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AGRI-ENVIRONMENTAL LITERACY AND PSYCHOLOGICAL CAPITAL MODEL FOR AGRITOURISM

by

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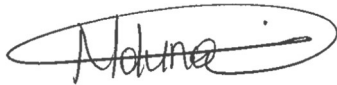
DECLARATION

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I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

February 2024

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To God be the Glory.

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ABSTRACT

Agritourism has been recognised as a niche tourism sector that has the potential to reshape, reinvent, rekindle and revitalise domestic tourism in South Africa. Domestic tourism in South Africa faces various challenges, such as a lack of marketing, promotion and product development, as well as the low availability and distribution of information. To develop, the agritourism industry needs to identify the important attributes that would motivate potential agritourists based in Gauteng to visit an agritourism farm. The study examined the agri-environmental literacy of potential agritourists that would enable the agritourism establishment to attract the appropriate pro-environmental market, while also investigating psychological capital (PsyCap) to identify any connections between potential agritourists' agri-environmental literacy and the recognised agritourism attributes. The primary objective of the study was to develop an agri-environmental literacy and PsyCap model for agritourism.

Panel data from the Bureau of Market Research (Unisa) collected primary data by sending an online link inviting panel members to participate in the study from 24 August 2020 to 18 January 2021. The data were obtained from 526 potential agritourists residing in Gauteng. Descriptive statistics provided insight into the agri-environmental literacy, PsyCap and important agritourism attributes of potential agritourists. Exploratory and confirmatory factor analyses, structural equation modelling (SEM) and mediation were employed to test the two developed conceptual models.

The study made a threefold contribution: theoretically, it developed two conceptual agri-environmental literacy and PsyCap models for agritourism, integrating components from environmental education and positive psychology, thereby expanding the knowledge of tourism management. Empirically, the study tested and confirmed these models through SEM, identifying critical paths that enhance product development and marketing for agritourism. It revealed the significant role of agri-environmental literacy in influencing attitudes and behaviours in agritourism. Practically, the insights led to a proposed agri-environmental literacy and PsyCap model for agritourism, for product development and marketing aligned with agritourists'

needs. The study provided insights and recommendations to improve domestic tourism development and the effective marketing of agritourism in South Africa.

Future research is recommended to diversify the sample by focusing on other provinces in South Africa, allowing for regional comparisons and a broader understanding of the dynamics of agritourism.

Key terms: agri-environmental literacy, psychological capital (PsyCap), agritourism model, agritourism attributes, agritourist, agritourism provider

TSHOBOKANYO

Bojanala jwa temothuo bo tsewa jaaka lephata le le kgethegileng la bojanala le le nang le kgonagalo ya go bopa sešwa, go fetola, go tlhosetsa le go tsosolosa bojanala jwa selegae mo Aforikaborwa. Bojanala jwa selegae mo Aforikaborwa bo lebanwe ke dikgwetlho tse di farologaneng di tshwana le tlhaelo ya papatso, tsweletso le go tlhabololwa ga ditlhagiswa, gammogo le go tlhaela ga tshedimosetso le go phasaladiwa ga yone. Gore indaseteri ya bojanala jwa temothuo e gole, indaseteri e tlhoka go supa diponagalo tsa botlhokwa tse di ka rotloetsang batho ba e ka nnang bajanala ba temothuo mo Gauteng go etela polase ya bojanala jwa temothuo. Thutopatlisiso e tlhatlhobile kitso ya temothuo-tikologo ya ba e ka nnang bajanala ba temothuo e e ka kgontshang setheo sa bojanala jwa temothuo go ngokela mmaraka o o maleba o o ratang tshomarelo ya tikologo, mme gape go ntse go batlisisiwa letlotlo la tlhaloganyo (PsyCap) go supa kgolagano magareng ga kitso ya ba e ka nnang bajanala ba temothuo le diponagalo tse di gona tsa bojanala jwa temothuo. Maikaelelo magolo a thutopatlisiso e ne e le go tlhamela bojanala jwa temothuo sekao sa kitso ya temothuto-tikologo le PsyCap.

Datha ya phanele go tswa kwa Birong ya Dipatlisiso tsa Mebaraka (Unisa) e kokoantse datha ya tshimologo ka go romela segokedi sa seranyane go laletsa ditokololo tsa phanele go tsaya karolo mo thutopatlisisong go tloga ka 24 Phatwe 2020, go fitlha ka 18 Firikgong 2021. Datha e bonwe go tswa mo bathong ba e ka nnang bajanala ba temothuo ba le 526 ba ba nnang mo Gauteng. Dipalopalo tse di tlhalosang di tlhagisitse kitso ya bojanala jwa temothuo, PsyCap le diponagalo tsa botlhokwa tsa bojanala jwa temothuo mo go ba e ka nnang bajanala ba temothuo. Go dirisitswe ditokololo tsa tlhotlhomiso le netefatso ya dintlha, tiriso ya mmeo e e farologaneng (SEM) le thuanyo go lekeletsa dikao tse pedi tse di tlhamilweng.

Thutopatlisiso e dirile kakgelo e e maphata mararo: mo tioring, e tlhametse bojanala jwa temothuo dikao tse pedi tsa kitso ya temothuo-tikologo, e golaganya dikarolo tsa thuto ya tikologo le kakanyo e e siameng, mme ka go rialo go atolosiwa kitso ya tsamaiso ya bojanala. Mo ntlheng ya tekeletso le kelotlhoko, thutopatlisiso e lekeleditse le go tlhomamisa dikao tseno ka SEM, e supa ditselana tsa botlhokwa tse di tokafatsang tlhabololo ya ditlhagiswa le papatso mo bojanaleng jwa temothuo. E senotse seabe sa botlhokwa sa kitso ya temothuo-tikologo go tlhotlheletsa mekgwa le

maitsholo mo bojanaleng jwa temothuo. Mo ntlheng ya tirisego, tshedimosetso e lebisitse kwa sekaong se se tshitshinngwang sa kitso ya temothuo-tikologo le PsyCap sa bojanala jwa temothuo, malebana le tlhabololo ya ditlhagiswa le papatso e e lepalepaneng le ditlhokego tsa bajanala ba temothuo. Thutopatlisiso e neetse tshedimosetso le dikatlenegiso tsa go tokafatsa tlhabololo ya bojanala jwa selegae le papatso e e bokgoni ya bojanala jwa temothuo mo Aforikaborwa.

Go atlenegisiwa dipatlisiso tse dingwe mo isagong gore go dirisiwe sampole e e farologaneng ka go lebelela diporofense tse dingwe mo Aforikaborwa, go letla gore go nne le tshwantshanyo ya dikgaolo le go tlhaloganya dintlha tse di fetogang tsa bojanala jwa temothuo.

Mareo a botlhokwa: kitso ya temothuo-tikologo, letlotlo la tlhaloganyo (PsyCap), sekao sa bojanala jwa temothuo, diponagalo tsa bojanala jwa temothuo, mojanala wa temothuo, motlamedi wa bojanala jwa temothuo

OPSOMMING

Landboutoerisme is erken as 'n nis-toerismesektor wat die potensiaal het om binnelandse toerisme in Suid-Afrika te hervorm, weer aan te vuur en nuwe lewe te gee. Daar is heelwat uitdagings vir binnelandse toerisme in Suid-Afrika, insluitende 'n gebrek aan bemarking, bevordering en produkontwikkeling, asook dat daar nie voldoende inligting beskikbaar is en versprei word nie. Om te kan ontwikkel, moet die landboutoerisme-bedryf die belangrike kenmerke identifiseer wat potensiële landboutoeriste wat in Gauteng gebaseer is, sal motiveer om 'n landboutoerisme-plaas te besoek. Die studie het die landbou-omgewingsgeletterdheid van potensiële landboutoeriste ondersoek wat landboutoerisme in staat stel om die toepaslike pro-omgewingsmark aan te trek, terwyl die studie ook sielkundige kapitaal (*PsyCap*) ondersoek om enige verbintenisse tussen potensiële landboutoeriste se landbou-omgewingsgeletterdheid en die erkende landboutoerisme-kenmerke te identifiseer. Die hoofdoelwit van die studie was om 'n landbou-omgewingsgeletterdheid- en *PsyCap*-model vir landboutoerisme te ontwikkel.

Paneeldata van die Buro van Bemarkingsnavorsing (Unisa) het primêre data ingesamel deur 'n aanlyn skakel te stuur na paneellede om deel te neem aan die studie van 24 Augustus 2020 tot 18 Januarie 2021. Die data is ingesamel by 526 potensiële landboutoeriste wat in Gauteng woon. Beskrywende statistiek het insig gegee in die landbou-omgewingsgeletterdheid, *PsyCap* en belangrike landboutoerisme-kenmerke van potensiële landboutoeriste. Verkennende en bevestigende faktorontledings, strukturele vergelykingsmodellering (*SEM*) en bemiddeling is aangewend om die twee ontwikkelde begripsmodelle te toets.

Die studie het 'n drievoudige bydrae gemaak: In teorie het die studie twee begripsmodelle vir landbou-omgewingsgeletterdheid en *PsyCap* ontwikkel vir landboutoerisme, deur komponente van omgewingsonderrig en positiewe sielkunde te integreer, en só die kennis van toerismebestuur uit te brei.

Hierdie studie het op 'n empiriese wyse hierdie modelle deur *SEM* getoets en bevestig, en kritieke weë geïdentifiseer wat produkontwikkeling en bemarking vir landboutoerisme bevorder. Dit het die beduidende rol onthul van die invloed van

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landbou-omgewingsgeletterdheid op houdings en gedrag in landboutoerisme. Prakties gesproke het die insigte gelei tot 'n voorgestelde landbou-omgewingsgeletterdheid- en *PsyCap*-model vir landboutoerisme, vir produkontwikkeling en bemarking wat in lyn gebring is met landboutoeriste se behoeftes. Die studie het insigte en aanbevelings verskaf om die ontwikkeling van binnelandse toerisme en die effektiewe bemarking van landboutoerisme in Suid-Afrika te verbeter.

Toekomstige navorsing word aanbeveel om die steekproefneming te diversifiseer deur te fokus op ander provinsies in Suid-Afrika, deur streeksvergelykings toe te laat, en deur 'n wyer verstandhouding van die dinamiek van landboutoerisme.

Sleutelterme: landbou-omgewingsgeletterdheid, sielkundige kapitaal (*PsyCap*), landboutoerisme-model, landboutoerisme-kenmerke, landboutoeris, landboutoerisme-verskaffer

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LIST OF ABBREVIATIONS AND ACRONYMS

The following abbreviations and acronyms are used throughout the study:

ABC	Antecedent Behaviour Consequences
ALI-LF	Agricultural Literacy Instrument for Local Foods
AMOS	Analysis of Moment Structures
ANA	Agritourism Network Association
ASA	Agritourism South Africa
ASE	Agri-environmental sensitivity
BMR	Bureau of Market Research
CEPS	Children's Environmental Perceptions' Scale
CEKS	Chinese environmental knowledge scale
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CGSS	Chinese General Social Survey
CHEAKS	Children's Environmental Attitude and Knowledge Scale
CMIN	Chi-square value
CR	Composite Reliability
DMO	Destination Marketing Organisation
DSP	Dominant social paradigm
EC	Environmental Concern
EE	Environmental Education
EFA	Exploratory Factor Analysis
ER	Environmentally responsible
ETC	European Travel Commission
GDP	Gross Domestic Product
HERO	Hope, Efficacy, Resilience, Optimism

HTMT	Heterotrait-Monotrait Ratio
IFI	Incremental fit index
KMO	Kaiser–Meyer–Olkin
MLE	Maximum likelihood estimation
MSELI	Middle School Environmental Literacy Instrument
MSELS	Middle School Environmental Literacy Survey
NAAEE	North American Association for Environmental Education
NAFDMA	North American Farmers' Direct Marketing Association
NDT	National Department of Tourism
NEETF	National Environmental Education & Training Foundation
NEP	New Ecological Paradigm
NEPS	New Environmental Paradigm Scale
NGO	Non-profit organisations
PAF	Principal Axis Factoring
PCQ	Psychological Capital Questionnaire
PEB	Pro-environmental Behaviour
PRE	Preservation
PsyCap	Psychological Capital
RMSEA	Root Mean Square Error of Approximation
SA	South Africa(n)
SAT	South African Tourism
SEM	Structural Equation Modelling
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized Root Mean Squared Residual
TAMS	Canadian Travel Activities and Motivation Survey
TLI	Tucker-Lewis index
TPB	Theory of Planned Behaviour

TRA	Theory of Reasoned Action
UN-WTO	United Nations World Tourism Organisation
US	United States
USA	United States of America
USD	United States Dollar
UK	United Kingdom
UTL	Utilisation
UNESCO	United Nations Educational, Scientific and Cultural Organization
VBN	Value-belief theory
WES	Wisconsin Environmental Survey
WTO	World Tourism Organisation
WTTC	World Travel and Tourism Council
WWOOF	Willing to Work on Organic Farms
ZAR	South African Rand
2-MEV	Environmental Values

CHAPTER 1:
BACKGROUND TO THE STUDY

1.1   INTRODUCTION

Globally, tourism has grown and is thriving, both as an economic sector and an activity, despite the continuous economic changes that the world has experienced in recent times (UN-WTO, 2019:1). As an industry, tourism has become a key sector for regional development, and a driver of the global economy (Cooper, 2020:4; WTTC, 2020:3). A decline in the contribution of tourism to the gross domestic product (GDP) of almost US$4.9 trillion in 2020 (-50.4%) was followed by a rise of US$1 trillion (+21.7%) in 2021 (WTTC, 2022a:1). While tourism contributed 10.3% to the global GDP in 2019, this figure decreased to 5.3% in 2020 due to ongoing COVID-19 pandemic travel restrictions. However, it increased again to 6.1% in 2021 (WTTC, 2022a:1).

As a consequence of the COVID-19 pandemic, the tourism industry lost 62 million jobs in 2020, representing a loss of 18.6%. This meant that just 271 million individuals were employed by the tourism industry globally in 2020, compared to the 333 million employees in 2019 (WTTC, 2022a:1). In 2021, the number of jobs increased by 6.7%, (WTTC, 2022a:1). Although tourism experienced a significant decline from 2019 to 2021, there was an improvement in 2022 in terms of tourism's contribution to both global GDP and employment. Globally, tourism contributed 7.6% of global GDP in 2022, which was an increase of 22% on the 2021 figures, and only 23% below 2019 levels (WTTC, 2023:1). Furthermore, the tourism industry created 22 million new jobs in 2022, representing a 7.9% increase on the 2021 figures, and only 11.4% below the 2019 figures (WTTC, 2023:1).

Locally, the tourism industry showed a decline of almost ZAR225.2 billion in the contribution of tourism to the GDP in 2020, that was followed by an increase rise of ZAR195.2 billion (+8.4%) in 2021, and an increase of 3.7% in 2022 (National Department of Tourism , 2023:1; WTTC, 2022a:1). In 2020, 1.06 million people were employed in the South African tourism sector, compared with 1.51 million in 2019, although there was a slight increase of 1.9% in 2021, with 1.08 million jobs (WTTC, 2022a:1). Globally, the GDP of the travel and tourism sector is expected to grow by

5.8% annually between 2022 and 2032, outpacing the growth of the economy by 2.7% (WTTC, 2022b:3).

The global domestic tourism market was valued at USD 1 670.34 billion in 2022. The domestic tourism market segment grew from a 55% market share in 1990–2000, to 65% in 2001–2010, and 70% in 2011–2020 (Polaris Market Research, 2023:5; UNWTO, 2021:2). In South Africa, a total number of 34.0 million domestic overnight trips was taken in 2022; an increase of 19.6% over 2019, and an increase of 128.4% from 2021 (SAT, 2023:81). Also, in 2022, 5.7 million international tourists arrived in South Africa (SAT, 2023:22). However, despite a flourishing international travel market, it is the domestic tourism markets that sustain and assist sought-after global tourist destinations and their continued promotion (NDT, 2022:3).

The performance of tourism globally has resulted in the industry becoming a key driver of socio-economic development (UN-WTO, 2022:1). Locally, tourism is classified as one of the country's key economic sectors due to the high employment intensity and multiplier effects of the industry (NDT, 2023:1). South Africa's key economic sectors include agriculture, mining, transport, energy, and manufacturing (Geza, Ngidi, Slowtow & Mabhaudhi, 2022:2). One of the sectors namely, agriculture presents entrepreneurial opportunities in agritourism, allowing farmers to diversify operations and increase revenue streams, enhancing financial stability and diversifying operations (Botha, 2023:1).

Agritourism is a type of niche tourism that involves the offering of agricultural products combined with a variety of recreational facilities, thus it is a combination of two key sectors, agriculture and tourism (Geza *et al*., 2022:2). Niche tourism, among other aspects, emphasises rural tourism as a viable form of travel grounded in local agricultural and sustainable practices (Robinson & Novelli, 2007:1). Macro-niche tourism offerings encompass both outdoor and indoor activities, including sports, adventure, and activities related to nature, culture, and heritage. These can be further categorised into various micro-niches, such as farm tourism, walking safaris, eco-tourism, slum tours, and extreme sports (Soligo, 2022). Agritourism is emerging as a prominent form of niche tourism that is grounded in sustainability, small and homogeneous groups of tourists, and product differentiation (Sorea & Csesznek, 2020).

Agritourism is well developed in other countries such as, for example, the United States of America (US) and Italy (Walden, Webb, Hobbs & Hepler 2013:1). In the 1920s, when travel became increasingly popular, agritourism gained popularity in the US (Walden *et al.*, 2013:1). Although the term agritourism is regarded as a fairly new concept in the US, in practice, it has been a long-established tradition in the US for people to visit farms and ranches to learn about agriculture and to celebrate harvests. For example, in the late 1800s, families living in cities visited farms or ranches to escape from city life and learn about farming and rural life. Italy is another excellent example of how agritourism can be implemented. The country passed the Agriturismo law in 1985 to encourage and support farm stays in rural areas (Chase *et al.*, 2018:13).

Agritourism became popular in South Africa with visits to game farms in the early 1950s. In the 1960s, ostrich racing and riding became quite popular on farms in the Oudtshoorn region. Wine tourism started in the early 1970s and involves tourists visiting wine estates for wine tasting (Van Zyl, 2019). Even though agritourism in South Africa can be traced back to the 1960s, it is a relatively new product offering for the country, and therefore, more information is needed to boost supply and demand.

Agritourism has been identified as one of the niche tourism products that can be used to rethink, reinvent, reignite, and revitalise domestic tourism (NDT, 2022:89). In the post-COVID-19 era there was a general consensus in the tourism industry to refocus on the local dimension, in other words, to develop and promote domestic tourism globally and locally (NDT, 2022:2; UNWTO, 2020:1). As a result, South Africa developed a Domestic Tourism Remodelling Model (DTRM) to rethink, reinvent, reignite, and revitalise domestic tourism (NDT, 2022:89).

The DTRM focuses on product development by grouping possible tourism product offerings and experiences under the following four elements: iconic attractions, un-iconic attractions, multi-culturalism and senses, as presented in Table 1.1 below. These elements are essential for strengthening and advancing the domestic tourism market.

Table 1.1:   Elements of the Domestic Tourism Remodelling Model

Number	Element	Descriptor
1	Iconic	The term 'iconic' refers to a well-known tourist attraction, whether natural or cultural. In addition to featuring prominently in destination marketing materials, these attractions are also used to attract tourists.
2	Un-iconic	An element that is not iconic is called 'un-iconic'. As such, the term 'un-iconic' refers to under-appreciated, unidentified, and unrecognised tourist attractions.
3	Multi-culturalism	Across disciplines and domains, multiculturalism has different meanings. Multiculturalism refers to the inclusion of diverse backgrounds, cultures, races, nations, and ethnicities.
4	Senses	Element 4 involves the five senses. The inclusion of this element challenges the idea that tourism consists primarily of 'look-and-see' activities. Tourism experiences that incorporate all five senses have the potential to be more holistic and diverse.

Source: National Department of Tourism, 2022:90

As the fourth element of the DTRM, 'senses' encompasses the five senses and aims to enhance the touristic experience by offering experiences beyond the conventional, as well as potentially increasing tourist interest. Niche tourism products included in the fourth element include agritourism experiences which is significant to the research on which the current study is based (NDT, 2022:90).

The aim of the DTRM is for destinations to explore and develop different products so that there are a variety of tourism offerings available at the destinations and to avoid depending on popular attractions and product offerings (NDT, 2022:100). In so doing, to present a diverse offering for the domestic market which can have a positive effect on domestic tourism growth. Domestic tourism provides a foundation for sustainable tourism growth and equitable socio-economic development, and thus, it is prioritised as a key component of the travel sector globally and locally (NDT, 2022:2; UNWTO, 2020:4).

The supply and demand of domestic products, such as agritourism, require product development and marketing that are aligned to tourists, and which will lead to both domestic and agritourism growth (NDT, 2022:86; Van Zyl, 2019).

In the pre-COVID-19 period, domestic tourism in South Africa faced various challenges, some of which are still prevalent, such as lack of marketing and promotion, product development, and the availability and distribution of information (NDT, 2023:1; NDT, 2022:89). According to the NDT (2020/21-2024/25:15, 2022:23), another challenge is that "existing products [do] not meet the needs and requirements of particular market segments".

Various strategies, such as marketing, promotion, increased awareness and dissemination of information, have been identified as important strategies in the successful development of domestic tourism in South Africa (NTSS 2016-2026, 2017:20; NDT, 2022:24). Thorough research is essential to develop and tailor agritourism experiences that meet the preferences of agritourists, and to effectively promote them to the intended target market. To this end, it is key to comprehend the specific needs and interests of agritourists.

Section 1.2 below presents the problem statement of the study.

1.2   PROBLEM STATEMENT

Agritourism is a niche tourism product providing tourist activities on farms for educational and recreational purposes (Arroyo, Barbieri & Rich, 2013; Phillip, Hunter & Blackstock, 2010). The continued growth of agritourism has facilitated its emergence as an alternative economic activity among farmers, as seen in research studies done by Arroyo *et al.* (2013) in Missouri and North Carolina. Furthermore, agritourism can also stimulate communities to adopt sustainable farming practices, such as the protection of biodiversity on farms (Dangol & Ranabhat, 2007).

Various research studies have examined the potential development of agritourism in different countries and regions throughout the world (Shah, Gibson, Shah & Pratt, 2020:204). Below is a list of the research studies on agritourism that have been conducted all over the world. The list is presented alphabetically according to country and its exposure:

- Australia (Addinsall, Scherrer, Weiler & Glencross, 2017; Capriello, Mason, Davis & Crotts, 2013; Embacher, 1994; Ollenburg & Buckley, 2007);

- Belgium (Dubois, Cawley & Schmitz, 2017);

- Canada (Ainley & Smale, 2010; Weaver & Fennell, 1997);

- China (Blažević, Peters & Chen , 2018; Lu, Wei & Zhan, 2019; Yang, 2012);

- Colombia (Garzón, Acevedo, Pavón & Baldiris, 2022);

- Croatia (Lončarić, Prodan & Bagarić, 2018);

- Egypt (Sharpley, 2002);

- England (Blažević *et al.*, 2018; Ilbery *et al.*, 1998; Nilsson, 2002; Sharpley & Vass, 2006; Walford, 2001);

- Fiji (Shah *et al.*, 2020);

- France (Annes & Wright, 2015; Dorocki, Rachwał, Szymańska & Zdon-Korzeniowska, 2013; Wright & Annes, 2014);

- Greece (Karampela & Kizos, 2018; Koutsouris, Gidarakou, Grava & Michailidis, 2014);

- Hondaras (Campbell & Kubickova, 2020);

- India (Krishna *et al.*, 2020; Madan, 2014; Waris, 2016);

- Italy (Addinsall *et al.*, 2017; Broccardo, Culasso & Truant, 2017; Brandano, Osti & Pulina, 2018; Canovi, 2019; Contini, Scarpellini & Polidori, 2009; Capriello *et al.*, 2013; Fanelli, 2019; Giaccio, Giannelli & Mastronardi, 2018; Lupi *et al.*, 2017; Roman & Golnik, 2019; Roman, Roman, Prus & Szczepanek, 2020);

- Malaysia (Mahdzar *et al.*, 2017);

- Nigeria (Khidir, 2020; Ogunleye, 2015; Uduji *et al.*, 2021);

- Nepal (Maharjan, Dangol, Pandey & Pant 2022);

- New Zealand (McIntosh & Bonnemann, 2006);

- Norway (Daugstad & Kirchengast, 2013);

- Poland (Hegarty & Przezborska, 2005; Roman *et al.*, 2020);

- Portugal (Marques, 2006);

- Romania (Adamov *et al.*, 2020; Călina *et al.*, 2017);

- Russia (Kazmina *et al.*, 2020);

- Siri Lanka (Malkanthi & Routry, 2011);

- South Africa (Fourie, 2014; Meyer & De Crom, 2013; Mguni, 2010; Rogerson & Rogerson, 2014; Van Niekerk, 2013);

- Spain (Sánchez-Martín, Blas-Morato & Rengifo-Gallego, 2019);

- Taiwan (Busby, 2010; Leelapattana, Hsu, Thongma, Chen & Chiang, 2019; Liang, Lim & Wang, 2019; Shen *et al.*, 2022);

- Tanzania (Ngassa, 2013; Uwimana & Uwimpuhwe, 2022);

- Thailand (Srikatanyoo & Campiranon, 2010);

- United Kingdom (Capriello *et al.*, 2013; Clarke, 1999; Domenico & Miller, 2012; Phelan & Sharpley, 2011; Shumaev, 2018);

- United Sates of America (Ainley & Kline, 2013; Arroyo *et al.*, 2013; Barbieri, 2010; Barbieri & Mahoney, 2009; Barbieri & Mshenga, 2008; Barbieri & Streifeneder 2019; Barbieri, Xu, Gil-Arroyo & Rich, 2016; Bowman, 2019; Brune *et al.*, 2021; Brune, Knollenberg, Stevenson & Barbieri, 2020; Capriello *et al.*, 2013; Carpio, Wohlegenant & Boonsaeng, 2008; Chase *et al.*, 2018; Choo & Petrick, 2014; Comen, 2017; Doh, Park & Kim, 2017; Gao, Barbieri & Valdivia, 2014; Hill, Loomis, Thilmany & Sullins, 2014; Holland & Wolfe, 2000; Jolly & Skidmore, 2003; Jolly & Reynolds, 2005; Keith, 2003; LaPan & Barbierie, 2014; McGehee, 2007; McGehee & Kim, 2004; McGehee, Kim & Jennings, 2007; Nickerson, Black & McCool, 2001; O'Connor, 2011; Perticara & Swenson, 2019; Poore, 2011; Phillip *et al.*, 2010; Schilling, Marxen, Heinrich & Brooks, 2006; Specht, McKim & Rutherford, 2014; Sullins, Moxon & Thilmany, 2010; Tew & Barbieri, 2012; Veeck, Che & Veeck, 2006; Wicks & Merrett, 2003; Yeboah, Owens, Bynum & Okafor, 2017); and

- Zimbabwe (Baipai, Chikuta, Gandiwa & Mutanga, 2022).

From the wide coverage throughout the world, it is evident that the topic is of interest to researchers all over the globe. This can, amongst others, be attributed to the continuous growth, sustainable diversification, as well as the socio-economic importance of agritourism. Various dimensions of agritourism have been addressed in literature (Arroyo *et al.*, 2013; Bagi & Reeder, 2012; Bernardo, Valentin & Leatherman, 2004; McGehee *et al.*, 2007; Tew & Barbieri, 2012).

The studies listed above were further analysed in terms of their key objectives, methodology, and focus area of the publication. Table 1.2 below summarises the review of agritourism literature studies (1994–2022) by indicating the key objectives, theme, and methodological approach of the study.

Table 1.2:   Agritourism literature studies (1994–2022)

Key objectives of agritourism	Number of studies
Understanding agritourism providers	36
Understanding agritourism	16
Agritourism sustainability	2
Agritourism features (activities, products, facilities & success)	7
Agritourism development	28
Agritourism innovation	2
Agritourism market understanding	21
Agritourism marketing	5
Agriculture and tourism linkages	1
Agritourism and local food systems	3
Agritourism and agriculture literacy	3
Agritourism critical success factors	1
Theme of publication	
Tourism	110
Environmental science	3
Rural studies	3
Thesis	7
Methodological approach	
Survey tourists	17
Operators' in-depth interview	9
Observation agritourism establishments	2
Survey operators	69
Secondary data analysis	13
Literature review	13

Source: Author's own compilation

From Table 1.2, it is evident that the focus of previous research has been on understanding agritourism from the provider's perspective, and also to contribute to

the development of agritourism as a study field. Based on the perspective of providers, previous studies examined topics such as agritourism entrepreneurship, diversification of farm business, and critical success factors for agritourism. Some studies also gave the farmers' perspectives and the motivations thereof (Arroyo *et al.*, 2013; Bagi & Reeder, 2012; Baipai *et al.*, 2022; Bernardo *et al.*, 2004; McGehee *et al.*, 2007; Tew & Barbieri, 2012).

According to these studies, agritourism operators are seen as entrepreneurs who are motivated by a plethora of personal and economic goals, such as a desire for more income, to offer diversified farm products, to improve their quality of life, and increase farm profitability (Barbieri, 2010; Bernardo *et al.*, 2004; Schilling, Attavanich & Jin, 2014; Tew & Barbieri, 2012). Research conducted in South Africa mostly focused on themes such as agritourism as a diversification activity, as a local economic empowerment tool, and as economic and developmental tools (Mnguni, 2010; Rogerson & Rogerson, 2014; Van Niekerk, 2013).

Although some previous research studies have focused on the agritourist, these are limited and need further investigation (Ainley & Smale 2010; Brandano *et al.*, 2018; Brune *et al.*, 2020, 2021; Busby, 2010; Jolly & Reynolds, 2005; Leelapattana *et al.*, 2019; Lončarić *et al.*, 2018; Mahdzar *et al.*, 2017; McIntosh & Bonnemann, 2006; Poore, 2011; Roman & Golnik 2019; Shah *et al.*, 2020; Srikatanyoo & Campiranon, 2010). There is especially a lack of agritourist research in a developing country such as South Africa (Fourie, 2014; Van Niekerk, 2013).

Research shows that the main reasons for agritourists visiting farms are listed as:

- Scenery, farm life, local cuisine and countryside are among the top reasons for farm tourism (Busby, 2010);
- Working farms offer a value-for-money experience, hospitality, accommodation, landscape and an operational farm set-up (Shah *et al.*, 2020:7);
- Activities and shopping at the farm (Srikatanyoo & Campiranon, 2010:170);
- Activities or experiences (Mahdzar *et al.*, 2017:3);
- Gastronomic experiences and accommodation (Roman & Golnik, 2019:21);
- Other experiences, such as learning opportunities, meaningfulness and authenticity, and nature (Mahdzar *et al.*, 2017; McIntosh & Bonnemann, 2006); and

- Quality of food services (Sidali, Spitaler & Schamel, 2019).

The current study aims to fill the gap in the literature regarding agritourism in South Africa from a demand-side perspective. The demand-side perspective is important to align the product offering with tourists' needs, and to develop marketing strategies that will attract tourists to agritourism establishments. This also applies to South Africa, as there is a dearth of studies on demand-orientated agritourism (Speirs, 2003:iii).

The studies conducted in South Africa mainly focused on diversification as a local economic empowerment tool and the development of agritourism and also, the socio-economic difference between agritourism and non-agritourism farmers (Mnguni, 2010; Rogerson & Rogerson, 2014; Van Niekerk, 2013). An example of a study that examined demand-side factors is that of Speirs (2003) who developed segmentation attributes for agritourism that were based on demographics, socioeconomics and travel patterns, although these segmenting attributes are not related to agritourism as a niche offering.

In essence, the question that needs to be answered is: What do agritourists value or deem important concerning an agritourism product? Fourie's (2014) study evaluated the factors affecting visitor loyalty at a South African agricultural festival. Fourie (2014) found that agricultural exposure education, lifestyle, escape and socialisation directly influenced participants' loyalty in visiting farms, which provides insight into the topic.

As previously mentioned, agritourism has been recognised as a niche tourism sector with the potential to reshape, reinvent, rekindle, and revitalise domestic tourism in South Africa (NDT, 2022:89). Even though the COVID-19 pandemic acted as a catalyst for rethinking, developing, reinventing, reigniting, and revitalising the tourism sector, as well as adding impetus to the refocus on the development and promotion of domestic tourism, there were existing challenges pre-COVID-19 related to domestic tourism in South Africa (NDT, 2022:1; UNWTO, 2020:1).

Globally, domestic tourism has received relatively little formal attention from governments, the private sector, non-governmental organisations, local communities and tourism scholars (NDT, 2022; Jafari, 1986, Pearce, 2019; Scheyvens, 2007; Yong, Yu, Min & Peng, 2019). Locally, the domestic tourism industry also faces various ongoing challenges, for example, there is a lack of product development and

marketing and promotion. In addition, there are challenges related to the availability and distribution of information, and it has been found that the existing products do not meet the needs of the tourist market (NDT, 2011-2020:15; NDT, 2022:23). The development of agritourism in South Africa necessitates aligning the available products with the needs of agritourists, while effectively marketing, promoting, and disseminating information about product offerings to the target market.

Domestic tourism can foster economic advantages, social and cultural enrichment, community pride, nation-building, sustainable environmental conservation, and it also mitigates the seasonal fluctuations in international tourist arrivals (Yong *et al.,* 2019:23). It is crucial to implement effective management plans and to align tourism development with the needs of local communities, while adhering to the principles of sustainable tourism that prioritise people, planet and prosperity (Rao & Suresh, 2001; UNWTO, 2021:1).

The emphasis on sustainability in tourism development stems from the recognition that uncontrolled tourism growth may contribute to environmental degradation and the challenges presented by over-tourism or mass tourism (Kyara, Rahman & Khanam, 2022:1). Consequently, it is imperative to ensure the sustainable development of agritourism to mitigate these concerns (Kyara *et al.*, 2022:1). Various tourism stakeholders have expressed concern about the consequences of rapid tourism development without consideration for environmental sustainability (Arrobas, Ferreira, Brito-Henriques & Fernandes, 2020).

One of the key concepts associated with sustainability is the environmental literacy of the market. Environmental literacy, particularly the pro-environmental behaviour of tourists, has been identified as an important factor in achieving sustainability in tourism (Arrobas *et al.*, 2020:8; Conradie, 2017:400; Fang, Prayag, Ozanne & De Vries, 2020:3). It is vital to consider the environmental literacy and behavioural intentions of potential agritourists when developing agritourism sustainably. A key characteristic of environmental literacy is its focus on behaviour (Monroe, 2003:115). An environmentally literate individual makes environmentally conscious choices, which consider and protect the environment (Monroe, 2003:115). The end goal is therefore to develop agritourism experiences that tourists can engage in and enjoy without

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negatively affecting the environment and the socio-economic life of the local community.

Tourism experiences have been found to strengthen tourists' ephemeral psychological fortitude against the daily challenges in their lives and contribute to sustainability as a mental and psychological concept (Wong, Lin & Kou, 2021:15). By building mental toughness, tourism experiences can help tourists develop confidence, resilience and hope, ultimately offering them a glimpse of hope and optimism to face life with courage and endurance (Wong *et al.*, 2021:15). The current study therefore explored the psychological capital (PsyCap) of potential agritourists, considering it to be a positive means and necessary state to influence their attitudes, behaviours, performance and wellbeing (Luthans & Youssef-Morgan, 2017).

Given the importance of psychological capital (PsyCap) for the current study in terms of shaping the attitudes, behaviours, performance and wellbeing of potential agritourists (Luthans & Youssef-Morgan, 2017), it is essential to recognise that domestic tourism serves as a cornerstone for sustainable tourism growth and equitable socio-economic development (NDT, 2022:3). Consequently, innovative solutions are required to enhance tourism offerings on a domestic scale. There is also a pressing need to develop domestic tourism products that are sustainable, that cater to the needs and requirements of specific market segments, and effectively market and promote these offerings (NDT, 2011-2020:15; NDT, 2022:23). As a niche product within domestic tourism, agritourism must be developed sustainably, and strategically marketed to foster its growth and contribute to the overall expansion of the domestic tourism product offerings (NDT, 2011-2020:15; NDT, 2022:23).

In the pursuit of aligning agritourism offerings with the preferences of agritourists, operators must acquaint themselves with their potential market. This understanding is vital to ensure that agritourism, as a product, effectively meets the diverse needs of its target audience. Notably, previous research has indicated a scarcity of studies on potential agritourists. Therefore, for agritourism to thrive and remain competitive in South Africa, it is imperative for farmers and agritourism suppliers to investigate agritourism from the demand-side. To this end, the current study aimed to gain an understanding of the important attributes that attract agritourists and which cause them

to visit a farm (demand-side). By doing so, agritourism service providers can develop a product that precisely caters to the needs of the target market.

Building on this, the current study further delved into the sustainable development of agritourism, examining it from both an environmental perspective by exploring agri-environmental literacy, and a psychological perspective, through the lens of psychological capital (PsyCap). The objective of the study was to develop a comprehensive model integrating agri-environmental literacy and PsyCap, specifically tailored for agritourism. This model is intended to serve as a valuable resource for agritourism service providers, offering insights for product development and effective marketing strategies within the agritourism domain. In so doing, to align the agritourism offering and marketing with agritourists' needs.

Moreover, the study uncovered the agri-environmental literacy of potential agritourists, unveiling various existing relationships among agri-environmental literacy, PsyCap, and the agritourism attributes deemed important by agritourists when considering a visit to a farm. The overarching aim is to present an agri-environmental literacy and PsyCap Model, a tool that agritourism service providers can leverage in informed product development and strategic marketing. This model will unveil valuable characteristics of the potential agritourist market, shedding light on their pro-environmental behaviour and highlighting essential agritourism attributes. With this information, agritourism service providers can develop sustainable agritourism products and implement effective marketing strategies, addressing the challenge of product development and the dissemination of information. This approach seeks to ensure that the resulting products align with the specific needs and requirements of specific market segments.

The current study's overarching research question is: What are the important attributes that would motivate potential agritourists to visit an agritourism farm?

To solve the problems related to the following: 1) the lack of marketing and promotion, 2) lack of product development, 3) the unavailability and lack of distribution of information, and 4) the existing products not meetings the needs and requirements of the agritourism market, this research aimed to investigate the important agritourism attributes that would motivate an agritourist to visit a farm. The current study further

investigated the agri-environmental literacy of potential agritourists so that this information can be used to develop agritourism offerings that meet the potential market needs, enable effective marketing, and ensure that the farm will not attract a potential market that is not pro-environmental. PsyCap was also investigated to uncover any relationships between potential agritourist agri-environmental literacy and agritourism attributes.

The theoretical contribution of this study is to apply the concepts taken from the domains of environmental education, environmental literacy and/or environmental psychology, and PsyCap to the context of the present study, namely, agritourism in the farm environment, thus contributing to the body of knowledge in the tourism management field.

The components of agri-environmental literacy and the PsyCap agritourism attributes presented in the conceptual agri-environmental literacy and PsyCap model for agritourism Scenario 1 and Scenario 2 were tested empirically, providing an empirical contribution.

Based on the insight gained from this study, from a theoretical as well as an empirical perspective, a final agri-environmental literacy and PsyCap model for agritourism was developed, which will be useful in agritourism development, agri-environmental education and sustainability, as well as agritourism marketing, thus providing the practical contribution of this study.

To address the research problem outlined above, the following research objectives were therefore set.

1.3   RESEARCH OBJECTIVES

This section presents the primary and secondary research objectives that were formulated for the current study.

1.3.1   Primary objective

The primary research objective of the study was to develop an agri-environmental literacy and psychological capital model for agritourism: the case of Gauteng.

1.3.2   Secondary objectives

In order to achieve the primary objective of the study, the following secondary objectives were formulated:

- To conceptualise agri-environmental literacy, behavioural intention, PsyCap, and agritourism attributes from existing literature.

- To explore the relationships between agri-environmental literacy, PsyCap, behavioural intention, and agritourism attributes from existing literature.

- To determine the respondents' biographic information, agri-environmental literacy, PsyCap, and important agritourism attributes.

- To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling.

- To determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, concern and sensitivity.

- To determine whether behavioural intention, concern and sensitivity have a mediating effect on the relationship between PsyCap and agritourism attributes.

- To draw conclusions from and make recommendations based on the results of the study.

1.4   RESEARCH METHODOLOGY OF THE THESIS

The methodological procedure was operationalised in three phases, as illustrated in Figure 1.1.
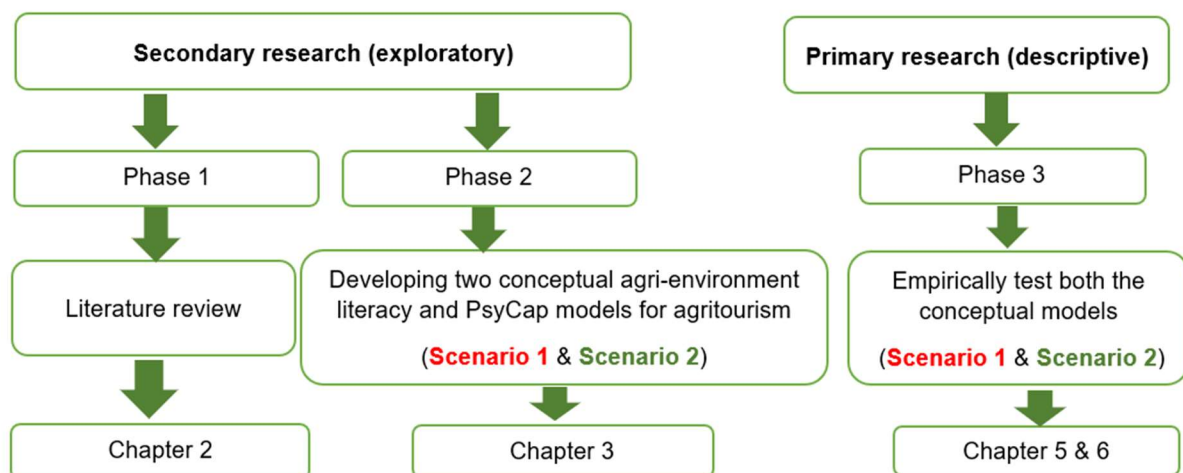
Figure 1.1:   Methodological procedure of the current study (including chapter outline)

The research method applied in the current study was secondary research, which consisted of the literature review (Phase 1) and the development of two conceptual models (Phase 2). The primary research resulted in the development of two conceptual agri-environmental literacy and PsyCap models for agritourism that were tested empirically in Phase 3. Potential mediation effects were also investigated. The secondary research performed in the study is discussed next.

1.4.1 Secondary research

It is imperative that a research study commences with a literature review (Booth, Sutton, Clowes & Martyn St-James, 2021; Finn, Walton & Elliott-White, 2000:89; Mouton, 2001:87). A literature review was conducted and was operationalised in two phases, as reported in Chapters 2 and 3, respectively (Figure 1.1).

As part of the literature review, various sources of information were consulted (De Vos, Strydom, Fouché & Delport, 2007:137–139; Pandey & Pandey, 2021:35), such as books, articles in professional journals, statistical abstracts, theses and dissertations, presentations at conferences, symposia and workshops, internet websites, and electronic databases (for example, the library catalogue, EBSCOhost: Academic Search Premier, Hospitality & Tourism. ABI/INFORM. ScienceDirect and Emerald Full Text).

The literature review for this thesis conceptualised prior research relating to:

- Environmental and agri-environmental literacy, overall life psychological capital and agritourism, including related terms such as farm tourism and agritourism;

- Environmental education (EE) and environmental literacy (EL); and

- Six components from the EE and EL domains were identified as possible mechanisms that could influence potential agritourists' agri-environmental behaviour and important agritourism attributes when considering the visit to an agritourism farm. A separate literature search was conducted on each of these components, namely, agri-environmental orientation (environmental awareness and affinity), agri-environmental knowledge, agri-environmental attitudes and values, behavioural intention (intention to act, verbal commitment), agri-environmental sensitivity and concern.

In Phase 2 of the literature review, two conceptual agri-environmental literacy and PsyCap models for agritourism were developed and discussed in Chapter 3. The next section describes the primary research conducted in the study.

1.4.2 Primary research

During Phase 3 of the study (Figure 1.1), primary data were collected through an online survey to collect information pertinent to the purposes of the study (Thomas, 2021:35; Welman, Kruger & Mitchell, 2009:149). The aim of the primary research was to achieve and address the research objectives of the study. The primary research process followed in this study is discussed next.

The first step of the primary research process involved selecting a research design. The research was empirical in nature, as it made use of the quantitative method, where an online survey was used to collect primary data.

The second step was to select and develop a sampling plan. The survey population for the current study comprised of potential agritourists residing in Gauteng, South Africa. The Gauteng province is the smallest province in land size in South Africa, but it has the largest population in the country, with 15.5 million residents (26%) in 2022 (Stats SA, 2022). Known as the economic heartland of South Africa, Gauteng is the main gateway to Southern Africa for most tourists (SAT, 2022). Furthermore, Gauteng is the source market of domestic tourism (NDT, 2022:1)

The current study followed a purposive sampling method. A proxy sample frame was used, and a panel database consisting of respondents who reside in Gauteng (BMR, 2022). Due to the unavailability of the sample frame list for selecting sample elements, an online panel database was chosen for the study, which offered some benefits to the data collection process. The Bureau of Market Research (BMR) database was utilised, containing a sample of 3924 individuals from an online community consisting of different age groups; ensuring representation of potential agritourists in the Gauteng region.

This decision was informed by the inaccessibility of research participants during the COVID-19 lockdown (Greef, 2020:5). The decision to use an online panel was also informed by the Unisa COVID-19 guidelines for ethics which prohibited face-to-face

contact research studies, while recommending online data collection as the preferred method (Unisa, 2020:1).

For the purposes of the current study, a purposive sample was drawn based on the following criteria:

- The sample should include residents of Gauteng;

- The sample had to include different generational cohorts (Generation Z; Millennial, Generation X and Baby Boomers);

- Both male and female individuals had to be included in the sample; and

- The respondents had to understand English, which was the language used in the questionnaire.

Using the above criteria, 3 924 panel members were identified for the study and were invited to participate in the study. The panel process involved recruiting members from an affiliate site (BMR site) who confirmed their willingness to take multiple surveys over an extended period by registering on the site. A survey was then emailed to panel participants based on the qualifying criteria described above.

A variety of guidelines were used by the current study, including those of Cooper and Emory (1995:207) and Krejcie and Morgan (1970:608), which illustrate how sample size is related to the total population. A sample size should be determined according to the characteristics of the population (Cooper & Emory, 1995:207; Krejcie & Morgan,1970:608).

These authors developed a method to ensure a sample size that is representative of a population. For a population of 1 000 000, Krejcie and Morgan's table for determining sample size recommends taking 384 samples (Krejcie & Morgan, 1970:608). According to Krejcie and Morgan (1970:608), the recommended sample size (n) of 351 is recommended for a population of 4000 (panel population 3924).

The formula for calculating the unknown sample size based on a given recommended sample size for a different population size can be done using a proportion as follows:

Recommended sample size for a population of 4000: **R** = 351

BMR Database population size (3924): **P** = 3924

Unknown sample size for BMR database population: **X**

The proportion is set up as:

R / P = X / Database_population_size

351 / 4000 = X / 3924

X = (351 / 4000) * 3924

 =344,331

=344

A calculated sample size provides one with a minimum, not a maximum, therefore, considering Krejcie and Morgan's (1970:608) work, a sample size (n) of 526 was deemed appropriate for the current study. The decision to use a sample size of 526 instead of the calculated 344 was deliberate and aimed to enhance the quality and robustness of the study's results. While the recommended sample size serves as a baseline and guideline and is based on providing a minimum sample size for point estimates given the acceptable margin of error. It is important to recognise that deviations from this guideline can be justified under certain circumstances. In this case, the complexity of the final SEM model requires a larger sample size which allows for increased statistical power and greater precision in estimates, and enhanced generalisability of findings. Additionally, a larger sample size can help mitigate the impact of potential biases and increase the reliability of the study's conclusions. By prioritising statistical complexity, data quality and reliability, the study aimed to produce more comprehensive and trustworthy results, ultimately contributing to a deeper understanding of the research topic. Therefore, the current study surveyed 526 participants.

The third step included the selection and development of the research instrument used in the study. A questionnaire was developed, with questions related to the eight constructs (agri-environmental orientation; agri-environmental knowledge; agri-environmental attitude; behavioural intention; environmental concern; farm environmental sensitivity; psychological capital and agritourism attributes) that were investigated for the study (Appendix A: Agritourism survey of potential market).

The questionnaire consisted of six sections (A–F) and the questions were based on existing measurement scales used in previous research (Bogner & Wiseman, 2006; Larson, Green & Castleberry, 2011; Leeming, Dwyer & Bracken, 1995; Luthans,

Youssef & Avolio, 2006:237–238; Shah *et al.*, 2020:8; Veisi, Lacy, Mafakheri & Razaghi, 2019:34), as well as the literature review conducted for the current study (Chapter 3). The layout of the sections in the questionnaire is discussed next.

Section A of the questionnaire measured potential agritourists demographic information of the respondents, such as gender, generational cohorts, home language, and race group was obtained to characterise and profile a potential agritourist residing in Gauteng.

Section B2 of the questionnaire measured potential agritourists' agri-environmental orientation using an applicable Likert-type scale ranging from (5) strongly agree to (1) strongly disagree (refer to Table 1.2).

Section C1 measured potential agritourists' knowledge of farming and agritourism activities using a five-point multiple-choice response format allowing respondents to select the correct answer from the listed choices.

A Likert-type scale was used in Sections C2–C4, D, E and F of the questionnaire. The applicable Likert-type scale used for each section is shown in Table 1.3 below.

Table 1.3: **The applicable Likert-type scale used in the questionnaire**

Section in questionnaire	Applicable Likert-type scale used				
	1	2	3	4	5
B, C2, C3, D, E	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
C4	Not at all concerned	Slightly concerned	Moderately concerned	Very concerned	Critically concerned
F	Not important	Slightly important	Moderately important	Very important	Critically important

Sections B, C2, C3, D and E required of the respondents to indicate their level of agreement or disagreement with each statement on a scale of 1 (strongly disagree) to 5 (strongly agree). In Section C4, a semantic differential scale ranging from 'not at all concerned' to 'critically concerned' was used to measure potential agritourists' concern regarding the effects of tourism on the environment, farms and farming. In Section F, a Likert-type scale ranging from 'not important' to 'critically important' was used to

measure the respondents underlying important agritourism attributes when choosing to visit an agritourism farm.

The fourth step of the study was to conduct a pilot test. Experts in the field of tourism, agritourism, research methodology and online surveys were identified and asked to give their opinion on the questionnaire. The questionnaire was also sent for editing before conducting the pilot study. Minor modifications were implemented based on the recommendations of the experts, after which the questionnaire was pre-tested. The questionnaire was tested on the research population, comprising of potential agritourists residing in Gauteng during July 2020. The questionnaire for the pilot study comprised of seven major constructs and 144 variables.

The fifth step was to conduct the primary research of the study. The data collection procedure was based on a self-administered online survey making use of online panel data from the BMR (Unisa). In total, 3 924 respondents from the BMR database who reside in Gauteng were invited to participate. A total sample of 526 potential agritourists residing in Gauteng was realised.

The sixth step was data processing. This comprised verifying all questionnaires submitted to make sure that these were completed in full. All the questions were pre-coded during the questionnaire design. As the survey was conducted online, the questions were pre-coded during the design of the questionnaire (Cooper & Schindler, 2018:379; Denscombe, 2007:258).

To ensure data accuracy, all questionnaires were cleaned and verified. The verification included ensuring that the respondents answered all the questions before the data was analysed using the statistical packages for social science (SPSS.23.0).

The data analysis was conducted as follows:

- Descriptive statistics were used, firstly, to characterise and profile the respondents (potential agritourists in Gauteng), and secondly, to describe the characteristics of the sample taken, for each of the seven constructs, as reflected in Sections A–F of the questionnaire (Appendix A: Final questionnaire) (Leedy & Ormrod, 2010:265).

- Multivariate statistical techniques were applied to the data, namely, confirmatory factor analysis (CFA), exploratory factor analysis (EFA) and structural equation modelling (SEM). CFA was employed (Sections B, C2–F of the questionnaire) to

test whether the categories found in previous exploratory research could be confirmed in this study. When CFA did not show an acceptable fit, an EFA was conducted.

- The aim of the EFA was to investigate the underlying structure of the data and to determine whether or not it could be simplified into one or more factors. Since CFA did not show an acceptable fit for B, C2–F, EFA was employed in these sections (Sections B, C2–F of the questionnaire).

- SEM was employed to test the conceptual agri-environmental literacy and PsyCap models for agritourism (Scenario 1 & Scenario 2). The two conceptual agri-environmental literacy and PsyCap models for agritourism were based on existing literature (Figure 3.1). To understand the role and relationships of each of the constructs in the proposed conceptual models, the relationships within and across concepts were tested using SEM. The two proposed conceptual models are referred to as the Scenario 1 model and Scenario 2 model. Both Scenario 1 and Scenario 2 were tested. Based on the SEM results, the Scenario 2 model was confirmed (Figure 6.17). Given the exploratory nature of the tested conceptual Scenario 2 model, potential mediation effects were also explored in the SEM model, and the results thereof are presented in this thesis (Section 6.13).

The seventh and final step was to present the research results. The descriptive statistics, CFA, EFA and SEM results are presented in Chapters 5 and 6 of the thesis, and the conclusions and recommendations, based on the results, are summarised in Chapter 7. The research design and method used in the current study are discussed in detail in Chapter 4. The key terms used in the study are presented next.

1.5   DEFINITION OF KEY TERMS

This section defines the key terms frequently used in this thesis, as illustrated in the flow diagram in Figure 1.2.

| 1.5.1 Sustainable Tourism |
| 1.5.2 Niche Tourism |
| 1.5.3 Agritourism and agri-tourist |
| 1.5.4 Agritourism operator |
| 1.5.5 Psychological capital |
| 1.5.6 Agri-environmental literacy |
| 1.5.7 Agri-environmental orientation |
| 1.5.8 Agri-environmental knowledge |
| 1.5.9 Agri-environmental attitude |
| 1.5.10 Agri-environmental concern |
| 1.5.11 Agri-environmental sensitivity |
| 1.5.12 Behavioural intention |

Figure 1.2:   Key terms used in the thesis

1.5.1   Sustainable tourism

Sustainable tourism refers to "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (UNWTO 2005:11). A comprehensive definition of sustainable tourism should encompass two key elements:

Firstly, sustainable tourism requires seamless integration of all the facets of development. Secondly, certain aspects of tourism, such as long-haul air travel, may prove unsustainable in terms of the existing technologies and best practices. For this reason, the sustainability of tourism resources entails the optimal utilisation of resources, while encompassing biological diversity. Essentially, according to the UNWTO (2013), sustainable tourism should:

- Make efficient use of environmental resources, recognising them as a pivotal component in tourism development. This involves preserving vital ecological processes and aiding in the conservation of natural heritage and biodiversity.

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- Show respect for the socio-cultural authenticity of host communities, while safeguarding their built and living cultural heritage, traditional values, and contributing to intercultural understanding and tolerance.

- Ensure sustainable, long-term economic operations that deliver socio-economic benefits to all stakeholders and ensure fair distribution. This includes providing stable employment, income-earning opportunities, and social services to host communities, thereby contributing to poverty alleviation.

1.5.2 Niche tourism

Niche tourism involves tailored offerings that are designed to meet the specific requirements of a particular market segment (Novelli *et al.*, 2022:xxiii; Robinson & Novelli, 2007:344). It is crucial to view markets as composed of individuals with distinct needs based on specific characteristics, rather than as a simplistic and uniform entity (Sroka, Sulewski, Mikolajczyk & Król, 2023). Consequently, a niche market is characterised by a group of people with specialised needs or interests (Novelli *et al.*, 2022; Robinson & Novelli, 2007). These tourists exhibit a strong inclination towards the products offered within a niche market.

Tourism niches can be understood as segments within still relatively broad markets (macro-niches, such as cultural tourism, rural tourism, and sports tourism) that can be further subdivided into more specific categories (micro-niches, such as geo-tourism, gastronomy tourism and cycling tourism) (Novelli *et al.*, 2022; Robinson & Novelli, 2007).

1.5.3 Agritourism and agritourist

Numerous definitions and terms exist for the term 'agritourism' (Phillip *et al.*, 2010). The inconsistencies regarding the terminology, and the characteristics and activities of agritourism have been reported extensively in literature (Arroyo *et al.*, 2013; Phillip *et al.*, 2010; Streifeneder, 2016). For example, Table 2.1 (Chapter 2) lists 23 different definitions of agritourism, and the different terms reported in literature that are summarised from the most recent to the oldest date. According to Sharpley and Sharpley (1997:9), agritourism refers to "tourism products which are directly connected with the agrarian environment, agrarian products or agrarian stays".

Agritourism can therefore be defined as any tourism product that is related to agriculture and its environment. Weaver and Fennell (1997:357) classified an agritourism setting as a rural operation offering commercial tourism components taking place on a working farm. Maharjan *et al.* (2022:1) placed agritourism in a rural setting, defining it as a means for farmers to generate an extra income by offering agricultural activities, services and amenities to tourists. Based on Maharjan *et al.*'s (2022:1) definition, agritourism is used as a diversification tool for farmers.

Phillip *et al.* (2010:754) proposed a theoretical framework for agritourism which focuses on three key areas, namely:

- functionality of a farm (working or non-working farm);
- types of tourist farm activities offered; and
- the degree of authenticity of the tourist experience offered by a farm.

This agritourism typology developed by Phillip *et al.* (2010:754) is illustrated in Figure 2.4 (Chapter 2). According to Phillip *et al.* (2010:754), agritourism is the direct or indirect interaction of visitors with a working or non-working farm product, during which they can experience a directly staged, authentic, or indirect interaction with agritourism products. The definition formulated by Phillip *et al.* (2010:754) agrees with the definition by Sharpley and Sharpley (1997:9) that agritourism is a tourism product that incorporates everything related to agriculture and an agricultural environment.

The current study thus adopted the following definition for agritourism: Agritourism is a type of tourism that includes the direct or indirect engagement of agritourists with operational or non-operational farm products, providing opportunities for authentic, staged, or indirect interactions with agritourism offerings. It is a tourism product that fully integrates elements related to agriculture within an agricultural environment (Phillip *et al.* 2010:754; Sharpley & Sharpley, 1997:9).

Tourists are defined as visitors who travel and stay outside their usual environment for no more than one year continuously, either for leisure, business, or other reasons (UN-WTO, 2008:10). Leiper (1979:393) defined a tourist as a temporary visitor staying at least 24 hours at a destination, away from their usual place of residence. The purpose of such a journey can be for leisure (recreation, holiday, health, study, religion, or sport) or for business.

An agritourist is therefore defined as a visitor staying away from his or her residence for 24 hours or more for leisure, business, family, mission or a meeting. Even though all agritourists are interested in the same niche product (agritourism), their needs, wants and influences might not be the same. Agritourists are heterogeneous in the experiences they seek, as is evident in the existing typologies of agritourism (Phillip *et al.*, 2010:754). Agritourists participate in agritourism activities for various reasons as offered by these farms.

Agritourism cannot be effectively promoted unless the needs and motivations of tourists are thoroughly understood. Psychology plays an important role in understanding tourist behaviour (Šimková, 2014:320). Section 1.5.5 defines psychological capital in the context of the research.

1.5.4   Agritourism provider

The current study adopted an agritourism definition which includes both operational and non-operational farm products, therefore, offering authentic, staged, or indirect interactions with agritourism offerings. Agritourism providers are individuals or companies that own, operate, offer, sponsor, or promote agritourism activities. The farmer, farmer's family, and the off-farm suppliers of agritourism products have been identified as agritourism providers (Flanigan, Blackstock & Hunter, 2014:395).

Agritourism providers can be involved in working farm agritourism; non-working farm agritourism; working farm passive contact agritourism; working farm indirect contact agritourism; working farm direct contact staged agritourism; and working farm direct contact authentic agritourism (Flanigan *et al.*, 2014:396). Agritourism providers are frequently driven by a desire for financial success (Shah *et al.*, 2020).

The term 'agritourism operator' has also been used by various scholars (Ainley & Kline, 2013; Barbieri & Mshenga, 2008; Busby & Rendle, 2000; Colton & Bissix, 2005; Veeck *et al.* 2010) to refer to companies or individuals involved in offering, sponsoring, or promoting agritourism. The current study uses both the terms 'agritourism providers' and 'agritourism operators' interchangeably.

1.5.5   Psychological capital

Psychological capital (PsyCap) was developed from the theory of positive psychology which draws from positive organisational behaviour (Youssef-Morgan & Luthans,

2015:18). Positive psychology was established to move away from the notion of correctional mental illness and the dysfunctional behaviour of individuals, and to facilitate normal functioning and growth in healthy individuals (Luthans, 2002a:702).

Luthans *et al.* (2006b:3) conceptualised PsyCap as based on the four dimensions of hope, efficacy, resilience and optimism, as follows:

> [A]n individual's positive psychological state of development […] is characterised by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success.

The underlying theory of PsyCap is that it has a developmental capacity to represent an individual's positive appraisal of circumstances, and the probability for success based on the motivated effort and perseverance of an individual (Youssef-Morgan & Luthans, 2015:18).

According to Luthans *et al.* (2006b:4), PsyCap refers to the individual's positive and developmental state that is characterised by high levels of hope, efficacy, resilience and optimism. The four dimensions of hope, efficacy, resilience and optimism are referred to as the HERO within an individual which are able to indicate one's psychological self and potential self (Luthans, 2012:2).

HERO is explained as follows:

- Hope refers to a "positive motivational state that is based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)" (Snyder, Irving & Anderson, 1991:287).

- Efficacy refers to one's belief regarding one's ability to be motivated, one's cognitive resources, and courses of action within a given context (Stajkovic & Luthans, 1998b:66).

- Resilience draws from developmental psychology and refers to the individual's ability to bounce back from adversity, conflict, failure or even positive events (Luthans, 2002a:702).

- Optimism is usually defined as a generally optimistic perspective, and commonly refers to an individual's positive expectancy (Carver & Scheier, 2002) or the optimistic explanatory (attributional) of an individual; therefore, a positive view and internalisation of good aspects concerning one's life (Seligman, 1998).

By means of the HERO dimensions, PsyCap promotes an expression of individuals positive resources and talents of individuals, focusing on their asset characteristics and qualities. The HERO dimensions have been well established and reported within the workplace domain (Seligman, 1998; Youssef-Morgan & Luthans, 2015).

Variables that have been associated with PsyCap are personal relationships, health (Luthans, Youssef, Sweetman & Harms, 2012), quality of life, life satisfaction and flourishing (Santisi, Lodi, Magnano, Zarbo & Zammitti, 2020).

Although the concept of psychological capital has been introduced in the field of tourism, the aim is to understand how it impacts the relationship between workplace fun and work engagement among tourism employees (Tsaur, Hsu & Lin, 2019).

It is important for providers to gain an understanding of tourist behaviour to develop tourism products and services that will ensure that the needs and wants of tourists are met. These products also need to evolve with the needs and wants of tourists in mind.

Tourism researchers are therefore in search of an understanding of the needs, wants, influences and the way final decisions to travel to a destination are made (Caldito, Dimanche & Ilkevich, 2015).

It is important to comprehend the psychology behind tourist' decisions and the driving factor of performing certain activities or doing things (in this case, travelling to an agritourism farm).

It should be noted that the tourism landscape has shifted since the COVID-19 pandemic, as the psychology and behaviour of tourists have become more important (Chassagne & Everingham, 2019:1922). For humans to flourish, it has become increasingly important for them to connect with nature and experience it. This need has to be aligned with the product offering as well (Cheer, 2020:7).

The current study applied PsyCap in agritourism in the development of an agri-environmental literacy and PsyCap model for agritourism in South Africa.

Environmental literacy is effective in the prevention of environmental harm, in this case, the farm environment (Šimková, 2014:320). The next section therefore discusses agri-environmental literacy as an initiative that could contribute to the protection of the environment through education initiatives.

1.5.6 Agri-environmental literacy

In the literature, the terms 'environmental education' and 'environmental literacy' are mostly used interchangeably, although environmental literacy is the intended outcome of the education process (Elder, 2003:7; Erdoğan, 2009:37; Farber, 2015:17; Igbokwe, 2012:649; Varışlı, 2009:29). In conceptualising environmental literacy, Harvey (1977:67) described a literate individual as "one who possesses basic skills, understandings, and feelings for the man-environment relationship".

According to Roth (1992:8), environmental literacy is not just the capability that an individual has to perceive and understand the health of environmental systems but also the individual is able to take appropriate action to maintain, improve or restore the health of those systems. To conceptualise environmental literacy, Roth (1992:8) presented knowledge (skills), affect (environmental sensitivity, attitudes, values), behaviour (personal investment and responsibility), and active involvement as the four components of environmental literacy.

Drawing from environmental literacy components, Loubser, Swanepoel and Chacko (2001:318) then conceptualised this concept as:

> [T]he ability to be aware of one's environment. It enriches one with the knowledge to realise the imbalances and threats the environment faces and enables one to form positive attitudes towards it with the aim of developing skills to resolve and prevent environmental problems and urge to protect and improve the environment for the present and future generations by active participation.

Expanding Roth's definition, Hsu (2004:38) highlighted the importance of attitude, defining an environmentally literate individual as someone with knowledge regarding the environment, a positive attitude toward the environment and all the related

environmental issues regarding how the person can take action towards maintaining the environment. An environmentally literate individual's daily lifestyle consumption should therefore reflect a certain degree of awareness, knowledge, skills and consideration for the environment (Hsu, 2004:38). An environmentally literate individual also has a broad understanding of how people and societies relate sustainably to each other and to the natural systems (Elder, 2003:14).

Environmental awareness is a continuum of competencies ranging from having no awareness of, to a deep, thorough appreciative concern for the environment (Elder, 2003:16; Ibitz, 2017:58; Loubser *et al*., 2001:318–319; Roth, 1992:8). The aim of EE (environmental education) is therefore to cultivate individuals who will be literate and equipped to act on important environmental issues (Bryant & Hungerford, 1977). For the purpose of this study, the term environmental literacy (EL) was applied to the context of agritourism and the natural environment. Environmental and agritourism literacy refers mainly to:

- Environmental literacy and its components (knowledge, affect and intended behaviour) concerning agritourism, the natural environment of agritourism (farms) and agritourism activities;

- The intended outcome related to the process of agricultural and environmental education; various components or elements, such as the knowledge, affect (environmental sensitivity, attitudes and concern); and behaviour (personal investment and responsibility, and active involvement) of potential agritourists;

- A continuum of competencies of potential agritourists ranging from being complete unaware of agri-environmental orientation, to a deep and thorough understanding of, and having concerns and sensitivity towards it; and

- Agricultural and environmental knowledge.

For purposes of this study, environmental and agritourism literacy referred to the potential agritourist awareness, knowledge, attitudes, behavioural intention, concern and sensitivity towards agritourism and the natural environment. While this definition provided the context for the current study, it also enabled the operationalisation of the concept into an instrument that would measure the underlying categories and components of environmental and agritourism literacy (Farber, 2015:16).

The definition developed for environmental and agritourism literacy comprises six components of environmental and agritourism literacy, which were used to inform the current study, namely:

- environmental and agri-orientation (including awareness and affinity);

- environmental and agri-knowledge;

- environmental and agri-values (attitude);

- environmental and agri-concerns;

- environmental and agri-sensitivity; and

- behavioural intentions.

It is important to research agri-environmental literacy and its key components in relation to agritourism. Environmental literacy has the potential to promote environmentally friendly behaviour, foster a sense of unity, and create a collective consciousness about the environment (Fang *et al.*, 2018). Thus, supporting a lasting commitment to natural decision-making and environmental protection, ultimately contributing to a sustainable and comfortable living environment (Fang *et al.*, 2018).

The major components of agri-environmental literacy are discussed next, including agri-environmental orientation as a component of agri-environmental literacy.

1.5.6.1 *Agri-environmental orientation*

Environmental orientation is generally defined as the ability to recognise environmental issues (Wickramasinghe, 2019:420). According to Cohen *et al.* (1976:49), "any environmental feature can be looked upon in a variety of ways and these ways are called environmental orientations". The way a person sees the environment depends on 1) what one is looking for in it; and 2) what one is looking for, which could be based on cultural conditioning, the accustomed social roles, as well as a definition of the situation based on how an individual relates to the environment (Cohen *et al.*,1976:49).

The Tbilisi Declaration (UNESCO, 1978) reflected a pragmatic approach to environmental orientation, namely, to guide individuals and social groups to be aware of and sensitive to the total environment and associated challenges. Dunlap and Jones

(2002) defined environmental orientation as humans' awareness of their impact on the environment and their willingness to contribute to managing it.

Larson *et al.* (2011:72) defined environmental orientation broadly as one's view towards nature and the natural world. Furthermore, Larson *et al.* (2011:72) identified two components, namely, eco-affinity and eco-awareness, as a means of operationalising environmental orientation. Eco-affinity refers to a logical understanding of environmental issues, such as the individual in relation to the general importance of sustainability of natural ecosystems and eco-awareness. Eco awareness is defined as an individual's interest in nature (Larson *et al.*, 2011:83).

The current study adopted the definition of agri-environmental orientation as:

the natural world perception of an agritourist and their consciousness regarding the farm environment and personal interest in the farm environment.

Agri-environmental knowledge is discussed next.

1.5.6.2 *Agri-environmental knowledge*

Environmental education emphasises the promotion of environmental knowledge. Environmental knowledge has been defined as the means of assisting "individuals and social groups [to] gain a variety of experiences with the total environment and to acquire a basic grasp of the environment, its associated difficulties and humanity's critical responsible presence and role in it" (UNESCO, 1978:3). This is the most widely adopted and comprehensive definition of environmental knowledge (Eneji, Edung, Effiong & Okon, 2019:122).

In basic terms, environmental knowledge is defined as the amount of information people have regarding environmental problems and their capacity to comprehend and evaluate its impact on society and the environment (CheKima, CheKima & CheKima, 2019:50; CheKima, Chekima, Syed Khalid Wafa, Igau & Sondoh, 2016:26). Consequently, environmental knowledge is regarded as the ability of an individual to understand and assess the effect society has on the environment (Haron, Paim & Yahaya, 2005:427). The individual therefore demonstrates their environmental knowledge through their capability to recognise the causes and consequences of environmental problems (Haron *et al.*, 2005:427).

Environmental knowledge has been associated with environmental behaviour since 1970, when the first linear model of environmentally responsible (ER) behaviour was introduced (Iozzi, 1989:3; Shamuganathan & Karpudewan, 2015:765). Environmental knowledge is therefore an antecedent of ER behaviour. It is therefore important to consider agri-environmental knowledge, as it is associated with pro-environmental behaviour. Pro-environmental behaviour refers to the conscious actions and choices taken by individuals or groups that aim to positively impact the natural environment, promote sustainability, and reduce harm to ecosystems and the planet (Udall, De Groot, De Jong & Shankar, 2020). Pro-environmental behaviour may include actions such as conserving resources, recycling, reducing waste, using renewable energy sources, supporting environmentally friendly products, and advocating for environmental policies (Udall *et al.*, 2020).

For the purposes of the current study, the term agricultural and environmental knowledge was drawn from the environmental education and literacy domain and applied to the context of agritourism and the agri-environment and is referred to as agricultural and environmental knowledge. In essence, it describes how much information potential agritourists have about agri-environmental facts, agri-environmental problems, and how they are able to comprehend and assess their impact on society and the environment.

For the current study to measure potential tourists' environmental knowledge (Section 4.4), it was necessary to investigate the general environmental knowledge scales found in the EE and/or EL domains. The above definition provided the necessary context for the current study, but also enabled the measurement of the concept to uncover potential agritourist agri-environmental knowledge.

Besides agri-environmental knowledge it was also important to consider the potential agritourists' environmental attitude. An important reason why the environmental attitude of tourists is crucial in developing sustainable tourism is that it influences their behaviours and choices during their travels (Sadiq, Adil & Paul, 2022). The agri-environmental attitude towards a tourism offering is discussed next.

1.5.6.3 *Agri-environmental attitude*

Attitude is generally defined as "a mental and neural state of readiness, organised through experience, exerting a directive or dynamic influence upon individual's

response to all objects and situations" (Allport 1935:810). Ajzen (1985) defined attitude as a subjective cognition and evaluation regarding one's specific behaviour.

Environmental attitudes are made up of personal values, wants and needs concerning the natural environment (Liang *et al.*, 2018:3; Marcinkowski, 1997:168; Veisi *et al.*, 2019:28). Heberlein (2012:5) conceptualised environmental attitudes as "an organisation of beliefs, including an overall evaluation, liking and disliking for some aspects of the environment, the environment as a whole, or some object which has clear and direct effects on the environment, such as power plants".

For their part, Schultz, Shriver, Tabanico and Khazian (2004:31) defined environmental attitude as a "person's collection of beliefs, affect, and behavioural intentions regarding environmentally related activities or issues". In essence, a person's values and beliefs and the degree to which an individual cares for the environment outline their environmental attitude (Liu, Teng & Han, 2020:155). According to Liang *et al.* (2018:3), environmental attitude is an affective value of environmental literacy because it describes a condition in which people have an understanding and appreciation for the environment, while also caring about it.

An empathic and caring attitude influence an individual in taking appropriate action towards assisting, preventing and resolving environmental problems (Liang *et al.*, 2018:3). Affective categories include the values, environmental sensitivity, feelings, and an attitude of concern and motivation (Marcinkowski, 1997:168). Liu *et al.* (2020:2) added environmental awareness and a decision-making attitude towards environmental issues as one of the affective categories. Environmental attitudes are commonly measured along these affective categories (Marcinkowski, 1997:168).

According to Stern and Dietz (1994:326), people's attitudes towards environmental challenges and their pro-environmental behaviour are assumed to be based on self and other people's value orientations. Environmental attitudes can therefore flow from a value orientation and demonstrate concern for the wellbeing of other human beings (Stern, Dietz & Kalof, 1993:325). Attitudes and values have been used interchangeably, although values are regarded to be more pervasive influences on their behaviour than attitude (Lawson & Loudon, 1996:81).

According to Milfont and Duckitt (2010), environmental attitude is centred on a person's psychological tendency that is articulated through evaluative responses

towards the natural environment with some degree of favour or disfavour thereof. Liu *et al.* (2020:3) concurred and emphasised that environmental attitude is concerned with the psychological tendency expressed through a degree of favour or disfavour of a particular entity. Biswas (2020:5925) therefore suggested that environmental attitudes are complex and are a function of the social values, beliefs and behavioural intentions of a person.

Due to the various terms used in literature when conceptualising environmental attitude, the current study adopted the definition of Biswas (2020:5925), who referred to agri-environmental attitude as:

- The personal social values, beliefs and behavioural intentions regarding agritourism environment;

- An agri-environmental collection of beliefs, affect, and behavioural intentions that a person holds regarding agri-environmentally related activities or issues;

- The desirable values or attitudes towards an agritourism environment;

- An evaluation of, or an attitude towards the facts of one's own behaviour, or others' behaviour, that has consequences for the agri-environment;

- Guiding the selection or evaluation of environmental behaviour and events ordered by a person's relative importance;

- The appropriate action needed to be taken towards an agritourism environment;

- An individual's environmental beliefs and values, which will influence how the individual relates to the environment;

- The formed environmental beliefs and values guiding one's sensitivity, concerns and action towards the environment; and

- The effect of awareness related to environmental quality, which can be through formal or informal means and evaluation.

For purposes of the current study, agri-environmental attitude was defined as a complex function of social values, beliefs, concern, sensitivity and the behavioural intentions of potential agritourists towards the farm environment (Biswas, 2020:5925).

The next section presents a definition of the term 'agri-environmental concern'.

1.5.6.4 Agri-environmental concern

Environmental concern refers to a concept that encompasses a wide range of attitudes about environmental issues. According to Le Borgne, Sirieix and Costa (2015), the concept had not yet been defined in a stable and consensual manner at the time of their writing. Franzen and Vogl (2013:2) defined environmental concern as a sense of understanding that, on the one hand, humans endanger the natural environment, while on the other hand, they show a willingness to protect nature. Fransson and Gärling (1999:370) defined environmental concern as a specific attitude toward the environmentally conscious behaviour of a person. For their part, Duong, Doan, Vu, Ha, and Dam (2022:4) simply defined environmental concern as "consumers' attention and understanding of ecological problems".

The current study thus adopted the following definition for environmental concern: the perception encompassing both the recognition of human impact on the natural environment, alongside a willingness to safeguard it, as well as a distinct attitude directed towards the environmentally conscious actions taken by an individual. In simpler terms, environmental concern refers to consumers' awareness, comprehension, and attentiveness related to ecological issues, and their proactive efforts towards addressing them.

Various scholars (Bulut, Nazli, Aydin, & Haque, 2021; Demir, Rjoub & Yesiltas, 2021; Kumar, Prakash & Kumar, 2020) suggested that individuals possessing heightened ecological consciousness tend to participate in pro-environmental actions.

Another key component which affects environmental literacy is environmental sensitivity (Fang, Hassan & LePage, 2023). The section below discusses agri-environmental sensitivity.

1.5.6.5 Agri-environmental sensitivity

The term environmental sensitivity first appeared in the 1970s, following by the 1977 conference on environmental education in Tbilisi, which created the International Tbilisi Declaration (UNESCO, 1978). According to Chawla (1998:19), the definition of environmental sensitivity is that it is an interest in learning about the environment, feeling responsible for it, and acting to preserve it. Environmental sensitivity is a characteristic of an individual's ability to perceive his or her environment with empathy. An individual who is environmentally sensitive towards the environment, appreciates,

cares for, and empathises with the environment because he or she has deeply embedded knowledge of the environment (Cheng & Wu, 2015:557).

According to Chawla (1998:12), environmental sensitivity is "a predisposition to take an interest in learning about the environment, feeling concern for it, and acting to conserve it, on the basis of formative experiences". Therefore, in terms of the current study, agri-environmental sensitivity is referred to as:

> [A]n interest in learning about the agri-environment, feeling responsible for it, and acting to preserve it. An individual who has agri-environmental sensitivity appreciates, cares for, and empathises with the agricultural environment because he or she has deeply embedded knowledge of it (Cheng & Wu, 2015:557).

Sustainable development, positive environmental attitudes, and taking personal responsibility for the environment can enhance a strong intention towards pro-environmental behaviour (Fang *et al.*, 2023). The next section presents a definition of behavioural intention.

1.5.6.6 Behavioural intention

Intention is defined as a person's willingness and determination with regards to planning to perform a certain type of behaviour (Mamman, Ogunbado & Abu-Bakr, 2016:51). The concept of behavioural intention is derived from the theory of planned action (TPA) which outlines it as readiness to carry out a behaviour (Ajzen, 1991). It is therefore a subjective probability that a person will engage in some form of behaviour (Ajzen & Fishbein, 1980). The notion behind TPA is that behaviour is predicted by the intention to act (Ajzen & Fishbein, 1980).

The current study intended to examine whether the components of environmental literacy and PsyCap affect the potential behaviour of agritourists in terms of their choice of visiting an agritourism establishment. The definition of behavioural intention was therefore adapted to the context of agritourism as follows for the current study: Behavioural intention is a subjective probability within which a potential agritourist will engage responsibly with the agritourism environment.

The organisation of the thesis is outlined next.

1.6   ORGANISATION OF THE THESIS

In Chapter 1, the background and orientation were provided by introducing tourism, rural tourism, agri-environmental literacy, PsyCap and agritourism. A key driver of economic growth in rural areas is tourism. Even though tourist development is crucial for the socio-economic development of host regions, it can be linked to environmental degradation, which could result in over-tourism or mass tourism (Kyara *et al.*, 2022:1). Various tourist stakeholders have raised concerns that the rapid development of tourism and the negative effects of continuing economic growth show little regard for environmental sustainability (Ammirato, Della Gala & Volpentesta, 2013:295).

Sustainable tourism development, that is, economic, social, and environmental sustainability, requires balanced economic growth. In the past, diversifying and growing agricultural revenues in rural areas have been deemed possible through tourism (Bhatta, Ohe & Ciani 2020:23; Sznajder, Przezbórska & Scrimgeour, 2009). Agritourism makes a significant contribution to the tourism sector by providing socioeconomic benefits and development prospects. It further has the ability to contribute to the regional, municipal, and national growth of nations (Shah *et al.*, 2020:204).

The majority of the literature on agritourism has been presented from the perspective of the provider, exploring issues such farm business diversification, entrepreneurship, farmers' perspectives, and farmers' motives. In addition, the critical success factors (CSF) of the industry have also been investigated to pinpoint crucial aspects that will propel the success of agritourism (Chase *et al.*, 2019; Comen, 2017; Fatmawati, Bestari & Rostiani., 2021; Kumbhar, 2020). The literature mentioned CSFs such as the creation of agritourism products, farmer education, funding, marketing, and collaboration and partnerships (Baipai *et al.*, 2022:617).

The elements influencing the agritourist's motives to visit an agritourism farm and agritourism activities have, however, received relatively little attention. It is well known in South Africa that agritourism could assist in farm sustainability. Therefore, in an effort to develop and manage agritourism in South Africa, this study aimed to identify and investigate the relationship between key agritourism attributes as identified by potential agritourists, their behavioural intention, agritourist agri-environmental literacy, and their PsyCap. Agri-environmental literacy, PsyCap, behavioural intention,

are significant agritourism factors that influence agritourism choices and were examined in terms of an agritourist. The purpose of the current study was to identify the correlations between the variables to create and advocate a model of agri-environmental literacy and PsyCap for the SA agritourism business.

Against this background, the problem statement, the aim, and the research objectives of the study were discussed. The research method was discussed, and it was indicated that primary and secondary research were conducted for the study. Relevant definitions of terms that are frequently used in this thesis were presented. These important points of departure set the context for the study.

The literature review is presented in Chapters 2 and 3. Chapter 2 contains the first part of the literature study (Phase 1 of the methodological procedure), conceptualising agri-environmental literacy, PsyCap and agritourism to provide the context of the study. The second part of the literature study (Phase 2 of the methodological procedure) is discussed in Chapter 3. The two conceptual models for agritourism developed for the current study are presented and explained, including a detailed discussion of the six agri-environmental literacy dimensions included in the two conceptual literacy models, namely, agri-environmental orientation, agri-environmental knowledge, agri-environmental attitude, behavioural intention, agri-environmental concern, and agri-environmental sensitivity. Furthermore, the PsyCap and agritourism attributes as components included in the conceptual literacy frameworks are discussed. The difference between the two models is the role PsyCap plays in relation to agri-environmental literacy (Figures 3.2 and 3.3).

The research method used for the study is discussed in Chapter 4, which follows the procedure (steps) of the primary research process. Details of the research design, sampling plan, research instrument (online survey), pilot test, data collection (online research panel) data processing, and methods used for the analysis of data are provided.

Chapter 5 reports on and interprets the results and the analysis of respondents, namely, potential agritourists in Gauteng, and includes a discussion of the descriptive statistics. Chapter 6 discusses the factor analysis results, and the conceptual models are tested with the assistance of the statistical technique SEM (structural equation modelling). The mediation results are also discussed in Chapter 6.

Lastly, Chapter 7 concludes and presents recommendations for the agritourism providers and tourism managers involved in agritourism. The main conclusions from the literature review are presented, followed by the conclusions and recommendations emanating from the descriptive and factor analysis results. Based on the SEM results, a literacy model for agri-environmental literacy and PsyCap (Scenario 2 model) is proposed. Limitations of the study and recommendations for future research are also provided. The contributions of the research are also highlighted.

CHAPTER 1:Introduction and background to the study

CHAPTER 2:Agri-environmental literacy, psychological capital and agritourism towards model development

CHAPTER 3:Conceptual agri-environment literacy and PsyCap model for agritourism

CHAPTER 4:Research design and methodology

CHAPTER 5:Analysis of potential agritourist market: descriptive and factor analysis results

CHAPTER 6:Factor analysis: stage 2 and structural equation modelling: stage 3 of the study

CHAPTER 7:Discussion, interpretation of results, conclusion and recommendations

Figure 1.3:   Chapter outline

CHAPTER 2:
AGRI-ENVIRONMENTAL LITERACY, PSYCHOLOGICAL CAPITAL AND AGRITOURISM TOWARDS MODEL DEVELOPMENT

2.1 INTRODUCTION

Agritourism is a significant niche market of the tourism industry that has been identified as a growth area in tourism (Shah *et al.*, 2020:131). The development of agritourism might provide farmers with additional income, especially during challenging times. The popularity of agritourism has emerged due to increasing urbanisation and new family structures. The latter has the potential to create a new market for tourism development in rural areas (Ainley & Kline, 2013; Barbieri & Mshenga, 2008; Busby & Rendle, 2000).

Globally, there has been research on the various motivations and reasons why agritourism providers participate in this niche tourism market. However, the local agritourism market is relatively under-researched, which creates an imbalance in demand-based research. For sustainable agritourism, operators should first consider their market potential (agritourists). It is important to understand of the agritourist as a consumer of agritourism products for the purposes of product development and marketing but so far these aspects have received limited attention both globally and locally.

It is vital to explore the extant demand-side research to uncover the reasons for the choice of agritourism, the pro-environmental behaviour, and environmental literacy of agritourists, and to understand the agritourists' psychological capital. As tourism has been associated with negative impacts on the natural environment, such as overcrowding and damage, the issue of sustainability in tourism is important. Sustainability in nature ensures that the natural environment can be enjoyed and protected for future generations. An essential role player in this regard is a responsible tourist. It is known that a responsible tourist understands the importance of consuming the tourism experience without harming the environment. Taking the demand-side narrative, who is an agritourist, what does it mean to be environmentally literate, and what would drive one to engage in agritourism as a niche tourism product?

This chapter conceptualises the proposed concepts to develop sustainable agritourism as a potential market. Chapter 2 is linked to the first and second secondary objectives of the study, namely:

To conceptualise agri-environmental literacy, behavioural intention, psychological capital and agritourism attributes from existing literature and

To explore the relationships between agri-environmental literacy, PsyCap, behavioural intention, and agritourism attributes from existing literature.

The current chapter presents a review of existing research on environmental literacy, PsyCap, and behavioural intention within agritourism. Agritourism relies on nature and natural resources, and it must thus be developed in a sustainable manner. Two of the major challenges associated within tourism are maintaining natural environments and minimising negative impacts, especially in areas prone to natural disasters, such as nature-based tourism (Hall & Boyd, 2005; Leo *et al.*, 2021; Van der Veeken *et al.*, 2016). No matter how low the impact level of tourism is, it can still damage the environment. Travel density and the behaviour of tourists could influence travel quality and natural resources (Li, Zhang, Nian & Zhang, 2017; Manning, 2007; McCool & Lime, 2001; Muskat, Hörtnagl, Prayag & Wagner, 2019; Petrosillo, Zurlini, Corlianò, Zaccarelli & Dadamo, 2007). Sustainable tourism cannot be realised without the intervention of all the stakeholders involved in the tourism industry. In the same way, agritourism is also dependent on the natural environment, and therefore, it needs to be practised responsibly.

PsyCap is a state of positive mental development. In this study, PsyCap was explored in the context of agri-environmental literacy and the important agritourism attributes that would determine potential agritourists' choice of agritourism establishments.

The chapter contextualises agritourism, in exploring the development of the term agritourism (Section 2.2.1), followed by agritourism's key stakeholders and the agritourist as consumer of agritourism (Section 2.2.2), and previous research related to agritourism (Section 2.2.3).

Section 2.3 discusses agri-environmental literacy in agritourism; thus, literacy as a dimension of sustainable agritourism development (Section 2.3.1), followed by an outline of agri-environmental and agritourism literacy (Section 2.3.2), and the categories and dimensions of environmental and agritourism literacy. The chapter

presents PsyCap (Sections 2.4.1 and 2.4.2) against the background of tourism and agritourism. In Section 2.5 the study present behavioural intention of potential agritourists towards agritourism environment and agritourism.

Based on the categories and dimensions identified in the literature review presented in this chapter, a conceptual agri-environmental literacy and PsyCap model for agritourism was developed and is reflected in Chapter 3 (Figure 3.1). Figure 2.1 below illustrates the flow of the secondary research presented in Chapter 2.

Figure 2.1:   Flow of the secondary research in Chapter 2

The theory will be presented according to the outline presented in Figure 2.1.

2.2 AGRITOURISM AS MICRO-NICHE OF RURAL TOURISM

The inception of niche tourism can be attributed to the domains of ecology and marketing (Novelli *et al.*, 2022). Niche tourism explores one of the rapidly expanding segments in the field of tourism. This type of tourism can be viewed from both the macro and micro perspective (Novelli *et al.*, 2022; Robinson & Novelli, 2007). Niche tourism has emerged as an antitheses counterpoint to what is commonly referred to as mass tourism (Robinson & Novelli, 2007:344).

The British television series, *The Grand Tour,* provided early connotations of the concept 'niche tourism', which reflected like-minded individuals engaging in purposeful travel (travelling independently for educational purposes) before the broader socio-economic accessibility to travel and tourism (Robinson & Novelli, 2007). The term 'niche tourism' refers to products, services or interests that are shared by a small group of people (Novelli *et al.*, 2022:344). The concept 'mass tourism' refers to a large-scale phenomenon where standardised leisure services are packaged and sold at fixed prices to a mass audience (Poon, 1994).

Niche tourism refers to products tailored to meet the needs of a specific market segment (Novelli *et al.*, 2022: xxiii; Robinson & Novelli, 2007:344). The markets need to be seen as sets of individuals with specific needs based on specific features and qualities, rather than a simplistic homogeneous whole (Sroka *et al.*, 2023). As such, a niche market is defined as a group of people with specialised needs or interests (Novelli *et al.*, 2022; Robinson & Novelli, 2007). These tourists have a strong desire for the products offered in a niche market.

Tourism niches can be defined as segments of still relatively large markets (for example, macro-niches, such as cultural tourism, rural tourism and sports tourism) that can be further segmented into micro-niches, such as geo-tourism, gastronomy tourism and cycling tourism (Novelli *et al.*, 2022; Robinson & Novelli, 2007).

Niche tourism, amongst others, focuses on rural tourism as a successful form of travel that is based on local agricultural and sustainable practices (Robinson & Novelli, 2007:1). The dimensions of niche tourism are illustrated in Figure 2.2.

MASS TOURISM

Conventional tourism involving large numbers of tourists

NICHE TOURISM

Special tourism market where a small number of people appears

MICRO-NICHES

CULTURAL	ENVIRONMENTAL	RURAL	URBAN	OTHERS

MICRO-NICHES

CULTURAL	ENVIRONMENTAL	RURAL	URBAN	OTHERS
Heritage	Nature and wildlife	Agritourism	Business	Photographic
Tribal	Ecotourism	Camping	Conference	Small cruise
Religious	Adventure	Wine and/or gastronomy	Exhibition	Volunteer
Educational	Alpine	Sport	Sport	Dark
Genealogy	Geotourism	Festivals & events	Gallery	Youth
	Coastal	Arts and crafts	Art	Transport

Figure 2.2:   Dimensions of niche tourism

Source: Adapted from Novelli *et al.* (2022:9)

Figure 2.2 illustrates how, within various macro-niche tourism contexts, a range of micro-niches can be found that emerge from the most appealing and vibrant traits, locations of destinations, and specific tourist preferences. The needs of a particular market segment are catered for in niche tourism products. Their size and makeup might differ significantly based on the demographics, socioeconomic standing, and location of the destination (Novelli *et al.*, 2022).

Macro-niche tourism offerings encompass both outdoor and indoor activities, such as sports and adventure, as well as activities related to nature, culture and heritage. These can be further divided into a wide range of micro-niches, such as farm tourism, walking safaris, eco-tourism, slum tours and extreme sports (Novelli *et al.*, 2022). Rural tourism is becoming one of the prominent forms of niche tourism that is based on sustainability, small and homogenous groups of tourists and product differentiation (Sorea & Csesznek, 2020). The realm of rural tourism and the trend of agritourism have experienced growth (Soligo, 2022:85).

The current study focused on farm tourism (also known as agritourism) as a form of niche tourism emanating from the macro-niche dimension of rural tourism. Rural tourism is related to a wide range of products generally linked to nature-based activities, agriculture, a rural lifestyle or culture, and sight-seeing that takes place in non-urban (rural) areas with the following characteristics:

- low population density;

- landscape and land use dominated by agriculture and forestry; and

- a traditional social structure and lifestyle (UN-WTO, 2019:15).

If developed and managed appropriately, niche tourism may lead to more sustainable outcomes, especially in the context of agritourism (Novelli, 2005). Before defining agritourism, a snapshot of agritourism is presented in Figure 2.3 below that illustrates how agritourism fits into the context of the current study.
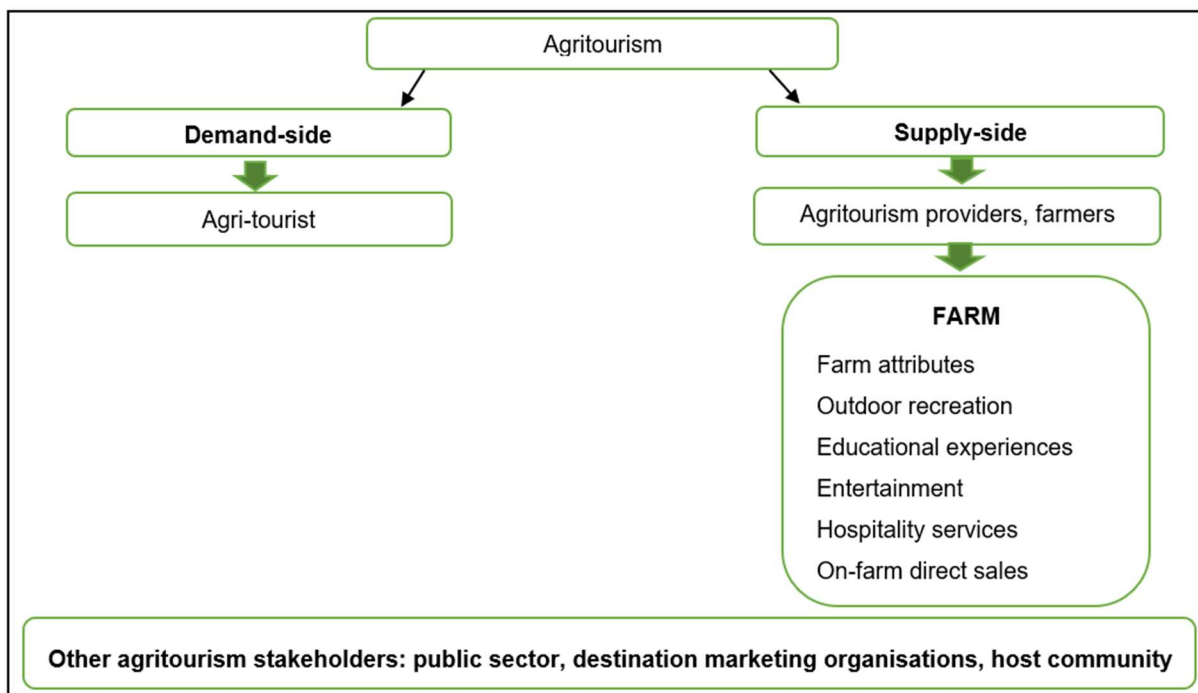
Figure 2.3:   Presentation of agritourism in the current study

Section 2.2.1 conceptualises agritourism, illustrating how the concept has evolved and how a definition, as applied in the current study, was adopted.

2.2.1   Defining agritourism and the agritourist

There is no consensus in literature regarding the contextualisation of agritourism (Flanigan, Blackstock & Hunter, 2014). Various scholars (Arroyo *et al.*, 2013; Phillip *et*

al., 2010; Streifeneder, 2016) conceptualised agritourism, its characteristics activities and terminological inconsistencies. Some of the terms frequently used to name agritourism are agrotourism, vacation farms, rural tourism and farm-based tourism. These terms are often used interchangeably in literature (Barbieri & Mshenga, 2008; Roberts & Hall, 2001; Wall, 2000). The use of diverse terms has led to a conceptual misunderstanding of the term 'agritourism' (Clarke 1999; Evans & Ilbery 1989; Gladstone & Morris, 2000; Kizos & Losifides, 2007; Ilbery *et al.*, 1998; Wall, 2000; Weaver & Fennell 1997).

The standard definition is that agritourism occurs mainly on a working farm, which is specifically set in a rural area (Slocum & Curtis, 2017). The question when defining the term agritourism is whether it is a working or non-working farm. According to Clarke (1996), other factors, such as physical area of land, the proportion of agricultural income, individuals' expertise, and motivations (for example, livelihood, hobby) also need to be considered when defining agritourism. Phillip *et al.* (2010) presented an overview of agritourism's definitions and related labels, ranging from 1989 to 2008. The terms are presented in year order in Table 2.1 and arranged from the most used to the least used term.

Table 2.1:   Definition of agritourism and different related terms

Term used	Definition	Authors
Agritourism	"Tourism products which are directly connected with the agrarian environment, agrarian products or agrarian stays."	Sharpley & Sharpley (1997:9)
	"Rural enterprise which incorporates both the working farm and the commercial tourism components."	Weaver & Fennell (1997:357)
	"Rural tourism conducted on working farms where the working environment forms part of the product from the perspective of the consumer."	Clarke (1999:27)
	"The decision to visit an operational farm or any other agricultural or agri-business operation for purposes of enjoyment, involvement and educational aspects."	Brown (2005:9)
	"Activities of hospitality performed by agricultural entrepreneurs and their family members that must remain connected and complementary to farming activities."	Sonnino (2004:286)

Term used	Definition	Authors
	"Agritourism is the contact given to the tourist in the physical environment and the environmental aspects. This makes them aware of the traditions and lifestyles of the people from the local community."	Sznajder & Przezborska (2004:166)
	"a specific type of rural tourism in which the hosting house must be integrated into an agricultural estate."	Marques (2006:151)
	"Rural enterprises which incorporate both a working farm environment and a commercial tourism component."	McGehee (2007:111, 280)
	"Any practice developed on a working farm to attract visitors."	Barbieri & Mshenga (2008:168)
	"Agritourism is a part of rural tourism referring to leisure, including active leisure, on an operating agricultural farm which offers various recreational and tourist services on the farm and outside it, in high season or throughout the calendar year."	Roman *et al.* (2020:1)
	"Agritourism involves any agriculturally based operation or activity that brings visitors to a farm."	Jiang & Wang (2018:1)
Agrotourism	"Tourism activities are undertaken in non-urban regions by individuals whose main employment is in the primary or secondary sector of the economy."	Iakovidou (1997:44)
	"Tourist activities of small-scale, family or co-operative in origin, being developed in rural areas by people employed in agriculture."	Kizos & Losifides (2007:63)
	"Provision of touristic opportunities on working farms."	Wall (2000:14)
Farm-based tourism	"Phenomenon of attracting people onto agricultural holdings an alternative farm enterprise."	Evans & Ilbery (1989:257); Ilbery *et al.* (1998:355)
Farm tourism	"Rural tourism conducted on working farms where the working environment forms part of the product from the perspective of the consumer."	Clarke (1999:27)
	"Tourist activity is closely intertwined with farm activities and often with the viability of the household economy."	Gladstone & Morris (2000:93)
	"To take tourists in and put them up on farms, involving them actively in farming life and production activities."	Iakovidou (1997:44)

Term used	Definition	Authors
	"Commercial tourism enterprises on working farms. This excludes bed and breakfast establishments, nature-based tourism and staged entertainment."	Ollenburg & Buckley (2007:445)
	"Activities and services offered to commercial clients in a working farm environment for participation, observation or education."	Ollenburg (2006:52)
	"a part of rural tourism, the accommodation location on a part-time or full-time farm being the distinguishing criterion."	Oppermann (1996:88)
	"Increasingly used to describe a range of activities [which] may have little in common with the farm other than the farmer manages the land on which they occur."	Roberts & Hall (2001:150)
Vacation farms	"Incorporate both a working farm environment and a commercial tourism component."	Weaver & Fennell (1997:357)

Source: Adapted from Phillip *et al.* (2010)

Table 2.1 shows the variations in the definitions of agritourism from different scholars. The difficulty in defining agritourism is attributed to a lack of clarity about why one term is chosen over another (Phillip *et al.*, 2010:754). The main debate is about whether the tourism product is based on a working farm, the nature of contact between tourists and farmers, and the degree of authenticity of the tourism experience.

It would be useful to agritourism in the private and public sector in developing policies, conducting research, and implementing initiatives that support working farms and rural communities had there been a common understanding of the concept of agritourism across the globe (Lamie *et al.*, 2021:574). A widely used typology of agritourism is the theoretical framework developed by Phillip *et al.* (2010), which was revised after empirical studies in 2014 (Flanigan *et al.*, 2014:399).

Figure 2.3 illustrates Phillip *et al.*'s (2010) theoretical typology of agritourism.
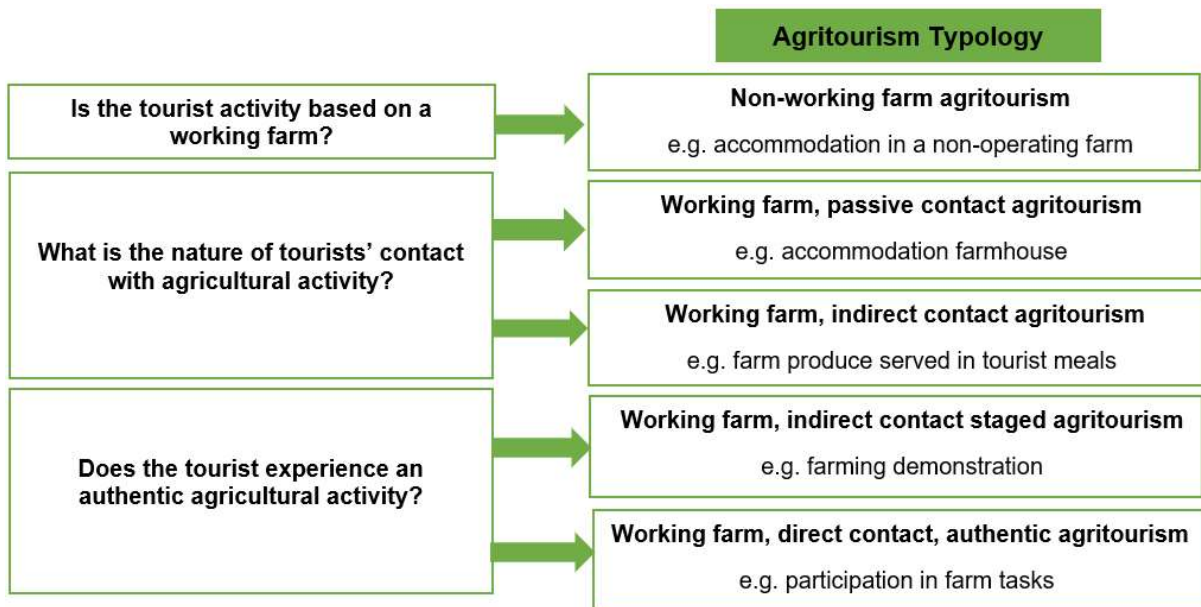
Figure 2.4: **Typology of agritourism framework**

Source: Phillip *et al.* (2010:754)

By presenting a typology, Phillip *et al.* (2010) suggested that a framework allows for multiple types of agritourism to coexist on a single farm. The typology of agritourism framework developed by Flanigan *et al.* (2014) which is based on an understanding of demand and supply, is depicted in Figure 2.5 below.
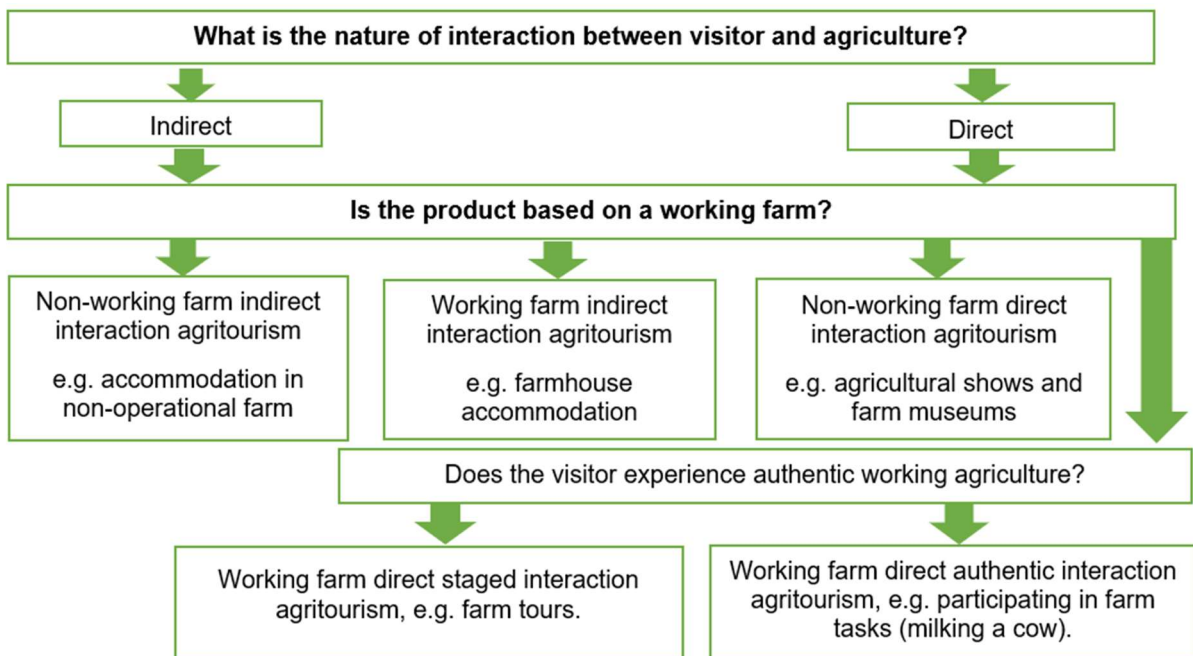
Figure 2.5: **A typology of agritourism**

Source: Flanigan *et al.* (2014:399)

The typology developed by Flanigan *et al.* (2014) also assessed its effectiveness by measuring the perceptions of agritourism providers and visitors. This assessment of the improved typology of agritourism understanding, recognised patterns and developed a shared conceptual framework. The study by Flanigan *et al.* (2014) concluded that it is critical to determine the agritourist's perceptions. In each of these frameworks, as illustrated in Figure 2.4 and 2.5, the nature of interaction and authenticity (in terms of place and activity) were found to be important discriminators of the different types of agritourism products.

The effort of coming up with a precise, uniform definition of agritourism is still in progress (Lamie *et al.*, 2021:575). An adapted definition of agritourism is presented in Section 3.7.1.

The development of agritourism varies significantly from region to region, and can be examined from the supply, demand, and supply and demand-side perspectives (Fleischer, Tchetchik, Bar-Nahum & Talev, 2018:274). Various factors, such as carrying capacity, destination connectivity, types of available attractions, and government support, play a role in the development of agritourism (Arroyo *et al.*, 2013:41). It is crucial to be consistent in evaluating both the demand and the supply-sides. All stakeholders involved in agritourism are therefore important. Section 2.2.2 presents the different stakeholders from both the demand and supply-sides of agritourism.

2.2.2   Key stakeholders in agritourism

Various stakeholders play a crucial role in promoting and using the farm products, as shown in Figure 2.6. These stakeholders are the host community, the destination marketing organisation (DMO), public sector agritourism suppliers, and agritourists.
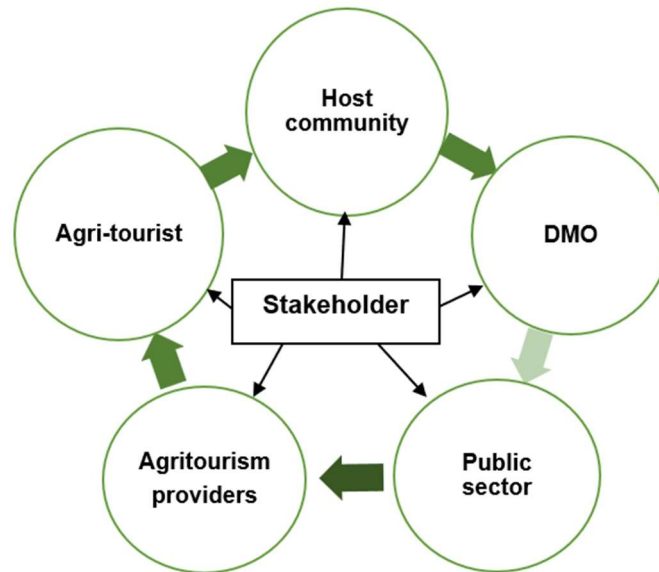
Figure 2.6: Agritourism stakeholders

The relevant stakeholders can be defined as follows:

- **Host community:** The host community consists of people who live and work in a particular location (Cooper, 2012:37). Agritourism is a crucial economic development strategy that benefits agriculture and tourism (Addinsall *et al.*, 2015:309). It contributes to the sustainable rural livelihoods of host communities, especially in developing countries. Locally supported agritourism programmes help communities capitalise on their natural, historical, and cultural resources (Karabati, Dogan, Pinar & Celik, 2009:134).

- **Destination management organisations (DMOs)** allow for the efficient exchange of information between providers and agents (McGehee *et al.*, 2007:119). Farm holiday consortiums are crucial for organising and marketing these operations (Arroyo *et al.*, 2013:41). Furthermore, DMOs can coordinate and advance communication initiatives from other interested parties, such as the national and regional tourist boards.

- **The public sector** plays a crucial role in maximising the benefits, while minimising the negative effects of agritourism (Cooper, 2012:38; Ritchie & Crouch, 2003:148). Agritourism generates income, stimulates regional development, and creates employment through general tourism. Continuation strategies, such as training and marketing, are crucial for the success of agritourism. Government funding is also

essential in providing a favourable context for the development of agritourism enterprises (Sharpley & Vass, 2006:1050).

- **Agritourism providers** are people who own, operate, offer, or sponsor an agritourism activity, or the employees of such individuals. According to Flanigan *et al.* (2014:395), agritourism providers are farmers, farm families, and the off-farm suppliers of agritourism products. Agritourism providers can be involved in one of six types of agritourism (Flanigan *et al.*, 2014:396):

    o working farm agritourism;

    o non-working farm agritourism;

    o working farm passive contact agritourism;

    o working farm indirect contact agritourism;

    o working direct farm contact staged agritourism; and

    o working farm direct contact authentic agritourism.

    Agritourism providers are frequently driven by a desire to succeed financially (that is, formal rationality) (Shah *et al.*, 2020).

- **Agritourists:** The agritourism destination, establishment or activity is the ultimate product for the agritourists, as well as everything affecting them during their visit. Agritourists are looking for satisfying experiences at well-organised destinations (Brandano *et al.*, 2018:715; Cooper, 2012:37). When agritourists evaluate a destination, establishment, or activity, they consider various factors, such as infrastructure, accommodation, facilities, activities, attractions, and stakeholders (Page, 2014:77; Shah *et al.*, 2020:2015).

Although each stakeholder has his or her own agritourism goals, all stakeholders must work together to build a thriving business. Farmers have adopted agritourism due various reasons, such as decreased food output or crops, the progressive withdrawal of state subsidies, declining economic viability, and an increase in lifestyles, which has resulted in structural issues in the industrialised world (Ilbery *et al.*, 1998:356). As a result, agritourism has become increasingly important for working family farms seeking to maximise their economic potential (Frater, 1983:172). Furthermore, agritourism allows tourists to learn about farming, the farming process, products, production, and the importance of agriculture to local communities and the wider economy in general.

As such, the trends associated with contemporary tourism attract tourists that are avoiding conventional tourism offerings and prefer special niche products such as farm-based holiday experiences (Baipai *et al.*, 2022; Comen, 2017; Prasanshakumari, 2016).

Agritourism also offers an educational experience to its visitors that could potentially benefit the sustainability of the farm environment. Agritourism can also be seen as a sustainable strategy that benefits all stakeholders involved and that provides entertainment and leisure activities for visitors, and socio-economic benefits for farmers and local communities (Ciolac *et al.*, 2019; Tugade, 2020).

Of note is that the agritourism industry in Africa remains underdeveloped and under-researched (Baipai *et al.*, 2022). The number of studies reporting on agritourism in developing countries is increasing gradually, but more attention still needs to be paid to the marketing and sustainable development of agritourism (Bhatta *et al.*, 2020). The agritourism industry is developing and settling in, so it is important for researchers to investigate how to strengthen the linkages between agriculture and tourism products or offerings (Chaiphan & Patterson, 2016).

Various agritourism key drivers have been reported in literature (Baipai *et al.*, 2022; Chase *et al.*, 2019; Comen, 2017; Fatmawati *et al.*, 2021; Kumbhar, 2020). Some of these key drivers are human or natural resources, farm location, financial analysis and management, collaboration and partnerships with complementary enterprises, quality service, addressing agritourists' needs and feedback, marketing, education and training of operators and funding possibilities (Baipai *et al.*, 2022; Chase *et al.*, 2019; Comen, 2017; Fatmawati *et al.*, 2021; Kumbhar, 2020).

Although there are differences in both geographical and macroeconomic environments, as well as in the stages of agritourism development, the results of these studies may be applicable to developing agritourism destinations, such as Africa (Baipai *et al.*, 2022:620). For example, agritourism product development and funding are not considered as key drivers for agritourism success in developed destinations; these key drivers are, however, important to ensure agritourism's success.

Agritourism products (attractions, activities, amenities, and accommodation) are reported as important key drivers that form agritourist satisfaction attributes (Fanelli & Romagnoli, 2020).

To grow an agritourism business, marketing has been identified as an essential tool, especially in developing countries (Baipai *et al.*, 2022; Joyner *et al.*, 2018). It is therefore important for agritourism suppliers in developing country destinations to understand the demand characteristics, in addition to the preferences and motivations that are involved in developing informed promotional campaigns, and to avoid poor marketing and promotional campaigns (Joyner *et al.*, 2018).

Section 2.2.3 discusses the agritourist as an agritourism consumer, or the ultimate user of the product.

2.2.3 Agritourist: an agritourism consumer

Consumers perceive everything related to a tourism product offering as the overall experience (Page, 2014:77). An agritourism offering is thus perceived by consumers as the overall experience. Even though agritourists are interested in the same niche product (agritourism), their needs, wants, and influences cannot be assumed to be the same.

The term agritourist is broadly defined as tourists who visit farms and participate in farm activities (Sonnino, 2004:286). Agritourism is a niche product that falls under the umbrella of tourism. According to UN-WTO (2002b), a tourist is an individual who travels outside his or her usual environment for not more than one year at a time.

In the current study, an agritourist was thus based on the UN-WTO's (2002b:1) definition of a tourist:

> "[A] person who visits farms and participates in farm activities or benefits from the services (farming activities) of agricultural entrepreneurs and their families; staying at an agritourism establishment outside his or her usual environment for no more than a year at a time for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited".

Modern fast-paced lifestyles are often characterised by a disconnect from nature, creating a nostalgia for pre-industrial rural life (Robinson & Novelli, 2007:1). Consequently, agritourism establishments are increasingly becoming popular among tourists. In addition to escaping the hurried pace of city life, this type of tourism allows one to reconnect with nature and experience close ties with rural or simplified life,

while learning about the links between local cultural practices and surrounding landscapes (Soligo, 2022:85).

The demand for agritourism has increased due to the urbanisation of societies, while changes in family structures have also led to the growth of agritourism (Soligo, 2022). Rapid urbanisation is an ongoing phenomenon globally, especially in developing nations. As a result, creating a potential market for tourism development in rural areas is an important aspect for the tourism industry. Agritourists are willing to pay for various on-farm experiences (Jolly & Reynolds, 2005). The motivation driving agritourism providers to engage in agritourism primarily stems from economic incentives, among other factors (Bhatta & Ohe, 2019:131).

Section 2.2.4 presents a review of studies that focused on the demand perspective of agritourism (agritourist).

2.2.4 Exploring previous research on agritourism from various authors

It is essential to explore the agritourists' motivations and preferences to gain an understanding of evolving trends and the development of innovative forms of agritourism (Bhatta & Ohe, 2020:24). Despite this importance, there are only a limited number of studies in the literature addressing agritourist behaviour. Globally, since the early 2000s, there has been little scholarly attention to agritourist motivations (Ainley & Kline, 2013; Barbieri *et al.*, 2018; Capriello *et al.*, 2013; Chatzigeorgiou, 2017; Leelapattana *et al.*, 2019; Mahdzar *et al.*, 2017; McIntosh & Bonnemann, 2006; Petroman *et al.*, 2016; Shah *et al.*, 2020; Sidali *et al.*, 2019).

The primary reasons influencing farm visits include factors such as:

- Race, location of residence and gender (Carpio *et al.*, 2008:255);

- Opportunity to feel and be with nature (Mahdzar *et al.*, 2017);

- Quality of food services (Sidali *et al.*, 2019);

- Hospitality and entertainment (Shah *et al.*, 2020) and

- Quality, personal space and fresh farm food (Barbieri & Mshenga, 2008; Barbieri *et al.*, 2016).

Agritourism is considered a niche market, rather than a viable diversification strategy for struggling farm families (McIntosh & Bonnemann, 2006; Ainley & Kline, 2013).

The agritourist-focused literature review can be categorised into three main themes:

- Motivations and preferences of agritourists;

- Factors influencing agritourism choices; and

- Sustainability and environmental considerations.

Each of these themes is discussed below.

Motivations and preferences of agritourists: Jolly and Reynolds (2005) analysed agritourist demographics and motivations in Northern California, revealing varied reasons for visiting agritourism farms, including educational, recreational, and relaxation purposes. In other studies, the rural experience, learning opportunities, and personal meaningfulness emerged as significant motivators for agritourists (McIntosh & Bonnemann, 2006). The literature also suggests that agritourists prefer a range of activities, value the agricultural landscape, and seek complementary services such as sports and adventure (Gao *et al.*, 2014; Qiu Zhang, Fan, Tse & King, 2017; Galluzzo, 2015a).

Attributes influencing agritourism choices: The attributes play a crucial role in shaping agritourists' choices and experiences. Table 2.2 lists the different types of attributes reported in literature.

Table 2.2:   Types of attributes as measured in agritourism research

Attributes	Author	Country
▪ Attractions ▪ Access (rural) ▪ Activities ▪ Accommodation ▪ Amenities	Busby & Rendle (2000)	Europe New Zealand North America
▪ Family-orientated ▪ Activities and entertainment ▪ Local food ▪ Natural ambience ▪ Cultural opportunities and attractions	Busby (2010)	Taiwan
▪ Beautiful scenery ▪ Safety ▪ Clean and green environment ▪ Convenience of restroom and shower facilities	Srikatanyoo & Campiranon (2010)	Thailand

Attributes	Author	Country
▪ Diversity of attractions ▪ Convenience of bedroom facilities ▪ Taste of food and beverage ▪ Easy to access ▪ Attractions close to main touring routes ▪ The convenience of communication facilities ▪ Educational opportunities in agriculture ▪ Activities that allow for family participation ▪ Participation in agritourism activities ▪ Opportunities to buy agricultural goods ▪ Non-agriculture activities		
▪ Landscape ▪ Authentic farm experience ▪ Interaction ▪ Activities ▪ Basic services ▪ Fresh food	Shah *et al.* (2020)	Fiji

The various types of attributes that are listed in the table above have been applied to uncover reasons agritourists choose to visit an agritourism farm. Different types of attributes have been identified across studies, including attractions, access, activities, accommodation, amenities, and more (Busby & Rendle, 2000; Busby, 2010; Srikatanyoo & Campiranon, 2010; Shah *et al.*, 2020). These attributes contribute to agritourists' decision-making and can inform product development and marketing strategies for agritourism providers.

2.2.4.1 *Marketing in agritourism*

Marketing is a "social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others" (Kotler, Wong, Saunders & Armstrong, 2005:7). The focus of this definition is on the process taking place between consumers and an organisation providing a service (Kotler & Armstrong, 2021:5). In the context of the current study, this is the process taking place between agritourists and agritourism establishments or destination marketing organisation. Marketing can be explained by the following important terms, namely, needs, wants and demands; products and services; value, satisfaction and quality; exchange, transactions and relationships; and markets (Kotler

& Armstrong, 2021:6). These core marketing concepts are linked with each other as illustrated in Figure 2.7.
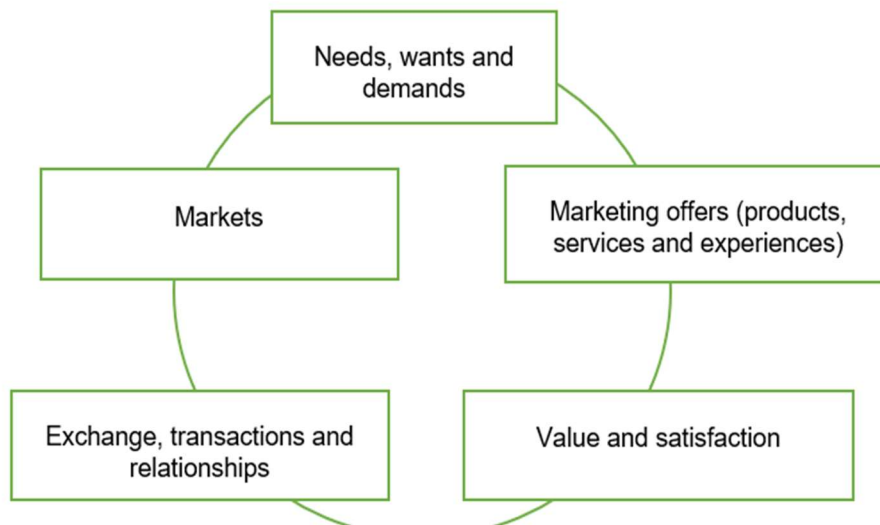
Figure 2.7:   Core marketing concepts

Source: Kotler *et al.*, 2020:8

The core concepts of marketing, emphasising the social and managerial process involving individuals and groups in obtaining their needs and wants through the creation and exchange of products and value, are defined as follows (Kotler *et al.*, 2020:8)

- **Needs, wants and demands**: Marketing is based on human needs, which are feelings of deprivation. These needs include: 1) physical needs, such as food, clothing, warmth, safety, social needs, and 2) individual needs, such as knowledge and self-expression. Marketers do not invent these needs; people in industrial societies seek satisfying objects, while less developed societies reduce desires. **Wants** are the form of human needs shaped by culture and individual personality. People in different countries have different wants. As society evolves, people's wants expand, leading producers to provide more want-satisfying products and services. People have limited resources and want to choose products that provide the most satisfaction for their money. Consumers view products as bundles of benefits, aiming for the most satisfaction. When choosing products, consumers look for the best bundle of benefits for their money, therefore, demand is driven by these bundles of benefits. By providing consumers with a set of benefits, companies provide value propositions to satisfy their needs.

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- **Marketing offers** are a combination of products, services, information, or experiences that satisfy a market's needs or desires. Marketing offers are not limited to physical products.

- There are a wide variety of products and services available to consumers that might satisfy a given need. What is the best way for them to choose among these many products? Purchasing decisions are based on consumers' perceptions of the **value** delivered by different products and services. The guiding concept is customer value. In terms of customer value, it is the difference between what a customer gets from owning and using a product and how much it costs to do so.

- People satisfy their needs and wants through marketing when they **exchange** goods and services. An exchange occurs when someone offers something in return for something they want. The exchange of goods and services is only one way people can acquire desired items. The ideas of exchange and connections give rise to the notion of a market.

- **A market** encompasses both the current and potential purchasers of a product, individuals who hold a specific requirement or desire that can be fulfilled through transactions and associations. Consequently, the magnitude of a market is determined by the count of individuals expressing the need, possessing the means to participate in exchanges, and being open to trading these resources for their desired items.

The process of marketing, as illustrated in Figure 2.7, and as described by Kotler *et al.* (2005:7), is relevant in the context of agritourism, focusing on the interactions between agritourists and agritourism service providers or establishments or destination marketing organisations. The principles discussed in marketing, such as the lack of marketing and promotion, little product development, and information distribution as challenges faced in South Africa's domestic tourism are crucial. The challenges faced by South Africa's domestic tourism also include the inadequacy of existing products to meet specific market segments' needs (NDT, 2011-2020:15; NDT, 2022:23), and directly relate to the core marketing concepts discussed above. For example, the importance of understanding and satisfying consumer needs (in the context of the current study, the agritourist), providing value propositions, and addressing issues related to the exchange of goods and services within a market.

The challenges in South Africa's domestic tourism align with the principles of marketing, indicating the need for effective marketing strategies, product development, and information dissemination to cater to the diverse needs and requirements of specific market segments. Addressing these challenges is essential for fostering a thriving domestic tourism industry in South Africa.

Addressing the challenges in South Africa's domestic tourism, such as the need for effective marketing strategies and product development, is not only vital for fostering a thriving domestic tourism industry but also aligns with the sustainability principles of agritourism, recognised as a strategy for rural development and environmental conservation (Giaccio *et al.*, 2018; Robinson *et al.*, 2011).

Scholars emphasise the potential positive impacts of agritourism on soil conservation, biodiversity, slow food movement, and ecosystem services (Giaccio *et al.*, 2018; Galluzzo, 2015a). The concept of environmental literacy emerges as a critical factor in achieving sustainability within agritourism (Fang *et al.*, 2020:1).

In the South African context, agritourism remains a promising avenue for sustainable rural development. Previous research has segmented potential agritourists based on preferences, highlighting key attractions and factors influencing visitor loyalty (Speirs, 2003; Fourie & Kruger, 2015). However, there is a notable gap in understanding agritourists as consumers, particularly within the South African context.

While existing studies offer insights into tourists' motivations, preferences and attributes, a deeper understanding of agritourist agri-environmental behaviours and their connections to sustainable practices remains an untapped area. By bridging this gap, the proposed agritourism model could contribute significantly to rural development, agri-environmental conservation and the sustainable growth of agritourism in South Africa.

One of the concepts related to sustainability is environmental literacy, which includes the pro-environmental actions of tourists (Arrobas *et al.*, 2020; Fang, Wang & Yan, 2020). These actions are recognised as crucial elements in promoting sustainability within tourism (Arrobas *et al.*, 2020:8; Conradie, 2017:400; Fang *et al.*, 2020:3). Thus, the development of sustainable agritourism requires a consideration of environmental literacy and the behavioural intentions of potential agritourists. A notable feature of environmental literacy is its emphasis on behaviour (Monroe, 2003:115).

Environmental literacy as a construct in agritourism and agritourist pro-environmental behaviour is discussed in Section 2.3 below.

2.3 ENVIRONMENTAL LITERACY IN THE CONTEXT OF AGRITOURISM

In this section, the construct, environmental literacy and agritourism literacy is conceptualised, corresponding to the first part of the first secondary objective, namely:

To conceptualise environmental and agritourism literacy (agri-environmental literacy) from existing literature.

The section firstly, introduces the literacy context (Section 2.3.1), secondly, it presents a definition of agri-environmental and agritourism literacy (Section 2.3.2), and thirdly, it provides the categories and dimensions of environmental and agritourism literacy (Section 2.3.3).

Agritourism development could result in adverse environmental changes, a negative effect on the social-cultural values of the region, and inauthentic portrayals of local customs and ways of life (Colton & Bissix, 2005:93). The degree to which agritourism providers have developed managerial abilities, such as product and market development and the agritourists' behaviour towards the farm environment, could influence the sustainability of agritourism in the long term (Colton & Bissix, 2005:93).

It is essential to consider environmental literacy, as this could develop a positive attitude towards the environment and produce environmentally responsible (ER) behaviour in terms of farm tourism (Biswas, 2020; Fang, 2023; Liang *et.al*., 2018). ER behaviour is important in achieving sustainability; therefore, it is important to consider environmental literacy to develop sustainable agritourism practices. Moreover, within the context of agritourism development and sustainability, addressing environmental challenges necessitates a focus on education to promote transformative shifts in the environmental conduct of tourists frequenting such establishments (CheKima *et al.*, 2019; Wickramasinghe, 2019).

This aligns with the exploration of literacy as a pivotal dimension in the realm of agritourism development and sustainability, as discussed below.

2.3.1 Literacy as a dimension of agritourism development and sustainability

The term 'literacy' refers to both possession of education and knowledge of one's field or subject, such as improving financial literacy or acquiring cultural literacy (Oxford English Dictionary, n.d.). Literacy is sometimes viewed as a metaphor for any skill or competence one might have (Fransman, 2005:8). Globally, literacy is constantly being redefined to meet societal, political, religious, and economic goals (Ntiri, 2009:97). There are various forms of literacy (for example, computer literacy, digital literacy, financial literacy, health literacy, media literacy, and environmental literacy); therefore, literacy is a context-dependent construct (Moersch, 2014:50; Weigle, 2014:64).

The adoption of literacy in the context of tourism is evident in various studies. Conradie (2017) developed a literacy model for sustainable avi-tourism, focusing on secondary school learners in Gauteng, South Africa. The research revealed that bird education among school learners instilled a love for birds and the outdoors, leading to birdlife conservation and sustainable avi-tourism attractions (Conradie, 2017).

Building on this research, the current study applied similar principles to measure the environmental literacy of potential tourists. This approach aimed to develop sustainable agritourism products by exploring the agri-environmental literacy of potential agritourists. Understanding their agri-environmental literacy will inform the sustainable development and marketing of agritourism. Figure 2.8 illustrates the literacy context as applied in the current study in terms of environmental and agritourism literacy.
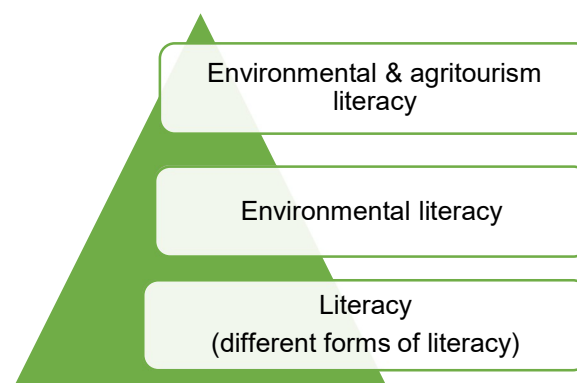
Figure 2.8:   Environmental and agritourism literacy context

Source: Adapted from Conradie (2017:101)

According to Figure 2.8, the lower section of the triangle represents literacy as a broad concept. In this context, education comprises all kinds of literacy (Conradie (2017).

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According to Fransman (2005:2), there are four dimensions of literacy that shape the evolution of dominant discourse, namely, literacy as 1) a set of skills; 2) applied knowledge; 3) a process; and 4) as text.

Literacy, as a skill, combines reading, writing, oral language skills, numeracy skills, and other skills that enable access to knowledge and information (Fransman, 2005:2). Various scholars (Cope & Kalantzis, 2000; Lankshear & Knobel, 2003; Street, 2003) advocated for an alternative perspective that is better suited to twenty-first-century life. As a result, multiple literacy concepts incorporate technology, health, information, media, visuals, science, and numerous others (Choukou *et al.*, 2022; Cope & Kalantzis, 2000; Lankshear & Knobel, 2003; Lim *et al.* 2022; Street, 2003; Wuyckens, Landry & Fastrez, 2022).

The concepts that illustrate a specific set of competencies, such as palpatory literacy or a skill for body massage, enable access to knowledge and information, and, sometimes, promote active engagement with meaning-making (Ahlsen & Nilsen, 2022). Other forms of literacy are information literacy, media literacy, digital literacy, cultural literacy, and environmental literacy (Wuyckens, Landry & Fastrez, 2022).

Environmental literacy is one of the earliest explicit uses of literacy and is applied outside of reading and writing texts (Alneyadi, Abulibdeh & Wardat, 2023; Bland, 2022). Roth introduced the term in 1968 but developed it further over 25 years, outlining it as the capacity to evaluate the relative health of environmental systems and taking appropriate measures to maintain, restore or improve the health of those environmental systems (Roth 1992). The strategy is used to address environmental issues and achieve sustainability (Zheng, Zheng, Zheng & Su, 2020:314). The terms 'environment education' and 'environmental literacy' are often used interchangeably, even though environmental literacy is the desired result of the educational process (Elder, 2007; Udall *et al.*, 2020). Section 2.3.2 that follows defines environmental literacy in the context of agritourism.

2.3.2   Defining agri-environmental and agritourism literacy

Learning about the environment is experiential and multidisciplinary and develops problem-solving and decision-making abilities (NAAEE, 2021; Roberts, 2012), and the goal is to gain environmental literacy (Hollweg *et al.*, 2011). Environmental education serves to develop skills and help an individual to understand global challenges, while

creating a sustainable future for the earth by involving all stakeholders of society, such as students, teachers, citizen, scientists, businesses and governments (NAAEE, 2021). Environmental education is vital to raise citizens that are seen as environmentally literate (Varışlı, 2009:29).

Environmental literacy promotes sustainable societies and healthy living, and ought to serve as a strong foundation for future environmental stewardship (Biswas, 2020:5922). Consequently, environmental literacy is concerned with environmental protection rather than simply knowing something about the environment (UNESCO, 2004; Velazquez, Munguia & Sanchez, 2005; Cotton, Miller, Winter, Bailey & Sterling, 2015). Although environmental education is imperative to developing EL citizens with the necessary attitudes, sensitivity, and knowledge of environmental concerns, environmental literacy is a goal rather than a means to education.

A person with environmental literacy can ascertain and interpret the relative healthy nature of an environment, and take actions to maintain, restore, or improve its health (Disinger & Roth, 2000:27). It is the ability to be aware of and explain the health and wellbeing of an environmental system and maintain, recover, or promote the health of the environmental system with actions (Boca & Saraçlı, 2019). Various researchers have operationalised environmental literacy amongst school children (Elder, 2003:15; Goldman, Assaraf & Shaharabani, 2013).

Harvey (1977:67) conducted research on the early conceptualisation of environmental literacy, followed by Roth (1992:8). According to Harvey (1977:67), an EL person is "one who possesses basic skills, understandings, and feelings for the man-environment relationship". In this context, an agri-environmentally literate (AgEL) person would "possesses basic skills, understandings, and feelings for the man-agricultural environment relationship" (Harvey, 1977:67).

Environmental literacy is the ability to perceive and understand the health of ecosystems and to take appropriate measures to maintain, improve, or restore that health. According to Hsu (2004:38), environmental literacy is a person's understanding and attitude toward the environment and environmental issues. This includes the ability and motivation to resolve environmental problems, and involvement in maintaining an equilibrium between quality of life and quality of the environment (Goldman *et al.*, 2013:517; Harvey, 1977:67; McBeth & Volk, 2009:55; Roth, 1992:8).

To be environmentally literate, people must include appropriate environmental considerations in their daily decisions, such as consumption, lifestyle, career, civics, and individual actions relating to the environment (Hsu, 2004:38). By developing a more positive attitude towards the environment, one can develop the skills to resolve and prevent environmental problems (Hsu, 2004:38; Roth, 1992:8)

According to Loubser *et al.* (2001:318), environmental literacy is defined as:

> "[T]he ability to be aware of the environment around one. By developing a more positive attitude towards the environment, one can develop the skills to resolve and prevent environmental problems and urge to protect and improve the environment by actively participating".

In terms of adopting a sustainable approach, Elder (2003:14) defined environmental literacy as an individual's capacity to learn how people and societies are related to one another and to natural systems and what can be done to sustain this relationship.

In the literature (Elder, 2003:16; Ibitz, 2017:58; Loubser *et al.*, 2001:318–319), environmental competencies range from complete unawareness, in some cases, to a comprehensive understanding of the environmental concerns of tourism destinations, in others. Among the most important goals of EE is to foster individuals who are in touch with the environment and who are capable of acting on environmental issues (Hungerford & Tomera, 1985).

Agritourism has the potential to offer broad benefits to society, such as educational gains and increased agricultural literacy (Brune, 2020:1). Agritourism activities incorporate experiential and place-based education; therefore, it is favourable to build upon visitors' agricultural literacy (Barbieri *et al.*, 2018:2334). By engaging in various agritourism activities, agritourists can improve their knowledge, stimulate learning interest and motivation, and foster higher-order thinking skills on the topic (Barbieri & Streifeneder, 2019:2334).

For the purposes of the current study, the term 'environmental literacy' was adopted from Conradie's (2017) research and applied in the context of agritourism and the natural farming environment on farms where agritourism takes place. In summary, the term environmental and agritourism literacy refers mainly to:

- Environmental literacy concerning agritourism, the natural environment of agritourism (farms), and agritourism activities;

- The intended outcome related to the process of agricultural and environmental education, various dimensions or elements, including knowledge, affect (environmental sensitivity, attitudes and values), and behaviour (personal investment and responsibility, and active involvement);

- A continuum of competencies ranging from being complete unaware of it, to a deep and thorough agri-environmental orientation, understanding of, concern for and sensitivity towards it;

- Agricultural and environmental knowledge;

- Attitudes towards nature and the farming environment;

- Behavioural intention towards farming and the natural environment (intended pro-environmental behaviour); and

- Potential agritourists are engaging in agritourism, making both tourism and agriculture sustainable.

For the purposes of this study, 'environmental and agritourism literacy' refers to an individual's awareness and concern, knowledge, attitude, sensitivity and behavioural intentions towards agritourism, and concern about the natural environment to protect the farm environment and to preserve the natural farming environment through agritourism for the use of present and future generations.

The definitions of environmental literacy present both the background and the context of the current study and how to operationalise or turn the concept into an instrument that would measure the underlying categories and dimensions of environmental literacy within the context of agriculture. This is referred to as agri-environmental literacy (Farber, 2015:16). Section 2.3.3 discusses the various dimensions and categories of environmental literacy.

2.3.3 Categories and dimensions of environmental and agritourism literacy

According to Coyle (2005:xii), true environmental literacy takes time to evolve. The concept of literacy should not be viewed as a binary concept, meaning that a person is either literate or not literate (Roth, 1992:17). According to Roth (1992:17), environmental and agritourism literacy is a continuum of skills ranging from zero

competencies to high competency. To be environmentally literate, one needs to be aware, knowledgeable, skilled, and attuned to incorporate appropriate environmental considerations into daily choices about consumption, lifestyle, career and civics. It also means to engage in civic action and individual action (Scholz & Binder, 2011).

The tourist achieves environmental literacy through environmental education, which involves connecting knowledge with skills, and ultimately, putting the learning into action (Coyle, 2005:54). Environmental literacy can be described on three levels, namely, environmental awareness, personal conduct knowledge, and true environmental literacy (Coyle, 2005:xiii). Environmental literacy may range from being totally unaware of, to having a complete understanding of and caring for the environment (Loubser *et al.*, 2001:318; Shobeiri, 2018:80; Swanepoel, Loubser & Chacko, 2002:282).

The categories of environmental literacy align with the guiding principles of environmental education, as reflected in the Tbilisi Declaration (UNESCO, 1978:15). According to the Tbilisi Declaration (UNESCO, 1978:15), environmental education goals need to:

- stimulate **awareness** to assist societies and individuals attain awareness and sensitivity in terms of the total environment and its allied problems;

- help societies and individuals gain **knowledge** and a variety of experiences, and acquire a basic understanding of the environment and its associated problems;

- assist societies and individuals to acquire **attitudes** that would create concern for the environment and the motivation to participate actively in environmental improvement and protection;

- help societies and individuals to acquire **skills** that would enable them to identify and solve environmental problems and take an active role; therefore, providing societies and individuals with an opportunity to participate and be involved at all levels in working towards the resolution of environmental problems.

In the Tbilisi Declaration, society and individuals are seen as key players in preventing and resolving environmental challenges (Conradie 2017:106; Goulgouti, Plakitsi & Stylos, 2019:1; McBeth *et al.*, 2008:2).

To resolve environmental challenges requires a process of environmental literacy, as depicted in Figure 2.9. The figure Illustrates the five essential steps of environmental agritourism literacy through which an individual will progress; however, these phases overlap in real life (Elder, 2003:16; Shobeiri, 2018:81). Figure 2.9 outlines these five essential steps required to develop environmental agritourism literacy.

| Capacity for personal and collective action and civic participation |
| Problem-solving and critical thinking skills |
| Attitudes of appreciation and concern for the environment |
| Knowledge and understanding of human and natural systems and processes |
| General awareness of the relationship between the environment and human life |
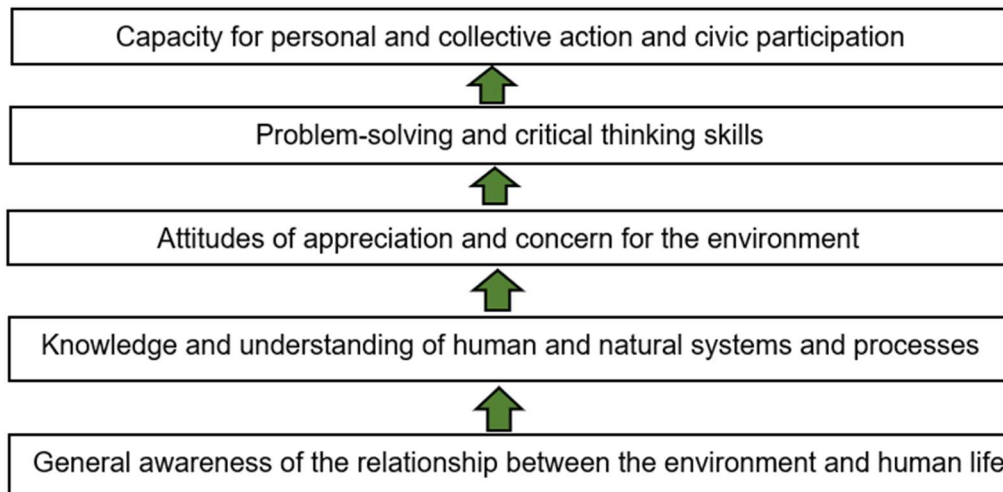
Figure 2.9:   The environmental literacy ladder

Source: Elder (2003:16); Shobeiri (2018:81)

The five steps of environmental literacy imply that literacy cannot be achieved without completing all five steps on the ladder. Completing one or any measure alone will not result in literacy (Shobeiri, 2018:81). Continuous effort must be made to build environmental competence while collecting personal experiences and building an emotional attachment to the environment (Ibitz, 2017:58). There are observable constructs in environmental literacy as described in the environmental literacy ladder (Elder, 2003; Shobeiri, 2018).

The literature identified the following 14 dimensions of environmental literacy: knowledge, attitude, environmental sensitivity, concern, environmental behaviour, hope, involvement, participation, intent, motivation, cognitive skills, affective disposition, and commitment (verbal and actual) (Hsu, 2004:39; O'Neil *et al.*, 2020:11; Swanepoel *et al.*, 2002:283; Szczytko, Carrier & Stevenson, 2018:4; Vaghef & Shobeiri, 2018:85; Veisi *et al.*, 2019:28).

Several instruments have been developed that measure environmental literacy, including research by McBeth *et al.* (2008:2) who developed a Middle School

Environmental Literacy Instrument (MSELI). The following groups of EL dimensions are commonly used to measure environmental literacy:

- Awareness, knowledge, attitude, participation (Swanepoel *et al.*, 2002:283);

- Knowledge, hope, behaviour (Szczytko *et al.*, 2018:5);

- Awareness, knowledge, attitudes (O'Brien, 2007:102);

- Awareness, knowledge, attitude, skills and participation (UNESCO, 1978:15);

- Knowledge, affect, behaviour (Goulgouti *et al.*, 2019:9; Kibert, 2000:73; Kyriazi & Mavrikaki, 2013:17; Yavetz, Goldman & Pe'er, 2009:403);

- Knowledge, environmental issue awareness, knowledge of the skill, evaluation of environmental issues (Culen & Mony, 2003:26);

- Environmental knowledge, affect, cognitive skills and environmentally responsible behaviour (Erdoğan, 2009:11);

- Cognitive knowledge, cognitive skills, affect, behavioural intention and behaviour (McBeth *et al.*, 2008:2; McBeth & Volk, 2009:57); and

- Knowledge, cognitive and affective dispositions, cognitive skills, and behaviour (Hollweg *et al.*, 2011:2–3).

Knowledge about the environment is critical for behaviour, but it is not enough to encourage environmentally friendly behaviour (Paço & Lavrador, 2017:10; Wiek, Withycombe & Redman, 2011:216). In addition, sentiments and beliefs must be considered (Peçanha de Miranda Coelho *et al.*, 2016:123). It is, therefore, unlikely that knowledge will lead to pro-environmental behaviour, unless it is stimulated, absorbed, and internalised by individuals (Liu *et al.*, 2020). The role of knowledge in pro-environmental behaviour is achieved through attitude. Iozzi (1989) argued that attitudes regarding the environment are directly correlated with behaviour but not with knowledge.

Veisi *et al.* (2019:25) reported that individuals with low to moderate levels of environmental knowledge can show an attitude of concern and an understanding of the environment. Secondary literature does not report a significant correlation between knowledge and behaviour alone (Veisi *et al.*, 2019:31). Knowledge of environmental issues could cultivate environmental attitudes, which could influence pro-

environmental behaviour (Casaló & Escario, 2018; Casaló, Escario & Rodriguez-Sanchez, 2019; Kaiser, Ranney, Hartig & Bowler, 1999; Flamm, 2009; Lee, 2014).

To instil pro-environmental behaviour among, for example, agritourists, the cognitive (that is, facts, knowledge or understanding) and affective (that is, emotions, feelings, values, or attitudes) domains of environmental literacy are needed. Figure 2.10 illustrates the main categories and dimensions of environmental literacy related to agritourism and the natural farm environment as identified in the current study (Varışlı, 2009:36; Veisi *et al.*, 2019:28).
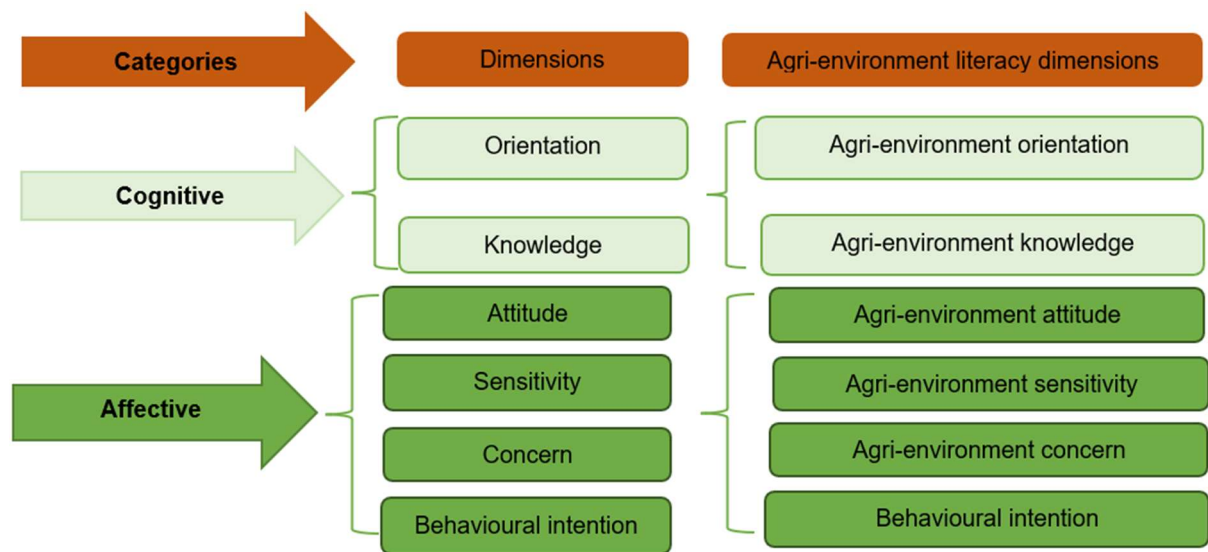
Figure 2.10:   Categories and dimensions of environmental literacy

Source: Adapted from Conradie (2017:109)

According to Figure 2.10, environmental literacy has the following two primary categories: the cognitive and affective. The cognitive category consists of two dimensions, namely, orientation and knowledge, whereas the affective domain consists of four dimensions, namely, attitude, sensitivity, concern and behavioural intention. Each of these dimensions are defined in this section (Sections 1.5.4 to 1.5.9).

Sustainable agritourism can therefore be achieved through the environmental literacy dimensions, as illustrated in Figure 2.7. Sustainable agritourism practices will not only benefit agritourism providers but the local community and the agritourist, as well. According to Wong *et al.* (2021:6), sustainability is concerned with the environment, as well as with a new form of mental and psychological sustainability achieved through

PsyCap. PsyCap is defined as one's positive appraisal of circumstances and the probability of success based on motivated effort and perseverance. The latter two are influenced by the tourism experience encountered (Luthans, Avolio, Avey & Norman, 2007a:550; Wong *et al.*, 2021:6).

PsyCap is associated with the pro-environmental behaviour and attributes that influence agritourism choices (Wong *et al.*, 2021:6). The current study explored the relationship between agritourists' PsyCap and the dimensions of agri-environmental literacy, along with important agritourism attributes for developmental and marketing purposes. Additionally, the current study seeks to align agritourism offerings with the agritourists' PsyCap resources to create enhanced farm-based experiences during visits to agritourism farms.

Section 2.4 below discusses PsyCap as a sustainable human attribute that could instil attitudes, behaviours, performance and wellbeing.

2.4 CONCEPTUALISING PSYCHOLOGY, POSITIVE PSYCHOLOGY AND PSYCHOLOGICAL CAPITAL IN AGRITOURISM

Psychology deals with the behaviour of tourists. It is concerned with how they think, feel, select and evaluate brands and services, as well as the influence the environment has on them (Filep, 2012:31). Tourist behaviour and reactions could be considered when designing new products and services, improving strategies, and satisfying consumers (Filep, 2012:31). The current study noted that an understanding of agritourist behaviour can be used to develop agritourism products and services, improve marketing strategies, and satisfy agritourists. A better understanding of agritourist behaviour will enable better planning and development of agritourism destinations, products, and services (Caldito *et al.*, 2015:104).

This section discusses and defines the constructs positive psychology and PsyCap, corresponding to the first part of the first secondary objective, namely, to conceptualise PsyCap from existing literature. This section will firstly, discuss positive psychology in tourism (Section 2.4.1), secondly, provide a definition of positive psychology (Section 2.4.2), whereafter, PsyCap is discussed in the context of agritourism (Section 2.4.3) and finally, the four dimensions of PsyCap are presented.

2.4.1 Positive psychology in tourism

Psychologists traditionally focus on repairing mental damage (Seligman & Csikszentmihalyi, 2000:5). However, this narrow approach neglects the appreciation of human strengths, flourishing, and overall wellbeing (Youssef-Morgan & Luthans, 2015:180). Youssef-Morgan and Luthans (2015:149) defined positivity as "an integrated system of antecedents, processes, practices, and outcomes identifiable by diverse observers and stakeholders as being unique and essential to both the individual and context".

Seligman's inaugural address (1998) marked a shift in psychology toward nurturing minds rather than just repairing them, known as "reinforcing the positive." Positive psychology, as defined by Seligman and Csikszentmihalyi (2000:5), focuses on optimal wellbeing, and the traits and institutions that allow individuals and institutions to flourish. Positive psychology emerged from the earlier focus areas, namely, disease-focused, behaviourism, and humanistic psychology (Seligman & Csikszentmihalyi, 2000:5). It diverges from merely addressing mental disorders or mechanical behaviour modification, recognising the human's internal motivation to realise their potential (Seligman & Csikszentmihalyi, 2000:5).

Positive psychology builds positive character traits, rather than just fixing past issues, and aims to enhance happiness and productivity (Luthans *et al.*, 2007b:9). This approach complements general and clinical psychology, aiming for human flourishing (Huang *et al.*, 2019:13). In tourism, positive psychology emphasises tourists' wellbeing and behaviour (Filep & Laing, 2019:343). Aligning with this perspective, numerous tourism studies have explored human behaviour (Aref, 2010; Crouch Perdue, Timmermans & Uysal, 2004; Dolnicar & Leisch, 2005; Dyer, Gursoy, Sharma & Carter, 2007; Jakubíková, 2012; Pearce & Jafari, 2011; Stoeckl, Greiner & Mayocchi, 2006; Ross, 1994; Uysal, Perdue & Sirgy, 2012; Van Raaij & Crotts, 1995).

For the purposes of the current study, tourism encompasses economic, social, psychological and cultural factors (Šimková, 2014:318). Positive psychology centres on positive emotions, character strengths, and positive institutions for human happiness and wellbeing (Maoying & Pearce, 2014:37). Travel is positioned in the definition of positive psychology as a behaviour that could contribute to the pursuit of

a healthier and happier life (Filep & Pearce, 2014:575). The next section defines positive psychology in the context of tourism and agritourism.

2.4.2 Defining positive psychology

Positive psychology seeks subjective experiences, such as wellbeing, contentment, past satisfaction and hope, optimism, and flow in the present (Seligman & Csikszentmihalyi, 2000:5). Two psychological levels have been identified, namely, individual and group level. The individual level refers to positive individual traits, such as the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom (Seligman & Csikszentmihalyi, 2000:5). The group level refers to civic virtues and the institutions that drive individuals towards being better citizens, for example, responsibility, nurturing, altruism, civility, moderation, tolerance, and work ethic (Seligman & Csikszentmihalyi, 2000:5).

Positioned as a behaviour that plays a role in the pursuit of a healthier and happier life, tourism is regarded by positive psychology as an activity that could contribute to wellbeing. However, Filep and Pearce (2014:575) raise a concern, namely that, at the time of their research, tourism research had not yet examined the overall relationship between travel, happiness, and subjective wellbeing from a positive psychology perspective. Tourism research tends to focus purely on the economic value perspective, disregarding the social issues related to tourism (Šimková, 2014: 317).

The tourist's personality, attitude, values, and lifestyle can be understood by taking various travel patterns into account (Šimková, 2014:317). Psychology, in this context, deals with tourists' behaviour, their experiences, and communication, whereas social psychology focuses on the influence of groups on individuals and their partners. Environmental psychology studies how the environment affects human behaviour (Šimková, 2014:317).

Rothmann and Cooper (2015) distinguished between two approaches to wellbeing: the disease model and the positive psychology model. The disease model fell beyond the scope of the current study, as the focus of the study is not on repairing damage but rather reinforcing the positive, therefore, the positive psychology model was relevant to this study.

In tourism, the enquiry of environmental and social psychology has been used to comprehend tourists' behaviour, attitudes, motivations, and wellbeing (Šimková, 2014:317). Positive psychology plays a vital role in tourism studies; therefore, it is worthwhile to consider possible connections between positive psychology and the social, environmental, and cultural issues, and their implications for the professional practice of tourist practitioners (Huang *et al.*, 2019:13). The two wellbeing approaches are illustrated in Figure 2.11.
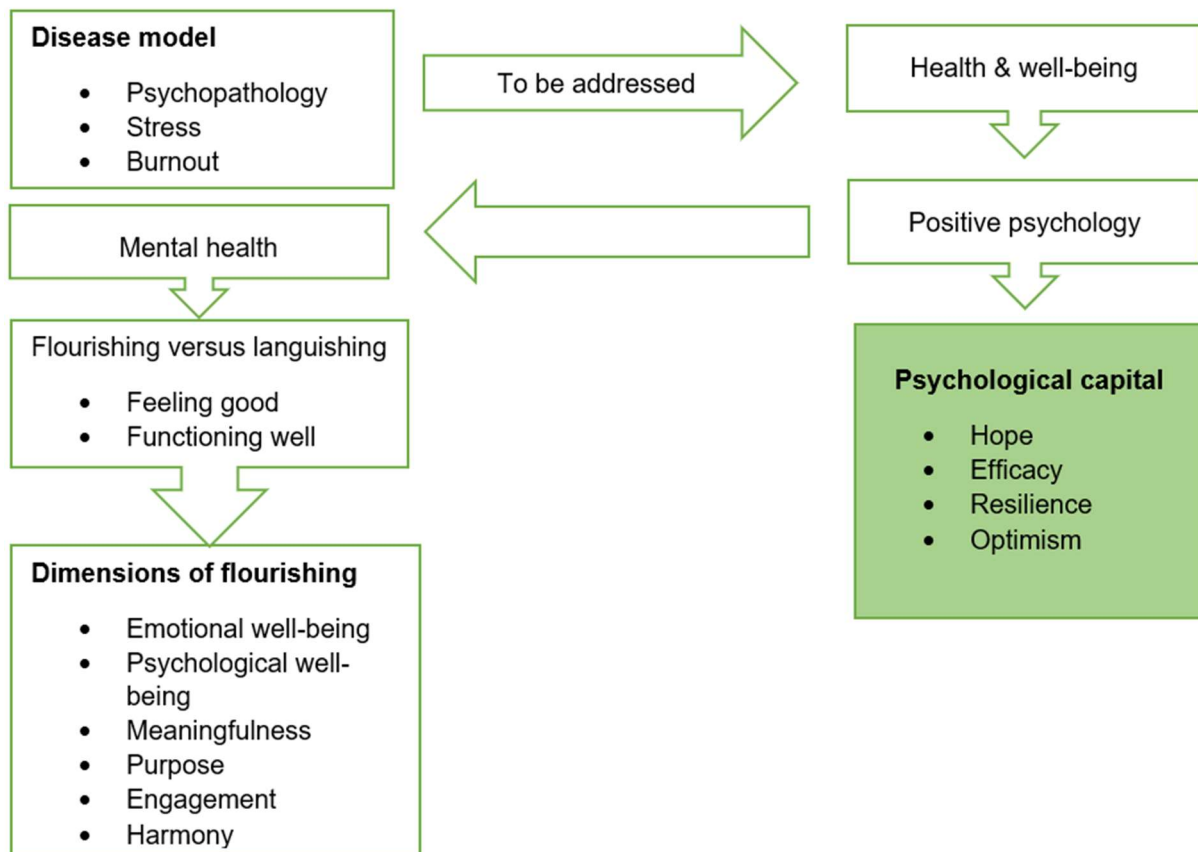
Figure 2.11:   Positive psychology wellbeing model

Source: Adapted from Rothmann & Cooper (2015)

A model involving several dimensions of wellbeing was adopted for this study, and one concept of positive psychological functioning was singled out, namely, PsyCap. To ensure better functioning, PsyCap emphasises the holistic view on the individual's wellbeing (Prasath, 2015). PsyCap describes an individual's positive psychological development, and is characterised by the dimensions of hope, efficacy, resilience and optimism (Luthans *et al.*, 2006b). These dimensions are malleable and open to change (Toth, Heiänen & Kianto, 2021).

PsyCap promotes the expression of positive resources and the talents of individuals by focusing on the asset of an individual characteristics and qualities; therefore, it can be considered close to the definition of eudemonic wellbeing.[1] The eudemonic theme is well established in tourism, with concepts such as autonomy, affiliation or relationships, meaning and mastery regarded as stable features of positive tourism (Filep & Pearce, 2014:1). PsyCap allows individuals to act proactively by trusting in their possibilities and looking at future scenarios positively without being discouraged by difficulties. Therefore, it supports individuals in dealing with everyday life effectively and acting proactively (Santisi *et al.*, 2020:5238).

The current study intended to establish the relationships between PsyCap and agritourism attributes for product and marketing purposes, therefore, Section 2.4.3 defines PsyCap in the agritourism context. There is currently an increased awareness of positive psychology as related to tourism (Huang *et al.*, 2019:13). As a result, it is important to inquire about its possible connection to the social, environmental and cross-cultural aspects of tourism, and its role within professional practice (Huang *et al.*, 2019:13).

2.4.3   PsyCap in the context of agritourism

Luthans *et al.* (2006b) and Luthans and Youssef (2007) proposed that positive PsyCap refers to a psychological state of being that can be defined as:

> [A]n individual's positive psychological state of development and is characterised by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success."

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[1] Eudaimonic wellbeing is defined as "the subjective experiences associated with eudaimonia or living a life of virtue in pursuit of human excellence. The phenomenological experiences derived from such living include self-actualization, personal expressiveness, and vitality"(Niemies,2014:1).

According to Manzano-García and Ayala (2017:2), PsyCap refers to people who strive to improve their daily life events and maximise their chances of success by using their own perseverance and effort. The four dimensions of PsyCap, as identified by Luthans *et al.* (2006b:4), are hope, self-efficacy, resilience and optimism. An underlying theory connecting these dimensions is that success is dependent on motivated effort and perseverance (Luthans *et al.*, 2007a:550). PsyCap is therefore a positive state of mental development characterised by the above-mentioned dimensions. The definition of PsyCap highlights that the identified dimensions are skills with properties that can be improved (Manzano-García & Ayala, 2017:2).

A key role for PsyCap is that it can be seen as an open construct that can be developed (Luthans *et al.*, 2006). When success is consistently evaluated positively and is attainable, this promotes an optimistic viewpoint and encourages one to pursue challenging goals in the face of obstacles and setbacks (Youssef-Morgan & Luthans, 2015:181). PsyCap triggers cognitive, affective and social mechanisms, leading to psychological wellbeing (Avey, Luthans, Smith & Palmer, 2010; Manzano-García & Ayala, 2017:2; Newman, Ucbasaran, Zhu & Hirst, 2014). Furthermore, PsyCap can facilitate the attention, interpretation, and memory retention processes necessary for domain-specific experiences and satisfaction, leaving a lasting influence on psychological wellbeing (Manzano-García & Ayala, 2017:2).

As not all PsyCap dimensions are significant in affecting behaviour, it is crucial to consider each dimension separately to fully assess how it relates to the overall wellbeing of the individual (Madrid, Diaz, Leka, Leiva & Eduardo, 2017; Malinowski, 2015). In the context of the current study, these dimensions were measured to assess how they are related to agri-environmental literacy and agritourism attributes for the development and marketing of agritourism. The next section discusses the four dimensions of PsyCap.

2.4.4 Four dimensions of PsyCap

Luthans (2012:2) explained that the HERO within an individual reveals who the individual is (psychological self) and who the individual can become (potential self). According to Luthans *et al.* (2007b:550), "Positive appraisal of circumstances and probability for success are based on a motivated effort and perseverance is the underlying thread connecting hope, efficacy, resilience, and optimism".

The first dimension (of HERO) is hope which is defined as a positive motivational state that is based on agency (goal-directed energy) and pathways (planning to meet goals) (Snyder *et al.*, 1991:287). As a pathway or way of power, the dimension of hope suggests that individuals are skilled to generate alternative paths to their desired goals (Luthans *et al.*, 2006b:66). The pathway dimension of hope distinguishes it from other PsyCap states, such as resilience, efficacy, and optimism (Youssef-Morgan & Luthans, 2015:181). Hope as a dimension has been linked to performance in the workplace (Peterson & Byron, 2008; Luthans & Youssef, 2007). The current study applied the dimension of hope in the agritourism context.

The second dimension is efficacy, which is defined as an individual's belief about his or her ability to activate the motivation, cognitive resources, and courses of action required to achieve a specific action within a given context (Stajkovic & Luthans, 1998b:66). This definition emphasises the link between an individual's having confidence efficacy (Luthans, Vogelgesang & Lester, 2006a:38). Through efficacy, the individual is motivated to choose and welcome challenges, while using strengths and skills to meet those challenges (Luthans *et al.*, 2006a:34). A well-established efficacy-development approach includes physiological and psychological arousal (Youssef-Morgan & Luthans, 2015:181). There is therefore a positive relationship between efficacy and performance in a work context (Stajkovic & Luthans, 1998a; Bandura, 2012). Within the agritourism context efficacy was explored to uncover any relationship between agri-environmental literacy and agritourism attributes.

The five findings of Luthans *et al.* (2006b:34) related to efficacy can be explained as follows: 1) Efficacy is domain-specific (an individual will not be confident in all areas of their lives); 2) can be practised or mastered; 3) can be improved; 4) others influence it; and 5) is a variable.

Five critical characteristics of self-efficacious individuals are that they: 1) set high goals and self-select complex tasks; 2) are comfortable and succeed in the challenge; 3) are highly self-motivated; 4) invest the necessary determination to achieve their goals; and 5) persevere when faced with obstacles.

The third dimension of PsyCap is resilience, which is a developable capability to bounce back from adversities (Luthans, 2002). Resilience as a dimension is defined as "a class of phenomena characterised by patterns of positive adaptation in the

context of significant adversity or risk" (Masten & Reed, 2002:75). Luthans (2002a:702) broadened the definition of resilience by including the ability to bounce back from adversity and having an extremely positive approach towards overall life. The concept of resilience is characterised by the capability to rebound or bounce back from adversity, conflict, and failure, and that results in measurable positive events, progress, and increased responsibility.

A measurable characteristic in a group of individuals or their situation that predicts a positive outcome in the future in terms of a specific outcome criterion forms part of a resilience asset within the work context (Masten & Reed, 2002:76). However, the relationship between psychological capital, agri-environmental literacy and agritourism attributes have not been fully examined in the context of tourists. The theory of resilience is drawn from clinical and developmental psychology and is a reactive function after experiencing challenges (Youssef-Morgan & Luthans, 2015:181).

The fourth PsyCap dimension is optimism, which is defined as a positive outlook or expectancy (Carver, Scheier, Miller & Fulford, 2009), and an attributional style that explains positive events in terms of personal, permanent and pervasive causes (Seligman, 1998). Optimistic individuals view and internalise good aspects concerning their general lives positively (Seligman, 1998; Youssef-Morgan & Luthans, 2015).

Previous research has focused on the HERO dimensions in terms of desirable outcomes in the workplace (Luthans & Youssef, 2007b; Seligman, 1998). As such, PsyCap research is usually associated with variables such as job commitment, satisfaction and workplace performance (Golparvar, 2014; Luthans, 2002b; Luthans *et al.*, 2007b).

Although not enough, other variables besides the work domain have been associated with PsyCap, such as anxiety, perceived stress, ability to handle pressure and problems, happiness, and wellbeing (Golparvar, 2014; Luthans, 2002b; Luthans *et al.*, 2007b). In a tourism context, Wong *et al.* (2021) explored how effective holiday programmes presented learning opportunities and provided restorative benefits, focusing on the temporal positive psychological consequences to employees who participated in a holiday programme.

Psychological positivity was examined by Luthans *et al.* (2012), who also included other life domains, such as health and relationships, in their investigation of

psychological positivity. According to Wong *et al.* (2021:16), tourism products, such as hiking at eco-sites, sightseeing on farmlands, or camping in mountains and woods might promote PsyCap in terms of improvements to the dimensions hope, confidence, optimism, and resilience. Wong *et al.* (2021:16) suggested encouraging more tourist-site interactions to increase tourists' awareness, and, as a result, their sense of responsibility for the natural environment.

The current study intends to widen the discussion on PsyCap and its dimensions from organisational behaviour to agritourism, specifically, the pro-environmental behaviour of potential agritourists and the agritourism environment. Tourism products that include transformative learning have been found to encourage pro-environmental behaviour towards tourism in a natural environment, thus encouraging sustainable tourism (Wong *et al.*, 2021; Xu, Huang & Whitmarsh, 2020).

Sustainable tourism, including agritourism, requires environmentally responsible (ER) behaviour and intentions to behave pro-environmentally (Pan, Chou, Morrison, Huang & Lin, 2018:1). The growth of tourism has caused environmental destruction and subjected destinations to the threat of environmental damage (Agnew & Viner, 2001:1; Moswete & Dube, 2014:397; Pan, 2018:3). At the Earth Summit in Rio de Janeiro in 1992, the United Nations proposed the notion of sustainable development (Panjabi, 1997).

The commitment to tourism development includes encouraging sustainable tourism development and reducing the impact of leisure activities by encouraging the pro-environmental behaviour of tourists. Pro-environmental behaviour is determined by pro-environmental intentions. Thus, behavioural intention amongst agritourists is to avoid damage towards the farm environment while promoting pro-environmental behaviour. The current study explored the potential agritourism market to recommend a model that will promote sustainable agritourism development and marketing strategies.

Section 2.5 discusses the pro-agri-environmental behaviour and intention concerning sustainable agritourism development.

2.5 BEHAVIOURAL INTENTION TOWARDS THE AGRITOURISM ENVIRONMENT

The rapid growth of tourism globally has led to significant environmental impacts, including the release of carbon emissions (Peeters & Dubois, 2010), utilisation of water resources (Gössling, 2015) and production of waste (Filimonau & De Coteau, 2020). According to Liu *et al.* (2020), many environmental issues are caused by human activity; therefore, it is critical to encourage people to engage in ER behaviour. The protection of the environment is a vital priority for the entire world (Mishal, Dubey, Gupta & Luo, 2016).

The government, tourism organisations and tourists as users of tourism goods and services should all be active in promoting pro-environmental behaviour (Cheng & Wu 2015:405). To develop sustainable and market agritourism, ER agritourists are an ideal source market for this type of niche tourism. In this regard, agritourists need to be responsible in how they consume or engage in agritourism. Since behavioural intentions measure pro-environmental behaviour, the current study explored the behavioural intentions of potential agritourists.

Understanding potential agritourists' agri-environmental behaviour intention prior to visiting a farm can inform agritourism providers, assist in the planning of intervention programmes, and improve pro-environmental behaviour, when necessary. ER behaviour, also known as pro-environmental behaviour (PEB), refers to "a behaviour that affects the environment as little as possible, or even benefits the environment" (Steg & Vlek, 2009:309). When pro-environmental behaviour (PEB) is chosen, and its cause elements are discovered, strategies can be developed to conduct actions, such as recycling or conserving energy based on these factors (Steg & Vlek, 2009). It is critical to have an understanding of PEB transformation in the tourism context because it could aid in the development of location-specific initiatives that lead to increased tourist participation in PEB and the sustainability of the destination.

However, according to Barr, Gilg and Shaw (2011:1235), individual behaviour is less pro-environmental during holidays (Barr *et al.*, 2011:1235). Tourists believe that tourist destinations are not "suitable sites to be environmentally sensitive" (Barr *et al.*, 2011:1235). People must therefore learn to believe that PEB is the correct thing to do, and they must realise that they can freely choose to engage in such a form of

behaviour, otherwise, it will be counterproductive (Venhoeven *et al.*, 2013). Furthermore, the more environmentally friendly and active that people see themselves as, the better they feel about putting their PEB into action. People have a more positive self-image if their engagement is voluntary, rather than driven by a particular situation (Qu, Xu & Lyu, 2019; Venhoeven *et al.*, 2013).

The concept of PEB has previously been applied in tourism studies by various authors (Barr *et al.*, 2011; Conradie, 2017; Cordano, Welcomer & Scherer, 2003; Levine & Strube, 2012; Qu *et al.*, 2019). PEB boosts the PEB intentions of tourists (Ballantyne & Packer, 2011; Goh, Ritchie & Wang, 2017; Han, 2015; Hughes, 2013; Wu, Huang, Liu & Law, 2015). In the same vein, intention affects PEB (Wu *et al.*, 2015:7). For example, while visiting a nature-based destination, PEB may be affected by the intention.

The concept of PEB is not new in tourism studies. Environmental psychologists (Bolderdijk *et al.*, 2013) have spent years focusing on how to incorporate PEB into the human conscience (Barr *et al.*, 2011:1235) with numerous theoretical frameworks and studies done to explain the gap between PEB knowledge and behaviour before, during and after holiday experiences (Kollmuss & Agyeman, 2002).

One of the theoretical frameworks is the attitude, behaviour, context (ABC) theory based on environmental psychology, which was developed in 1987 by Stern and Oskamp (1987). According to Stern and Oskamp (1987), PEB is caused by a series of causal relationships between external and internal factors. Furthermore, Guagnano, Stern and Dietz (1995) demonstrated that PEB is affected by internal environmental attitude (A) and external contextual factors (C), as well as their interactions.

Climate warming, green consumption, and waste recycling are among the PEB that may be studied using the antecedent behaviour consequences (ABC) theory (Ertz, Karakas & Sarigöllü, 2016; Huang, 2016). The ABC theory is one of the ideas that explains PEB and behavioural intentions. This theory emphasises the impact of context on environmental behaviour (Guagnano *et al.*, 1995; Stern, 2000). According to the ABC theory, individual behaviour is highly situational, and attitude cannot successfully predict behaviour without considering contextual elements (Stern, 2000). Personal characteristics, such as beliefs, values, and intentions (which are at the heart

of attempts to predict behaviour) are referred to as attitudes in the ABC theory (Ajzen, 2002; Zhang, Li, Cao & Huang, 2018).

The ABC theory suggests that the impact of personal characteristics on PEB is influenced by contextual factors, such as infrastructure availability, costs, and social norms (Stern, 2000). Contextual factors obstruct or assist PEB, and they explain PEB when combined with personal or attitudinal factors (Zhang *et al.*, 2018). Individuals are more likely to engage in PEBs when their attitude toward PEBs is positive, and the situation is supportive (Liu, Han & Teng, 2021).

One school of thought suggests that the disparate effects of attitude on behaviour result from the myopic assessments of attitudes that ignore situations (Goh & Balaji, 2016; Stern, 2000). Yadav, Balaji and Jebarajakirthy (2019) further suggested the relevance between context and psychological aspects in determining tourists' predisposition towards choosing sustainable tourism products. Hence, Kim, Lee and Jung (2020) advocated incorporating the ABC theory into future tourism studies in the context of tourist behaviour.

Another theoretical framework that was adopted in various tourism studies and applied to uncover intentions, is the theory of planned behaviour (TPB) (Montano & Kasprzyk, 2015:95). The TPB gained popularity due to its high sufficiency when describing PEB (Montano & Kasprzyk, 2015:95). Ajzen (1991) introduced the TPB, which suggests that attitudes are more likely to shape behavioural intentions than to direct behaviour (Kollmuss & Agyeman, 2002:241). A fundamental assumption of the TPB is that attitudes do not determine behaviour directly but rather influence behavioural intention. The TPB includes an individual's perceived control, which is a dimension of motivation (intention) and ability (performance) (Knussen, Yule, MacKenzie & Wells, 2004:237).

The TPB uses intentions as an indicator of behaviour due to its ease in measurement (Hughes, 2013). As a rule, the stronger a person's desire to engage in a certain behaviour, the more likely he or she will be to do so (Ajzen & Fishbein, 1980; Hsu 2004, Huang *et al.*, 2019; Kollmuss & Agyeman, 2002:241).

Ballantyne and Packer (2011) found that there is a relationship between the behaviour intention to conserve the environment prior to the tourism visit and the pro-environment behaviour during the tourism visit. Similarly, several tourism scholars

have investigated the environmental intention behaviour (Hibbert, Dickinson & Curtin, 2013; Higham *et al.*, 2016; Juvan & Dolnicar, 2014).

The attitude-behaviour-condition (ABC) theory and the TPB have been used as theoretical underpinnings to explain the intention–behaviour gap for PEBs (Ertz, Karakas & Sarigöllü, 2016; Wu *et al.*, 2015). The context of human behaviour research enables the development of more accurate theoretical models and more robust interpretations of results (Rousseau & Fried, 2001). Human behaviour is also shaped by its context when it comes to opportunities and constraints; therefore, it is crucial to consider a specific context when analysing the person-situation interaction (Zhao *et al.*, 2021:7).

The context thus overrides all the cognitive factors of the PEB models (Stern, 2000; Zhao *et al.*, 2021:7). In the context of the current study, the potential agritourists' behavioural intention was explored in relation to the farm environment and agritourism attributes to develop and market sustainable agritourism.

2.6   CONCLUSION

Even though agritourism is a growth area and trend in tourism, there is a lack of complete knowledge about the agritourism market. Agritourism has the potential to promote local economies by providing tourists with numerous possibilities to engage in authentic cultural experiences while visiting. As a result, farm tourism will likely become a paradigm for long-term sustainability. This chapter laid the foundation for Chapters 3 and 4. The chapter started with a contextualisation of agritourism. In contextualising agritourism, the literature presented a lack of uniformity in defining the concept. Various definitions presented in literature have been the cause of the unstructured development of theoretical frameworks concerning agritourism. This type of rural tourism is a sustainable tool in local communities due to its socio-economic benefits to agritourism providers who are farmers, and the local community.

It is therefore important that agritourists engage in agritourism without damaging the environment. Environmental literacy is a tool that can be implemented to achieve sustainability in tourism, and as such, is an essential key factor in sustaining agritourism. The dimensions of environmental literacy associated with pro-environmental behaviour were discussed in this chapter.

Agritourism could increase the PsyCap of individuals. The chapter contextualised positive psychology as an essential factor in uncovering why tourists do what they do, leading to PsyCap as a factor that determines human psychological sustainability. However, there is a lack of PsyCap research in the context of tourism, especially agritourism, although it is associated with wellbeing. The PsyCap literature generally focuses on the workplace.

The chapter presented behavioural intention as a measure of pro-environmental behaviour, which has been explored through various theoretical frameworks. The literature suggests that intention is effectively measured in context; therefore, it is context dependent.

A conceptual model is presented in Chapter 3 based on the concepts presented in this chapter, namely, agri-environmental literacy, PsyCap, behavioural intention and agritourism. The conceptual model is presented as a possible sustainable development and marketing tool for agritourism.

CHAPTER 3:
CONCEPTUAL AGRI-ENVIRONMENTAL LITERACY AND PSYCAP MODEL FOR AGRITOURISM

3.1   INTRODUCTION

Based on the theoretical concepts introduced in Chapter 2, the conceptual agri-environmental literacy and PsyCap models for agritourism were developed and are discussed in Chapter 3. The main aim of Chapter 3 is to discuss part of the fourth secondary research objective, namely:

- *To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling.*

The two conceptual agri-environmental literacy and PsyCap models for agritourism were developed from a demand perspective to suggest developmental and marketing strategies for agritourism providers. The current chapter commences by presenting each of the conceptual model, as well as analysing and considering each concept: agri-environmental literacy, agri-environmental attitude, agri-environmental knowledge, agri-environmental orientation, agri-environmental concern, agri-environmental sensitivity, PsyCap, and agritourism.

The chapter presents each in the form of definitions, measurement scales, and a synthesis of results from previous literature regarding each concept to indicate which definition and measurement scale were used in the current study. The two conceptual models developed in the study are also introduced, namely, the agri-environmental literacy and PsyCap model for agritourism (Scenario 1 and Scenario 2).

Figure 3.1 below illustrates the flow of the secondary research presented in Chapter 3.
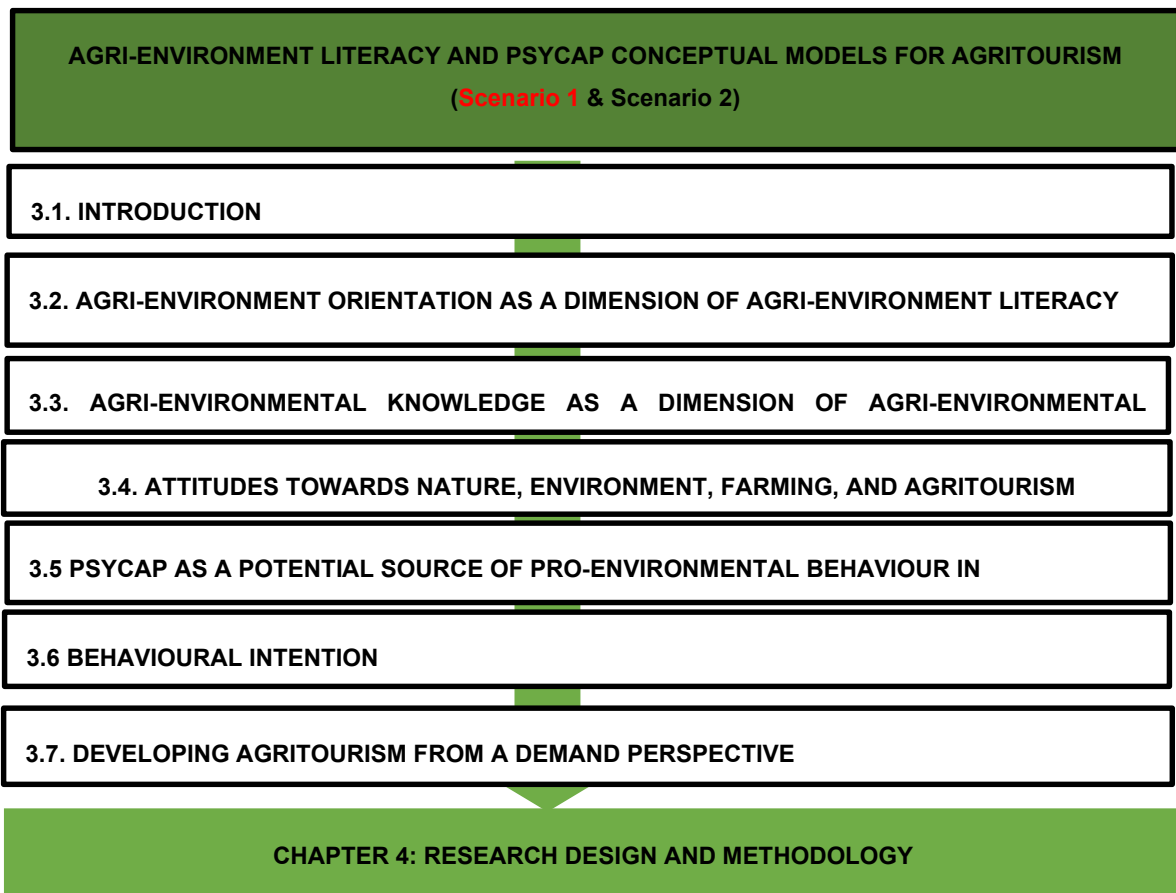
Figure 3.1: Flow of the secondary research Chapter3

The theory will be presented according to the outline presented in the figure above.

Two conceptual models, agri-environmental literacy and PsyCap model for agritourism **Scenario 1 model** **and** agri-environmental literacy and PsyCap model for agritourism **Scenario 2 model** were developed in the current study. These two models were based on the concepts of agri-environmental literacy (agri-environmental orientation, agri-environmental knowledge, agri-attitude, behavioural intention, agri-environmental concern and agri-environmental sensitivity).

PsyCap and agritourism attributes were adapted as new concepts in tourism and agritourism. The difference between the two conceptual models is the role of PsyCap in association with the dimensions of agri-environmental literacy and ultimate agritourism attributes. Figure 3.2 represents the first conceptual model (**Scenario 1**) for agritourism, followed by Figure 3.3 representing the second conceptual model (**Scenario 2**) for agritourism.

The discussion commences with the first conceptual agri-environmental literacy and PsyCap model for agritourism **Scenario 1,** as indicated in Figure 3.2.
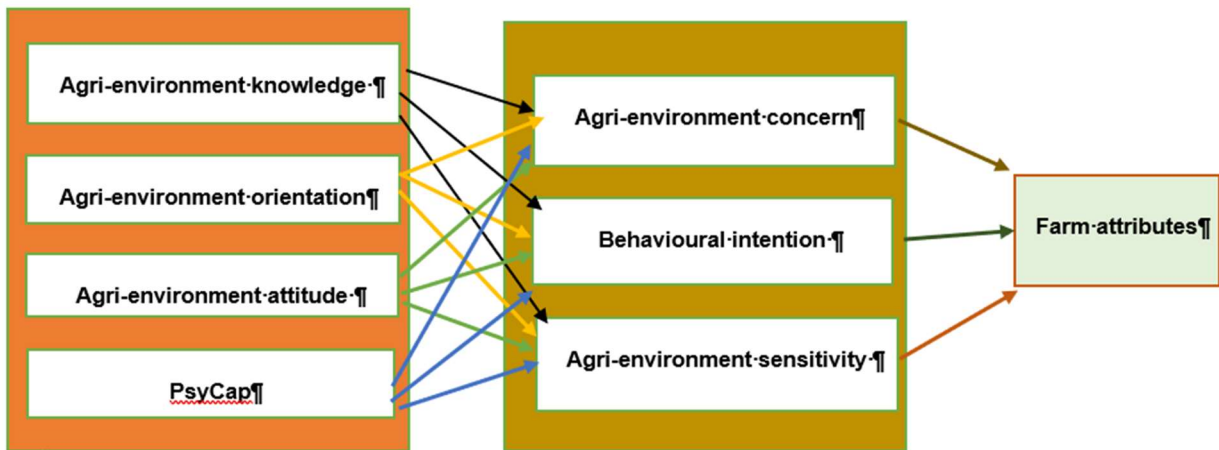
Figure 3.2: **Agri-environmental literacy and PsyCap model for agritourism (Scenario 1)**

The second conceptual agri-environmental literacy and PsyCap model for agritourism (Scenario 2) is presented in Figure 3.3.
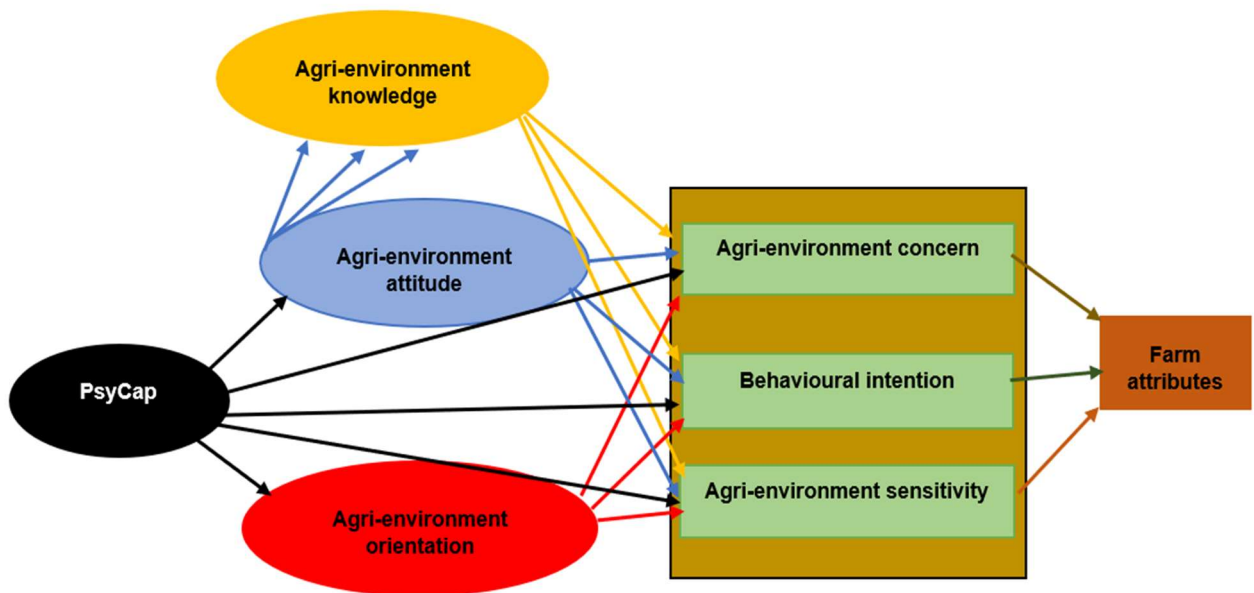
Figure 3.3 **Conceptual agri-environmental literacy and PsyCap model for agritourism (Scenario 2)**

The sections from 3.2 to 3.7 explore the conceptual models, starting with the concept of agri-environmental orientation as a dimension of agri-environmental literacy.

3.2 AGRI-ENVIRONMENTAL ORIENTATION AS A DIMENSION OF AGRI-ENVIRONMENTAL LITERACY

Environmental problems have been related to the awareness of the significance of environmentally responsible (ER) behaviour (Shamuganathan & Karpudewan, 2015:758). The literature suggests that society needs to be environmentally literate to manage the environmental challenges that all humans face (Erdogan, Marcinkowski & Ok, 2009; Hsu & Roth, 1996; Olson & Rothkrug, 1991; Wilke, 1995).

An environmentally literate (EL) citizen behaves more responsibly towards the environment than a citizen who is not EL (Shamuganathan & Karpudewan, 2015:758). Environmental education (EE) programmes are intended to raise awareness of and cultivate the development of EL throughout an individual's lifetime (Kaya & Elster, 2019:70).

The increasing daily needs of human beings can directly or indirectly affect the environment positively or negatively (Kaya & Elster, 2019:70). Humans interact with the natural environment; therefore, there will be some form of human effect on the environment (Kaya & Elster, 2019:71). EL individuals who will make well-informed decisions concerning the environment are therefore important (Kaya & Elster, 2019:71). Universally, human beings find an increasing need to influence the natural systems that affect their quality of life; therefore, they experience a need to educate and influence each other positively and make societal decisions about environmental issues (Kaya & Elster, 2019:71).

A fundamental part of humans' wellbeing is a quest for environmentally literate people to protect and improve the environment and natural resources, which is now more urgent than ever before (Kaya & Elster, 2019:71). Current or potential future environmental problems and their possible solutions need to be communicated effectively to different stakeholders in various industries to achieve sustainable development objectives, of which agritourism is one. EL is introduced to allow individuals to understand the importance of the natural environment.

Orientation to the environment is essential for survival (Larson *et al.*, 2011:72). As illustrated in Section 2.3.3, environmental literacy is measured by key elements, namely, cognitive (knowledge and skills), affective, and behavioural (Liang *et al.*,

2018:3). Section 3.2.1 defines agri-environmental orientation as a dimension of agri-environmental literacy.

3.2.1   Defining agri-environmental orientation

A person's environmental orientation can be defined as his or her ability to recognise environmental issues (Wickramasinghe, 2019). Environmental orientation refers to the ways in which environmental features can be examined (Cohen *et al.* 1976:49).

Agri-environmental orientation (Section 1.5.7) is described as the potential agritourist's natural world perception, which is indicated by a general impression, consciousness regarding the significance of agritourism in the natural environment, and personal interest in the agritourism environment. An individual's world view is his or her understanding and view of the world (Merriam Webster's Collegiate Dictionary, 1991). Sire (2004:122) provides a holistic definition of the term 'world view' which incorporates behaviour and heart orientation:

> A commitment, a fundamental orientation of the heart, that can be expressed as a story or in a set of presuppositions (assumptions which may be true, partially true, or entirely false) which we hold (consciously or subconsciously, consistently or inconsistently) about the fundamental constitution of reality, and that provides the foundation on which we live and move and have our being.

It is known that individuals often disregard or are sceptical about scientific facts and expert opinions (as well as that of their peers) if the facts oppose their world view. Such an effect is vital, especially on matters such as seen with climate change (Grant, 2011:5). It is therefore essential to have an understanding of people's ecological world view because it can reflect how all information about the environment is received.

The current study measured the broad world view or person's cognitions regarding the relationship between humans, the agri-environment and agritourism. Larson *et al.* (2011:72) defined orientation as "a person's perception of nature" and the way people "perceive the natural world". Larson *et al.* (2011:72) identified two dimensions of environmental orientation, namely, eco-affinity and eco-awareness. The former refers to a rational grasp of environmental issues related to the general importance and sustainability of natural ecosystems, while the latter refers to a personal interest in

nature (Larson *et al.*, 2011:83). According to the Tbilisi Declaration (UNESCO, 1978), awareness of something such as nature has the potential to offer individuals and social groups an understanding of and sensitivity to the environment and its related issues.

Generally, environmental awareness is an attitude regarding the environmental consequences of human behaviour (Ham, Mrčela & Horvat, 2016:160). Environmental awareness is a predisposition to react to environmental issues in a particular manner (Culiberg & Rojšek, 2008:132). Environmental awareness may precede PEB, although being environmentally aware does not necessarily lead to PEB. Carlson (2004:46) concurred and stated that environmental awareness is the first step toward PEB.

The Oxford English Dictionary (n.d.) defines affinity as "a natural liking for and understanding of someone or something", Larson *et al.* (2011:83) defined the term 'eco-affinity' as personal attention to nature and intentions to carry out pro-ecological behaviours. Affinity towards nature could therefore motivate people to protect nature against the exploitation of the environment that would be perceived as self-destruction (Müller, Kals & Pansa, 2009:59).

In order to achieve the overall objectives of the current study, agri-awareness is outlined as a wide-ranging impression or consciousness regarding the general importance and sustainability of the agri-environment. In the context of the current study, it is thus regarded as an affinity towards the agri-environment which can motivate agritourists to protect the farm environment against exploitation that would be perceived as self-destruction (Müller, Kals & Pansa, 2009:59).

Agri-environmental orientation in the current study thus, refers to the way an individual perceives the natural world. This is reflected in the general impression and consciousness about the importance of and personal interest in agriculture and the agri-environment within which agritourism occurs.

In attempting to measure the agri-environmental orientation of potential agritourists, the current study investigated various general environmental orientation scales to choose an appropriate scale to apply in the current study. These measurement scales are discussed in the next section.

3.2.2 The measurement of agri-environmental orientation

A measuring instrument for the current study was adapted from work done by Larson *et al.* (2011:72). Larson *et al.* (2011) employed a mixed-method approach, which included pilot tests, final survey implementation, and interviews to develop a survey instrument for assessing environmental orientation, as in the context of the current study (Larson *et al.*, 2011:72). Although Larson *et al.*'s (2011) measuring instrument was explicitly developed to grasp the eco-awareness and eco-affinity of children, the instrument is an effective means of measuring these two concepts. This scale is known as the Children's Environmental Perceptions Scale (CEPS). The CEPS scale was adapted from the New Ecological Paradigm (NEP) scale, which was complex to apply (Larson *et al.*, 2011:72), and was also found to be inadequate to fully explore all human dimensions regarding their environmental perceptions and to differentiate between distinct environmental perceptions (Manoli, Johnson, Buxner & Bogner, 2019:10).

Eco-affinity and eco-awareness are two differentiated dimensions of environmental perception which are explored by the CEPS scale (Larson *et al.*, 2011:72). Eco-affinity is understood as an interest in nature and the predisposition to carry out actions that favour the environment. Eco-awareness refers to a person's understanding of environmental issues, such as the sustainability of farming establishments (Corraliza & Collado, 2019).

The current study applied the CEPS scale and tested its suitability for adult groups by measuring their environmental and agri-orientation towards the farming environment and agritourism (Appendix A: Section B).

In order to develop environmental affinity and agri-knowledge requires more input than an overall awareness, consciousness, and an interest in the environment. A comprehensive understanding of human, agricultural, and natural systems and processes are required (Elder, 2003:16). According to Larson *et al.* (2011:85), the evaluation tool may assist researchers to examine the ways individuals perceive the natural world. Shaping of individuals and understanding of ecological issues and guiding how they perceive and interact with the environment; environmental knowledge influences one's environmental orientation. The next section presents the second concept of agri-environmental literacy agri-knowledge.

3.3 AGRI-ENVIRONMENTAL KNOWLEDGE AS A DIMENSION OF AGRI-ENVIRONMENTAL LITERACY

The promotion of agri-environmental knowledge is an underlying dimension of environmental education (EE) (Liobikienė & Poškus, 2019:2). Roth (1992) stated that effective EE is essential to develop EL citizens with attitudes, sensitivity and appropriate knowledge regarding environmental concerns (Veisi *et al.*, 2019:27).

Such citizens should also have a set of related problem-solving, planning and collaborative skills and action strategies. According to Bryant and Hungerford (1977), cultivating EL individuals that can act on critical environmental issues and are willing to take that action is an important goal of EE (Veisi *et al.*, 2019:27).

Environmental knowledge in the broader context comprises all the cognitive understandings of the environment and its associated problems (Roth, 1992). Section 3.3.1 defines agri-environmental knowledge as a dimension of agri-environmental literacy.

3.3.1 Defining agri-environmental knowledge

Various definitions of knowledge exist in the literature. The Tbilisi Declaration (UNESCO, 1978:3) puts forward a comprehensive definition of knowledge as an environmental dimension, outlining it as means of helping "individuals and social groups gain a variety of experiences with the total environment and to acquire a basic grasp of the environment, its associated difficulties and humanity's critical responsible presence and role in it". Knowledge has also been defined as "the general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems" (Fryxell & Lo 2003:48). Another explanation of knowledge refers to "individuals' familiarity with facts, information and principles relating to environmental sustainability" (Ramsey & Rickson, 1976:20; Wiernik, Ones & Dilchert, 2013:831; Zsóka *et al.*, 2013:127).

Environmental knowledge depends on one's comprehension of the ecological processes and one's familiarity with environmental issues and their source (Heo & Muralidharan, 2019:423). Knowledge gives people context and a frame of reference for something as in this study referring to a working farm. Iozzi (1989:3) suggested that knowledge is essential to engage in environmental behaviour. Haron *et al.*

(2005:427) concurred and defined environmental knowledge as one's ability to comprehend and assess the effects of society on the ecosystem. One way to demonstrate knowledge is through one's ability to identify the causes and consequences of environmental problems (Haron *et al.*, 2005:427). Knowledge of issues and action strategies is therefore important in developing an EL citizenry.

Knowledge has been recognised as an antecedent of ER behaviour since the 1970s, with the introduction of the linear model, despite the linear relationship of knowledge, attitude and ER behaviour being identified as weak (Shamuganathan & Karpudewan, 2015:765).

For the current study, the term agricultural and environmental knowledge was taken from the EE and EL domains and applied to the context of agritourism and the agri-environment, referred to as agricultural and environmental knowledge; therefore, mainly referring to:

- The potential agritourism awareness of agri-environmental facts, information and principles as a place where agritourism takes place (working farm);

- knowledge and awareness regarding and causes of environmental problems that farms and agritourism at large experience, and possible social solutions to those problems; and

- a potential tourist's ability to understand and evaluate the influence of society on the ecosystem in which agritourism takes place.

Against this background, the definition of agri-environmental knowledge is that it is an individual's knowledge and ability to comprehend and assess the facts, information and principles relating to the agri-environment (farm) as the host of agritourism, the causes of environmental problems affecting the agri-environment, and possible social remedies for these problems. Knowledge has the potential to influence an individual's attitude, leading to responsible actions (Biswas, 2020:5923).

It was essential for the current study to further investigate the general environmental knowledge scales found in EE and EL to be able to measure agricultural and environmental knowledge amongst potential tourists. The measurement scales used in the literature to measure environmental knowledge are discussed next.

3.3.2 The measurement of agricultural and environmental knowledge

It is crucial to develop agricultural environmental knowledge as it is linked to ER behaviour and green purchase behaviour (Jhanji & Kaur, 2019:1057; Li, Zhao, Ma, Shao & Zhang, 2019:28). Various studies have measured environmental knowledge in the context of environmental studies (Alp, Ertepinar, Tekkaya & Yilmaz, 2006; Conradie, 2017; Fah & Sirisena, 2014; Heo & Muralidharan, 2019; Kim, Kim & Thapa, 2018; Leeming *et al.*, 1995; Levine & Strube, 2012; Liang *et al.*, 2018; Liobikienė & Poškus, 2019; Liu *et al.*, 2020; McBeth & Volk, 2010; Mostafa, 2009; Rahman, 2019; Stevenson, Peterson, Bondell, Mertig & Moore, 2013; Szczytko, 2018; Veisi *et al.*, 2019; Wang *et al.*, 2018; Xiao & Hong, 2010; Zsóka, Szerényi, Széchy & Kocsis, 2013).

The literature has reported on the findings of agricultural and environmental knowledge research, and 21 of these studies are summarised in Table 3.1. Table 3.1 outlines the author, measurement scale, population or sample used in their study, and the example of the type of items used in their measurement scale.

Table 3.1: **Summary of measuring scales of environmental knowledge**

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Liu *et al.* (2020)	Chinese environmental knowledge scale (CEKS)	Chinese residents (2010 Chinese General Social Survey) (CGSS2010).	True or False	E.g. Acid rain has nothing to do with coal burning. " "A single-species forest is more likely to lead to pests and diseases."
Heo & Muralidharan (2019)	Kaiser scale for environmental issues (KSEI)	Younger millennials (18–24 years old), US.	Yes or no	E.g. Each consumer's behaviour can have a positive effect on society by purchasing products sold by socially responsible companies. "Since one person cannot have any effect on pollution and natural resource problems, it does not make any difference what I do."
Liobikienė & Poškus, 2019	Adapted from Frick, Kaiser & Wilson (2004)		Four-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (4)	E.g. Travel by train is less polluting compared to travel by plane. "Consumption of Lithuanian apples has less environmental impact than consumption of apples imported from the Netherlands."
Rahman (2019)	Developed a scale based on the Environmental Education Across the Curriculum guidebook (Ministry of Education)	Secondary level between the ages of 11 and 14 years old in Malaysia.	Multiple-choice questions	E.g. What can mainly be produced from animal faeces? A. Food B. Fertiliser C. Water D. Medicines Plants give/provide us with these resources:

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
				I. Food
				II. Medicines
				III. Water
				IV. Gold
				A. I and II
				B. II and III
				C. I, II and III
				D. I, II, III and IV
Veisi *et al.* (2019)	Developed a scale	SBU university students in Tehran, the capital of Iran.	Five-point Likert-type scale, ranging from "strongly disagree" (1) to "strongly agree" (5)	E.g. The main cause of the extinction of plant and animal species is human-caused habitat destruction. "Environmental problems caused by overpopulation"
Kim *et al.* (2018)	Developed and empirically tested in prior studies	Domestic visitors, Jeju Island South Korea.	Seven-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7)	E.g. I am very knowledgeable about environmental issues. "I become incensed when I think about the harm being done to this destination's plants and animals by pollution."
Liang *et al.* (2018)	Developed a scale	Undergraduate students in Taiwan.	True or False questions and multiple-choice questions.	E.g. The ultimate goal of natural environment conservation is to attain biodiversity, which signifies the utmost variety of different species "Which of the following statements about information on conservation is correct?"

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Szczytko *et al.* (2018)	Developed a scale	University students in Agriculture Applications courses in North Carolina.	Multiple-choice questions	E.g. Ecological Knowledge: "What would most likely pollinate a flower with red petals and no odour?"
Conradie (2017)	Adapted CHEAKS	Secondary school learners in Gauteng (South Africa) (aged 13–17).	Multiple-choice questions	E.g. Which of the following bird species is on the endangered list? 1) Rosy faced lovebird 2) Laughing dove 3) Crowned lapwing or plover 5) Blue crane
Fah & Sirisena (2014)	Environmental Literacy Survey (ELS)	Secondary school students, Malaysia.	Multiple-choice questions	E.g. All of the same individual organisms that live on the ground in a particular forest share the same: 1) niche 2) habitat 3) lifestyle 4) food source
Wang *et al.* (2018)	Developed a true or false scale	Rural residents in China.	True or False	E.g. Coal is a renewable resource. "Waste batteries cause no harm to the environment and human health."
Stevenson *et al.* (2013)	Middle School Environmental Literacy Survey MSELS	Middle school learners in North Carolina, US (age 11–15 years).	Multiple-choice items	E.g. If there were no decomposers left on Earth, what would happen?

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Zsóka *et al.* (2013)	Listing environmental problems	University students (age 18–24) and high school learners (age 14–18) in Hungary.	Provide a list	Number of environmental problems students could list. E.g. Listed problems: Water pollution, climate change, air pollution, biodiversity loss and the growing amounts of waste and man-made catastrophes.
Levine & Strube (2012)	National Environmental Education & Training Foundation NEETF/Roper survey	University students in Washington, US.	Multiple-choice items	E.g. There are many different kinds of animals and plants, and they live in many different types of environments. What is the word used to describe this idea. It is … a) Multiplicity b) Biodiversity c) Socioeconomics d) Evolution e) Don't know
McBeth & Volk (2010)	MSELS	Middle grade learners (age 11–15 years) in the US.	Multiple-choice items	E.g. A, grassland turns into a desert. What will most likely happen to the animals that live in the grassland? a) Most will leave or die b) They would have more babies to survive c) Those that eat grass would adapt to new food
Xiao & Hong (2010)	Chinese General Social Survey (CGSS)	Urban Chinese residents.	True or False	E.g. Overusing fertiliser and pesticides will damage the environment.

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Mostafa (2009)	Adapted from Ellen, Eroglu & Webb (1997)	Citizens in Kuwait.	True or False	E.g. I know more about recycling than the average person. "I understand the environmental phrases and symbols on the product package."
Alp *et al.* (2006)	Adapted CHEAKS	School learners (ages 11–17) in Turkey.	Multiple-choice items	E.g. A species that no longer exists is: 1) protected 2) endangered 3) abundant 4) extinct 5) wild game
Coyle (2005)	NEETF/Roper measuring instrument	Adults in the US.	Multiple-choice items	What is the most common cause of pollution of streams, rivers, and oceans? Is it ... 1) Dumping of garbage by cities 2) Surface water running off yards, city streets, paved lots, and farm fields 3) Trash washed into the ocean from beaches, or 4) Waste dumped by factories. 5) Don't know
Haron *et al.* (2005)	General knowledge related to the environment	Urban and rural citizens of Selangor, Malaysia.	True, False or Do not know	E.g. All living things play an essential role in maintaining balance in the ecology. "Most rivers in Malaysia are polluted"

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Leeming *et al.* (1995)	CHEAKS	Elementary (ages 5–10 years) and middle school learners (ages 11–15 years) in the US.	Multiple-choice items	E.g. Ecology is the study of the relationship between: 1) different species of animals 2) plants and the atmosphere 3) organisms and their environments 4) man and other animals. 5) man and the environment.

Table 3.1 summarised the scales used to measure environmental knowledge from various secondary research sources (21 studies). The suitability of scales measuring environmental knowledge and their applicability to the current study is evident from the table. Most of the secondary research reported emanated from Asian countries (China, South Korea, Malaysia and Taiwan), followed by the US. Research conducted in Iran, South Africa, and Lithuania was also reported. The following measurement scales were applied to measure environmental knowledge:

- The knowledge subscale of the MSELS (McBeth & Volk, 2009; Stevenson *et al.* 2013);

- NEETF/Roper survey (Coyle, 2005; Levine & Strube, 2012);

- Knowledge subscale of the CHEAKS (Alp *et al.*, 2006; Leeming *et al.*, 1995; Conradie, 2017);

- Chinese environmental knowledge scale (CEKS) (Liu *et al.*, 2020);

- Chinese General Social Survey (CGSS) (Xiao & Hong, 2010);

- Wisconsin Environmental Survey (WES) (Fah & Sirisena, 2014);

- Kaiser scale for environmental issues (Heo & Muralidharan, 2019).

It is noted that different authors have applied the environmental knowledge scale based on a specific destination (Haron *et al.*, 2005; Heo & Muralidharan, 2019; Kim *et al.*, 2018; Liang *et al.*, 2018; Liobikien˙e & Poškus, 2019; Mostafa, 2009; Szczytko *et al.*, 2018; Wang *et al.*, 2018; Veisi *et al.*, 2019; Rahman, 2019; Zsóka *et al.*, 2013).

It is evident from Table 3.1 that several different questions measure environmental knowledge. The measurement scales commonly used to measure pro-environmental behavioural intentions are the environmental knowledge subscale of the CHEAKS and the verbal commitment subscale of the MSELS. These two scales make use multiple-choice questions to capture a participant's knowledge base.

Of note is that the measurement scales in literature have been applied to various contexts, samples or target groups, including measuring the environmental knowledge of different generations, such as:

- Primary or elementary school children, ages 5–10 years (Leeming *et al.*, 1995);

- Middle school learners, ages 11–15 years (Conradie, 2017; Leeming *et al.*, 1995; McBeth & Volk, 2009; Rahman, 2019; Stevenson *et al.*, 2013);

- High school learners, ages 14–18 years (Alp *et al.*, 2006; Conradie, 2017; Fah & Sirisena, 2014; Leeming *et al.*, 1995; Zsóka *et al.*, 2013);

- University students (Levine & Strube, 2012; Liang *et al.*, 2018; Szczytko, 2018; Veisi *et al.*, 2019; Zsóka *et al.*, 2013);

- Adults (Haron *et al.*, 2005; Liobikien˙e & Poškus, 2019; Liu *et al.*, 2020; Mostafa, 2009; Xiao & Hong, 2010; Wang *et al.*, 2018);

- Millennials (Heo & Muralidharan, 2019); and

- Tourists (Kim *et al.*, 2018).

The target population for the current study consisted of any potential agritourists that can benefit from this type of tourism. The scale development followed the guidelines presented in previous research by Conradie (2017) to achieve the current study's objectives, namely, to measure general agri-enviro knowledge. Knowledge and cognitive skills are best measured with locally relevant questions that would assist in standardising country-specific scales (Szczytko *et al.*, 2018:205).

This section provided a summary of various environmental knowledge scales as used to measure this concept in literature. Apart from the measurement scales reported in the secondary literature, the literature review findings were synthesised based on the environmental knowledge, as discussed below.

3.3.3 Synthesis of the findings from secondary literature on environmental and agri-knowledge

The following synthesis is reported regarding environmental knowledge literature:

- It is observable that the elements used to measure environmental knowledge include plants and animals, species' knowledge, ecological concepts, action-specific environmental knowledge and system knowledge (Conradie, 2017:138; Veisi *et al.*, 2019:31), as well as subdomains, such as animals, energy, water, conservation, recycling, pollution and other general items (Alp *et al.*, 2006:213; Leeming *et al.*, 1995:19; Veisi *et al.*, 2019:31). Furthermore, the measurement scales included biodiversity, pollution, renewable resources, waste management, and animal species (Szczytko *et al.*, 2019:196). These elements were used as a

guideline to develop the questions used in the current study to measure the potential agritourists' agricultural and environmental knowledge. Furthermore, the types of questions used to measure environmental knowledge were mainly constructed in a multiple-choice scale. Consequently, the multiple-choice response format was applied in the current study to test the agricultural and environmental knowledge of potential agritourists (refer to Section 4.4).

- Moreover, the secondary literature reports relatively low levels of environmental knowledge amongst university students (Liang *et al.*, 2018:1; Levine & Strube, 2012:316; Veisi *et al.*, 2019:36), school learners (Alp *et al.*, 2006:214; McBeth & Volk, 2009:61) and adults (Coyle, 2005:iv). Chinese adult men possessed significantly more environmental knowledge than women (Xiao & Hong, 2010:101). Malaysians performed well on primary or general environmental knowledge but low on complex environmental knowledge (Haron *et al.*, 2005:435). These results indicated that participants engaging in EE activities outdoors showed higher environmental knowledge than those who did not (Stevenson *et al.*, 2013:8). Therefore, suggesting that outdoor activities significantly influence environmental knowledge (Duerden & Witt, 2010:385). It is important to note that unsustainable outcomes can result from insufficient and unsound knowledge, misleading environmental perceptions, and erroneous decoding; therefore, knowledge plays a critical role in sustainability and environmental literacy (Biswas, 2020:5924).

- Studies in China reported different results, as higher levels of knowledge regarding environmental issues translated into PEB, thereby not exhibiting the knowledge-behaviour gap demonstrated somewhere else (Xiao & Hong, 2010:88).

- It has also been found that environmental knowledge significantly influences green purchase behaviour, or is at least, an important predictor influencing green purchase behaviour among youth groups (Jhanji & Kaur, 2019:1058).

- Overall, education and environmental knowledge are reported to be the strongest predictors of environmental behaviour. Respondents with higher education and environmental knowledge showed significantly more active participation in all environmental activities and behaviour (Xiao & Hong, 2010:99).

- Despite the limited generalisability of the sample, Heo and Muralidharan (2019:413) reported EK to be directly related to EC, suggesting that young

consumers are knowledgeable about environmental issues and are likely to be highly concerned about the environment. Despite their high level of knowledge and confidence, young Millennials are likely not engaged enough to behave in an ER manner (Heo & Muralidharan, 2019:432).

The development of environmental awareness, knowledge, and skills are considered essential to help minimise environmental problems; therefore, environmental education is critical in creating an EL society (Liang *et al.*, 2018:2). Even though most cases did not report knowledge as directly influencing environmental behaviour, it can influence an individual's attitude, which in turn leads to responsible actions (Biswas, 2020:5922).

According to Szczytko *et al.* (2018:204), knowledge has the most impact on behaviour when tied to affective factors such as attitudes, emotions, or past experiences. The affective factor element reflects one's empathetic and caring attitude toward the environment recognising the values of environmental quality and being prepared to assist, prevent and resolve environmental problems and issues (Liang *et al.*, 2019:3).

Environmental knowledge does not always successfully translate into environmental action (Liang *et al.*, 2018:15). Consequently, attitudes towards nature, the environment and farming represent the affective dimension that is included in the current study. The third dimension of the conceptual agri-environmental literacy and PsyCap model's for agritourism (refer to Figure 3.1): attitudes towards nature, environment and farming are discussed in Section 3.4.

3.4 ATTITUDE TOWARDS NATURE, ENVIRONMENT, FARMING, AND AGRITOURISM

Several researchers (Hens *et al.*, 2010; Kaiser *et al.*,1999; Kollmuss & Agyeman, 2002) have highlighted the significance of attitude towards adopting environmentally friendly practices or PEB. Environmental literacy provides a strong foundation for future environmental responsiveness and the transition towards more sustainable societies and healthy living (Biswas, 2020:5922). Attitude is one of the variables that can predict environmental literacy and ER behaviour (Veisi *et al.*, 2019:28).

While demographic differences have proven ineffective in determining PEB, attention shifted to psychological factors, encompassing elements like attitudes (Li *et al.*,

2019:28). This is one of the reasons why Ajzen (1991) established the TPB, proposing that people's behavioural intentions are prompted by attitudes (Li *et al.*, 2019:28). The Tbilisi Declaration encourages positive environmental attitudes as one of the categories or objectives of environmental education, which refer to attitude as a means of helping "social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection" (UNESCO, 1978:15).

Section 3.4.1 defines an agri-environmental attitude, followed by Section 3.4.2 which provides an overview of a list of studies measuring environmental attitudes and values. An analysis of various scales is used to measure environmental attitudes and values which is conducted to choose the most appropriate measurement scale for the current study. The section concludes with a synthesis of the main findings from the secondary literature relating to environmental attitudes and values.

3.4.1   Defining agri-environmental attitude

The secondary literature provides various terms, definitions or explanations of the term 'environmental attitude'. Environmental attitude has been contextualised as one concept, which include personal values, wants and needs all related to the natural environment (Liang *et al.*, 2018:3; Marcinkowski, 1997:168; Veisi *et al.*, 2019:28). It is specifically concerned with how an individual's performance or behaviour is valued as either favourable or unfavourable (Li, Wang, Xue, Zhao & Zhu, 2020:28). According to Liu *et al.* (2020:155), the ambiguity towards human attitudes has led to a lack of clarity regarding the definition of the concept in social psychology. This ambiguity is because environmental attitude is a latent construct; therefore, it cannot be observed directly.

Environmental attitude, as a construct, has been interpreted as the extent to which a person cares for the environment according to an individual's environmental values and beliefs (Liu *et al.*, 2020:2). If viewed as an affective element of environmental literacy, it is referred to as an individual's empathetic and caring attitude toward the environment, while being aware of the values of the environmental quality (Liu *et al.*, 2020:2).

Attitude has the potential to lead an individual to take appropriate action to prevent and resolve environmental problems (Liang *et al.*, 2018:3). Marcinkowski (1997:168) classified the affective dimensions seen from the context of an environmental study,

as a set of values, environmental sensitivity, feelings and attitude of concern, and motivation to participate actively in environmental improvement. Liu *et al.* (2020:2) added the environmental awareness and decision-making attitude a person can hold towards environmental issues, which is seen as an affective dimension. Environmental attitudes are commonly measured among these range of categories (Marcinkowski, 1997:168).

Attitudes, values and concerns are frequently measured in environmental studies to monitor individual preferences towards nature (Torkar & Bogner, 2019:1570). Hence, Stern *et al.* (1993) proposed a Value-Belief Norm (VBN) theory classification. The VBN theory is concerned with values or valued objects. Values are a source of environmental concern: people's attitudes regarding environmental challenges and PEB are assumed to be based on self, and other people's or all living things' value orientations (Stern *et al.*, 1993:326). Schroeder (2011:213) described values as a feeling or sense of importance, worth, or significance that something has for someone which can be different for individuals.

O'Neill, Holland, and Light (2008:1) described values as ways individuals' actions and surroundings matter. Different approaches and considerations contribute to the interconnected realm of action. Schwartz and Bilsky (1987:551) presented a definition of values as "concepts or beliefs, about desirable end states or behaviour, that transcend specific situations, guide selection or evaluation of behaviour and events, and are ordered by relative importance". Various authors in literature make use of a multitude of terms when reporting on value, which include:

- Environmental values and attitude (Regmi, Johnson & Dahal, 2019);
- Environmental world views (Bernstein, 2020; Ling, Landon, Tarrant & Rubin, 2020; Srbinovski & Stanišić, 2020);
- Ecological values (Derdowski, Grahn, Hansen & Skeiseid, 2020);
- Environmental values (Bogner, 2018);
- Ecological world view (Arcury, Johnson & Scollay, 1986; Ballew *et al.*, 2019; Blaikie, 1992);
- Environmental attitudes (Heberlein, 2012);

- Environmental concern (Dunlap, Van Liere, Mertig & Jones, 2000, Dunlap, 2008; Gifford & Nilsson, 2014);

- Global environmental attitudes (Leeming *et al.*, 1995); or

- Environmental beliefs and values (Corraliza & Berenguer, 2000; Wensing, Carraresi & Bröring, 2019).

The concept of values differ from attitudes as *attitudes* are positive or negative evaluations of something quite specific, whereas values can be regarded as a more general concept (Dietz & Shwom, 2005:346). Environmental attitudes can flow from a value orientation that reflects concern for the welfare of other human beings (Stern & Dietz 1994:325). According to Lawson and Loudon (1996:81), values have more pervasive influences on behaviour as they work on a higher level of abstraction and are deeper-seated in a person. Behaviour can then be grounded based on the value concept (Higham & Carr, 2002:278). A potential agritourist's attitude toward nature, the environment, and farming will be influenced by their environmental values.

Ajzen (1985) generally defined attitude as the subjective cognition and evaluation regarding a specific behaviour of an individual. Environmental attitude is defined as a "collection of beliefs, affect, and behavioural intentions a person holds regarding environmentally related activities or issues" (Schultz *et al.*, 2004:31). According to Milfont and Duckitt (2010), environmental attitude is a psychological tendency expressed by evaluative responses to the natural environment with some degree of favour or disfavour. Biswas (2020:5925) defined environmental attitude as "a complex function of psychological and social values, beliefs and behavioural intentions". Liu *et al.* (2020:3) added that environmental attitude is a psychological tendency expressed by evaluating a particular entity with some degree of favour or disfavour in relation to a cause.

Environmental attitudes are psychological tendencies expressed by evaluative responses to the natural environment with some degree of favour or disfavour (Milfont & Duckitt, 2010). Bagozzi, Gopinath and Nyer (1999) emphasised that affection is a psychological feeling that representing environmental sensitivity, which generates inner environmental concern of same kind. Zheng *et al.* (2020:317) claimed that through environmental attitudes, social groups and individuals can acquire the value concerning the environment and actively participate in environmental improvement

and protection such as green peace movement. Environmental attitude is a process of developing attitudes of appreciation and concern for the environment (Biswas, 2020:5925). Moreover, with education, attitude can change with time and experience acquired through informal and non-formal means of gaining environmental literacy. For this study, the terms environmental attitude and values were taken from EE and environmental psychology literature and were applied to the context of tourism more specifically agritourism and agritourism environment (farming). In summary, environmental attitudes and values regarding an agritourism environment (working farm) refer mainly to:

- personal social values, beliefs and behavioural intentions regarding the agritourism environment;

- agri-environmental collection of beliefs, affect, and behavioural intentions a person holds regarding agri-environmentally related activities or issues;

- desirable values or attitudes towards the agritourism environment;

- evaluation of, or an attitude towards, the facts of one's behaviour, or others' behaviour, with consequences for the agri-environment;

- guide selection or evaluation of environmental behaviour and events ordered by a person's relative importance;

- appropriate action needed toward agritourism environment;

- an individual's environmental beliefs and values which will then influence how one relates to the environment;

- formed environmental beliefs and values guiding one's sensitivity, concerns and action towards the environment and

- the effect of awareness of environmental quality can be through formal or informal means, evaluation and related.

To understand how potential agritourists perceive nature, the environment, and farming, the current study examined tools that measure general environmental values and attitudes. These tools are described in Section 3.4.2.

3.4.2 Measuring attitudes towards nature and environment to measure agri-attitude

To measure environmental attitudes and values it led to the development of majority of measurement scales (Johnson & Manoli, 2010:85; Bogner, 2016:1). As a results, lack of a common measurement scale has contributed to a lack of the importance of environmental attitude (Johnson & Manoli, 2010:85). Understanding the significance of attitude and behaviour and how they evolve as a result of education is crucial for the promotion of products that relies on nature. According to Bogner (2006:248), many existing environmental attitude scales measure seemingly related constructs; however, confirmatory research in this context is limited. A total of 19 studies which use different measuring instruments to report findings related to environmental attitudes and values were investigated and provided in Table 3.2. A summary of these scales used to measure environmental attitudes and values, by various authors (Ataei, Aliabadi, Norouzi & Sadighi, 2018; Biswas, 2020; Bogner 2016; Bogner & Wiseman, 2006; Coyle, 2005; Heo & Muralidharan, 2019; Johnson & Manoli, 2010; Kim *et al.*, 2018; Leeming *et al.*, 1995; Liang, 2018; Liobikienė *et al.*, 2019; Liu *et al.*, 2020; Manoli *et al.*, 2019; McBeth & Volk, 2010; Mostafa, 2009; Rahman, 2019; Stevenson *et al.*, 2013; Veisi *et al.*, 2019; Wang *et al.*, 2018; Zsóka *et al.*, 2013) is provided in Table 3.2. The majority of the secondary research studies reported in Table 3.2 is from the US. Research conducted in Europe, Malaysia, Kuwait, Hungary, China, Ireland, South Korea, Taiwan, Iran, South Africa and India are also reported on in the table below.

Table 3.2:   Summary of measurement scales for environmental affect (attitudes and values)

Author			Type of questions or items	Examples of items
Biswas (2020)	Developed a measurement scale	Respondents from an Indian metro city and its suburban areas.	5-point Likert response format, ranging from "strongly disagree" (1) to "strongly agree" (5).	I always try to reduce the amount of electricity and water I use' as a measure of a sustainable lifestyle practice. I always keep a healthy diet.
Liu *et al.* (2020)	NEP Scale	Chinese Residents (2010 Chinese General Social Survey).	Five-point Likert-type scale ranging from (1) "strongly disagree" to "strongly agree" (5).	E.g. If things continue on their present course, we will soon experience a major ecological catastrophe. Human beings are the most important in order to meet our own needs, we can change the natural environment.
Heo & Muralidharan (2019)	New Environmental Paradigm scale (NEPS)	College students, who comprise a significant portion of younger Millennials (18–24 years old). US.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. when humans interfere with nature, it often produces disastrous consequences. Humans are severely abusing the environment'.
Liobikien˙e *et al.* (2019)	New Environmental Paradigm scale NEPS	Lithuanian citizen (Lithuania, Europe).	Four-point Likert scale ranging from "strongly disagree never behave" (1) to "strongly agree always behave" (4).	E.g. The so-called ecological crisis facing humankind is real. Only changing behaviour will solve environmental problems.
Manoli *et al.* 2019	2-Mev-Scale & NEP	4th and 5th-grade students. US.	Five-point Likert-style response ranging from "strongly agree" (5) to "strongly disagree" (1).	E.g. Preservation: I would help raise money to protect nature. (2-Mev-Scale). Utilisation: People have the right to change the environment (nature).

Author			Type of questions or items	Examples of items
				NEP: People must still obey the laws of nature
Rahman (2019)	Developed a scale	Students at the primary and secondary levels between the ages of 11 to 14 in Malaysia.	Five-point Likert-type scale ranging from "fail" (1) to "excellent" (5).	I will learn how to conserve the environment.
Ataei *et al.* 2018	NEPS (revised version of New Environmental Paradigm)	agricultural knowledge-based employees in Kermanshah and Hamadan in Iran.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. Humans were meant to rule over the rest of nature.
Veisi *et al.* (2019)	Adapted from the New Ecological Paradigm Scale (NEPS)	University students in Iran.	Five-point Likert Response format, ranging from "strongly disagree" to (1) "strongly agree" (5).	E.g. Humans have the right to modify the natural environment to suit their needs. Plants and animals have as much right as humans to exist.
Liang *et al.* (2018)	Developed a measurement scale	Undergraduate students in Taiwan.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I think human lives are critically dependent on the supply of the earth's natural resources. I think there is a meaning and value for the existence of the plants and trees.
Kim *et al.* (2018)	Developed a measurement scale	Domestic visitors visiting Jeju Island in South Korea.	Seven-point Likert scale format ranging from "strongly disagree" to (1) "strongly agree" (7).	E.g. It frightens me to think that much of the food I eat is contaminated with pesticides during this trip. I get frustrated and angry when I think of the ways the tourism industry causes pollution.

Author			Type of questions or items	Examples of items
Conradie (2017)	Adapted the 2-MEV	Secondary school learners in Gauteng (South Africa) (aged 13–17).	Five-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5)	E.g. I save water because it is important for survival of birds Our planet has unlimited resources
Bogner (2016)	2-MEV scale	289 secondary school Irish students in Ireland.	Five-point Likert scale ranging from "I totally disagree" (1) to "I totally agree" (5)	E.g. We must build more roads so people can travel to the countryside. I enjoy gardening
Wang et al. (2018)	NEPS	Rural residents in China.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5)	E.g. Plants and animals have as much right as humans to exist If things continue on their present course, the environment of our future generations is severe
Boewe-de Pauw and Van Petegem (2013)	2-MEV	Children (ages 10–13) in Flanders, Guatemala and Vietnam	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5)	E.g. It upsets me to see the countryside taken over by building sites
Zsóka et al. (2013)	Developed a scale	University (age 18-24) and high school (age 14-18) students in Hungary.	Five-point Likert-type scale ranging from "I don't know" (1) to "fully agree" (5)	E.g. would you use your bike more frequently if there were better storage facilities for bikes at work? Would you use a car more frequently if cheaper gasoline? for cars)
Stevenson et al. (2013)	MSELS	Middle school learners in North Carolina, US (ages 11–15 years).	Five-point Likert-type scale ranging from "to a great extent" (1) "to no extent" (5)	To what extent do you spend time outdoors alone?

Author			Type of questions or items	Examples of items
			Agreement scale ranging from "strongly agree" (1) to "strongly disagree" (5).	
Johnson and Manoli (2010)	Revised 2-MEV	Upper elementary and middle school children (ages 9–12) in the US.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	Egg preservation If I ever have extra money, I will give some to help protect nature.
McBeth and Volk (2010)	MSELS	Middle grade learners (ages 11–15 years) in the US.	Five-point Likert-type scale ranging from "to a great extent" (1) "to no extent" (5).	E.g. To what extent do you spend time outdoors alone? E.g. I love the environment.
Mostafa (2009)	Adapted from Taylor & Todd (1995) scale	Citizens in Kuwait.	Five-point Likert-type scale Agreement scale ranging from "strongly agree" (1) to "strongly disagree" (5).	I (1 = dislike; 5 = like) the idea of purchasing green. I have a/an (1 = unfavourable; 5 = favourable) attitude toward purchasing a green version of a product.
Coyle (2005)	NEETF/Roper Score Card	Adults in US.	Multiple-choice items.	E.g. When it is impossible to find a reasonable compromise between economic development and environmental protection, which do you usually believe is more important: economic development or environmental protection? a) Economic development b) Environmental protection c) Depends on Landfills? d) Don't know

Author			Type of questions or items	Examples of items
Leeming *et al.* (1995)	Children's Environmental Attitude and Knowledge Scale CHEAKS	Elementary (ages 5–10 years) and Middle School Learners (ages 11– 15 years) in the US.	Five-point Likert response format ranging from "very untrue" (1) to "very true" (5).	E.g. It upsets me when I see people use too much water.
Bogner and Wiseman (2006)	2-MEV	Secondary School learners in Germany.	Five-point Likert-type scale ranging from "strongly disagree" to "strongly agree".	E.g. It makes me happy to see people trying to save energy.

Table 3.2 summarises the scales used to measure environmental values and attitudes as listed in the of 19 studies. In order to analyse and choose an appropriate scale for the current study, detailed information about the authors, measurement scales used, population or sample targeted, and types of items are discussed in this Section. A summary of these main findings are deducted from Table 3.2 are as follows.

- Scales applied to measure environmental attitudes and values are the MSELS, NEPS, 2-MEV, CHEAKS, and NEETF or Roper Score Card (Coyle (2005)

- To measure environmental attitudes, researchers (Krosnick, Judd & Wittenbrink, 2005; Milfont & Duckitt, 2010) have mainly used direct self-report methods (such as interviews and questionnaires) and less frequently implicit methods (such as observation, priming, and response competition measures). In most of the studies summarised in Table 3.2, surveys and/or scales were used to measure environmental attitudes, except for Levine and Strube (2012), who examined the relationships between explicit and implicit measures of environmental attitudes, knowledge, intentions, and pro-environmental intentions. The computerised Implicit Association Test (IAT) was used to measure implicit environmental attitudes to determine the strength of automatic associations (Levine & Strube, 2012:315).

- The most applied measure in the context of environment studies instrument is the NEP (Dunlap *et al.*, 2000), modified (Dunlap *et al.*, 2000). The objective of NEP scaling is to reveal a wide range of ecological perspectives and environmental items to verify the measured environmental concerns (Ntanos, Kyriakopoulos, Skordoulis, Chalikias & Arabatzis, 2018:1). Dunlap *et al.* (2008:5) assert that pro-environmental viewpoints are widely used in behaviour or attitudes explained by underlying values, world views, or paradigms.

- According to the NEP, environmental values are constructs with a one-dimensional higher-order factor structure, with two contrasting paradigms forming the extremes of a single dimension (Conradie, 2017:148). The NEP scale measures the degree of endorsement of an environmental world view from low to high range (Dunlap, 2008:9).

- The NEP scale has faced criticism regarding dimensionality (Hawcroft & Milfont, 2010:150). This is because the scale assumes that people have either pro- or anti-

environmental views (Dunlap *et al.*, 2000:440). The scale was revised to 15 items since it aimed to tap five key aspects, but they were recognised as not forming distinct dimensions and thus treated as one primary dimension representing an endorsement of an environmental world view (Manoli *et al.*, 2019:2).

- Among the scales that have gained support is the two-dimensional model of Ecological Values Scale 2-MEV scale (Bogner, 2016; Conradie, 2017; McBeth & Volk, 2009). The 2-MEV was developed in Europe to assess adolescents' attitudes and gauge the effectiveness of educational programmes (Munoz, Bogner, Clement & Carvalho, 2009; Oerke & Bogner, 2013). Its validity has been extended to adults (Munoz *et al.*, 2009; Oerke & Bogner, 2013). The 2-MEV scale was developed to measure higher-order factors (values, preservation and utilisation) based on primary attitudes. Rokeach (1968) clarified that the term "value" pertains to fundamental attitudes, while "values" encompass higher-order factors. Environmental values can be grouped into two factors, the higher-order preservation (PRE) factor reflecting usage of resources and the utilisation (UTL) factor reflecting protection of the environment (Wiseman & Bogner, 2013:787). Manoli *et al.* (2019:2) locate the importance of preserving and utilising environmental resources as a fundamental characteristic of the 2-MEV. This 2-MEV scale has gained popularity, and was endorsed and confirmed in literature based on the following:

    o despite including a larger number of items, the second-order structure is two factors (Milfont & Duckittk, 2010);

    o there has been confirmation of the secondary higher-order structure of PRE and UTL (Johnson & Manoli, 2010);

    o the 2-MEV model has been implemented within an eco-school initiative (Boeve-de Pauw & Van Petegem, 2013) and

    o adapted from diverse backgrounds, the 2-MEV scale enjoys worldwide use in close to 30 language versions and allows for inter-study comparisons by fitting well into the psychology of sustainable development simultaneously (Boeve-de Pauw & Van Petegem, 2013; Schultz & Swezey, 2013).

Additionally, the popularity of the 2-MEV-scale has been influenced by the adaptation of the scale by various scholars worldwide, for instance, in Japan, Western Europe

(Bogner & Wiseman, 2002) and sixteen other European countries (Munoz *et al.*, 2009); Flanders (Boeve-de Pauw & Van Petegem, 2013). The scale has also been adapted in non-European countries, such as Brazil, New Zealand, South Africa, and West Africa (Conradie, 2017; Milfont, 2007; Schultz & Zelezny, 1999) and the US (Johnson & Manoli, 2010).

The 2-MEV-scale measurement has been applied to various samples and target groups, such as:

- Adults (Ataei *et al.*, 2018; Biswas, 2020; Coyle, 2005; Liu *et al.*, 2020; Liobikienė & Poškus, 2019; Mostafa, 2009; Wang *et al.*, 2018);

- University students (Heo & Muralidharan, 2019; Liang *et al.*, 2018; Veisi *et al.*, 2019; Zsóka *et al.*, 2013);

- Primary school learners or elementary school learners (Johnson & Manoli, 2010; Leeming *et al.*, 1995; Rahman, 2019); and

- Secondary school learners (Bogner, 2016; Bogner & Wiseman 2006; Conradie, 2017; Leeming *et al.*,1995; McBeth & Volk, 2010; Rahman, 2019; Stevenson *et al.*, 2013; Zsóka *et al.*, 2013).

While both the NEP scale and the 2-MEV-scale have been validated in various situations and with different groups, it has been discovered that the NEP scale does not fully capture how individuals see the environment (Manoli *et al.*, 2019:8). On the other hand, the 2-MEV-scale does a better job at measuring if people have diverse opinions about preserving and using the environment than the NEP does.

In the current study, the 2-MEV-scale was used to measure how potential agritourists value nature, the environment, farming and agritourism. This section provides an overview of the scales used to measure environmental attitudes and values. Section 3.4.3 presents the synthesis of findings from the literature review on environmental attitudes and values.

3.4.3   Synthesis of the findings from the secondary literature regarding attitude toward nature and the environment

This section synthesises the main findings from the secondary literature relating to environmental values and attitudes.

- The secondary literature indicated that environmental attitude could influence PEB practices (Biswas, 2020:5928; Liu *et al.*, 2020:1; Jhanji and Kaur 2019:1055; Li *et al.*, 2019:28). For example, those with a more positive attitude are more likely to engage in pro-environmental activities, such as recycling and waste management (Li *et al.*, 2019:28). Veisi *et al.* (2019:34) confirmed a strong correlation between environmental attitude and students' sensitivity toward environmental protection. Liu *et al.* (2020:2) also reported a correlation between customers with higher environmental attitudes and the purchase of green products. Moreover, a high mean attitude score amongst students was also reported by Veisi *et al.* (2019:36). Other than general attitude, one's perceived pressure from social norms has also been reported to influence PEB (Veisi *et al.*, 2019:36). Liang *et al.* (2018:15) reported a high correlation between affective and behavioural elements, which are highly correlated with the value of PEB. The predictive value of attitudes is maximised in low conflict conditions and minimised in high conflict situations (Corraliza & Berenguer, 2000:843). The study by Corraliza and Berenguer (2000:843) found that, regardless of whether Millennials felt confident they would be able to solve environmental problems, they did not change their behaviour. As a result, consumer belief, especially among younger age groups, might not translate into actual PEB (Heo & Muralidharan, 2019:432).

- Age plays a role in PEB. For example, Boeve-de Pauw and Van Petegem (2013:551) found that PEB was more prevalent in older children compared to younger children across cultures.

- There is also evidence of demographic differences in literature. Studies have found that environmental knowledge has a substantial positive effect on attitudes toward the environment among women than on men (Gambro & Switzky 1999; Levine & Strube, 2012; Liu *et al.*, 2020). Learning about the environment could therefore result a positive environmental attitude among women than among men.

- The location of one's residence influences one's PEB, as rural respondents displayed significantly more PEB than urban respondents (Liu *et al.*, 2020:9).

- Generally, people exhibit moderately favourable environmental behaviour (Boyes, Skamp & Stanisstreet, 2009:669; Levine & Strube, 2012:316). Coyle (2005:35) found that 85% of Americans reported PEB, such as frequently turning off lights and electrical appliances when not in use; 61% indicated frequently conserving

water in their homes, and 59% frequently recycled their household waste. However, few individuals (9%) took part in projects relating to the environment, such as volunteer clean-ups and alternative transportation.

- The literature review suggested significant variables affecting green consumption that are also related, such as, environmental concern, and the values and attitudes towards green consumption (Mostafa, 2009:11030). It was found, for instance, that two higher-order factors are associated with different environmental concerns, attitudes, and more specific behaviour, such as the utilisation of nature and preservation of nature (Bogner, 2018:5).

- Research has also indicated that nature as a source of relaxation and inspiration promotes PEB among those involved in such tourism products (Bogner, 2018:5). According to Bogner (2018:5), nature is attractive for relaxation and inspiration, and therefore, it makes sense to indirectly measure the past behaviour of appreciative users of nature. A study conducted by Duerden and Witt (2010:379) demonstrated that both indirect and direct experiences with nature increase environmental knowledge and attitudes, although knowledge was indicated to have increased more than attitudes. The results suggested that spending time in nature increases attitudes towards the environment (Stevenson *et al.*, 2013:5). It is thus impossible to ignore the importance of values, attitudes, and environmental knowledge in nature-based tourism (Kim & Stepchenkova, 2020:1575).

- Biswas (2020:5928) suggested that higher education institutions, government agencies, and non-profit organisations (NGOs) should promote environmental literacy to develop environmental attitudes. Veisi *et al.* (2019:36) reported that attitudes can be positive even when having limited knowledge. Consequently, holding sufficient environmental knowledge would ultimately lead to a more positive attitude (Veisi *et al.*, 2019:36). Several studies, including that of Kaiser *et al.* (1999), Flamm (2009), Lee *et al.* (2015), and Casaló and Escario (2018) concluded that knowledge could foster environmental attitudes, and environmental attitudes could foster PEB. Some scholars argued that a pro-environmental attitude may not always be associated with PEB (Davies, Foxall & Pallister, 2002; Hansmann, Laurenti, Mehdi & Binder, 2020; Li *et al.*, 2019; Missimer, Robèrt & Broman, 2017; Oskamp *et al.*, 1991); therefore, it is crucial to possess the ability to implement a pro-environmental approach.

- To explore the causal relationship between ER behaviour and the development of sustainable tourism, Busby and Wu (2015:571) suggested that research should focus on factors such as attitude toward sustainable tourism and support for sustainable tourism. According to Levine and Strube (2012:319), attitudes are viewed most accurately through the lens of behavioural intention to environmental behaviour. The adoption of environmental behaviour practice has been found to be directly related to environmental attitudes, as environmental attitudes facilitate the adoption of sustainable lifestyles to protect the environment (Biswas, 2020:5928). In addition, ER behaviour is promoted by developing environmental attitudes and a conscience toward minimising environmental threats (Biswas, 2020:5928). McBeth and Volk (2009:59) found that attitudes, knowledge, cognitive abilities, and psychological characteristics interact.

  According to Wong *et al.* (2021:6), environmental sustainability, mental and psychological sustainability should also be considered amongst tourists. Individuals PsyCap determines their psychological sustainability (Luthans & Youssef Morgan, 2017).

Psychological factors are regarded as more relevant in understanding PEB than demographics and other factors (Li, 2019:31). In the context of agritourism, PsyCap has been related to pro-environment behaviour (Wong *et al.*, 2021:6). The current study explored the role of PsyCap in determining potential agritourist behavioural intention, and identified potential attributes that determine choosing agritourism.

As a result, Section 3.5 conceptualises PsyCap in the context of the development of a conceptual agritourism model.

3.5 PSYCAP AS A POTENTIAL SOURCE OF PRO-ENVIRONMENTAL BEHAVIOUR IN AGRITOURISM

PsyCap has been known to be a good predictor of satisfaction with important life domains, including work, relationships, and general health (Luthans *et al.*, 2013:128; Santisi *et al.*, 2020:8). PsyCap focuses on "who people are and develop what these individuals can become" (Luthans *et al.*, 2006a:40). PsyCap allows individuals to pursue self-actualising vocations (Tu, 2020:1). PsyCap also facilitates social and psychological development to help individuals overcome adversity and provides

cognitive strategies that build a sense of self-efficacy, optimism, hope, and resilience, all of which comprise PsyCap (Tu, 2020:1).

This section commences with Section 3.5.1, which contains the definitions or descriptions of PsyCap, followed by Section 3.5.2, which presents a summary of studies measuring PsyCap by using various instruments.

Various scales are used to measure PsyCap, which are then analysed to assist with choosing the most appropriate scale used in the current study (Section 3.5.2). Section 3.5.3 synthesises the main findings from the secondary literature about PsyCap.

3.5.1   Defining PsyCap

Traditionally, psychology focused on human alignments and how to fix what is wrong in our lives (Staples, 2014:22). Positive psychology has been defined as the "scientific and applied approach to uncovering people's strengths and promoting their positive functioning" (Edwards, Rand, Lopez & Snyder, 2007:3). In tourism, positive psychology is developed as a humanist-inspired study of an individual flourishing in tourism (Filep & Laing, 2019:343). Positive psychology is not new in tourism, as some key humanistic psychology works are related to those of Rogers, Maslow, Murray, Allport and May – referred to as the "grandparents" of humanistic psychology (Duckworth, Steen & Seligman 2005:632). PsyCap was developed due to a focus on positive capabilities as a means of improving and understanding the workplace; therefore, positive organisational behaviour is referred to as POB (Luthans, 2002b).

PsyCap has also been defined as a positive state of an individual characterised by self-efficacy, optimism, hope and resilience (Gustitia, 2019:324). Santisi *et al.* (2020:10) defined PsyCap as a positive characteristic that promotes the expression of positive resources and talents. A more comprehensive and a multidimensional construct of PsyCap was developed by Edwards *et al.* (2007:3), who defined it as:

> [A]n individual's positive psychological state of development that is characterised by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity,

sustaining and bouncing back and even beyond (resiliency) to attain success.

This definition has been adapted by various scholars and has been used in various studies (Avey *et al.*, 2010:20; Fang *et al.*, 2020; Hui *et al.*, 2014; Krasikova, Lester & Harms, 2015; Luthans *et al.*, 2013; Mao, He, Morrison & Andres Coca-Stefaniak, 2020:4; Memili, Patel, Koç & Yazıcıoğlu, 2020; Santisi *et al.*, 2020; Staples 2014; Sweet & Swayze 2017; Sweet, Swayze & Busse, 2019:130; Tsaur et al 2019:133; Tu, 2020:1).

PsyCap comprises four psychological resources: hope, self-efficacy, resilience and optimism (Luthans *et al.*, 2004:150). These four dimensions are discussed in 2.4.4.

There has been consistency regarding the definition of PsyCap in that it seen as 1) a fundamental of positive psychology; 2) a positive state of mind, and 3) promotes positive expressions and abilities.

The current study defines PsyCap as an individual's asset and a state characterised by self-efficacy, optimism, hope, and resilience that promotes the expression of positive resources (Gustitia, 2019:324; Santisi *et al.* 2020:10).

The current study investigated various PsyCap measurement instruments that are able to measure the potential agritourist's PsyCap, as discussed below.

3.5.2   Measurement of PsyCap

Measurement scales quantifying PsyCap have been used consistently in the literature. Luthans, Avolio and Avey (2007) developed a PsyCap scale from recognised, published efficacy, hope, optimism, and resilience measures. Since the development of the PsyCap scale by Luthans *et al.* (2007c), there have been various studies on PsyCap.

A summary of scales that were used to measure PsyCap by various authors (Avey *et al.*, 2010; Diedericks, 2016; Edwards *et al.*, 2007; Fang *et al.*, 2020; Hui *et al.*, 2014; Krasikova *et al.*, 2015; Luthans *et al.*, 2013; Luthans *et al.*, 2012; Mao *et al.*, 2020; Memili *et al.*, 2020; Santisi *et al.*, 2020;; Staples, 2014; Sweet 2012; Sweet & Swayze, 2017; Sweet *et al.* 2019; Tsaur *et al.*, 2019; Tu, 2020) is presented in Table 3.3.

Table 3.3:   Summary of measurement scales for psychological capital (PsyCap)

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Wong *et al.* (2021)	PsyCap Questionnaire (PCQ) adapted from Yoon & Uysal (2005)	Domestic tourists in Macau.	Seven-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (7).	E.g. Hope: I will energetically pursue my goals during the COVID-19 pandemic.
Mao *et al.* (2020)	The PsyCap Questionnaire (PCQ) (PCQ) (Luthans *et al.*, 2007c)	Employees of tourism companies in China.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I feel confident analysing a long-term problem to find a solution.
Fang *et al.* (2020)	Was used as the basis for developing questions on self-efficacy, hope, optimism and psychological resilience	Small tourism business owners and managers in Kaikoura, New Zealand.	Interviewing was conducted in the field to give context.	E.g. Can you give me some examples from your personal life of how you have dealt with challenges? When challenges occur, do you persevere? Can you give some examples?
Memili *et al.* (2020)	27-item scale proposed by Berrone *et al.* (2012)	Turkish family firms in the hospitality and tourism industry.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. Emotions and sentiments often affect decision-making processes.
Santisi *et al.* 2020	PsyCap Questionnaire (PCQ) 12 items) of the original 24-item PCQ used	Italian workers.	Seven-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (7).	E.g. I feel confident analysing a long-term problem to find a solution I'm optimistic about what will happen to me in the future as it pertains to work.

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Tu (2020)	PsyCap Questionnaire (PCQ)	Economically disadvantaged children in Taiwan.	Five-point Likert-type scale ranging from "seldom" (1) to "always" (5).	E.g. I energetically plan something which represents children having the confidence to face challenges. I work hard to get success.
Tsaur *et al.* (2019)	12-item PsyCap Questionnaire (Luthans *et al.*, 2007c): hope (2 items), optimism (4 items), resilience (3 items), and self-efficacy (3 items)	Front-line employees in customer service-orientated tourism and hospitality enterprises in Taiwan.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I am confident that I could deal efficiently with unexpected events. I can get past difficult times at work because I have experienced difficulty before.
Sweet *et al.* (2019)	24-item PsyCap Questionnaire (PCQ) (Luthans *et al.*, 2007c)	First-year students at Liberal arts college in Atlanta, US.	Six-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. The way you see yourself right now: When I have a setback in my life, I have trouble recovering from it and moving on.
Sweet & Swayze (2017)	PsyCap Questionnaire (PCQ)	Nurses in the South-Eastern region of the US.	Six-point Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. I'm optimistic about what will happen to me in the future as it pertains to work.
Diedericks (2016)	PsyCap Questionnaire (PCQ)	Academics at the University of South Africa (Unisa).	A six-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. I can think of many ways to reach my work goals.

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Krasikova *et al.* (2015)	Adapted PCQ-12 (Luthans *et al.*, 2007c)	Deployed soldiers (US).	Six-point Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. I am confident in representing this unit (self-efficacy).
Hui *et al.* (2014)	Developed their own PsyCap Questionnaire	Workers from the Chinese workforce.	Multiple-choice questions	E.g. I can face danger fearlessly at work. A. Yes, B. No & C. At times.
Staples (2014)	A PsyCap questionnaire designed by Luthans *et al.* (2007c) to measure PsyCap (PCQ)	Workers within the US workforce.	Six-point Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. There are many ways around any problem that I am facing now at work.
Luthans *et al.* (2013)	PsyCap Questionnaire (PCQ) developed by Luthans *et al.* (2007c)	Working adult students at a Midwestern University, Arizona, US.	Six-point Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. I always look on the bright side of things regarding my personal relationships/health/life.
Luthans *et al.* 2012	PsyCap Questionnaire (PCQ) developed by Luthans *et al.* (2007c)	Undergraduate students enrolled for business courses at Midwestern University (US.)	Six-point Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. There are lots of ways around any problem concerning my schoolwork.
Sweet 2012	PCQ is a self-reported 24-item questionnaire	Community medical centre employees in the US.	Six-point Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. I feel confident analysing a long-term problem to find a solution.

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Avey *et al.* (2010)	PsyCap Questionnaire (PCQ)	Employees in today's workplace, Midwest (US).	Six-point Likert-type scale of agreement with response options ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. I feel confident analysing a long-term problem to find a solution.
Luthans *et al.* (2007c)	Developed PsyCap Questionnaire (PCQ)	The Midwestern United States. Engineers and technicians from a very large company.	Six-point Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (6).	E.g. Right now, I see myself as being pretty successful at work.

Table 3.3 provided a summary of 18 scales used to measure PsyCap. The table reported on the authors, the measurement scales used, the population or sample targeted, and the types of questions or items that were used to analyse and choose an appropriate scale to use in the current study. An analysis of the main findings in Table 3.3 is provided next:

- Research conducted in the US accounted for most of the secondary research. Also reported were studies conducted in China, South Africa, Taiwan, Turkey, Italy, and New Zealand.

- Many instruments do not quantify PsyCap. PsyCap is primarily measured by direct self-reporting, specifically through questionnaires or scales.

- PsyCap is commonly measured using the PsyCap Questionnaire (PCQ), designed by Luthans *et al.* (2007c). This scale is divided into the following four subscales: hope, efficacy, resilience, and optimism. The PCQ-24 consists of six items for each subscale, totalling 24 items in the measuring instrument. The PCQ-24 has undergone a wide range of psychometric analyses in various industries, including service, manufacturing, education, high technology, military and tourism (Avey *et al.*, 2010; Diedericks, 2016; Edwards *et al.*, 2007; Fang *et al.*, 2020; Hui *et al.*, 2014; Krasikova *et al.*, 2015; Luthans *et al.*, 2013; Luthans *et al.*, 2012; Mao *et al.*, 2020; Memili *et al.*, 2020; Santisi *et al.*, 2020; Staples, 2014; Sweet 2012; Sweet & Swayze, 2017; Sweet *et al.*, 2019; Tu, 2020; Tsaur *et al.*, 2019).

- The PCQ is applied to various contexts, samples, and target groups (Spark, 2012; Staples, 2014; Sweet & Swayze, 2017).

For the current study, the PsyCap Questionnaire (PCQ) developed by Luthans *et al.* (2007c) was selected and modified to determine its impact on potential agritourists' behavioural intentions and attributes that influence agritourism choice.

A synthesis of the findings based on the literature review of PsyCap is provided next.

3.5.3 Synthesis of PsyCap findings from literature

The main findings from the secondary literature are outlined below. During a literature review of PsyCap, it was found that the focus was primarily on workplace outcomes, leadership, employee performance, satisfaction, and the relationship between PsyCap and performance (Hui *et al.*, 2020; Luthans *et al.*, 2013; Luthans *et al.*, 2013; Sweet

et al., 2019). For example, the four scales used to measure PsyCap have been verified in workplace studies (Jensen & Luthans, 2006; Larson & Luthans, 2006; Luthans *et al.*, 2005; Peterson & Luthans, 2003).

The literature review also confirmed PsyCap as a higher-order factor (Edwards *et al.*, 2007:566). There is a positive relationship between job satisfaction and this higher-order factor (Edwards *et al.*, 2007:566). PsyCap is therefore suggested as a better predictor of performance and job satisfaction than the individual dimensions (self-efficacy, hope, resilience and optimism. Employees with high overall PsyCap had positive work engagement attitudes, improving their vigour and increased their work engagement attitude (Tsaur *et al.*, 2019:138).

In addition, PsyCap leads to employees' positive feelings, and stimulated individuals to take participate more fully in their work (Avey *et al.*, 2010; Larson & Luthans, 2006). PsyCap positively improves the quality of work-life (Kim *et al.*, 2017), overall life satisfaction (Paek Schuckert, Kim & Lee, 2015), as well as commitment and wellbeing (Avey, Avolio & Luthans, 2011; Luthans, Avey & Clapp-Smith, 2008; Avey, Luthans, Smith & Palmer, 2010). There is no indication that mediation affects the relationship between PsyCap and life satisfaction (Santisi *et al.*, 2020:9).

According to the literature review, it will be beneficial to study PsyCap holistically, and to examine its effects on work, relationships, and health (Luthans *et al.*, 2013:120). Thus, studies have been carried out to examine the effects of PsyCap in different areas of a person's life (Luthans *et al.*, 2013). According to Luthans *et al.* (2013:120), although positive attitudes are always associated with good health and social conditions, PsyCap is unique. It facilitates both the realisation of employees' work and positive outcomes, and satisfaction with health and relationships.

Luthans *et al.* (2013) examined PsyCap in different contexts and found it related to objective health outcomes, such as BMI (body mass index), cholesterol levels, and satisfaction with one's health. Furthermore, PsyCap predicted a person's satisfaction with his or her relationships, and his or her investment in such relationships (such as time spent with friends and family). Krasikova *et al.* (2015) found that soldiers with higher levels of PsyCap prior to deployment were less likely to suffer from mental health problems, such as anxiety and depression, than soldiers with lower levels of

PsyCap, and were less likely to suffer from substance problems, such as alcohol and drug abuse, than those with a low PsyCap prior to deployment.

Although Krasikova *et al.* (2015:287) found that the health perceptions of soldiers were a potential mediator of mental health problems, the effect of workplace fun on PsyCap was examined by Tsaur *et al.* (2019:133) and the mediating and moderating effects of PsyCap were examined.

The literature review suggested PsyCap as a means of managing unpredictable and unforeseeable social and economic environments to improve the following two dimensions of subjective wellbeing: flourishing and life satisfaction, which represent the indicators of quality of life (Santisi *et al.*, 2020:9). In their study, Santisi *et al.* (2020:8) established a correlation between PsyCap, life satisfaction and flourishing, and the results revealed that PsyCap had a positive effect on quality of life. Even though active leisure participation had no direct effect on PsyCap, leisure resources mediated the relationship (Tu, 2020:9). Active leisure participation has been found to contribute to positive psychology (Stewart, Smith & Moroney, 2013) and active lifestyles (Henderson & Bialeschki, 2005). By combining transformative learning (Coghlan & Weiler, 2018; Wolf, Ainsworth & Crowley, 2017) with attention restoration (Lehto, 2012; Rosenbaum, 2009), the study by Wong *et al.* (2021) illustrated how these two forces could jointly cultivate PsyCap.

From an environmental perspective, Afshar Jahanshahi, Maghsoudi and Shafighi (2020) aimed to determine whether individuals with high PsyCap demonstrated more ER behaviour at work than those with low PsyCap. The effects of three dimensions of PsyCap, namely, hope, optimism, and resilience, on ER behaviour at work were examined in Bangladesh by using employee survey data (Afshar Jahanshahi et al., 2020). The three dimensions of positive PsyCap (hope, optimism, and resilience) were found to be significantly related to employees' ER behaviour in the workplace (Afshar Jahanshahi et al., 2020).

Other studies have found that active leisure experience and nature are appealing to tourists (Votsi, Mazaris, Kallimanis & Pantis, 2014) and are beneficial to health. According to Abraham, Sommerhalder and Abel (2010), nature experiences promote attention restoration, reduce stress, and stimulate positive emotions. Tu (2020:9)

therefore proposes that nature travel should be encouraged to support and facilitate the individual's self-efficacy, hope, optimism, and resilience.

A study by Wong *et al.* (2021) aimed to test whether holiday programmes can cultivate learning opportunities and restorative benefits, emphasising temporary positive PsyCap outcomes. Wong *et al.* (2021) examined the effectiveness of staycation programmes in cultivating learning opportunities and restorative benefits. The authors emphasised the overall positive psychological outcomes amid the COVID-19 pandemic. In their study, Wong *et al.* (2021) discovered that short excursions could increase PsyCap by increasing hope, confidence, optimism, and resilience in the face of challenges (Wong, *et al.*, 2021).

The literature review suggested a difference in the level of PsyCap amongst different generations (Spark, 2012; Staples, 2014, Sweet & Swayze, 2017). Staples (2014) explored generational PsyCap differences across industries and found that Baby Boomers'[2] PsyCap scores were higher than that of younger generations. Sparks (2012) found significant differences among the various generations' psychological empowerment scores. Staples (2014:73) also reported a higher overall PsyCap score amongst Baby Boomers than among their younger counterparts. Furthermore, the older generations also displayed higher PsyCap optimism when compared to their younger counterparts (Staples, 2014:73). Similarly, in a study of nurses' overall PsyCap, Sweet and Swayze (2017) found that PsyCap significantly differed by generation. Baby Boomers reported the highest overall level of PsyCap, followed by Generation X,[3] with Millennials[4] reporting the lowest average scores on each PsyCap sub-scale (Sweet & Swayze, 2017:11). These findings suggest that additional experience will increase PsyCap (Sweet & Swayze, 2017:24).

In their discussion on trends and the course of research in tourism and positive psychology, Filep and Laing (2019:349) recommended that tourism research should rethink tourist motivation models by focusing on wellbeing throughout travel, rather

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[2] 'Baby Boomers' are the generation born between 1946 and 1964 (Dwyer & Azevedo, 2016).

[3] Generation X are those people born between 1965 and 1979 (Kotler, Armstrong, Harris & Piercy, 2013).

[4] Millennials are the generation of people born between 1981 and 2000, they are also referred to as Generation Y (Sanner-Stiehr & Vandermause, 2017).

than just on core motivation drivers. Tu's (2020:7) study suggested that upcoming tourism studies need to design and assess leisure participation to demonstrate that leisure participation is causally associated with PsyCap.

Researchers have mostly studied PsyCap within the workplace environment, and later, from a pandemic perspective (COVID-19) (Mao *et al.*, 2020:2). To realise the full potential of individuals, communities, regions, countries, and the world, Luthans (2012:7) recommended verifying and improving what is known about PsyCap and making further advances.

A wide range of attitudinal and behavioural outcomes have been theorised and empirically demonstrated in the numerous positive work-related effects of PsyCap. However, these may also have implications in other domains, such as health and relationships (Luthans *et al.*, 2013). An extended model of PsyCap, including multiple forms of PsyCap, such as work-related, health-related, and relationship-related, and the effect these would have on the outcomes within and across life domains, therefore needs to be prioritised in future research (Luthans *et al.*, 2013:120).

PsyCap is important, and therefore it should be tested beyond the occupational or work domain. The current study aimed to extend the stream of research by examining PsyCap within the works of environmental literacy and agritourism (Memili *et al.*, 2020:7). The fourth dimension of the conceptual literacy framework for the PsyCap literacy model for agritourism (Figure 3.1), namely, behavioural intention of different potential agritourists in terms of agri-environmental literacy and agritourism, is discussed next.

3.6   BEHAVIOURAL INTENTION

Human behaviour is widely attributed to various environmental issues, including climate change, environmental pollution, and loss of biodiversity (Lange & Dewitte, 2019:92). It is therefore important to understand human behaviour and the mitigating or exacerbating factors related to positive or negative environmental behaviour (Lange & Dewitte, 2019:92).

Within the tourism context, it has been found that perceived destination quality significantly influences satisfaction, which in turn, influences behavioural intentions (Vada, Prentice, Scott & Hsiao, 2020:296). PEB is usually examined in the tourism

context to gain insight into the protection of the destination's natural resources and to avert negative impacts (Kim *et al.*, 2018:1).

Section 3.6.1 presents definitions or descriptions of behavioural intention, followed by a summary of the measurement scales used in behavioural intention studies in Section 3.6.2. Various scales were used to measure behavioural intentions. The findings were analysed to assist with choosing the most appropriate scale to be used in the current study (Section 3.6.2). Section 3.6.3 synthesises the main findings from the secondary literature about behavioural intention.

3.6.1　Defining behavioural intention

Generally, the term behaviour refers to specific type of conduct. As a dimensions of attitude, general behaviour may include cognitive and affective dimensions (Kibert, 2000:16). PEB generally refers to the commission of acts benefiting the natural environment, while omitting acts that could harm it (Lange & Dewitte, 2019:92). The term involves positive consequences for the environment as a common denominator. Behavioural intention is therefore defined as a strong internal stimulus that is often understood as the cause of behaviour (Moisander, 2007:407). Behavioural intentions are an individual's function of attitude and perceived usefulness in performing a behaviour.

Ajzen (1985:181) initially defined behavioural intention as an individual's motivation in his or cognisant plan or decision to exert any effort in performing a specific behaviour (Ajzen,1985:132). Warshaw and Davis (1985:214) defined behavioural intention as "the degree to which a person has made conscious plans to perform or not perform some specific future behaviour".

According to Ajzen (1991:181), behavioural expectation is proportional to the product of behavioural intention and subjective behavioural control. Behavioural intention is therefore an indicator of "how hard people are willing to try" and "how much of an effort an individual is planning to exert" (Ajzen, 1991:181). Warshaw and Davis (1985) definition reflects how an individual decides about his or her behavioural intention. According to Ajzen (1991), the effort people are willing to invest, presumes that they have already decided on the behaviour. A low intention, in this sense, means low effort and a high intention, high effort.

According to the Institute of Medicine (2002:1), behavioural intention, is "the belief or perception that an individual will engage in a particular behaviour". Intentions therefore reflect one's willingness to be motivated to perform a specific behaviour. A person's intention to act, according to Hines, Hungerford and Tomera (1987:6), is a combination of several variables acting together, for example, cognitive knowledge, cognitive skills, and even personality factors.

To assess behavioural intention, individuals are usually asked to indicate their plans or willingness to perform a given behaviour within a specific timeframe, for instance, within the next six months (Lange & Dewitte, 2019:93; Wiernik *et al.*, 2013:832). Commitments to act pro-environmentally are usually used to capture people's intentions (Liu *et al.*, 2020:5). Behavioural intention had to be defined in the context of the current study. For the current study, the term behavioural intention was used and applied in the context of the agri-environment and agritourism. In summary:

- The behavioural intention towards the agri-environment and agritourism is a potential agritourist plan or decision to exert effort in performing an agri-environmental behaviour;

- Potential agritourists behave in a pro-agri-environmental behaviour;

- The effort a potential agritourist is prepared to invest, presupposes he or she has decided in favour of agri-environmental behaviour;

- A potential agritourist perceives the likelihood or subjective probability that he or she will engage in agri-environmental behaviour; and

- Although it is not expressed verbally, there may be a verbal commitment to an expressed intention to act in a specific manner. Potential agritourists express verbally their intention to act in specific manner.

Behavioural intention indicates the potential tourists' probability or subjective probability that they will engage in actual pro-agri-environmental behaviour and pledge to be responsible for agritourism and the environment. Various environmental behavioural intention scales that emanated from environmental education or literacy were analysed to measure the behavioural intentions towards, or in an agritourism environment. Section 3.6.2 below discusses the measurement of behavioural intention.

3.6.2 Measurement of behavioural intention

The adoption of ER behaviour is an important indicator of sustainable tourism. Enabling people to adopt these behaviours is therefore important in developing sustainable tourism and ecotourism practices. To know which interventions are required, it is therefore essential to measure the behavioural intentions of potential agritourists towards the natural environment. Table 3.4 provides an overview of 23 measurement scales found in literature and used to assess behavioural intention to select one applicable for the current study.

Table 3.4:   Summary of measurement scales for behavioural intention

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Liu *et al.* (2020)	NEPS survey question pro-environmental behaviour commitment	Chinese residents (2010 Chinese General Social Survey) (CGSS2010).	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I would give part of my income if I were certain that the money would be used to prevent environmental pollution.
Mónus (2020)	Behaviour subscale (actual commitment subscale; 12 items) of Children's Environmental Attitudes and Knowledge Scale (CHEAKS)	Secondary school students (aged 14–20). University students (aged 18–35).	Five-point Likert-type scale ranging from "never" (1) to "always" (5).	E.g. If I ever have extra money, I will give some to help protect nature.
Chow *et al.* (2019)	The scale of the Department for Environment and Food and Rural Affairs United Kingdom Measuring Actual commitment	Nature-based tourists visiting China.	Five-point Likert-type scale ranging from "strongly agree" (5) to "strongly disagree" (1).	E.g. I try to keep a certain distance with animals and their habitats and avoid disturbing their lives.
Goulgouti *et al.* (2019)	Adapted environmental behaviour scale from Yavetz *et al.*'s (2009) questionnaire	Pre-service teachers in Greece.	Five-point Likert-type scale ranging from "never" (1) to "always" (5).	E.g. I purchase environmentally friendly products.
Abdullah, Samdin, Teng & Heng (2019)	Developed a scale	Tourists in Malaysia.	Five-point Likert-type scale ranging from "strongly agree" (5) to "strongly disagree" (1).	_

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Larios-Gómez (2019)	Revised scale of Attitudes and Environmental Knowledge (EAKS)	Consumers are chosen according to the criterion of convenience (men and women between 21 and 55 years) in Mexico.	Likert-type scale with responses ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. Would be willing to use a less polluting transport system to help reduce air pollution.
Fang *et al.* (2018)	Developed a behavioural intent scale	Chinese and Taiwanese university students.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. During travelling, I will join in listening to natural interpretations from tour guides.
Liang *et al.* (2018)	Developed a measurement scale.	Undergraduate students in Taiwan.	Five-point Likert-type scale ranging from "never" (1) to "always" (5).	E.g. I am willing to take the initiative to find out more about climate change, carbon reduction, and other related information.
Kim *et al.* (2018)	Developed a measurement scale (Kim *et al.*, 2018:10)	Domestic visitors visiting Jeju Island in South Korea.	Seven-point Likert-type scale format ranging from "strongly disagree" (1) to "strongly agree" (7).	E.g. I help to maintain the local environmental quality.
Pan, Chou *et al.* (2018)	Adapted from Hungerford *et al.* (1980), Hsu & Roth (1998), Erdogan, Ok & Marcinkowski (2012)	University students from the tourism departments of nine universities in Taiwan.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I am willing to encourage or persuade others to adopt behaviours that prevent or solve environmental problems.

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Conradie (2017)	Verbal commitment subscale of CHEAKS adapted from Leeming *et al.* (1995)	Secondary school learners in Gauteng (South Africa). (aged 13–17).	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I am willing to buy a bird book to learn more about birds and bird habitat.
Wang *et al.* (2018)	Developed a behavioural intend scale	Rural residents in China.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I am willing to pay more money to buy environment-friendly products.
Boewe-de Pauw and Van Petegem (2013)	Subscale of the actual commitment CHEAKS (Leeming *et al.*, 1995)	Children (aged 10–13) in Flanders, Guatemala and Vietnam.	Five-point Likert-type response format ranging from "very true" (5) to "very false" (1).	E.g. To save energy, I turn off the lights when they are not needed.
Stevenson *et al.* (2013)	MSELS	Middle school learners in North Carolina, US (aged 11–15 years).	Five-point Likert-type scale ranging from "very true" (1) to "very false" (5).	E.g. To save water, I would be willing to use less water when I bathe.
Levine & Strube (2012)	Intended Pro-Environmental Behaviour Scale (Cordano *et al.* (2003)	University students in Washington, US.	Five-point Likert-type scale ranging from "disagree" (1) to "agree" (5).	E.g. To sign a petition to support stricter environmental laws (How likely would you be to perform different behaviours).
Dolnicar (2010)	Survey question on environmental-friendly behaviour	Adults in Australia.	Engage in different behaviours "never", "rarely", "sometimes" or "always".	E.g. I picked up litter that was not my own.
McBeth & Volk (2010)	Verbal commitment scale: MSELS	Middle grade learners (aged 11–15 years) in the US.	a) Likert-type scale ranging from "to a great extent" (1) to "no extent" (5)	E.g. To save energy, I would be willing to use dimmer light bulbs

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
			b) Agreement scale ranging from "strongly agree" (1) to "strongly disagree" (5).	
Duerden & Witt (2010)	Actual commitment scale: CHEAKS (Leeming *et al.*, 1995)	Middle (aged 11–14) and high school learners (aged 14–18) in the US.	Five-point Likert-type response format ranging from "very untrue" (1) to "very true" (5).	E.g. I have asked my family to recycle some of the things we use.
Mostafa (2009)	Adapted a scale from Li (1997)	Citizens in Kuwait.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree". (5)	E.g. Over the next month, I will consider buying green products because they are less polluting.
Yavetz *et al.* (2009)	Developed a self-reported environmental behaviour scale	Pre-service teachers in Israel.	Five-point Likert-type scale ranging from "never" (1) to 5 "almost always".	E.g. Use of water and electricity. Purchase of environmentally friendly products.
Coyle (2005)	NEETF/Roper Score Card	Adults in US.	Responses included "never do it", sometimes do it" and "frequently do it".	E.g. Recycle things such as newspapers, cans and glass.
Leeming *et al.* (1995)	Actual commitment scale: CHEAKS	Elementary (aged 5–10 years) and middle school learners (aged 11–15 years) in US.	Five-point Likert-type response format ranging from "very untrue" (1) to "very true" (5).	E.g. I turn off the water in the sink while I brush my teeth to conserve water.
Maloney & Ward (1973)	Verbal commitment Ecology Scale	Adults in US.	True or false format.	E.g. I would be willing to ride a bicycle or take the bus to work in order to reduce air pollution.

Table 3.4 provided a summary of 23 scales used to measure actual PEB. The list indicates authors, measurement scales used, population or sample targeted, and the types of questions or items that were outlined to choose an appropriate scale for the current study. The main findings were as follows:

- The measurement of behavioural properties is a context-specific characteristic of behaviour itself, or an indicator of the latent characteristics of the behaving person (Lange & Dewitte, 2019:93). An individual may infer his or her likelihood to express an intention to take environmental action provided he or she is knowledgeable about environmental action strategies, accepts environmental responsibility (a sense of obligation toward alleviating environmental problems), and has a positive environmental outlook (Hsu & Roth, 1998).

- The studies were conducted in various countries, such as the US, Taiwan, China, Israel, Kuwait, Australia, Vietnam, South Korea, Malaysia, Greece, and South Africa.

- At times, these studies used self-report assessments, requesting individuals to indicate their plans or willingness to perform a given behaviour. Most of the studies reported on in Table 3.4 used people's intentions and commitments to act pro-environmentally to capture their behavioural intentions.

- The following measurement scales were applied to measure pro-environmental behavioural intention: MSELS, Intended Pro-Environmental Behaviour Scale (Cordano *et al.*, 2003, cited in Levine & Strube, 2012), CHEAKS, verbal commitment subscale of the Ecology Scale and Intention to Act subscale of the Environmental Literacy Instrument (Hsu & Roth, 1998).

- From the 23 studies outlined in Table 3.4, it was evident that various types of questions measure pro-environmental behavioural intention. The two most consistent scales reported in the literature were the verbal commitment subscales of CHEAKS and the MSELS.

- Both scales were derived from the verbal commitment subscale of the Ecology Scale of Maloney and Ward (1973), the first multi-dimensional scale to measure environmental concern and not theoretical (Kim *et al.*, 2018; Mostafa, 2009; Wang *et al.*, 2018; Yavetz *et al.*, 2009).

The measurement scales are applied to various contexts and samples or target groups, for example, school children, university students, tourists and adults. As the target of the current study comprised adults, measures of pro-environmental behavioural intentions were based on the verbal commitment subscale of CHEAKS (Leeming *et al.*, 1995). The specific scale has good psychometric properties and has proved to be a reliable and valid instrument and had already been applied in various settings (Leeming *et al.*, 1995). The Behavioural Intention Subscale and the Environmental Attitudes and Knowledge Scale (CHEAKS) were applied to an adult sample and proved valid and reliable (Mónus 2020:94). Section 3.6.2 below presents a synthesis of the literature review regarding behavioural intentions.

3.6.3   Synthesis of behavioural intention towards environment

This section provides a synthesis of the main findings from the literature on behavioural intention towards the natural environment:

- Environmental behavioural intentions significantly and positively affect PEBs (Liu *et al.*, 2020:5). A high degree of verbal commitment is associated with a willingness to adopt the PEB of individuals (Pan *et al.*, 2018:8). Likewise, consistent with previous research, most individuals have a relatively high degree of verbal commitment, indicating that people who are willing to behave in a PEB activity could assist in solving environmental problems (Maloney & Ward, 1973:584).

- A low score on verbal commitment was reported amongst university undergraduates (Liang *et al.*, 2018:15). The younger students also showed a higher verbal commitment (intention to act) than actual commitment (PEB). McBeth and Volk (2010:61) found the same among middle school learners. The involvement of advanced university students in behaviours that reflect high levels of environmentalism was low and ineffective in their everyday lives (Yavetz *et al.*, 2009:404). Despite the significant correlation measured between environmental attitudes and self-reported behaviour of advanced students, their supportive environmental attitudes did not translate into behaviour that reflected a high level of environmental commitment (Yavetz *et al.*, 2009:404). A significant difference in age between different year-level undergraduate students on behavioural intentions has been reported (Fang *et al.*, 2018).

- Amongst adults, green consumers reflected an individual interested in and concerned about environmental issues resulting in verbal commitment. A relationship between verbal ecological commitment and PEB amongst green Mexican consumers was reported (Larios-Gómez, 2019:90).

- Self-efficacy is directly associated with PEB, as reported in the literature (Liang *et al.*, 2018). It is therefore vital to promote a sense of self-efficacy, as it appears that, before individuals are ready to act, they need to believe that even one small act would make a meaningful difference (Liang *et al.*, 2018:15).

- More women residing in urban residential areas have been reported in the literature to have been found to exhibit PEB intentions than men (Li, 2019:30).

- Despite the lack of association between environmental knowledge and PEB, interaction with the environment is effective because it enables individuals to develop valuable skills and a sense of responsibility, and it enhances a sense of competence, ultimately leading to responsible, environmentally friendly behaviour (Li, 2019:17). Otto and Pensini (2017:92) explored the effects of connectedness to nature and environmental knowledge on ecological behaviour and reported a relationship between nature and PEB. Environmental affect and affiliation with nature are important core mediators between environmental knowledge and behaviour amongst nature tourists (Kim *et al.*, 2018:10). Nature-based tourism facilities have therefore influenced PEB, especially among tourists (Kim *et al.*, 2018:10). These tourists are likely to develop responsible behaviour and a commitment to protect the environment because of their connection to nature (Kim *et al.*, 2018:10).

- Behavioural intention plays a crucial role in explaining the behaviour, and this reflection is per the traditional TPB.

- Behavioural intent has been found to be an essential intermediate variable (Wang *et al.*, 2018:11) because it functions as a medium between the psychological constructs, and affects return intention and PEB (Li *et al.*, 2019:30).

- Education could play a role in determining behavioural intention, environmental knowledge, environmental sensitivity, environmental value, perceived behavioural control, and response efficacy (Wang *et al.*, 2018:11). The reason for this is that

education improves people's environmental knowledge and makes them realise how much they are responsible for the environment (Wang *et al.*, 2018:11).

- Behavioural intention is crucial for PEBs, such as sustainable consumption preferences (Wang *et al.*, 2018).

One of these sustainable consumptions is listed as agritourism. To develop engaging and tailored agritourism experiences, conducting agritourism research centred on agritourism tourists is crucial. Agritourism is an inseparable part of the natural environment that should be consumed sustainably due to its nature, as discussed below.

3.7   DEVELOPING AGRITOURISM FROM A DEMAND PERSPECTIVE

Educated and empowered agritourists can contribute to sustainable food systems through their consumption patterns and vote power (Roberts, Harder, & Brashears, 2016). Agritourism provides a space for agritourists to reconnect and reflect on a farm's food systems and sustainability. Chapter 2 (Sections 2.2.1 and 2.2.2) discussed the concept of agritourism. The literature on agritourism themes was also presented in Chapter 2 to demonstrate the increased interest in this tourism activity (Section 2.2.3). Section 3.7.1 below synthesises the primary definition of agritourism and presents the definition adopted for the current study.

3.7.1   Defining agritourism

Different definitions of agritourism have been presented in the literature, leading to a lack of consistency and even misunderstanding amongst agritourism providers and agritourists (Arroyo *et al.*, 2013; Che, 2006). Agritourism is simply defined as a recreational visit to farms, ranches, and other agricultural settings (Carpio *et al.*, 2008:255), to a more comprehensive definition, such as the experience of visiting a working farm or other agricultural, horticultural, or agribusiness operation for enjoyment, education, or active participation in the activities on the farm (Che, Veeck & Veeck, 2005:98).

As an economic and diversification tool, agritourism has been defined as bringing tourists into rural areas by offering a wide array of agricultural activities, services and amenities to generate additional income for farmers (McGehee *et al.*, 2007; Phillip *et al.,* 2010; Tew & Barbieri, 2012). Arroyo *et al.* (2013). Placing the emphasis on the

importance of farming, Streifeneder (2016:252) defined agritourism as tourism carried out on a fully functioning farm where agricultural activities predominate over tourism ones, and direct and familiar interaction with the host household and its members takes place in an unchanged agricultural environment.

The definitions provided in the literature suggest that agritourism relies on stakeholders (supplier vs demand). For example, in most cases, the definitions for agritourism focus on stakeholders (supplier vs demand) from an economic or experience perspective. Among the critical features of agritourism is a leisure or educational activity that occurs on a farm (McGehee *et al.*, 2007; Phillip *et al.*, 2010; Tew & Barbieri, 2012). Arroyo *et al.* (2013) provided a framework for defining agritourism as a working agricultural setting, entertainment and education.

As the current study focused on agricultural literacy and PsyCap, the definition adopted by the study therefore needed to align with the aim of the study. The current study thus adopted the framework by Arroyo *et al.* (2013:41) and Busby's (2010:314) definition of agritourism as:

> [T]the experience of visiting a working agricultural setting (working farm or other agricultural, horticultural, or agribusiness operation) for enjoyment, education, or active participation in the activities on the farm while visiting the farm. Visiting a working agricultural setting (working farm or other agricultural, horticultural, or agribusiness operation) for leisure, education, or participating involvement of farm activities.

This definition encompasses the products offered and agritourism as an experience and refers to the different ways agritourism can be consumed (education, leisure). It therefore includes both the demand and supply-side of agritourism. An essential part of the current study was to develop an agritourism model. In order to do so, it was crucial to understand that which drives agritourists' choices. Section 3.7.2 therefore presents measurement scales related to agritourism in order to choose the appropriate scale for the current study.

3.7.2 Measurement of agritourism

Since 1997, there have been frequent reports related to agritourism (Busby, 2010). It is vital for the success of agritourism practices to understand the agritourism attributes

which influence agritourists in their decision to participate in agritourism, as these will inform development and marketing decisions. As a result, it is essential to know the attributes that inform agritourism choices.

Table 3.5 provides an overview of the 37 measurement scales reported in literature that were developed to assess agritourism, and which were considered in the selection of the most suitable one for the current study.

Table 3.5:   Agritourism studies and developments

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Brune *et al.* (2021)	Travel planning behaviour (TPB) scales	Families visiting agritourism farms in North Carolina (US). Only parents' responses were recorded.	Attitude, subjective norms items, perceived behavioural control items, personal norms items. Five-point Likert-type scale "strongly disagree" (1) to "strongly agree" (5). Consumer-intended behaviour toward local food. Five-point Likert-type scale measuring the likelihood to engage in these behaviours "very unlikely" (1) to "very likely" (5).	E.g. attitudes toward purchasing when I buy local foods, I am supporting the local economy. Likelihood to engage in agritourism: How likely or unlikely are you to shop at a farmers' market.
Brune *et al.* (2020)	Adapted from TPB	Agritourists in North Carolina, US.	Five-point Likert-type scale measuring intended behaviour towards local food ranging from "Strongly disagree" (1) to "strongly agree" (5) Current intentions to buy local food five-point Likert-type scale of the likelihood to engage in these behaviours ranging from "very unlikely" (1) to "very likely" (5).	E.g. when I buy local foods, I am supporting the local economy. Are you likely to shop at a farmers' market?
Brune *et al.* (2020)	Agricultural Literacy Instrument for Local Foods ALI-LF scale	Children (9 &13 agriculture literacy, North Carolina (US).	Knowledge: multiple-choice responses ranging from 1 to 4. Attitude & behaviour.	E.g. Knowledge: What is a farmer? Behaviour: How likely or unlikely are you to ask your parent to buy foods

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
			"How much do you agree or disagree with the following statements?".	advertised as grown in North Carolina?
			Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	
			How likely or unlikely are you to do the following? "Not likely" (1) to "very likely" (5).	
Campbell & Kubickova (2020)	Adapted from previous literature (Runyan (2005),	Agritourism microbusinesses in the country of Honduras.	A resource-based view of the firm and social network theoretical frameworks.	E.g. I have plans to expand this business/farm in size/sales revenue.
Garzón, Acevedo, Pavón & Baldiris (2020)	Pre-tests, post-tests, follow-up tests, and motivation surveys	Students (21– 38) North-Western Colombia.	Case study: field experience and home experience (web application). 20 multiple-choice questions with a set of 4 possible answers each.	Measuring students' knowledge on each topic: (1) aquaculture (2) hydroponics (3) aquaponics system and (4) eco-education.
Leelapattana *et al.* (2019)	Adapted from the TPB	Visitors of a farm stay, Taiwan.	Seven-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (7).	Perceived benefits customers received after visiting the farm stay.
Shah *et al.* (2020)	Developed a measurement scale from the literature review Busby & Rendle (2000), Busby (2010), Phillip *et*	Tourists who have visited Fiji (potential agritourists).	Five-point Likert-type scale ranging from (1) "not important at all" to (5) "very important"	What factors would influence your choice of an agritourism establishment: Landscape:

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
al. (2010) & Srikatanyoo & Campiranon (2010).				1. The experience of trying something different. 2. The farm's natural surroundings.
Fanelli (2019)	Developed a measurement scale	Visitors in Tuscany.	Reviews posted by visitors from all over of the world on the websites of 60 agritourism facilities.	–
Perticara & Swenson (2019)	Field trip, survey instrument and follow-up in-depth phone interviews	Georgia state, US.	Telephone interviews.	Frequency with which teachers use agricultural resources and activities during the school year.
Roman & Golnik (2019)	Developed a measurement scale	Residents and international tourists in Milan, Italy.	Attractiveness: Yes or No questions. Factors determining the tourist attractiveness of the Lombardy region: Natural values Cultural values Catering base Transport availability Other Factors conducive to the development of tourism: Five-point Likert-type scale ranging from "negative" (1) to "positive" (5).	E.g. As a tourism destination, would you say the Lombardy region is attractive: Yes or No E.g. Which factors are conducive to the development of tourism in Lombardy: Cultural events Gastronomic base Accommodation base Natural values

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Brandano *et al.* (2018)	Developed a measurement scale from literature	Agritourism firms and agritourists from Italy.	Telephone interview (manager of the agritourism firms five-point Likert-type scale ranging from "not at all" (1) to "very much" (5).	–
Lončarić *et al.* (2018)	Developed a measurement scale	International tourists who visited several destinations in Croatia.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I am satisfied with the decision to participate in this experience.
Mahdzar *et al.* (2017)	Developed a measurement scale	Visitors to an agritourism park in Malaysia.	Five-point Likert-type scale ranging from "strongly disagrees" (1) to "strongly agree" (5).	_
Fourie & Kruger (2015)	Developed a measurement scale	Nampo agri-festival visitors, Free State, South Africa.	Five-point Likert-type scale ranging from "completely agree" to (5) to "totally disagree" (1).	E.g. Harvest Day is a well-organised event.
Li (2015)	Revised the Professional Association Membership Scale (Hager 2014)	Members of agritourism association.	5-point Likert-type scales ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. I would recommend North American Farmers' Direct Marketing Association (NAFDMA) or / Agritourism Network Association (ANA) to other farmers.
Madan (2014)	Developed a measurement scale	Agritourism owners, employees, and villagers in peri-urban Mumbai and Pune.	Interview schedule.	E.g. How do interactions between development goals, environmental governance and agrarian ecologies shape agritourism understanding and practice in peri-urban Mumbai and Pune?

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Specht *et al.* (2014)	Developed a measurement scale	University students at Southwestern Public University, US.	Affective response or attitude or reaction to a photo: Five-point Likert-type scale ranging from very negative" (1) to "very positive" (5). Agricultural awareness: Five-point Likert-type scale ranging from "no knowledge awareness" (1), to "indicated first-hand knowledge" (5).	_
Capriello *et al.* (2013)	The narratives were collected from TripAdvisor using the search engine of this travel blog website	Reviews collected were from agritourists in Australia, Italy, the United Kingdom, and the US.	Content analysis of customer likes and dislikes.	_
Nickerson (2012)	Developed a measurement scale	Farmers from Montana, US.	Five- Likert-type scale of level of importance ranging from "not at all important" (1) to "most important" (5).	E.g. please indicate the reason you diversified into agritourism?
O'Connor (2011)	Developed measurement scale	Agritourists who recently visited Northwest Michigan agritourism destinations, US.	Laddering interviews.	E.g. What are the relationships between consumer values, brands, and agritourism experiences?
Poore (2011)	Developed a measurement scale	Visitors to agritourism venues Tennessee, US.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. My farm visit fulfilled my purpose for a visit.

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Ainley & Kline (2013)	Secondary data: 2006 Canadian Travel Activities and Motivation Survey (TAMS)	Canadian rural tourists.	Three-point Likert scale ranging from "highly important" (3) to "of no importance" (1).	Benefits that these tourists sought while on vacation being of particular interest.
Barbieri (2010)	Developed a measurement scale	North American farmers.	Measuring important goals in the entrepreneurial decision-making process using two scales. Five-point Likert-type scale ranging from "not important" (1) to "extremely important" (5), The second scale was the Perceived levels of accomplishment: Three-point Likert-type scale ranging from "not accomplished" (1) to "very accomplished" (3).	E.g. The importance of diversifying into another business: Generate additional income Educate customer Continue farming
Busby (2010)	Adapted from Fakeye and Crompton (1991) and Echtner and Ritchie (1991)	Visitors to the Da-Ho region in Taiwan.	Six-point Likert-type scale ranging from "very strongly disagree" (1) to "very strongly agree" (6).	-
Mnguni (2010)	Developed a measurement scale	Agritourism providers from Limpopo, South Africa.	Five-point Likert-type scale ranging from "very dissatisfied" (1) to "very satisfied" (5).	E.g. How satisfied were you with the profit of agritourism products and services?
Tew & Barbieri (2012)	Adapted from previous instruments	Agritourism providers in Missouri.	Five-point Likert-type scale ranging from "not important" (1) to "extremely important" (5)	E.g. How important are your agritourism activities and farm visitors to accomplishing the following goals?

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
				Decrease fluctuations in your farm revenues
				Educate the public about agriculture and nature
Srikatanyoo & Campiranon (2010)	Developed a measurement scale adapted from: travel needs (suggested by Das, Sharma, Mohapatra & Sarkar, 2007; Hecht & Martin, 2006; Jensen *et al.*, 2006; McGehee *et al.*, 2007; Tyrvainen, Silvennoinen, Nousiainen & Tahvanainen, 2001)	Thai agritourists who have stayed at agritourism accommodations.	Five-point Likert-type scale ranging from "not at all important" (1) to very "important" (5).	–
Veeck *et al.* (2010)	Developed a measurement scale	Agritourism operations in Michigan.	Five-point Likert-type scale measuring the severity and significance of problems that agritourism operators face ranging from "not severe" (1) to "very severe" (5). "Not significant" (1) to "very significant" (5).	Most common products ranked as highest in gross sales: ▪ Apples ▪ Christmas trees ▪ Pumpkins ▪ Animal products ▪ Strawberries ▪ Sweetcorn ▪ Blueberries ▪ Bedding plants ▪ Trees/shrubs

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
				▪ Wine ▪ Vegetables ▪ Cherries ▪ Apple cider ▪ Flowers
Barbieri & Mahoney (2009)	Developed a measurement scale	Agritourism farmers in Texas, US.	5-point Likert-type scale ranging from "not important" (1) to "extremely important" (5).	E.g. Goals behind farm enterprise diversification: Keep the farm/ranch in the family.
Carpio *et al.* (2008)	2000 national survey on recreation and environment	Residents 16 years and older, US.	Total trips to visit farms Factors influencing decision to become a farm visitor.	–
Maharjan *et al.* (2007)	Semi-structured interview schedule was developed	Farmers, restaurants and guesthouses and tourism-related institutions (TRIs) in Shaktikhor, Nepal.	In-depth interviews, participatory rural appraisal tools, direct observation, informal meetings, and focus group discussions were carried out.	–
Ollenburg & Buckley (2007)	Adapted the measurement scale from Nickerson, Black and McCool (2001) and McGehee and Kim (2004).	Farm tourism operators in Australia.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly disagree" (5).	E.g. Statement: I started farm tourism because:
Sharpley & Vass (2006)	Developed a measurement tool	Farmers in Northumbria and Yorkshire region, England.	Five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5).	E.g. 'Being self-employed allows flexibility

Author	Measurement scale	Population or sample	Type of questions or items	Examples of items
Jolly & Reynolds (2005)	Developed a measurement scale	Residents from Sacramento and Yolo counties in California.	Five-point Likert-type scale ranging from "not important" (1) to "extremely important" (5).	E.g. Motivation for visiting agritourism farm/ranch activities Buy fresh/homemade. Educational farm.
Alson (2003)	In-depth Interview	Farmers in Norway.	In-depth interview.	_
Sharpley (2002)	Developed an interview schedule	Farmers in Cyprus and Egypt.	Open-ended interviews.	E.g. What are the challenges faced by agrotourism entrepreneurs?
Weaver & Fennell (1997)	Developed scale from previous literature	Vacation farm operators in the Saskatchewan Canadian province.	Five-point Likert-type scale ranging from "not at all important" (1) to "very important" (5).	Which vacation farm visitor activities would say are important? Wildlife viewing Hunting

Table 3.5 summarised the 37 scales used in agritourism studies from 1997 to 2021, the authors, the population or sample targeted, and the types of questions or items used. Below, an analysis of the main findings is reported:

- Various measurement scales were used in agritourism studies. The majority of the studies based their scales on previous literature and different contexts. The travel planning behaviour (TPB) scale was applied in various studies measuring agritourists causal relationship between an environmental education (EE) and (TPB) decision-making process that leads to future agritourism farm visit intention. (Leelapattana *et al.*, 2019). For example, Brune *et al.* (2021) applied the TPB scale to measure the impact of agritourism experiences on consumers' intentions to purchase local food after visiting agritourism farms in North Carolina (US). The TPB scale was also used to measure the influence of agritourism experiences on consumer behaviour towards local food (Brune *et al.*, 2021:65). It must be noted that a majority of the studies focused on agritourists (Busby, 2010; Fanelli, 2019; Fourie & Kruger, 2015; Lončarić *et al.*, 2018; Mahdzar *et al.*, 2017; O'Connor, 2011; Perticara & Swenson, 2019; Poore, 2011; Roman & Golnik, 2019; Shah *et al.*, 2020; Srikatanyoo & Campiranon, 2010).

- The research focused on agritourists or potential agritourists, using surveys and interviews to gather information about their behaviours, including their preferences for local food.

- The studies measured the factors influencing agritourists' choice of an agritourism establishment; online reviews; and characteristics of agritourism festivals and agritourism operations' perceptions.

Previous research focused on in-depth interviews and self-assessment as research methods to investigate agritourism benefits; agritourism membership benefits; diversification motivations; important entrepreneurial targets; agritourism importance; challenges faced by agrotourism providers; and important farm visitor activities.

In their study that explored a market for agritourism in Fiji, Shah *et al.* (2020) assessed the important agritourism attributes that would influence the choice of an agritourism farm by potential agritourists. Researchers have used attributes to determine why agritourists engaged in agritourism in the past (Table 2.2). Although different terms

have been used for the concept of attributes, it is clear that attributes have been applied in agritourism research to develop dynamic products.

One of the secondary objectives of the current study was to develop an agri-environmental and PsyCap model for agritourism in terms of product development and the marketing of agritourism. The current study applied Shah *et al.*'s (2020) attributes measurement scale to identify the factors that would affect agritourism choice. Section 3.7.3 presents a discussion of the findings from the agritourism literature.

3.7.3   Findings from literature on agritourism

This section provides a synthesis of the main findings from the secondary literature on agritourism.

- Agritourism literature predominantly focuses on the agritourism provider's point of view (Alson, 2003; Barbieri, 2010; Barbieri & Mahoney, 2009; Brandano *et al.*, 2018; Campbell & Kubickova, 2020; Madan, 2014; Maharjan *et al.*, 2007; Mnguni, 2010; Nickerson, 2012; Ollenburg & Buckley, 2007; Sharpley, 2002; Tew & Barbieri, 2012; Veeck *et al.*, 2010; Weaver & Fennell, 1997).

- Studies have been conducted in various countries, such as the US, Honduras, Colombia, Thailand, Fiji, Italy, Croatia, Malaysia, South Africa, India, Canada, Nepal, Australia, England, and Norway.

- Using secondary data from the Canadian Travel Activities and Motivation Survey (TAMS), Ainley and Kline (2013:58) found that agritourism was not distinguishable from tourism in other rural segments in terms of benefits sought, except for the demographics. Wohgenant and Boonsaeng (2008:255) also reported that race, location of residence, and gender influenced farm visits.

- Agritourism and agricultural literacy are essential for local food purchasing behaviour amongst consumers (Barbieri *et al.*, 2018). According to Barbieri *et al.* (2018), farm visits increased agricultural literacy among agritourists, affecting their behaviour towards agricultural products. Petroman *et al.* (2016) concurred that agritourism enables cultural, farm, and farming education. Participating in agritourism can help people learn about healthy food, develop good eating habits, understand how to make and sell agricultural products, and gain hands-on farming experience (Petroman *et al.*, 2016:83). Children participating in agritourism share

their knowledge with their parents, leading to a change in parental behaviour toward agritourism as a consequence of agri-environmental literacy (Barbieri *et al.*, 2018:2.

- The literature established a link between the choice to visit a farm and EE. Leelapattana *et al.* (2019) reported that individual pro-environmental behavioural intention and susceptibility to the social norms regarding environmental protection are influenced by EE. Although EE only influences individuals' normative beliefs and not their behavioural beliefs also, motivation and social reasons are vital in terms of the purchasing of green products (Leelapattana *et al.*, 2019). Attitude plays a significant role in people's intent to visit a farm in the future; therefore, EE has a definite and important effect on behavioural and normative beliefs, leading to a positive attitude (Leelapattana *et al.*, 2019:10). EE therefore plays a role in decision-making regarding whether to participate or not in agritourism. Individuals with high EE seek rural tourism products, such as agritourism.

- Agritourists visit farms for various reasons or motivations and experiences. The variation in motivation can be attributed to the diverse measurement concept used to find the agritourist's reasons for visiting a farm. Busby (2010:314) found that scenery, farming life, local cuisine and the countryside were top motivations for farm tourism amongst agritourists. Shah *et al.* (2020:7) found that a working farm offering a value-for-money experience was important to potential agritourists in Fiji.

- Furthermore, agritourism farms with a strong sense of hospitality are more likely to be selected by a potential agritourist when considering visiting a farm, rather than agritourism farms that do not include any hospitality services in their offering (Shah *et al.*, 2020:7).

- Mahdzar *et al.* (2017:3) reported that education, entertainment, escapism and aesthetics should be included in an agritourism offering. Gastronomic and accommodation bases are also highly valued by agritourists when visiting an agritourism farm (Roman & Golnik, 2019:21). Accommodation has been found to be an essential service for potential agritourists (Shah *et al.*, 2020:9). In determining which factors drive interest in agritourism, Shah *et al.* (2020:10) reported that an agritourists' decision to visit an establishment or engage in an agritourism experience can be ascribed to the farm landscape and the farm still being operational. Various experiences are found in literature that are reported to

have influenced agritourists or potential agritourists to participate in rural agritourism experiences. These have also provided learning opportunities, meaningfulness, and sincerity while staying at an operating organic farm (McIntosh & Bonnemann, 2006), as well as the opportunity to feel and be one with nature (Mahdzar *et al.*, 2017) and good quality food services (Sidali *et al.*, 2019).

- Jolly and Reynolds (2005) found that tourists are willing to pay for various on-farm experiences, but urban or rural agritourists required different experiences. In addition, Sidali *et al.* (2019) found that tourists already buying organic products for home use are more likely to purchase organic products while visiting a farm than tourists who are not already using organic products.

- Research conducted in South Africa focused on themes such as agritourism as a diversification, local economic empowerment, as well as economic and development tools (Mnguni, 2010; Rogerson & Rogerson, 2014; Van Niekerk, 2013). Among the most important studies that proposed segmentation of agritourism based on demographic, socio-economic, and travel characteristics was the study by Speirs (2003).

- Busby and Rendle (2000) presented a theoretical perspective based on literature, om other words, without engaging in primary research. Srikatanyoo and Campiranon (2010) investigated agritourists' needs and motivations with regard to engaging in agritourism. A study conducted by Shah *et al.* (2020) examined the importance of agritourism attributes for agritourists when choosing to engage in agritourism.

- Srikatanyoo and Campiranon (2010) reported on activities and shopping, facilities, services and location, and attractions and environment as the three important attributes when choosing to visit an agritourism farm. Having knowledge regarding the attributes that are valued can assist agritourism services providers to segment their target market based on these attributes. Agritourism providers must therefore be market-driven, starting with the identified agritourism attributes. Furthermore, having an understanding of agritourists could assist agritourism providers to develop marketing messages relevant for the relevant consumer, resulting in enhanced clarity and effectiveness of marketing communications, and increased sales. Srikatanyoo and Campiranon (2010:175) suggested that, even though it was essential to understand the agritourism attributes, agritourism providers must

develop offerings that meet the needs of agritourists and the host community, while protecting and enhancing opportunities for the future. Sustainable agritourism that benefits all key stakeholders should therefore be developed by adhering to the following six quality standards: authenticity, safety and security, transparency, harmony, hygiene, and accessibility to tourist products or services (Srikatanyoo & Campiranon, 2010:176). Moreover, sustainability necessitates harmonising agritourism offers with the human and natural environment (Busby, 2010).

- Busby (2010:321) reported scenery, farming life, local cuisine, and views of the countryside as important attributes of agritourism. Busby (2010:321) concluded by suggesting that agritourism has the potential to promote regional economies by providing tourists with numerous possibilities to engage in unique cultural experiences while visiting. Agritourism is therefore expected to become a model for sustainable development from the economic, cultural, social, and environmental perspectives (Busby, 2010:321). As most agritourists are nature lovers, their overall agritourism perceptions are influenced by the natural environment. It may, however, be a significant challenge to maintain the future demand for agritourism in an increasingly degraded environment (Busby, 2010:321). Future research therefore needs to focus on a sustainable development model for agritourism that would meet the needs of agritourists and increase visits to leisure farms (Busby, 2010:321).

The synthesis of the main results above indicates that potential agritourists have different needs and wants, seek different experiences, and are influenced by different attributes when deciding to participate in agritourism. The success and failure of agritourism will largely depend on whether it can satisfy agritourists by attending to their important needs; in which case, satisfied agritourists will be a significant source of future revenue (Srikatanyoo & Campiranon, 2010:175). By developing and packaging their offerings more efficiently, agritourism providers could become increasingly competitive in the marketplace.

Furthermore, the marketing of the products that are developed should be aligned with the reasons or attributes that influence an agritourist to visit a farm for tourism purposes. As an activity, agritourism should ultimately be concerned with economic benefits and sustainable development and growth. The development and promotion of agritourism should not solely focus on agritourists' needs (Busby, 2010:321).

Agritourism providers must strike a balance between the agritourist's satisfaction and sustainability of agritourism, which includes, for example, community wellbeing and lifestyle, as the UN-WTO (2003) emphasises that tourism sustainability entails controlling environmental and socio-economic repercussions.

Agritourism is not a new phenomenon in South Africa. The South African market is familiar with this product offering or the factors that play a role in influencing the market to participate in agritourism. According to Capriello *et al.* (2013), a tourist's choice of destination is influenced by psychological and functional variables. People want to live a fulfilling life. A fulfilling life requires balance (Judge & Watanabe, 1993), and as such, overall wellbeing has become important in living a fulfilling life (Lorenz, Beer, Pütz & Heinitz, 2016).

Agri-environmental literacy is regarded as a prerequisite in shaping individuals' attitudes towards adopting environment-friendly practices and lifestyles (Biswas, 2020:5924). Agritourism has been identified as an education tool; therefore, it can enlighten and broadens one's outlook toward farming and play a key role in one's wellbeing (Lorenz *et al.*, 2016). Against this background, the question asked is what would influence potential agritourists in South Africa to participate in agritourism activities to develop an agri-environmental literacy and PsyCap model for agritourism.

3.8 CONCLUSION

Chapter 3 presented phase 2 of the methodological procedure (Figure 1.2), comprising the presentation (Figures 3.1 and 3.2) and a detailed discussion of the two conceptual agri-environmental literacy and PsyCap models for agritourism developed for the current study. This relates to the fourth secondary objective of the study, namely:

To develop and test a conceptual agri-environmental literacy and PsyCap model for agritourism through structural equation modelling.

The two conceptual agri-environmental literacy and PsyCap models for agritourism were developed based on the literature review (Stage 1, Chapter 2). A detailed discussion of each dimension of the two conceptual agri-environmental literacy and PsyCap models for agritourism was provided in Chapter 3, achieving the first secondary objective of this study, namely, to conceptualise agri-environmental

literacy, behavioural intention, PsyCap and agritourism attributes from a review of the existing literature.

Each of the six agri-environmental literacy dimensions of the two conceptual agri-environmental literacy and PsyCap models for agritourism was taken from the environmental education, environmental literacy and/or environmental psychology domains, and was applied to the context of the current study, agritourism. By doing so, the current study contributes to the body of knowledge in the field of agritourism management. The four dimensions of PsyCap (hope, efficacy, resilience, and optimism) were also applied to the context of the current study, agritourism, thus further contributing to the body of knowledge in the field of positive psychology and tourism management.

The following provides a summary of the main findings from Chapter 3, as related to each dimension in the conceptual agri-environmental literacy and PsyCap model for agritourism:

- The term 'agri-environmental orientation' describes the way in which an individual perceives the natural world, as reflected in his or her general impressions and awareness of the importance of the agri-environment and his or her personal interest in it (Section 3.2.1). As a measure of environment, the CEPS was selected as the measure of agri-environmental orientation for this study (Section 3.2.2). The measurement scale was chosen based on the research by Larson *et al.* (2011:72). A synthesis of the main findings in the secondary literature on environmental orientation was provided in Section 3.2.3.

- An individual's agri-environmental knowledge was defined as his or her knowledge and ability to understand and evaluate the facts, information, and principles relating to agriculture, the farm environment and agritourism (Section 3.3.1). Agri-environmental knowledge represents the cognitive category of both the conceptual agri-environmental and PsyCap models for agritourism (Section 3.3.1). Based on the 21 environmental knowledge studies reported in the literature, the current study was conducted using a scale based on the farm, farming environment, and agritourism in South Africa. due to the limited availability of scales related to agri-environmental knowledge (Section 3.3.2). Section 3.3.3 provided a summary of the main findings of the secondary literature on environmental knowledge.

- Agri-environmental attitude is defined as agri-environmental attitudes and values regarding an agritourism environment (farming), which refer mainly to the social values, beliefs and behavioural intentions of a person (Section 3.4.1). Based on an analysis of 19 studies concerned with the measurement of agri-environmental attitudes and values (Section 3.4.2), the 2-MEV scale was chosen for the current study. Section 3.4.3 summarised the findings of the secondary literature on agri-environmental attitude.

- The current study defined PsyCap as an individual's resources characterised by self-efficacy, optimism, hope, and resilience that will lead to positive resources and abilities (Gustitia, 2019:324; Santisi *et al.*, 2020:10) (Section 3.5.1). The Psychological Capital Questionnaire (PCQ), developed by Luthans *et al.* (2007c), was selected and updated based on an analysis of 18 research studies to establish the scale's influence on potential agritourists' behavioural intentions and the traits that influence agritourism choice (Section 3.5.2). Section 3.5.3 provided a summary of the main findings of the secondary literature on PsyCap.

- Behavioural intention is defined as the likelihood or subjective probability and effort or commitment that the potential tourist is willing to engage in, or the likelihood of the individual engaging in actual pro-agri-environmental behaviour, and the individual declaring that they will engage in environmentally sustainable behaviour towards agritourism and the agri-environment in the future (Section 3.6.1). Based on an analysis of 23 studies on PEB and behavioural intention (Section 3.6.2), the verbal commitment subscale of the CHEAKS (Leeming *et al.*, 1995) scale was chosen for the current study. Section 3.6.3 provided a summary of the main findings of the secondary literature on PEB and behavioural intention.

- The current study adopted Arroyo *et al.* (2013:41) and Busby's (2010:314) definition of agritourism (Section 3.7.1). Based on an analysis of 37 studies (Section 3.7.2) on the measurement of agritourism, the current study applied Shah *et al.*'s (2020) attributes measurement scale to identify the factors affecting agritourism choice. Section 3.7.3 provided a summary of the main findings of the secondary literature on agritourism.

- The success and failure of agritourism largely depend on whether the needs and wants of agritourists are satisfied; however, a balance must be achieved between

environmental conservation and economic growth (Srikatanyoo & Campiranon, 2010:175).

The next chapter (Chapter 4) presents and discusses the research design and method that were applied to meet the primary research objective of the study.

CHAPTER 4:
RESEARCH DESIGN AND METHODOLOGY

4.1   INTRODUCTION

This chapter explains the research design and research method applied to this study to provide answers to the research objectives that were established to achieve the primary objective, namely:

To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling;

The research was conducted in three phases, as illustrated in Figure 4.1.
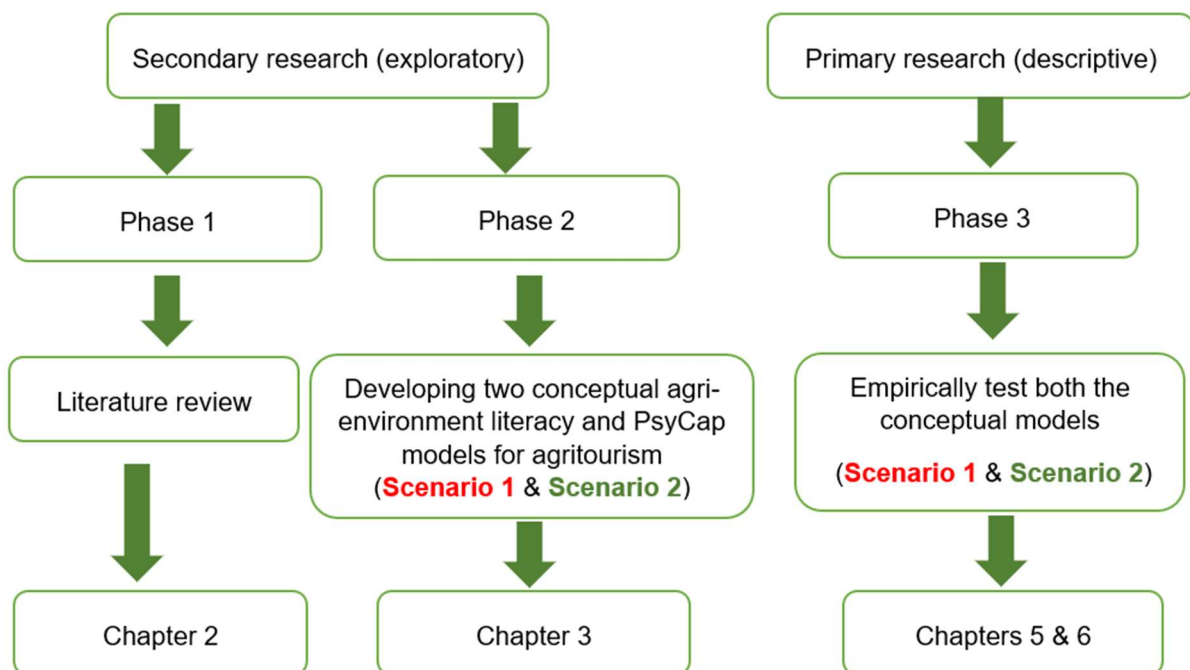
Figure 4.1:   Methodological procedure of the current study (including chapter outline)

The first two phases, as illustrated in Figure 4.1, represent the secondary research (exploratory research) conducted for this study. Phase 1 of the study, as outlined in Chapter 2, reviewed the extant literature related to the following concepts: agri-environmental literacy, PsyCap, and agritourism attributes. The domain concepts of environmental education (EE) and environmental literacy (EL) were applied to the

current study. These agri-environmental literacy and PsyCap concepts were conceptualised, and operational definitions were developed for the current study.

In Phase 2, as presented in Chapter 3, ideas from the literature review were consolidated into two conceptual agri-environmental literacy and PsyCap models for agritourism. As presented in Chapters 5 and 6, Phase 3 of the study involved the empirical testing of the primary research conducted for the study, and the dimensions in the two conceptual agri-environmental literacy and PsyCap models for agritourism.

This chapter focuses mainly on the primary research conducted through an online survey completed by potential agritourists residing in the Gauteng province. The current study followed a positivist paradigm and had a primarily quantitative research design.

The steps of the primary research process is illustrated in Figure 4.2 from a quantitative perspective.

Steps	Primary process (Quantitative)	Application to the study
Step 1	Select research design	Survey design (quantitative online panel survey)
Step 2	Select and develop a sampling plan	Purposive sampling
Step 3	Development of the research instrument	Self-administered online questionnaire
Step 4	Conduct a pilot test	A pilot-test was undertaken
Step 5	Field work: data collection	Data collection BMR online panel database
Step 6	Data processing	Data editing (cleaning), data validation
Step 7	Data analysis of results	Chapter 5 (Descriptive statistics) Chapter 6 (Factor analysis & SEM
Step 8	Present conclusions and recommendations of the study	Chapter 7 (Conclusions & recommendation)

Figure 4.2:   The primary research process

Source: Adapted from Babbie *et al.* (2007:98); Cooper & Schindler (2018:55); Creswell (2018:80); Malhotra (2007:78); Saunders *et al.* (2019:132); Tustin *et al.* (2010); Zikmund, Babin, Carr & Griffin (2013:63)

Each step, as illustrated in the primary research process and its application to the current study, is discussed, starting with Step 1, to select the research design for the study.

4.2   RESEARCH DESIGN OF THE STUDY

A research design serves as a roadmap for accomplishing the objectives of a research study. Therefore, the careful selection of an efficient design approach becomes crucial in attaining the goals of a research study (Hunziker & Blankenagel, 2021:1; Melnikovas, 2018:30). According to Saunders, Lewis and Thornhill (2019:128), the research design of a study can be represented by a "research onion". The research onion model developed by Saunders, Lewis, and Thornhill (2016:128) is used to explain the reasons behind choosing the data-collection techniques and results' analysis procedures. To formulate an effective methodology, a research onion explains the main layers or stages which need to be completed (Raithatha, 2017).

The research onion, as applied to the current study, is illustrated in Figure 4.3.
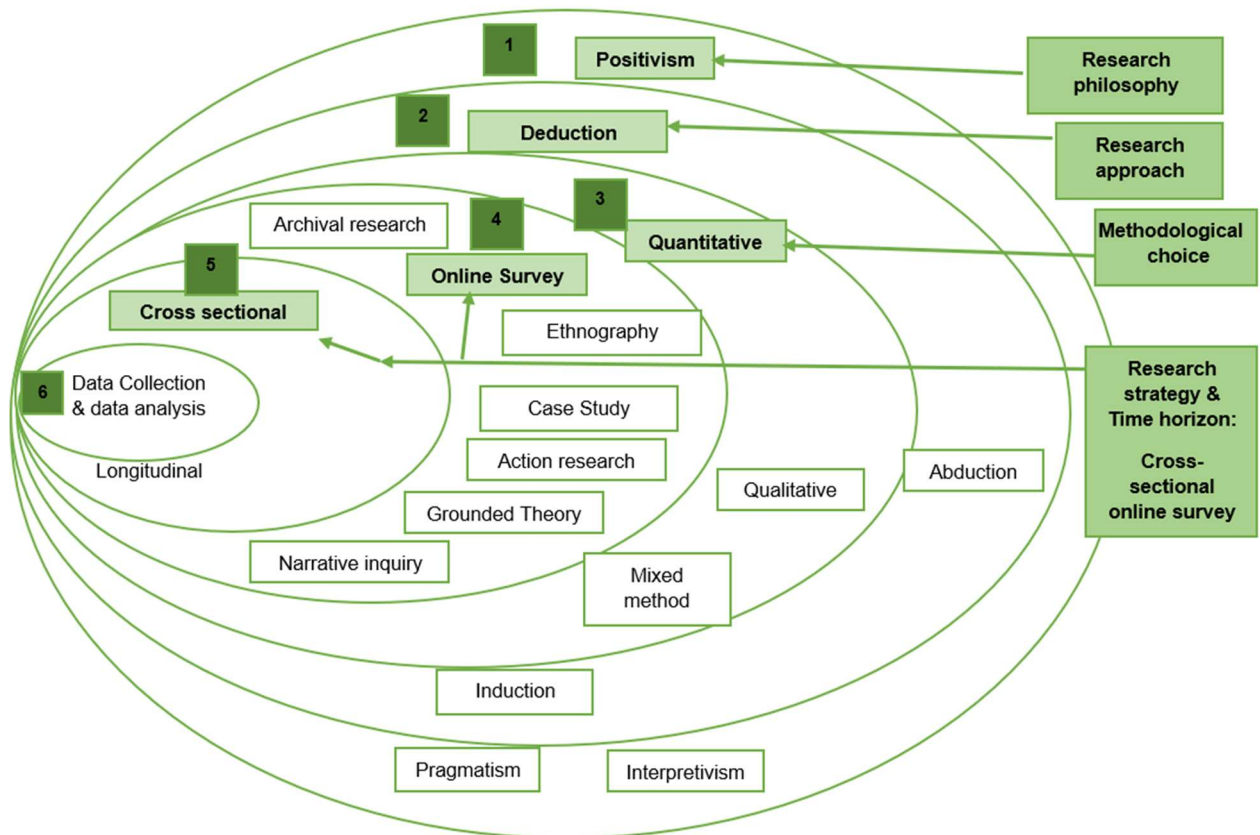
Figure 4.3:   **The research 'onion' underlying the research choices made in the current study**

As illustrated in Figure 4.3, the research philosophy used in the current study reflects the principles of positivism (1). Positivism refers to the "philosophical stance of the natural scientist entailing working with an observable social reality to produce law-like generalisations. The emphasis is on highly structured methodology to facilitate replication" (Saunders *et al.*, 2019:678). A positivist approach to research sees the scientific method as a useful tool for uncovering knowledge, which helps explain why things happen in the real world (Park, Konge & Artino, 2020:691). Positivism relies on the study of facts and the gathering of physical evidence (Gemma, 2018; Saunders, 2019).

A deductive research approach (2) involves moving from the general to the specific, such as developing hypotheses from a theory, testing them, and revising it according to the results (Harriman, 2010: 235; Woiceshyn & Dalellenbach, 2017:185). The current study applied deductive logic, as the literature review (Phase 1) was used to develop two conceptual models (Phase 2), which were tested empirically (Phase 3) (Figure 4.1).

In Phase 3 of the thesis, an empirical study was conducted. A quantitative study can be experimental, cross-sectional, or longitudinal. The primary data[5] were collected by means of a quantitative cross-sectional survey. The methodological choice[6] of the current study (in Phase 3) was therefore a quantitative research design (3). Quantitative research is a research methodology that emphasises the quantification of data collection and analysis (Creswell, 2020:4). The purpose of quantitative research is to determine the frequency, quantity, or magnitude of an observed phenomenon, which is what forms the basis of this part of the chapter (Cooper & Schindler, 2018:146). A quantitative study examines relationships between measurable items on instruments, and it tests objective theories (West, Turner & Zhao, 2010). A quantitative approach allows researchers to test the relationships among the items in the study model to prove or disprove their hypotheses based on the data collected (Dominic & Mahamed, 2023:1).

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[5] Primary data are acquired through original research and consists of data gathered by the researcher for the purposes of their study's objectives. (Welman *et al.*, 2009:149).

[6] The decision regarding methodology involves selecting either a qualitative, quantitative, or mixed-method research structure. (Creswell, 2018:4; Saunders *et al.*, 2019:165).

Among its many advantages, survey[7] research is fast, often inexpensive, reliable, and an efficient means of collecting information about a given population (Saunders *et al.*, 2019:168).

An online survey (4) research strategy[8] was used in the current study. An online survey refers to a survey that recruits respondents online (for example, through a website advertising campaign or a mass email message) and it requires of respondents to fill out the survey online (Lehdonvirta, Oksanen, Räsänen & Blank, 2021:136). Survey research is applicable when assessing the frequency and relationships between psychological and sociological items, and considers constructs such as attitudes, beliefs, prejudices, preferences, and opinions (Salkind, 2018:194; Saunders *et al.*, 2019:168). Using a survey as a research strategy is a fast, inexpensive, effective, and accurate way to assess data about an examined population (Zikmund *et al.*, 2013:191).

The current study was a cross-sectional study[9] (5), as the respondents could only complete the survey once. The measurements in this study were only conducted once, meaning that causal factors could not be isolated or inferred (Salkind, 2012). The data collection for this study involved the use of a self-administered questionnaire (6). Survey research is applicable when assessing the frequency and relationships between psychological and sociological items, and considers constructs such as attitudes, beliefs, prejudices, preferences, and opinions (Salkind, 2018:194). Using a survey as a research strategy is a quick, inexpensive, effective, and accurate way to assess data about an examined population (Zikmund *et al.*, 2013:191).

Research can either be conducted for exploratory, descriptive or explanatory purposes (Cooper & Schindler, 2018:124). Exploratory research[10] was outlined in the literature review in Chapters 2 and 3 (Phase 1 in Figure 4.1). Exploratory research investigates

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[7] Survey research is a quantitative approach that is numeric in nature and describes trends, attitudes, or opinions of a population by studying a sample of that population (Fowler, 2013:1077).

[8] The research strategy refers to the overall approach a researcher will take in addressing the research question (Saunders *et al.*, 2019:726).

[9] Cross-sectional studies are conducted on a single occasion, gathering data from a specific population sample at a single point in time at a particular moment (Neuman, 2007:17).

[10] Exploratory research is a methodological approach that is primarily concerned with generating or building theory (Davies, 2011:1).

research questions that have not previously been studied. Exploratory research is particularly useful for discovering new information and gaining insight into a topic of interest (Saunders *et al.*, 2019:174). The exploratory research process began with a review of the relevant secondary literature (Cooper & Schindler, 2014:130). The literature review was synthesised and organised into themes to enable the study to develop the two conceptual agri-environmental literacy and PsyCap models for agritourism (Phase 2).

In Phase 3, descriptive research[11] was followed to describe the subject investigated, in this case, potential agritourists in terms of the who, what, when, where and how questions of the current study (Cooper & Schindler, 2018:151). The current study developed an effective description of a potential agritourist for the sustainable development of agritourism and marketing agritourism. Descriptive research expands on the trends and themes that have already been discovered by survey research, and it is structured with clearly stated hypotheses, investigative questions, or research objectives (Dos Santos *et al.* 2021; Zikmund, 2013:60).

The research design of the current study is summarised in Table 4.1, according to the descriptors used by Cooper and Schindler (2018:151).

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[11] Descriptive research can be defined as an account of current events without the researcher having any control over the variables (Ethridge, 2004:24; Fox & Bayat, 2007:45).

Table 4.1:   Descriptors of research design

Descriptor	Application to the study
Purpose of the study: Exploration, description, and explanation are the main purposes of research	Exploratory research (Phase 1 and 2) Descriptive research (Phase 3)
Method of data collection	Online survey (panel database) Self-administered survey
The research environment: As a primary data collection method, primary data can be collected either under actual environment conditions or under staged or manipulated conditions.	Research was conducted in an actual environment: Potential agritourists completed the survey in their own time and place by clicking on the link invitation sent by the Bureau of Market Research.
Researcher's control of items: The researcher's ability to manipulate items	An ex post facto design was used, which means the researcher could only report what the respondent captured while completing the survey. Incomplete surveys were not considered for statistical analysis.
The time dimension: The study is carried out once or will be repeated over an extended period	This was a cross-sectional study. The study was carried out once, as data were collected once between August 2020 and January 2021. Each respondent had one opportunity to complete the survey once. A unique survey link was provided for each respondent as a control measure to complete the survey once.
The topical scope: Describes the breadth and depth of the study	Statistical analysis.

Following the selection of the research design, step 2 of the study was to develop the sampling plan.

4.3   RESEARCH DESIGN

The current study followed the following four steps in designing the sample plan as illustrated in Table 4.2.

Table 4.2:   The steps in designing the sample plan

Step 1: Define the population of interest/target population	
Step 2: Determine the sample frame	
Step 3: Select a sampling method	
Probability sampling	**Non-probability sampling**
Simple random sampling	Convenience
Stratified sampling	Judgemental/purposive
Systematic sampling	Quota
Cluster sampling	Snowball
Step 4: Determine the sample size	

Source: Adapted from Aaker *et al.* (2018:151); Kumar *et al.* (2013:336); Malhotra (2015:272); Saunders *et al.*, (2019:174); Tustin *et al.* (2010:339)

The sampling plan is discussed according to the steps illustrated in Figure 4.2.

4.3.1   Defining the population of interest/target population

The total number of subjects included in a study is referred to as the population of interest (Zikmund *et al.*, 2013:413). Studying the total target population may only be feasible when the population is small and it is absolutely necessary (Cooper & Schindler, 2018:402). According to Tustin *et al.* (2010:34) the survey population can be described in terms of the sample units[12], sample elements, and the extent and time of the survey.

In the context of the current study, the target population (4.3.2) consisted of potential agritourists residing in Gauteng, South Africa. In order to make inferences about the total population, a sample that is a subset of the target population can be selected (Salkind, 2018:97).

The rationale for selecting potential agritourists in Gauteng was based on the fact that Gauteng is the smallest province in land size in South Africa but the most condensed in terms of population, with 15.5 million residents (26% of the total population) in 2022

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[12] Sample unit is defined as "elementary units or group of such units which besides being clearly defined, identifiable and observable, are convenient for purpose of sampling are called sampling units" (Kabir,   2016:169).

(StatsSA, 2023:23) and the largest source for the tourist market in South Africa (NDT, 2021:8). Known as the economic hub of South Africa, Gauteng is the main gateway to Southern Africa for tourists from local and international markets (SAT, 2020:13).

A study of an entire population is not always practical, particularly if it is a large population (Zikmund *et al.*, 2013). The current study targeted potential agritourists in Gauteng, South Africa, a population with a density so high that studying them all is impossible.

The section below discusses the sampling frame for the current study.

4.3.2   Determine the sampling frame

A sample frame is a list of the study population (Zikmund *et al.,* 2013:69). Research frames are used to represent target population elements and consist of a list or set of directions for identifying the population members (Cooper & Schindler, 2018:402). Additionally, it is sometimes impossible to identify all members and size of the target population. The sample frame serves as an identification of all population elements from which the sample will be drawn. The primary sampling unit was potential agritourists residing in Gauteng as a tourism market source in South Africa. No complete list of the study population was available for selecting the sample elements, therefore, a database consisting of willing respondents (panel) from Gauteng, was selected as a proxy sample frame for the current study.

Traditional recruitment methods can be challenging for researchers who depend on human participants (Lehdonvirta *et al.*, 2021:133; Porter, Outlaw, Gale & Cho, 2019:320). Hence, online panel databases present a convenient opportunity for data collection (Lehdonvirta *et al.*, 2021133; Longhi & Nandi, 2014; Porter *et al.*, 2019). However, due to the COVID-19 lockdown in South Africa, it was challenging to access the sample, hence, an online panel survey was ideal for the current study. Furthermore, panel surveys offer the advantage of a high response rate and easier access to potential respondents (Tustin *et al.*, 2010).

The Bureau of Market Research (BMR) is a marketing research company of the University of South Africa that holds databases (Tustin *et al.*, 2010). The BMR database was used for the current study, as the database represented potential agritourists. The initial sampling frame consisted of a total of 3 924 individuals listed

on the BMR database who resided in Gauteng. The database constituted of an online community that could be willing to participate in the research study and covered the different age groups that were included in the questionnaire (question 3 of the survey).

The current study included all the generational cohorts in the sample. Consumer and travel patterns are likely to be influenced by different generations that share values, preferences, and beliefs throughout their lifetimes (Bernini & Cracolici, 2015; Kim & Park, 2020:1). Furthermore, different generations are an effective way to segment markets because of the homogeneous characteristics within each generational cohort (Kim & Park, 2020:1).

The current study's aim was to develop an agri-environmental literacy and PsyCap model for agritourism to develop agritourism sustainably and provide marketing to the target market. Even though the purpose of the current study is not segmentation, the information regarding the potential agritourist age cohorts will provide agritourism providers and marketers with meaningful managerial implications. The sampling method followed is discussed next.

4.3.3   Selecting a sampling method

A sampling method usually consists of probability and non-probability sampling methods (Salkind, 2019:69). Based on the knowledge of the study population, the financial resources available, the objectives, the limitations, and the nature of the problem, a sampling method was chosen. The current study following the sampling approach illustrated in Figure 4.4.
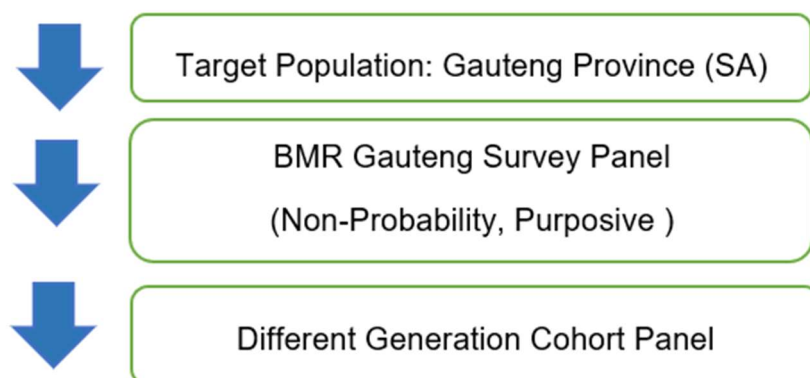
Figure 4.4:   The sampling approach followed in the current study

Source: Salkind (2019); Zikmund *et al.* (2013)

The proxy sample frame to be used was a panel database consisting of respondents who reside in Gauteng. A non-probability sampling method was selected, and participants were selected through the use of a purposive sampling[13] method. Purposive sampling is a non-probability sampling method that enables a researcher to identify and select those cases that will use limited resources effectively (Palinkas *et al.*, 2015) and that will provide valid and useful information (Campbell, 2020:652; Kelly, 2010: 317).

For the current study, a purposive sample was drawn based on the following criteria:

- The sample should include residents of Gauteng;

- The sample had to include different generational cohorts (Generation Z; Millennial, Generation X and Baby Boomers);

- Both male and female learners had to be included in the sample; and

- The respondents had to understand English, which was the language used in the questionnaire.

A total number of 3 924 panel members were identified (based on the above criteria) and were invited to participate in the survey. A process listed below was followed in the current study (Campbell, 2020:652; Kelly, 2010: 317; Palinkas *et al.*, 2015):

- The panel process involved recruiting members from an affiliate site (BMR site) who confirmed their willingness to take multiple surveys over an extended period of time by registering on the site; and

- A survey was then emailed to the panel participants based on the qualifying criteria described above.

The last step in the sampling plan process was to determine the sample size.

4.3.4   Determining the sample size

The sample size refers to the number of elements included in the research project (Malhotra, 2015:274). Different methods can be followed to determine the sample size for a study, and they depend on the following criteria:

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[13] Purposive sampling is "intentional selection of informants based on their ability to elucidate a specific theme, concept, or phenomenon" (Robinson, 2014:5243).

- The type of analyses to be undertaken for the study;

- The size of the total population from which the sample is drawn; and

- The type of statistical analyses to be used in the study (Kumar, 2005:181; Neuman, 2007:161; Saunders *et al.*, 2019:263).

Resources, such as time and money, need to be considered in the sample selection. A larger sample size and a more normal distribution are the signs of a sample drawn from a larger population. The central limit theorem explains this relationship.

Several guidelines were used in determining the sample size, including that of Cooper and Emory (1995:207) and Krejcie and Morgan (1970:608), which illustrate how sample size relates to total population. According to these authors, a sample size should be determined based on a population's characteristics. To ensure a sample size that is representative of a population, these authors developed the method described below.

The table for determining sample size from a given population shows that for a population (N) of 1 000 000, the recommended sample size is 384 (Krejcie & Morgan, 1970:608). Considering the panel database number of respondents which was a total number of 3 924, the current study sample size was calculated as follows:

Based on Krejcie and Morgan's (1970:608) work, the recommended sample size (n) of 351 is recommended for a population of 4000. The formula for calculating the unknown sample size based on a given recommended sample size for a different population size can be done using a proportion denoted as:

Recommended sample size for a population of 4000: **R** = 351

BMR Database population size (3924): **P** = 3924

Unknown sample size for BMR database population: **X**

The proportion is set up as: **R / P = X / Database_population_size**

351 / 4000 = X / 3924

X = (351 / 4000) * 3924

 =344,331

=344

Based on Krejcie and Morgan's (1970:608) work, the estimated sample size for the population of 3924 is based on the recommendation for a population of 4000 which is 344. A calculated sample size provides one with a minimum, not a maximum. The decision to use a sample size of 526 instead of the calculated 344 was deliberate and aimed to enhance the quality and robustness of the study's results. While the recommended sample size serves as a baseline and guideline and is based on providing a minimum sample size for point estimates given the acceptable margin of error. It is important to recognise that deviations from this guideline can be justified under certain circumstances. In this case, the complexity of the final SEM model requires a larger sample size which allows for increased statistical power and greater precision in estimates, and enhanced generalisability of findings. Additionally, a larger sample size can help mitigate the impact of potential biases and increase the reliability of the study's conclusions.

By prioritising statistical complexity, data quality and reliability, the study aimed to produce more comprehensive and trustworthy results, ultimately contributing to a deeper understanding of the research topic. The sample size (n) of 526 selected for the current study seemed appropriate on the basis of Krejcie and Morgan's (1970:608) work. Therefore, the information reported in this research study was collected from a total of n = 526.

For this study, the determination of the sample size (Section 4.4.4) considered factors such as the total population size and statistical analyses to be used (Malhotra, 2015). The techniques used (Section 4.4.4), which included recommendations from Cooper and Emory (1995) and Krejcie and Morgan (1970), guaranteed that the selected sample size would fulfil the research goals. Utilising the recommendations from Hair, Black, Babin and Anderson (2014a), presupposed that the sample size selected would be appropriate for factor analysis and structural equation modelling (SEM). These techniques are in line with the goals of the study and enabled thorough data analysis and insightful interpretation. Scholars have differing views on the optimal sample size for exploratory factor analysis (EFA), but there is a consensus that a larger sample size is generally advisable (Pallant, 2011:18). Tabachnick and Fidell (2007:613) recommended a minimum of 300 cases for EFA.

Hair *et al.* (2014a:102) stated that a ratio of five observations per variable is the minimum sample size when factor analysis is used as an analytic method.

Given the sample size of the present study (n = 526), it can be regarded as appropriate for EFA. According to Sivo, Fan, Witta and Willse (2006), there is no agreement on the sample size for SEM, which includes confirmatory factor analyses (CFA), although Garver and Mentzer (1999), Hoelter (1983), and Kline (2015:16) recommended 200 as the critical number. According to Hair, Black, Babin, Anderson and Tatham (2014b:661–664), the minimum sample size for an SEM is influenced by various factors, as indicated in Table 4.3 below, which displays the type of model and the sample size associated with the size.

Table 4.3:   Sample size specification for SEM

Type of model	Minimum sample size
Models with five or fewer constructs, each with more than three items (observed items, and low item communality (0.6 or higher).	100
Models with seven or fewer constructs, modest communalities (0.5), and no under-identified constructs.	150
Models with seven or fewer constructs, lower communalities (below 0.45), and/or multiple under-identified (fewer than three) items.	300
Models with a larger number of constructs, some of which have fewer than three measured items as indicators and multiple low commonalities.	500

Source: Hair *et al.* (2014b:664)

The sample size of 526 was appropriate to conduct SEM and it met the requirements for further data analysis. The realised sample size of 526 potential agritourists residing in Gauteng, South Africa, is justified by considerations of feasibility, representation, population characteristics, and methodological appropriateness. The use of established guidelines and expert recommendations lent credibility to the chosen sample size, enabling robust data analysis and valid inferences about the larger population.

After the sampling plan design, the next step involved the development of the research instrument.

4.4   THE RESEARCH INSTRUMENT

The third step in the primary research process is selecting and developing the research instrument. To answer the research objectives and achieve the primary aim of the study, an online panel survey was developed as measuring instrument to

determine potential agritourists in Gauteng (Kumar, 2018:156). It is important ensure that the questions in a survey are linked to the research objectives (Kumar, 2018:138). The questionnaire was developed to measure four constructs:

- Agri-environmental literacy categories (agri-environmental orientation, knowledge, attitude, concern and sensitivity);
- Psychological capital (PsyCap);
- Behavioural intention; and
- Agritourism attitudes.

The constructs and items were based on the two conceptual agri-environmental literacy and PsyCap models for agritourism established in the literature review (Section 3.1). Table 4.4 summarises the constructs, sections in the survey, number of items and the measurement scale used to construct the final questionnaire (Appendix A).

Table 4.4: Construction of the agritourism survey for the potential market

Construct		Section of questionnaire	No of items	Measurement scale
Biographic information	**A**	Information about panel members	–	-
Agri-environmental orientation	**B**	Agri-environmental orientation	13	Adapted from Conradie, (2017:446) and the Children's Environmental Perceptions Scale (CEPS) measuring environmental awareness and affinity (Conradie, 2017; Larson *et al.* 2011)
Agri-environmental knowledge	**C1**	Agricultural and environmental knowledge	11	Self-designed from sources
Agri-environmental attitude	**C2**	Attitudes towards nature, environment and farming	19	Bogner & Wiseman (2006); Conradie (2017)
Behavioural intention	**C3**	Behavioural intention	16	Leeming *et al.* (1995); Conradie (2017)
Agri-environmental concern	**C4**	Environmental concern	11	Veisi *et al.* (2019)

Agri-environmental sensitivity	D	Farm environmental sensitivity	10	Veisi *et al.* (2019)
Psychological capital (PsyCap)	E	Psychological capital (PsyCap)	24	Luthans & Youssef (2007a); Luthans *et al.* (2012, 2013)
Agritourism attributes	F	Agritourists' important attributes	22	Shah *et al.* (2020)

The questionnaire was based on previous research instruments, as discussed in the literature review (Chapter 3). A discussion of each section in the survey follows.

Section A of the questionnaire determined the biographic information of potential agritourists, namely, their gender, age, home language, race group and place of residence.

Section B enquired about the respondents' agri-environmental orientation. These questions were derived from Larson *et al.*'s (2011:72) research on environmental orientation. Conradie (2017) adapted the Larson *et al.* (2011) orientation scale that measured the awareness and affinity of secondary school learners in Grade 8 to 10 in Gauteng towards birds and the natural habitat (avi-orientation). Larson *et al.*'s (2011) measuring instrument was explicit and was developed to grasp the eco-awareness and eco-affinity of children. Research has found that the instrument can adequately measure these two concepts (Flowers, Carroll, Green & Larson, 2015; Conradie, 2017). It should be noted that Larson *et al.*'s (2011) measurement scale was adapted from the New Ecological Paradigm (NEP) Scale, which was found to be complicated or complex (Larson *et al.*, 2011:72). It has also been reported that the NEP scale is inadequate to fully explore all human dimensions in terms of their environmental perceptions and to differentiate distinct environmental perceptions (Manoli *et al.*, 2019:10).

The current study tested the suitability of the CEPS amongst adult groups by measuring their environmental and agri-orientation towards PEB. This is in line with Larson *et al.*'s (2011:85) suggestion of continuous refining and revision of the tool, especially amongst the diverse populations, to enhance its utility. Furthermore, the content validity of the two-component model (CEPS) has been verified (Larson *et al.*, 2011:81).

The current study used a Likert-type scale to rate the respondents' level of agreement or disagreement with each statement on a scale of 1 (strongly disagree) to 5 (strongly agree). The CEPS (Larson *et al.*, 2011:79) was adapted from general environmental items to specific items measuring respondents' awareness of and affinity towards the agri-environment. The CEPS scale originally consisted of 16 items, which were refined to 13 items after the pilot study data for the current study had been analysed. Items B13, B15, and B16 were removed during the revision (Appendix A: Final questionnaire). The adapted items from the CEPS scale are indicated in Table 4.5.

Table 4.5:   Adapted items from the CEPS scale

	2-CEPS scale		Adapted items for pilot questionnaire
	Environmental orientation		**Agri-environmental orientation**
Item no.	**Item**	**Item no.**	**Item**
1	I like to learn about plants and animals.	B1	I like to learn about different farms and farming (where my food comes from).
2	Plants and animals are important to people.	B2	Farms and farming are important to people.
3	I like to read about plants and animals.	B3	I like to read about farming.
4	Plants and animals are easily harmed or hurt by people.	B4	Farms are easily harmed or hurt by people.
5	I am interested in learning new ways to help protect plants and animals.	B5	I am interested in learning new ways to help protect farming and farms.
6	People need plants to live.	B6	People need farms to live.
7	My life would change if there were no trees.	B7	My life would change if there were no trees.
8	I would give some of my own money to help save wild plants and animals.	B8	I would give some of my own money to help save farms.
9	I would spend time after school working to fix problems in nature.	B9	I would spend time after school working to fix problems on a farm.
10	We need to take better care of plants and animals.	B10	We need to take better care of farms.
11	I like to spend time in places that have plants and animals.	B11	I like to spend time in places that have farms (plants and animals).
12	It makes me sad to see homes built where plants and animals used to be.	B12	It makes me sad to see homes built where farms used to be.

	2-CEPS scale		Adapted items for pilot questionnaire
	Environmental orientation		**Agri-environmental orientation**
Item no.	**Item**	**Item no.**	**Item**
13	I like to learn about nature.	B13	–
14	I would help to clean up green areas in my neighbourhood.	B14	I would volunteer at a cleaning-up farm project in my neighbourhood.
15	Nature is easily harmed or hurt by people.	B15	–
16	My life would change if there were no plants and animals.	B16	–

Section C1 consisted of questions to measure the respondent's basic knowledge of agriculture and agritourism in the South African context. This section consisted of multiple-choice questions. The respondents were requested to pair a farming product produced in South Africa per illustration correctly with the corresponding name.

Section C2 determined the respondent's attitude towards nature, the environment and farming. The current study used the 2-MEV scale (Bogner & Wiseman, 2006) to measure agri-environmental and agritourism values. Previous research has confirmed this scale, as Conradie (2017) adapted this scale to a South African sample, specifically focusing on school learners' ecological values regarding birds and their habitat. Several scales were investigated (Section 3.4.2), and the 2-MEV scale was chosen for the current study (Bogner & Wiseman, 2006:253; Johnson & Manoli, 2010:84).

Initially developed in Europe, the 2-MEV scale was used to measure adolescents' attitudes and to gauge the effectiveness of educational programmes. This validity has been expanded to that of adults as well (Munoz *et al*., 2009; Oerke & Bogner, 2013). The 2-MEV scale was quantified by using a questionnaire designed to measure environmental values (attitudes), inclusive of two factors, namely, utilisation (U) and preservation (P). A five-point Likert-type scale ranging from strongly agree (5) to strongly disagree (1), with an undecided category, was used in the research by Bogner and Wiseman (2006:249).

The current study included 19 environmental agri-value (attitudes) statements in the questionnaire, which respondents were requested to rate using an agreement scale ranging from strongly disagree (1) to strongly agree (5). The items included in the 2-MEV scale were adapted for the current study. These items are reflected in Table 4.6.

After the pilot study, data were analysed, and one item, "sitting at the edge of a pond watching dragonflies in flight is enjoyable", was excluded from the final questionnaire (Appendix A: Final questionnaire: Section C2).

Table 4.6:   Adapted items from the 2-MEV scale

2-MEV scale		Adapted items for pilot questionnaire	
Environmental values		**Agri-environmental orientation**	
Preservation (P)			
Item no.	**Item**	**Item no.**	**Item**
1	I save water by taking a shower instead of a bath.	C2.1	I save water because it is important for the survival of farms.
2	I always switch the light off when I don't need it.	C2.2	I save electricity because it could decrease air pollution, which endangers farming.
3	Humankind will die out if we don't live in tune with nature.	C2.3	Farms will stop existing if we do not live in tune with nature (farms).
4	I enjoy trips to the countryside.	C2.4	I enjoy trips to the farms.
5	Sitting at the edge of a pond watching dragonflies in flight is enjoyable.	C2.5	-
6	It is interesting to know what kinds of creatures live in ponds or rivers.	C2.6	It is interesting to know what is produced on farms.
7	Dirty industrial smoke from chimneys makes me angry.	C2.7	Industrial smoke from factories that kills farm crops and animals makes me angry.
8	It upsets me to see the countryside taken over by building sites.	C2.8	It upsets me to see the farmland taken over by building sites.
9	We must set aside areas to protect endangered species.	C2.9	We must set aside areas to protect farms.
10	Society will continue to solve even the biggest environmental problems.	C2.10	Society will continue to solve even the biggest environmental problems that affect farming.

2-MEV scale			Adapted items for pilot questionnaire	
Environmental values			**Agri-environmental orientation**	
Preservation (P)				
Item no.	Item	Item no.	Item	
Utilisation (U)				
11	Humans have the right to change nature as they see fit.	C2.11	Human beings have the right to change an agricultural environment as they see fit.	
12	We need to clear forests in order to grow crops.	C2.12	We need to clear forests in order to grow crops.	
13	We should remove garden weeds to help beautiful flowers grow.	C2.13	We should remove garden weeds to help beautiful flowers grow.	
14	Our planet has unlimited resources.	C2.14	Our planet has unlimited resources to feed everyone on the planet.	
15	Nature is always able to restore itself.	C2.15	A farm is always able to restore itself.	
16	We must build more roads so people can travel to the countryside.	C2.16	We must build more roads so people can travel to the farms.	
17	Only plants and animals of economic importance need to be protected.	C2.17	Farming is important for the economy and needs to be protected.	
18	Worrying about the environment often holds up development projects.	C2.18	Worrying about farming often holds up development projects.	
19	People worry too much about pollution.	C2.19	People worry too much about the impact of a high concentration of air pollutants on farming.	
20	Human beings are more important than other creatures.	C2.20	Human beings are more important than taking care of the farming environment.	

Section C3 measured the respondents' intended behaviour regarding the agri-environment and agritourism. The pro-environmental behavioural intentions of respondents were selected from potential agritourists regarding farming, the natural environment, and agritourism. Environmental behavioural intentions have been found to affect PEB positively. In the current study, behavioural intention indicated how much effort respondents are willing to exert to perform in a particular PEB to the benefit of the farm environment and, in turn, agritourism (Ajzen, 1991; Bamberg & Möser, 2007; Wiernik *et al.*, 2013).

Various scales were investigated (Section 3.5.2), and the verbal commitment subscale of CHEAKS by Leeming *et al.* (1995) was adapted to measure the pro-environmental behavioural intentions of respondents. The CHEAKS scale was specifically developed for elementary, middle and junior high school learners (Leeming *et al.*, 1995). This scale was derived from the verbal commitment subscale of the Ecology Scale of Maloney and Ward (1973), the first multi-dimensional scale to measure environmental concern. The CHEAKS scale has been found to provide sound psychometric properties, and to be a reliable and valid instrument (Leeming *et al.*, 1995). The instrument can be used in a variety of settings and has been applied to an adult sample, where it proved to be valid and reliable (Mónus 2020:94).

Out of the 12 items of the verbal commitment subscale of the CHEAKS (Leeming *et al.*, 1995) that reflected pro-environmental intentions, only 10 items were adapted to measure the pro-environmental behavioural intention of respondents regarding the agri-environment and agritourism. An additional six items (C3.11, C3.12, C3.13, C3.14, C3.15 & C3.16) were adapted from Conradie's (2017) original research. These additional items measured the respondents' pro-environmental behavioural intentions or willingness to participate in agritourism activities.

Leeming *et al.* (1995) measured the verbal commitment of behavioural intention using a five-point Likert-type response format, ranging from very true to very false. Abdullah *et al.*'s (2019) semantic differential scale, ranging from strongly agree (5) to strongly disagree (1) was used to measure respondents' behavioural intentions regarding pro-agritourism and environmental behaviour. Table 4.7 reflects the items included in the CHEAKS verbal commitment subscale, and the way these items were adapted for the current study. After the pilot study, data were analysed, and items E1.10 to E1.12 were

removed from the final questionnaire (Appendix A: Final questionnaire: Section E1). The adapted items from the CHEAKS scale are shown in Table 4.7.

Table 4.7:   Adapted items from the CHEAKS verbal commitment (behavioural intention) subscale

	CHEAKS verbal commitment (behavioural intention) subscale		Adapted items for pilot questionnaire	
	Behavioural intention regarding the natural environment		**Behavioural intention regarding the agri-environment and agritourism**	
Item no.	**Item**	**Item no.**	**Item**	
1	I would be willing to stop buying some products to save animals' lives.	C3.1	I would be willing to stop buying some products to save farming.	
2	I would not be willing to save energy using less air conditioning.	C3.2	I would be willing to save electricity if it could avoid destroying farms.	
3	To save water, I would be willing to use less water when I bath.	C3.3	I would be willing to save water because it is important for the survival of farming.	
	I would not give $15 of my own money to help the environment.		–	
4	I would be willing to ride the bus to more places in order to reduce air pollution.	C3.4	I would be willing to ride the bus to more places in order to reduce air pollution.	
5	I would not be willing to separate my family's trash for recycling.	C3.5	I would be willing to separate my rubbish for recycling if it would contribute to preserving farms.	
6	I would give $15 of my own money to help protect wild animals.	C3.6	I would be willing to give my own money to help protect farms.	
7	To save water, I would be willing to turn off the water while I wash my hands.	C3.7	I would be willing to turn off the water while I wash my hands if it could preserve farms and farming.	
8	To save energy, I would be willing to use dimmer light bulbs.	C3.8	–	
	I would go from house to house to pass out environmental information.		I would be willing to share environmental information to inform people about farming.	

	CHEAKS verbal commitment (behavioural intention) subscale		Adapted items for pilot questionnaire
	Behavioural intention regarding the natural environment		**Behavioural intention regarding the agri-environment and agritourism**
Item no.	**Item**	**Item no.**	**Item**
9	I would be willing to go from house to house asking people to recycle.	C3.9	I would be willing to explain to people who do not recycle how it could help farm life.
10	I would be willing to write letters asking people to help reduce pollution.	C3.10	I would be willing to motivate people to support environmentally responsible farming.
	Conradie's (2017) (behavioural intention) subscale		
11	I am willing to buy a bird book to assist me in identifying birds.	C3.11	I am willing to buy a farming book to assist me in understanding where my food comes from.
12	I am willing to buy a bird book to learn more about birds and bird habitats.	C3.12	I am willing to buy a farming book to learn more about farm crops and animals.
13	I am willing to talk to my teachers about a bird club at school.	C3.13	I am willing to talk to my family and friends about attending an agricultural trade show (e.g. Nampo Agricultural Trade Show).
14	I am willing to join a local birdwatching club.		–
15	I would be willing to go on a birdwatching tour in my area.	C3.15	I am willing to attend an agricultural trade show (e.g. Nampo Agricultural Trade Show).
16	I would be willing to put up a bird house or a bird feeder near my home.	C3.16	I would be willing to start a fruit and vegetable garden at home.
17	I would be willing to go on a birdwatching tour in a nature reserve.	C3.17	I would be willing to go on a farm tour.

Section C4 measured the environmental concern of respondents regarding the agri-environment. The current study used an 11-point environmental concern scale from Veisi *et al.* (2019:34). Potential agritourists were requested to rate the statements using an agreement scale, ranging from 'not at all concerned' (1) to 'critically concerned' (5).

Section D measured the environmental sensitivity of respondents regarding the agri-environment. The current study adapted a 10-point environmental concern scale from Veisi *et al.* (2019:34) to measure potential agritourists' agri-environmental sensitivity. Potential agritourists were requested to rate items using an agreement scale, ranging from 'strongly disagree' (1) to 'strongly agree' (5). The adapted items from the Environmental Sensitivity Scale are indicated in Table 4.8.

Table 4.8:   Adapted items from the environmental sensitivity scale

	Environmental sensitivity scale		Adapted items for pilot questionnaire
	Environmental sensitivity regarding the natural environment		Farm environmental sensitivity regarding the agri-environment
Item no.	Item	Item no.	Item
1	I perform my everyday business activities in an environmentally friendly manner.		–
2	I pay attention when I hear about environmental issues.	D 1.1	I pay attention when I hear about farm environmental issues.
3	Collective action (i.e. movements) is central to solving environmental problems.	D 1.2.	Collective action (i.e. movements) is central to solving farm environmental problems.
4	It is important that everyone be aware of environmental problems.	D 1.3	It is important that everyone is aware of farm environmental problems.
5	I feel personally responsible for helping to solve environmental problems.	D 1.4	I feel personally responsible for helping to solve farm environmental problems.
6	People should be held responsible for any damage they cause to the environment.	D 1.5	People should be held responsible for any damage they cause to the farm environment.
7	Nature and the environment have been invaluable just due to entertainment services.	D 1.6	Entertainment services do not value nature and the farm environment.
8	I perceive myself as very concerned about environmental issues in my community.	D 1.7	I perceive myself as very concerned about farming issues in my country.
9	I perceive myself as a sensitive person about energy usage (i.e. turning off lights and shutting off water faucets).	D 1.8	I perceive myself as someone who is sensitive to responsible farming (i.e. organic farming).
10	Green purchasing is the most effective way to reduce and minimise the adverse impact on human health and the environment.	D 1.9	Green purchasing is the most effective way to reduce and minimise the adverse impact on human health and the farm environment.
11	I am personally concerned about water shortage in Tehran that is a sensitive subject.	D 1.10	I am personally concerned about the impact of water shortage on the farming industry.

Section E measured the positive psychology, namely, PsyCap of potential respondents regarding their overall life. The current study used the PCQ-24 (Luthans *et al.*, 2007c) to measure PsyCap.

The PCQ-24 was designed by Luthans *et al.* (2007c) to measure PsyCap. This questionnaire consists of four subscales: hope, efficacy, resilience and optimism. Each subscale is measured with six items on the PCQ-24 for a total of 24 items in the questionnaire. The PsyCap Questionnaire (PCQ-24) is applied by the majority of studies that measure PsyCap (Section 3.4.2).

The current study used all 24 PsyCap statements, which the respondents were requested to rate using an agreement scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). The items in the PCQ-24 were adapted for the current study, as shown in Table 4.9. After the pilot study, the data were analysed, and all the items were retained in the final questionnaire (Appendix A: Final questionnaire: Section E).

Table 4.9:   Adapted items from the PsyCap scale

	Psychological capital scale			Adapted items for pilot questionnaire	
	PsyCap regarding overall life			**PsyCap regarding overall life**	
Item no.	**Item**		**Item no.**	**Item**	
	E1: Hope				
1	If I should find myself in a jam at work, I could think of many ways to get out of it.		E1.1	If I should find myself in difficulty, I could think of many ways to get out of it.	
2	At the present time, I am energetically pursuing my work goals.		E1.2	At the present time, I am energetically pursuing my overall life goals.	
3	There are lots of ways around any problem.		E1.3	There are many ways around any problem that I am facing now.	
4	Right now I see myself as being pretty successful at work.		E1.4	Right now, I see myself as fairly successful at life overall.	
5	I can think of many ways to reach my current work goals.		E1.5	I can think of many ways to reach my current overall life goals.	
6	At this time, I am meeting the work goals that I have set for myself.		E1.6	At this time, I am meeting the goals that I have set for myself.	
	E2: Resilience				
7	When I have a setback at work, I have trouble recovering from it, moving on.		E2.7	When I have a setback in my life, I have trouble recovering from it and moving on.	
8	I usually manage difficulties one way or another at work.		E2.8	I usually manage difficulties one way or another in my life overall.	
9	I can be "on my own," so to speak, at work if I have to.		E2.9	I can be "on my own", so to speak, if I have to.	

Item no.	Psychological capital scale	Item no.	Adapted items for pilot questionnaire
	PsyCap regarding overall life		**PsyCap regarding overall life**
Item no.	**Item**	**Item no.**	**Item**
10	I usually take stressful things at work in stride.	E2.10	I usually take stressful things regarding my life in my stride.
11	I can get through difficult times at work because I've experienced difficulty before.	E2.11	I can get through difficult times in my life because I have experienced difficulty before.
12	I feel I can handle many things at a time at this job.	E2.12	I feel I can handle many things at a time in my life.
E3	**E3: Optimism**		
14	When things are uncertain for me at work, I usually expect the best.	E3.14	When things are uncertain in my life, I usually expect the best.
15	If something can go wrong for me work-wise, it will.	E3.15	If something goes wrong in my life, it will.
16	I always look on the bright side of things regarding my job.	E3.16	I always look on the bright side of things in my life.
17	I'm optimistic about what will happen to me in the future as it pertains to work.	E3.17	I am optimistic about what will happen in my life in the future.
18	In this job, things never work out the way I want them to.	E3.18	In my life, things never work out the way I want them to.
	E4: Efficacy		
19	I feel confident analysing a long-term problem to find a solution.	E4.19	I feel confident analysing a long-term problem in my life to find a solution.
20	I feel confident in representing my work area in meetings with management.	E4.20	I feel confident about my life.

	Psychological capital scale		Adapted items for pilot questionnaire
	PsyCap regarding overall life		**PsyCap regarding overall life**
Item no.	**Item**	**Item no.**	**Item**
21	I feel confident contributing to discussions about the company's strategy.	E4.21	I feel confident contributing to discussions about life in general.
22	I feel confident helping to set targets/goals in my work area.	E4.22	I feel confident helping to set targets/goals in my life.
23	I feel confident contacting people outside the company (e.g. suppliers, customers) to discuss problems.	E4.23	I feel confident contacting people to discuss life problems.
24	I feel confident presenting information to a group of colleagues.	E4.24	I feel confident presenting information to a group of my peers.

Section F measured the respondents' perceived important agritourist attributes. These are important attributes that would influence a respondent to choose to visit an agritourism establishment. The respondents rated these attributes on a 5-point importance Likert scale, ranging from 'not important at all' (1) to 'critically important' (5). These attributes were adapted from previous research by Shah *et al.* (2020).

Section F consisted of 22 attributes that would influence the choice of a specific agritourism establishment (farm). These items are indicated in Table 4.10. Data were analysed after the pilot study (refer to Section 4.5); all items were retained in the final questionnaire. Although item F17, "Venue is hygienic and safe", was divided into two items, F5.17, "The farm venue is hygienic", and F5.18, "The farm venue is safe", in the final questionnaire (Appendix A: Final questionnaire: Section F).

Table 4.10:   Adapted items from the agritourism attributes

	Agritourism attributes		Adapted items for pilot questionnaire
Item no.	Item	Item no.	Item
	Attributes that would influence the choice of agritourism		If you had an opportunity to be an agritourist or farm tourist, which factors would motivate and influence you to visit an agritourism farm
F1: Landscape			
1	Try something different.	F1.1	The experience of trying something different.
2	Natural surroundings.	F1.2	The farm's natural surroundings.
3	Agricultural landscape.	F1.3	The farm's agricultural landscape.
4	Value for money.	F1.4	The value for money offered by visiting the farm.
5	Venue accessibility.	F1.5	The accessibility of the farm venue.
6	Basic medical facility.	F1.6	The basic medical facilities available on the farm.
F2: Authentic Farm Experience			
7	Actual operational farm.	F2.7	It is an actual operational farm.
8	Offering F&B choice.	F2.8	The farm offers food and beverage choices.
9	Officially classified.	F2.9	The farm is officially classified as an agritourist farm.
10	Caters to few people.	F2.10	The farm only caters for a few people at a time.

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	Agritourism attributes		Adapted items for pilot questionnaire
Item no.	Item	Item no.	Item
F3: Interaction			
11	Self-harvesting.	F3.11	There is an opportunity to interact in self-harvesting.
12	Agricultural value-added processes.	F3.12	There is an opportunity to interact in agricultural value-added processes.
13	Handicraft making.	F3.13	I can interact in handicraft making.
F4: Activities			
14	Presence of livestock.	F4.14	The presence of livestock
15	Offers on-farm activities.	F4.15	The farm offers on-farm activities.
16	Offers off-farm activities.	F4.16	The farm offers off-farm activities (e.g. pick fruit or vegetables, farm tour, farm cooking class and farm stall).
F5: Basic Services			
17	Venue is hygienic and safe.	F5.17	The farm venue is hygienic.
18	–	F5.18	The farm venue is safe.
19	Offers accommodation.	F5.19	The farm offers accommodation.
20	Offers farm-grown food.	F5.20	The farm offers farm-grown food.
F6: Fresh Food			
21	Prefer fresh food.	F6.21	I prefer fresh food.
F7: Traditional Farming			
22	Interested to see traditional farming techniques.	F7.22	I am interested in seeing traditional farming techniques.

4.5 PILOT STUDY

Pilot testing is an essential part of the construction of an instrument (Cooper & Schindler, 2018:280; Welman, Kruger & Mitchell, 2009:56). Therefore, the fourth step of the research process was to conduct a pilot study. The design of a questionnaire always entails the possibility that some questions may cause problems, which can be identified and eliminated through questionnaire testing (Sudman & Blair, 1998:300).

Hair *et al.* (2014b:664) suggested screening items using respondents similar to those from the same population before borrowing items from other sources.

The questionnaire was subjected to review by a team of experts, a statistician, two senior researchers at the BMR, academic experts and a language editor before the pilot study was conducted (Kembo, 2020; Pohl 2020; Van Zyl, 2020). Following their recommendations, minor modifications were made to the questionnaire, and it was then pre-tested.

The survey (for pre-testing) was sent to 40 respondents in Gauteng during August 2020. The survey was sent online by Qualtrics, and 38 participants started the survey, while two did not start. A total of 29 respondents completed the survey. The survey instructions were included in the cover letter, and a deadline was provided by email. Table 4.11 summarises the number of constructs and the items included in the pilot questionnaire.

Table 4.11:   Construction of the questions

Construct	Section of questionnaire		No. of items	Type of question
Biographic information	A	Information about you	9	Question A1–5: Closed-ended
				Question A6: Open-ended
				Question A7: Closed-ended
Agri-environmental orientation	B	Interest in agritourism and its environment (farm)	19	Closed-ended
Knowledge, attitude and behavioural intention	C1	Agritourism and its environmental knowledge	11	Closed-ended
Attitudes towards nature, environment and farming	C2	Environmental attitudes and values regarding agritourism environment (farm)	19	Closed-ended
Behavioural intention	C3	Behavioural intention towards agri-environmental behaviour	16	
Environmental concern	C4	Concern towards environmental impacts on farms and farming	11	Closed-ended

Construct	Section of questionnaire		No. of items	Type of question
Farm environmental sensitivity	D	Sensitivity towards environmental impacts on farms and farming	10	Closed-ended
PsyCap	E	PsyCap	24	Closed-ended
Agritourism attributes	F	Agritourism perceived important attributes	22	Closed-ended
Total			141	

The feedback with respect to the interpretation of the online survey showed that face validity of all subscales was generally deemed appropriate. The general feedback was positive, with only a few suggestions for improvements. One item under Section C1 (agricultural and environmental knowledge) was added: "What is the national animal of South Africa?" Minor modifications were made to clarify certain questions, and items such as "I would volunteer at a cleaning-up farm project in my neighbourhood" were improved to "I would volunteer at a cleaning-up farm project initiated in my neighbourhood".

Under Section E, the statement measuring Hope: "At this time, I am meeting the goals that I have set for myself", was changed to "I am meeting the goals that I have set for myself". The statement "At the present time, I am energetically pursuing my overall life goals" was simplified to "I am energetically pursuing my overall life goals", and "Right now I see myself as being fairly successful at life overall" was changed to "I see myself as fairly successful at life overall". No changes were made under Section B, Agri-environmental orientation. In the pilot study, it was confirmed that the research instrument was suitable for the intended study.

To construct the final questionnaire, the data analysis based on the pilot test and the feedback with respect to the interpretation of the participating respondents were considered. Section 4.6 discusses step 5 of the research process, which involved fieldwork and data collection.

4.6   FIELDWORK: DATA COLLECTION

The fifth step in the research process involved the collection of data for the current study. The study made use of an online survey to collect the data in 2020. The data collection adhered to all protocols in line with the COVID-19 regulations at the time of the study. The data collection process commenced on 24 August 2020 and concluded on 18 January 2021. The BMR (Unisa) assisted in the collection of data, which was done through an online research panel. The BMR sent a link to their online panel (the online database). A total of 3924 respondents in the BMR database who reside in Gauteng were invited to participate in the survey through a weblink.

The survey included an introductory letter from Unisa containing a simplified definition of agritourism to ensure the respondents' understanding (Appendix A). A dichotomous question (yes/no) was included to request the respondent's permission to participate in the study before commencing with the survey. A total of 597 questionnaires were collected, resulting in 526 usable questionnaires after cleaning. Step 6 of the research process was data processing and analysis, which is discussed next.

4.7   DATA PROCESSING AND ANALYSIS

Data were edited, coded, and captured during data processing (step 6 of the research process). All completed questionnaires were reviewed to identify and minimise errors, incompleteness, and misclassifications (Cooper & Schindler, 2018:377). During data coding (pre-coding), categories were assigned receptive codes that were built into the questionnaire design (Cooper & Schindler, 2018:379; Denscombe, 2007:258). Data were captured automatically using the online survey platform, Lime Survey. This way, the information gathered was converted into a format suitable for viewing and manipulating (Cooper & Schindler, 2018:378).

The online data were exported into a Microsoft Excel sheet. The statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 25.0 and AMOSv25. Section 4.8.4 describes the statistical analysis of the data used in the study. Data analysis refers to the ordering, categorising, summarising, and manipulating of the data to study relationships, test them, and/or draw conclusions (De Vos *et al.*, 2007:249).

The research process applied to the current study (step 6) comprised data processing, and the analysis involved processing and analysing the collected data. Statistical analysis took place in the following order:

- Cleaning and validation of the data (Section 4.8.1);

- The description of the data generated by descriptive statistics (Section 4.8.2);

- Research instrument validity and reliability (Section 4.8.3); and

- Statistical methods used in the study (Section 4.8.4).

4.8   DATA ANALYSIS

Step 7 of the research process involved the data analysis, which included the interpretation of the collected data by using analytical and logical reasoning to identify patterns, relationships and trends (Sharma & Nayar, 2020).

4.8.1   Cleaning and validation of data

The data cleaning process identifies errors, omissions, and ambiguities in a dataset (Camira Statistical Consulting Services, 2009:25; Diamantopoulos & Winklhofer, 2001:39). Data validation ensures that the collected data are clean, correct, and useful (Camira Statistical Consulting Services, 2009:25).

Data analysis techniques are influenced by the type of measurement and the measurement level (De Vos *et al.*, 2007:250). The level of measurement, its description, method of validation and application to the PsyCap agri-environmental literacy questionnaire are illustrated in Table 4.12 below.

Table 4.12:   PsyCap agri-environmental literacy questionnaire

Measurement level	Description	Method of validation	Application to questionnaire
Nominal	Classify into categories	Calculate frequencies	Section A–1 Section A–2 (Female/Male/prefer not to answer) Section A–3 Section B–2 (Yes/No) Section C (Correct/Incorrect)
Ordinal	Order by rank or magnitude	Calculate frequencies	Sections B–1, D, E1, E2
Interval	Categories are ranked on a scale. Distance between values is meaningful, but without an absolute zero.	Calculate means, standard deviations, skewness and kurtosis. Determine maximum and minimum values.	
Ratio	Categories exist on a scale. Distance between values is meaningful, and there is an absolute zero point.	Calculate means, standard deviations, skewness and kurtosis. Determine maximum and minimum values.	

Source: Adapted from: Cooper & Schindler (2018:250); Denscombe (2007:255–256); De Vos *et al.* (2007:250)

Frequencies, in the case of ordinal and nominal data, and distributions, in the case of interval or ratio data, were checked for any discrepancies in the data. After determining whether all sections of the questionnaire had been completed, a clean database of 526 cases was generated, and stored for data analysis. The descriptive statistics used in the current study are discussed in the next section.

4.8.2   Descriptive statistics

The purpose of descriptive statistics is to describe the basic characteristics of the data, such as the mean and the standard deviation, in the case of ratio and interval data (Cooper & Schindler, 2018:377; Zikmund *et al.*, 2013:486). The mean is the sum of the scores divided by the number of scores, whereas the standard deviation measures the variation around the mean (Salkind, 2018:157). In the case of nominal and ordinal data, frequency tables are used to describe data. In descriptive statistics (Section 5.2),

data are reduced to a manageable form for further analysis (Thomas, 2021:151). The next section discusses the validity and reliability of the research instrument.

4.8.3 Validity and reliability of the research instrument

The design and structure of the questionnaire are important factors affecting the reliability and validity of the data collected (Wilmot *et al.*, 2019). As a result, valid and reliable instruments lead to appropriate conclusions being drawn from the data, and resolve the research problem in a credible manner (Leedy & Ormrod, 2010:91).

Validity refers to the extent to which a test measures precisely what it is supposed to measure (Cooper & Schindler, 2018:280), or the extent to which the measure truthfully represents a concept (Riezler & Hagmann, 2021:15).

Reliability, on the other hand, refers to the accuracy and precision of a measurement procedure (Cooper & Schindler, 2018:280). In the current study, content validity and statistical evidence were used to establish the trustworthiness of the results. Content validity was established due to the fact that questions were based on literature (Section 4.4).

Factor analysis is a method used to describe variability among items in terms of fewer unobserved items than more observed items, called factors, and was performed on Sections B, C2, C3, C4, D, E and F of the questionnaire (Hair, Risher, Sarstedt & Ringle, 2019:96). Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) were applied in the current study (refer to Chapter 6). Based on the CFA and EFA, it was concluded that the research instrument used for this study was valid.

An analysis was performed on the questions in Sections B, C, E, F, G and I to determine Cronbach's alpha values to test the reliability of the questionnaire (reported in Section 5.4). Section 4.8.4 discusses the statistical methods used in the current study.

4.8.4 Statistical methods used in this study

The multivariate statistical analysis used in this study included both factor analysis (confirmatory and exploratory) and SEM. Figure 4.5 below illustrates the multivariate statistics applied to the current study.
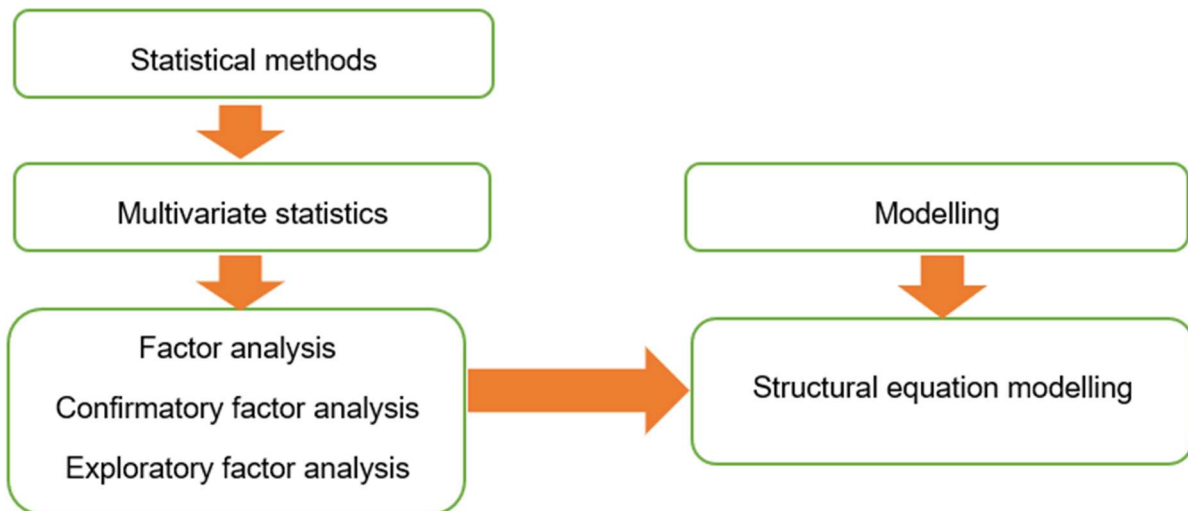
Figure 4.5: **The multivariate statistical analysis used** ⋅

4.8.4.1 **Factor analysis**

The purpose of factor analysis can be either exploratory or confirmatory (Hair *et al.*, 2019:92; Zikmund, Babin, Carr & Griffin, 2010:625). An EFA and a CFA were used in the study. The CFA was used to determine whether the factors and associated items found in previous research could be confirmed. EFA was conducted, where appropriate, to determine the reasons for the misfit of the CFA model.

As a multivariate interdependence technique, EFA reduces the number of items to be analysed from a large number, then statistically identifies the order of the identified factor using the percentage variance explained by each factor (Hair, Sarstedt, Hopkins & Kuppelwieser, 2014b:92; Zikmund *et al.*, 2013:625). The factors that were derived from the EFA were then used in SEM. The statistical methods, CFA, EFA and SEM, as applied in the current study, are discussed in the paragraphs below. Testing for mediation in SEM is also discussed in Section 7.5.

a) Confirmatory factor analysis

Confirmatory factor analysis (CFA), is an attribute-based factor analysis which involves the specification of dimensions according to a substantive theory (Hattie & Fraser, 1988; Hair, Celsi, Money, Samouel & Page, 2016:11; Hoyle, 1995; McArdle, 1996),

CFA is a (measurement) theory-testing procedure whereby the number of factors and the pattern of loadings (including restrictions) are specified regarding theoretical

propositions (Stevens *et al.*, 2013:345). CFA is therefore conducted to confirm theories regarding factors the research expects to find (Vogt, cited in Reinard, 2006:428).

CFA was employed to test whether the current study could confirm the categories found in research on the following:

- Attitudes towards nature, environment, and farming (Section C2) (Bogner & Wiseman, 2006:253);

- Behavioural intention (Section C3) (Conradie, 2017:451; Leeming *et al.*, 1995:29);

- Environmental concern (Section C4) (Veisi *et al.*, 2019:34);

- Farm environmental sensitivity (Section D) (Veisi *et al.*, 2019:34);

- Psycap (Section E) (Luthans, Youssef *et al.*, 2006:237–238); and

- The perceived important attributes of agritourism (Section F) (Shah *et al.*, 2020:8)

The analysis of moment structures (Amosv23.0) was used as the statistical software for conducting the CFA. A confirmatory approach was used, in which a model was postulated and evaluated; therefore, the model was tested for consistency with the observed data. Testing involves the evaluation of fit indices to test whether the proposed model fitted the data.

In the SEM literature, multiple-fit indices are used to assess the fit of a model. Several multiple-fit indices are used to compare the fit of a proposed model with the fit of a strategically chosen baseline model (Hoyle, 1995:483). These goodness-of-fit indices reflect the extent to which a model can be considered acceptable or not. The following goodness-of-fit indices were used in the current study (Hair *et al.*, 2019:576–580; Raykov & Marcoulides, 2012:35–41):

- Chi-square value (CMIN): This represents a test statistic of the goodness-of-fit, and is used to test the hypothesis of H0: The model fits perfectly (Parry, 2020:1). The chi-square minimum value is defined as $T = (N – 1)$ Fmin, with N = the sample size and Fmin = the minimal value of the fit function for the parameter estimation method used. The model is rejected when the p-value is smaller than a pre-set significance value (Hair *et al.*, 2019). The chi-square value is sensitive to sample size, and has been criticised (Hair *et al.*, 2019:576–580; Raykov & Marcoulides, 2012:35–41) because the sample size inflates it; models based on large sample sizes thus, always reject the null hypothesis (Healey & Donoghue, 2020).

Therefore, the normed chi square, which is CMIN/df, was used in the study, with a threshold of smaller than 3 indicating adequate fit.

- Root mean square error of approximation (RMSEA): This measures the quality of the fit between the actual data and the predicted model and should be below 0.08 for acceptable fit and 0.05 for good fit (Salkind, 2018:244).

- The comparative fit index (CFI) measures the relative improvement in fit going from the baseline model to the postulated model (Bentler, 1995:240). Comparing the proposed model with the null model, therefore, assumes no relationships between measures. A CFI that ranges between 0 and 1 is recommended to be greater than 0.90 to indicate an acceptable fit.

- Tucker-Lewis index (TLI): This measures a relative reduction in misfit per degree of freedom. It compares the normed chi-square values for the null and the specified model. TLIs should ideally be greater than 0.9 for an acceptable fit (Hoyle, 2023).

- Incremental fit index (IFI): The IFI also compares T (chi-square value) against a baseline or independence model, which assumes that all covariances are zero (0). IFIs should ideally be greater than 0.9 for an acceptable fit (Hair *et al.*, 2019).

- The CFA measurement models of potential agritourists' attitudes towards nature, environment and farming; behaviour intention; environmental concern; farm environmental sensitivity; psychological capital and agritourist perceived important attributes, all did not show acceptable fit, potentially as a result of the changes made to each construct for application in the agri-environment, and therefore, an EFA was conducted to explore the underlying structure of the data.

The next sub-section outlines the EFA technique as applied in the current study.

b) Exploratory factor analysis

Data in EFA are analysed to generate latent constructs representing a set of items from a large set of items (Hair *et al.*, 2019) in order to develop a theory or model. The objective of an EFA is to determine the number of interpretable factors required to explain correlations among the observed items without any prior theoretical processes (Reio & Shuck, 2015). The process of EFA therefore does not require any prior knowledge regarding the number of existing factors amongst items (Hair *et al.*, 2019:603).

The current study used EFA to determine the underlying structure of the data and to provide insight into the interrelationships among the items in Sections B, C2, C3, C4, D, E and F of the questionnaire (Appendix A). EFA aimed to identify fundamental constructs or factors within the data, as different items may display the same theoretical construct (Aaker *et al.*, 2013; Hair *et al.*, 2019). The three-stage process followed while performing the EFA in the current study is illustrated in Figure 4.6.
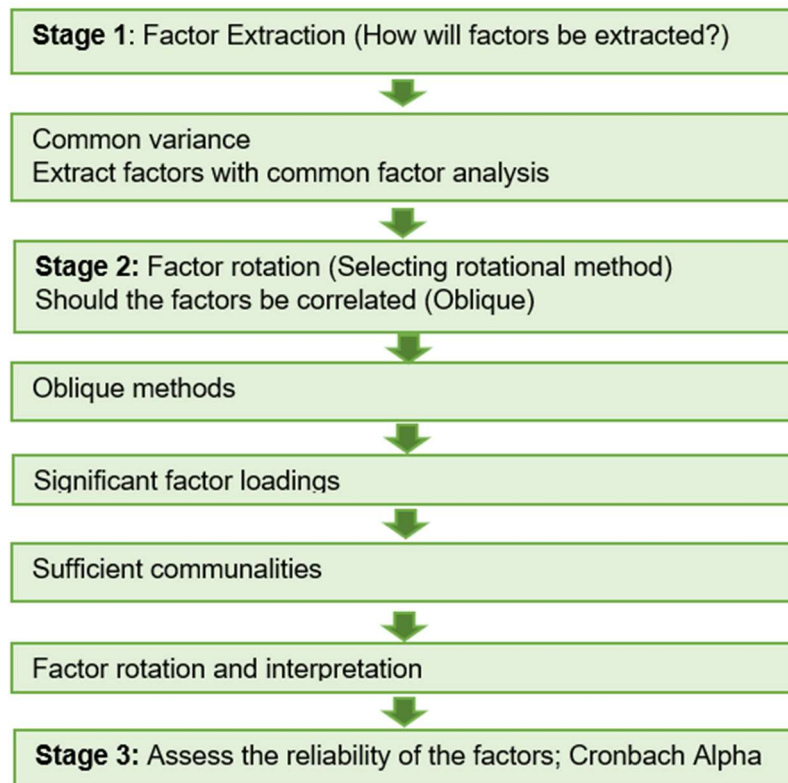
Figure 4.6:   The exploratory factor analysis (EFA) process followed in the current study

Source: Adapted from Ferguson & Cox (1993:85–92); Field (2013:657); Hair *et al.* (2019:106)

The above figure illustrated the steps in the EFA decision-making process that are discussed below. The suitability of the data for factor analysis was confirmed through the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (Bartlett, 1954; Kaiser, 1974).

Stage 1: Factor extraction

The second step involves deciding the factor extraction method. This step involves two decisions:

- The method of extracting factors (common factor analysis versus principal component analysis); and

- The number of factors selected to represent the underlying structure in the data (Hair *et al.*, 2019:103).

A set of items was subjected to common factor analysis, specifically, principal axis factoring (PAF) as an extraction method, using SPSS version 23.0. Common factor analysis was conducted to find the underlying dimensions surrounding the original items (Aaker *et al.*, 2013:490; Malhotra, 2015:616), as the focus was to identify the latent dimensions of constructs represented in the original items.

The difference between principal component analysis and common factor analysis is that the former considers total variance (Hair *et al.*, 2019:106), whereas the latter only considers common or shared variance. As the goal is to identify latent dimensions, and not merely, linear combinations of original items that are not correlated, principal axis factoring, a common EFA method was used. items.

Many extraction rules and practices exist, including Kaiser's criteria (eigenvalue > 1 rule), the scree test, cumulative percent of variance extracted, parallel analysis, and Velicer's minimum average partial (MAP) test analysis. In the current study, factors were retained based on consideration of the latent root (eigenvalue), percentage of variance, and the scree test criteria (Hair *et al.*, 2014a:107–108).

Factors with eigenvalues greater than 1.0, meeting the specified percentage of variance explained, usually 50% or higher, and factors shown by the scree test to have substantial amounts of common variance (factors before inflection point), were considered to determine the number of factors to be retained (Pallant, 2011). The number of factors to be retained was determined by taking into account factors with eigenvalues greater than 1.0 that explained 50% or more of the variance, and factors with substantial amounts of common variance (factors before the inflection point) based on a scree test. Once the number of factors had been established, the next step was to interpret the factors.

Stage 2: Factor rotation

This step is concerned with selecting the appropriate factor rotation method. As illustrated in Figure 4.6, the two main approaches to rotation are orthogonal (uncorrelated) and oblique (correlated) factor solutions (Hair *et al.*, 2019:111).

The current study performed Promax as an oblique rotational method to aid in interpreting the extracted factors, as recommended by Watkins (2020). Promax was used due to its flexibility and ability to identify how each factor is correlated (Hair *et al.*, 2019:93; Malhotra, 2015:619).

The correlations between factors and the original items, referred to as factor loadings, are used to interpret factors (Aaker *et al.*, 2013:497). Identifying the significant factor loadings was based on Hair *et al.*'s (2019:115) recommendation regarding the sample size. As n > 350, factor loadings of 0.30 and greater were considered significant and used for the interpretation (Hair *et al.*, 2019:115).

The communality of each variable was examined to identify items that might not have been adequately accounted for by the factor solution (Hair *et al.*, 2019:117). When communality is relatively high, the variable has much in common with other items taken as a group. It is vital to know how much common variance is present in the total variance in the data. Ultimately, factor analysis aims to find common underlying dimensions within the data (Field, 2013:637).

The current study followed the following guidelines for the inclusion of items in a factor solution: they should share at least 10% (communality of 0.31) of variance with other considered items. The last step of EFA was assessing the reliability of the factors.

Stage 3: Assessing the reliability of the factors

This step involves measuring the degree of consistency between multiple indicators of a factor (Hair *et al.*, 2019:123). The current study therefore used Cronbach's alpha coefficients to determine the internal consistency of each extracted factor. A Cronbach's alpha coefficient of 0.70 is the generally agreed-upon lower limit, although in some cases, it may decrease to 0.60 in exploratory research (Hair *et al.*, 2019:123). Due to the criticism that the Cronbach's alpha analysis has received, the composite reliability and the heterotrait–monotrait (HTMT) ratio of the correlations were evaluated

to examine the convergent and discriminant validity of the factors (Quinlan *et al.*, 2019:123). Descriptive statistics were calculated for the interpretation of the factors. The results of the EFA are provided in Chapter 6. Enabling the use of SEM is therefore discussed in the next section.

4.8.4.2 **Structural equation modelling (SEM)**

SEM describes a large number of statistical models used to empirically evaluate the validity of substantive theories (Collier, 2020:1). It is an appropriate multivariate method for testing theoretical relationships among concepts that are evaluated using multiple indexed items and is considered the multivariate method of choice (Pallant, 2011:105; Quinlan *et al.*, 2019:627).

SEM is defined as an integrated model that incorporates multiple, interrelated dependent relationships between concepts and constructs represented by multiple items (latent constructs) (Hair *et al.*, 2019:546; Malhotra, Baalbaki & Bechwati, 2013:710; Raykov & Marcoulides, 2012:1) as follows.

- SEM can be used to estimate multiple regression equations simultaneously is an effective and efficient technique for estimating dependence relationships among multiple regression equations (Hair *et al.*, 2019). The researcher uses theory, prior experience, and the research objectives to determine which independent items are related to each dependent variable. The hypothesised relationships are then transformed into a sequence of structural equations for each dependent variable.

- SEM can 1) incorporate latent items directly into these relationships; and 2) account for measurement error in the estimation process. By analysing the consistency among multiple measured items (manifest items or measures) gathered through various data collection methods (in this case, surveys), latent constructs can be inferred indirectly. The aim is for the entire set of questions to convey the notion better than any single item (Hair *et al.*, 2019:547). As a result, latent constructs represent theoretical concepts by reducing measurement error through multiple measures.

    - o It is also crucial to know the difference between exogenous and endogenous latent constructs. The latent, multi-item items that operate as independent items in the model are exogenous constructs (Hair *et al.*, 2019:549).

- o Exogenous constructs are latent multi-item constructs that are not dependent on other constructs. Endogenous constructs have a path (an arrow with one head) connecting one to another, or from an exogenous construct to an endogenous construct. However, exogenous constructs, since they are independent, do not have any paths connecting them. Exogenous constructs can covary with other exogenous items (two-sided arrows).

- Defining a model: A model represents theory, which is "a systematic set of relationships that provides a consistent and thorough explanation of phenomena" (Hair *et al.*, 2019:549). The SEM model has to be based on a solid theoretical foundation (Collier, 2020:1). A complete SEM model is illustrated in a path diagram by displaying both the constructs (represented by ovals or circles) and the measured items (represented by rectangles or squares) and the relationships between them. The relationship between constructs and measured items in a complete SEM model is illustrated within a path diagram by displaying both ovals and circles, as well as rectangles and squares as symbols (Thakkar, 2021:40). The direction of a straight arrow between two latent constructs can indicate either a dependence or correlation relationship (Hair *et al.*, 2019:550). The researcher must then determine whether the overall model fits, assessing whether to accept or reject it.

- SEM evaluates whether the theory matches the data in the study (Collier (2020:7: Hair *et al.*, 2019:550; Thakkar, 2021: 40).

The process that was followed in performing the SEM in the current study is illustrated in Figure 4.7, which contains the general SEM process and steps. Figure 4.7 illustrates the six-step decision process for SEM. There are two phases to SEM: the measurement model and the structural model. Steps 1 to 4 describe the measurement model procedure, while steps 5 to 6 explain the structural model procedure.
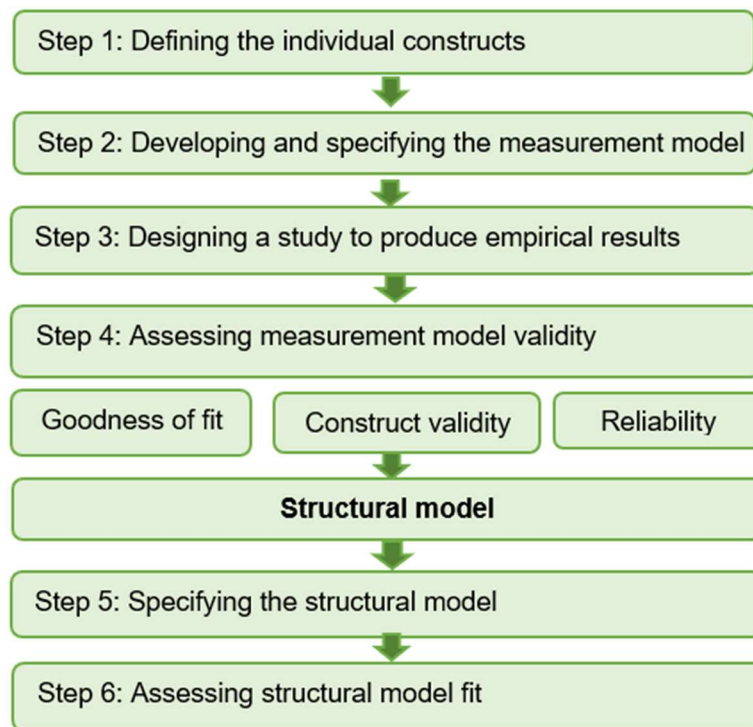
Figure 4.7: The structural equation modelling process

Source: Adapted from Hair *et al.* (2014b:566); Hair *et al.* (2019:626)

As a measurement model, SEM specifies indicators for each construct and enables its validity to be assessed (Hair *et al.*, 2019:605). In the current study, the researcher developed two conceptual agri-environmental literacy and PsyCap models for agritourism (Scenario 1 and Scenario 2), and tested these models by using SEM.

Step 1: Define the individual constructs: There is a theoretical definition of the constructs related to the six measurement models (Chapters 2 and 3). The constructs were operationalised by selecting their measurement scale items and the scale type (Sections 3.2 to 3.6) (Hair *et al.*, 2019:627).

The constructs were subjected to individual CFA (measurement models) and subsequent EFAs, as discussed in Section 5.4. Once the constructs and operationalisations of the constructs had been defined, the measurement model was developed and specified, as discussed in step 2.

Step 2: Develop and specify the measurement model: Measurement model were developed and specified by identifying the latent constructs to be measured and assigning the measured indicator items (items) to the latent constructs (Hair *et al.*, 2019:627). The measurement models were specified using measurement relationships for items, constructs, correlations, and error terms (Hair *et al.*,

2010b:568). This identification and assignment are presented using a diagram (Chapter 6).

Model identification is an important issue that has to do with whether adequate information exists to identify a solution to a set of structural equations (Hair *et al.*, 2014b:606). Kline (2015:201) recommended at least three to five indicators per factor to avoid technical problems, especially with small samples. The minimum required indicator requirement for CFA models, including more than one factor, is two (Kline, 2015).

Consequently, even when a two-item construct is under-identified by itself, the overall model may be over-identified, if integrated into a model with other constructs (Hair *et al.*, 2019:668).

Step 3: Design a study to produce empirical results: Issues considered at this step, were the sample size, the method used to deal with missing data, and the model estimation. Even though a sample size of n = 526 was obtained for the current study, the models' complexity and communalities were also investigated. The complexity of both models was evident in the number of constructs being measured that require the estimation of more parameters (Collier, 2020:33). Accordingly, the sample size was appropriate to investigate the SEM theory. As only completed responses were included, there were no missing data.

The current study used maximum likelihood estimation (MLE) to improve parameter estimates iteratively to maximise a given fit function (Hair *et al.*, 2019:632). Having specified the measurement theory (Step 2), the SEM models (Scenario 1 & Scenario 2) were estimated to provide an empirical measure of the constructed and associated indicators and their correlations (Step 3). The actual test (Step 4) was whether the measurement models were valid.

Step 4: Assess measured model validity: The validity of the measurements depends on two aspects: the goodness of fit within the model, and the validity of the assumptions of the model (Hair *et al.*, 2019:635). Goodness of fit measures how well the user-specified model reproduces the observed covariance matrix among indicator items mathematically. For the goodness-of-fit indices used in this study, refer to Section 5.8.3 (CFA). According to the rule of thumb, standardised indicator loading should be at least 0.45 and ideally 0.7 or more (Collier, 2020:65). These results

indicate that the indicators are strongly related to the constructs they serve, which suggests construct validity (Hair *et al.*, 2019:674).

In the current study, a statistical significance assessment was also made of each estimate of the coefficient of an indicator. Moreover, the model can provide additional diagnostic information that suggests how to modify the measurement model for improved model fit (Hair *et al.*, 2019:678). Adding modification indices to models would therefore improve their fit. Adding relationships purely to increase model fit is unjustifiable and should be done only if there is a viable theoretical reason (Collier, 2020:68).

The structural model (step 5 and step 6): involved integrating the measurement scales into estimating the relationships between dependent and independent items in the structural model (Hair *et al.*, 2019:19). Structural models describe the relationship between independent and dependent items (Hair *et al.*, 2010a:19). Using the last two steps (5 and 6) of the process of SEM, the structural model was operationalised for the current study.

Step 5: Specify the structural model: The models' component of the study represented the proposed theory with structural equations specifying relationships (Hair *et al.*, 2019:700). Establishing these structural models' relationships implied assigning relationships from one construct to another based on the proposed theoretical model (Hair *et al.*, 2019:643).

Two structural equation models, namely, the agri-environmental literacy and PsyCap models for agritourism (Scenario 1 & Scenario 2) were developed (Figures 6.16 and 6.17), based on the literature and the structural path diagram which depicts the relationships within the model.

The research hypotheses set for SEM models are indicated in Tables 4.13 and 4.14.

Table 4.13:   Summary of the research hypotheses for the conceptual agri-environmental and literacy and PsyCap model for agritourism SEM (Scenario 1)

H1:	There is a positive relationship between environmental agri-literacy and behavioural intention.
H1a:	There is a positive relationship between agri-environmental knowledge and behavioural intention.
H1b:	There is a positive relationship between agri-environmental orientation and behavioural intention.
H1c:	There is a positive relationship between agri-environmental attitude and behavioural intention.
H2:	There is a positive relationship between PsyCap and behavioural intention.
H3:	There is a positive relationship between environmental agri-literacy and concern.
H3a:	There is a positive relationship between agri-environmental knowledge and concern.
H3b:	There is a positive relationship between agri-environmental orientation and concern.
H3c:	There is a positive relationship between agri-environmental attitude and concern.
H4:	There is a positive relationship between environmental agri-literacy and sensitivity.
H4a:	There is a positive relationship between agri-environmental knowledge and sensitivity.
H4b:	There is a positive relationship between agri-environmental orientation and sensitivity.
H4c:	There is a positive relationship between agri-environmental attitude and sensitivity.
H5:	There is a positive relationship between PsyCap and concern.
H6:	There is a positive relationship between PsyCap and sensitivity.
H7:	There is a positive relationship between agri-environmental sensitivity and agritourism attributes.
H7a:	There is a positive relationship between agri-environmental sensitivity and farm experience.
H7b:	There is a positive relationship between agri-environmental sensitivity and farm activities.
H7c:	There is a positive relationship between agri-environmental sensitivity and farm landscape.
H7d:	There is a positive relationship between agri-environmental sensitivity and farm basic services.
H8:	There is a positive relationship between agri-environmental concern and agritourism attributes.
H8a:	There is a positive relationship between agri-environmental concern and farm experience.
H8b:	There is a positive relationship between agri-environmental concern and farm activities.
H8c:	There is a positive relationship between agri-environmental concern and farm landscape.
H8d:	There is a positive relationship between agri-environmental concern and farm basic services.

H9:	There is a positive relationship between behavioural intention and agritourism attributes.
H9a	There is a positive relationship between behavioural intention and farm experience.
H9b:	There is a positive relationship between behavioural intention and farm activities.
H9c:	There is a positive relationship between behavioural intention and farm landscape.
H9d:	There is a positive relationship between behavioural intention and farm basic services.

Source: Researcher's own compilation

The research hypotheses set for the second SEM model tested in the study are indicated in Table 4.14.

Table 4.14:   Summary of the research hypotheses for conceptual agri-environmental and literacy and PsyCap model for agritourism SEM (Scenario 2)

H1:	There is a positive relationship between PsyCap and agri-environmental attitude.
H2:	There is a positive relationship between PsyCap and agri-environmental orientation.
H3:	There is a positive relationship between agri-environmental attitude and knowledge score.
H4:	There is a positive relationship between environmental agri-literacy and behavioural intention.
H4a:	There is a positive relationship between agri-environmental knowledge and behavioural intention.
H4b:	There is a positive relationship between agri-environmental orientation and behavioural intention.
H4c:	There is a positive relationship between agri-environmental attitude and behavioural intention.
H5:	There is a positive relationship between PsyCap and behavioural intention.
H6:	There is a positive relationship between environmental agri-literacy and concern.
H6a:	There is a positive relationship between agri-environmental knowledge and concern.
H6b:	There is a positive relationship between agri-environmental orientation and concern.
H6c:	There is a positive relationship between agri-environmental attitude and concern.
H7	There is a positive relationship between environmental agri-literacy and sensitivity.
H7a:	There is a positive relationship between agri-environmental knowledge and sensitivity.
H7b:	There is a positive relationship between agri-environmental orientation and sensitivity.
H7c:	There is a positive relationship between agri-environmental attitude and sensitivity.
H8	There is a positive relationship between PsyCap and concern.
H9	There is a positive relationship between PsyCap and sensitivity.

H10:	There is a positive relationship between agri-environmental sensitivity and agritourism attributes.
H10a:	There is a positive relationship between agri-environmental sensitivity and farm experience.
H10b:	There is a positive relationship between agri-environmental sensitivity and farm activities.
H10c:	There is a positive relationship between agri-environmental sensitivity and farm landscape.
H10d:	There is a positive relationship between agri-environmental sensitivity and farm basic services.
H11:	There is a positive relationship between agri-environmental concern and agritourism attributes.
H11a	There is a positive relationship between agri-environmental concern and farm experience.
H11b:	There is a positive relationship between agri-environmental concern and farm activities.
H11c:	There is a positive relationship between agri-environmental concern and farm landscape.
H11d:	There is a positive relationship between agri-environmental concern and farm basic services.
H12:	There is a positive relationship between behavioural intention and agritourism attributes.
H12a	There is a positive relationship between behavioural intention and farm experience.
H12b:	There is a positive relationship between behavioural intention and farm activities.
H12c:	There is a positive relationship between behavioural intention and farm landscape.
H12d:	There is a positive relationship between behavioural intention and farm basic services.

Source: Researcher's own compilation

The structural models are presented in Chapter 7 of the study. The structural models were estimated and assessed (explained in Step 6), as recommended by Hair *et al.* (2014b:655). Step 6 firstly focused on fitting the SEM model, then on whether the structure of the relationships is consistent with the theory. Goodness-of-fit indices were discussed in Step 4. The final set of hypotheses, which are reported on in Chapter 6, are presented in Table 6.58. The testing for mediation is discussed below.

4.8.4.3   *Testing for mediation*

Mediation analysis is an essential statistical tool for understanding exposure-outcome relationships (MacKinnon, 2011:52). In statistics, a mediation model identifies and explains the mechanism underlying the observed relationship between an independent variable and a dependent variable by including a third explanatory variable, known as a mediator variable (Rijnhart, Valente, Smyth & MacKinnon 2021:2). The mediator variable, rather than the independent variable directly causing

the dependent variable, is the causal link in a mediational model, as illustrated in Figure 4.8. The exploratory nature of the current study led to testing for mediation amongst the variables.
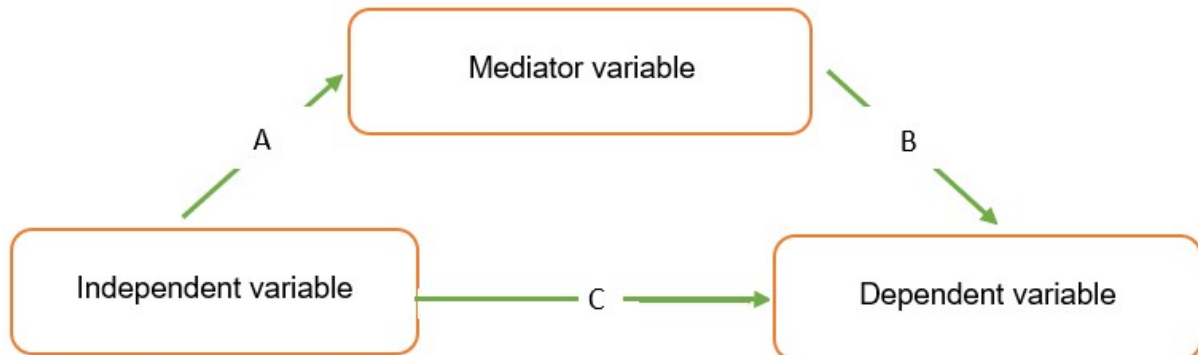
Figure 4.8:   A simple statistical mediation model

Source: MacKinnon (2011:60)

Using causal mediation analysis and assessing the plausibility of relevant causal assumptions ensures a causal interpretation of direct and indirect effects (Collier, 2020:170). The current study therefore tested the following relationships (Secondary research objectives 5 and 6):

To determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, concern, and sensitivity.

To determine whether behavioural intention, concern, and sensitivity have a mediating effect on the relationship between PsyCap and agritourism attributes.

After analysing the data, the final step (Step 7) was to present the findings in a meaningful way. The purpose of presenting data visually is to make conclusions easily understandable (Kumar, 2018:248). The current research findings are presented in Chapters 5 and 6, while the conclusion and recommendations are provided in Chapter 7.

4.9   RESEARCH ETHICS

Researchers should practice and internalise ethical principles to make ethically guided decisions concerning the humane and sensitive treatment of respondents (De Vos *et al.,* 2007:115). Ethics refers to the concerns, dilemmas, and conflicts that arise in

terms of the proper way to conduct research and could assist in defining what moral research procedures involve (Neuman, 2007:48).

As part of the requirement for this doctoral study, an application for ethical clearance was submitted and subsequently approved by Unisa [Reference number: 2018_CRERC_015(FA)] (refer to Appendix C for the ethical clearance certificate). The requirements comprised approved title registration, completion of the research proposal and data collection instrument.

Ethical clearance was obtained to confirm that the study was anonymous. The answers provided were treated as strictly confidential, and the answers given could not identify the person giving them. The study respondents were free to choose not to participate any further or to withdraw at any time without suffering any negative consequences. The respondents were asked to answer questions as honestly as possible. To ensure academic rigour, it was stated that the study's results would be used for academic purposes only, and published in an academic journal. The principles of voluntary and informed participation, confidentiality, anonymity, and non-harm were therefore considered when conducting the research (De Vos *et al.*, 2007:58). The respondents were given the study leader's contact details if they had any questions or comments.

4.10 CONCLUSION

This chapter discussed and justified the research design employed in the current research. The methodological procedure of the study comprised three phases. The first two phases represented the secondary research (exploratory research). Phase 1 comprised a literature review (Chapter 2), two conceptual agri-literacy and PsyCap models for agritourism were developed in Phase 2 (Chapter 3). Phase 3 comprised the primary research conducted for this study, in which the conceptual agri-literacy and PsyCap models for agritourism were tested empirically. This chapter (Chapter 4) elaborated on the seven steps in the primary research process as applied in this study.

The research paradigms and the philosophical assumptions and applications of the positivist philosophy that guided this study were discussed in Section 4.2. A quantitative research design was used to test the conceptual agri-environmental literacy and PsyCap framework for agritourism, which was based on previous literature

from the PsyCap, agri-environmental literacy and agritourism domains. A survey design (quantitative online survey) was selected for the research (Section 4.3), and an online survey was developed as the research instrument to measure the following eight dimensions (constructs): agri-environmental orientation, agricultural and environmental knowledge, agri-environmental attitude, behavioural intention, agri-environmental concern, agri-environmental sensitivity, PsyCap, and agritourism attributes. The constructs and items were based on the conceptual agri-environmental and the PsyCap model for agritourism established from the literature review (Tables 4.4 to 4.9).

The target population for the current study was potential agritourists residing in Gauteng. A panel was used as a sampling frame. The Bureau of Market Research (BMR) panel database was used. The initial sampling frame consisted of 3 924 respondents in the BMR database who reside in Gauteng. A survey link was sent to all 3 924 respondents. A sample size calculation guided the data collection to ensure an adequate number of samples were collected (Section 4.3.4). The data used in this study were obtained from a realised sample of n = 526 potential agritourists.

Data were processed and analysed (Section 4.7). An overview of data analysis techniques used in the current study was also given. The statistical methods, as applied in this study, EFA (Figure 4.6), CFA (Section 4.7.4) and SEM (Figure 4.7), were discussed. The research process adhered to sound ethical principles (Section 4.9). The following chapters (Chapters 5 and 6) outline the data analysis resulting from these procedures, followed by Chapter 7, which presents the conclusion, recommendations, and proposed agri-environmental literacy and PsyCap model for agritourism.

CHAPTER 5:
ANALYSIS OF POTENTIAL AGRITOURIST MARKET: DESCRIPTIVE AND FACTOR ANALYSIS RESULTS

5.1 INTRODUCTION

To achieve the objectives of this study, the prior chapter (Chapter 4) outlined the research design and methodology followed. The next chapters (Chapters 5 and 6) report and interpret the results and analysis of the sustainable agritourism data collected in stages for the current study.

The results of the present study are arranged according to the three stages used to analyse the data. The descriptive statistics (Stage 1) provided information on the biographic information of the potential agritourist in Gauteng (Section 5.2); and the agri-environmental literacy of potential agritourists, describing each of the six constructs (Sections 5.3.1 to 5.3.6); the current PsyCap of potential agritourists (Section 5.3.7) and agritourists' important agritourism attributes (5.3.8). This relates to the fourth secondary objective, namely:

To determine the respondents' biographic information, agri-environmental literacy, PsyCap and agritourism attributes.

In Stage 2, factor analysis was employed to determine the validity and reliability of the eight constructs used in the current study, whereas in Stage 3, SEM was applied to empirically test the two conceptual (**Scenario 1** & **Scenario 2**) agri-environmental literacy and PsyCap models for agritourism and is presented in Chapter 6.

Figure 5.1 illustrates the data analysis stages followed in this study.

STAGE 1: DESCRIPTIVE STASTISTICS:DEMOGRAPHIC PROFILE OF POTENTIAL AGRITOURISM MARKET IN GAUTENG SOUTH AFRICA

5.2.1 Gender of respondents' (potential agri-tourist)
5.2.2 Age categories of respondents
5.2.3 Primary home language of respondents'
5.2.4 Race group of respondents'
5.2.5 Respondents province of residence
5.2.6 Respondents' awareness of agritourism
5.2.7 Respondents' have previously lived on a farm or not
5.2.8 Respondents' who had previously visited a farm
5.2.9 Respondents' participation in farm activities
5.2.10 Respondents' who would consider visiting a farm for a holiday
5.2.11 Synthesis of the biographic profile of respondents'

STAGE 1: DESCRIPTIVE STATISTICS: CONSTRUCTS IN THE STUDY

5.3.1 Results concerning respondents' agri-environment orientation
5.3.2 Results concerning agricultural and environmental knowledge
5.3.3 Attitudes of respondents' towards nature, the environment, and farming
5.3.4 Respondents' agri-environment concern
5.3.5 Respondents' agri-environment sensitivity
5.3.6 Results on behavioural intention of respondents' towards the nature, the environment and farming
5.3.7 Respondents' PsyCap regarding their overall life
5.3.8 Results on attributes affecting respondents' agritourism choice
5.3.9 Synthesis of descriptive statistics of constructs results

STAGE 2: VALIDITY AND RELIABILITY OF CONSTRUCTS (CHAPTER 6)

6.2 Results of the factor analysis: agri-environment orientation of potential agri-tourists towards nature, the environment and farming
6.3 Results of the factor analysis: attitudes of potential agri-tourists towards nature, the environment and farming
6.4 Results of the factor analysis: behavioural intention of potential agri-tourists towards nature, the environment and farming
6.5 Results of the factor analysis: agri-environment sensitivity of potential agri-tourist
6.6 Results of the factor analysis: environmental concern of potential agri-tourist towards nature, environment and farming
6.7 Results of the factor analysis: psycap of potential agri-tourists towards their overall life
6.8 Results of the factor analysis: agritourism attributes influencing agri-tourists' choice
6.9 Results of second-order models: orientation, attitude, behavioural intention and psycap

STAGE 3: STRUCTURAL EQUATION MODELLING (SEM) RESULTS (CHAPTER 6)

6.10 Stage 3: structural equation modelling (SEM) results

6.11 Results of the first structural conceptual model **(Scenario 1)** for agritourism

6.12 Results of the conceptual structural Scenario 2: agri-environment literacy and psycap model for agritourism

6.13 Mediating effect of attitude, orientation, concern, behavioural intention and sensitivity in the scenario 2 SEM model

Figure 5.1:   Data analysis stages reported

Source: Researcher's own compilation

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As illustrated in Figure 5.1, the first part of the descriptive statistics is presented in Sections 5.2.1 to 5.3.8, presenting Stage 1 of the data analysis.

By understanding the demographic profile of potential agritourists, agritourism market operators and planners can improve their marketing efforts, particularly in terms of market segmentation, product development, service quality evaluation, image development, and promotion (Fodness, 1994:555; Kozak, 2002:222; Yoon & Uysal, 2005:45).

The study focused on potential agritourists residing in Gauteng, South Africa, using an online panel database of 3 924 individuals from various age groups to ensure representative sampling. The researcher followed the guidelines of Cooper and Emory (1995:207) and Krejcie and Morgan (1970:608) to determine an appropriate sample size (Section 4.4.4). Based on Krejcie and Morgan's recommendations for a population of 4000, a sample size of 526 was considered suitable for this study. Therefore, the information was collected from a sample of 526 potential agritourists residing in Gauteng, South Africa.

The respondents participated in this study during the period from August 2020 to January 2021. The next section introduces the demographic profile for the database of a potential agritourist market residing in Gauteng, South Africa.

5.2 DESCRIPTIVE STASTISTICS: DEMOGRAPHIC PROFILE OF POTENTIAL AGRITOURISM MARKET IN GAUTENG, SOUTH AFRICA

Demographic information of the respondents, such as gender, generational cohorts, home language, and race group was obtained to characterise and profile a potential agritourist residing in Gauteng.

5.2.1 Gender of respondents (potential agritourist)

Figure 5.2 indicates the gender distribution of the potential agritourism market.[14]

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[14] The percentages presented in the demographics do not add up to 100% due to the missing values in each case.
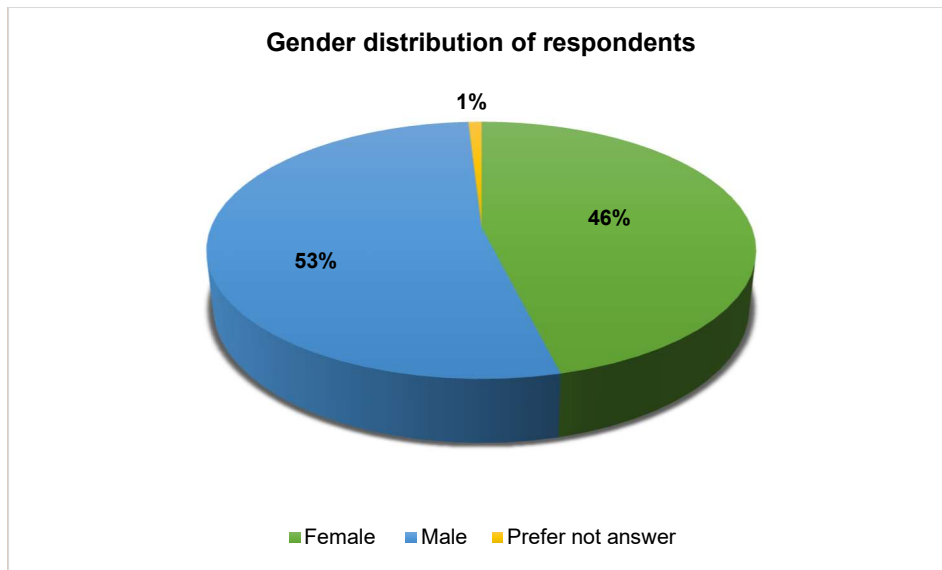
Figure 5.2:   Gender of respondents (%)

Of the total respondents, 53% were male, while 46% were females, as illustrated in Figure 5.2. A slightly higher proportion of male respondents was also reported in other agritourism studies (Shar *et al.*, 2019:209). It must be noted that, even though the current study reported a slightly higher male representation, a higher proportion of female agritourists is consistent with secondary literature (Back, Tasci & Milman, 2020:62; Brune, 2020:68; Choo & Petrick, 2014:375; Speirs, 2003:40; Van Winkle & Bueddefeld, 2021:9).

The assumption can be made that the Association of Agritourism Africa (ASA) may strategically target both male and female agritourists when marketing their product offerings. The reason is that there is not a significant difference between the potential market for male and female tourists (Srikatanyoo & Campiranon, 2010). Furthermore, previous studies reported a slightly higher proportion of females in their agritourist market (Brune *et al.*, 2020; Srikatanyoo & Campiranon, 2010). By targeting both male and female agritourists, the Association of Agritourism Africa (AAA) will not miss out on the valuable market that could participate in this type of tourism.

The next section presents the respondents' age categories.

5.2.2   Age categories of respondents

In this study, age was categorised by using different generational cohorts, namely, Baby Boomers, Generation X, Millennials and Generation Z (Cangelosi, 2020:347; Franz & Scheunpflug, 2016:31; Yawson & Yamoah, 2020:3). The generational theory

provides valuable insight regarding tourists' behaviour (Viljoen, Kruger & Saayman, 2018:1). Figure 5.3 indicates the age of the respondents in this study.
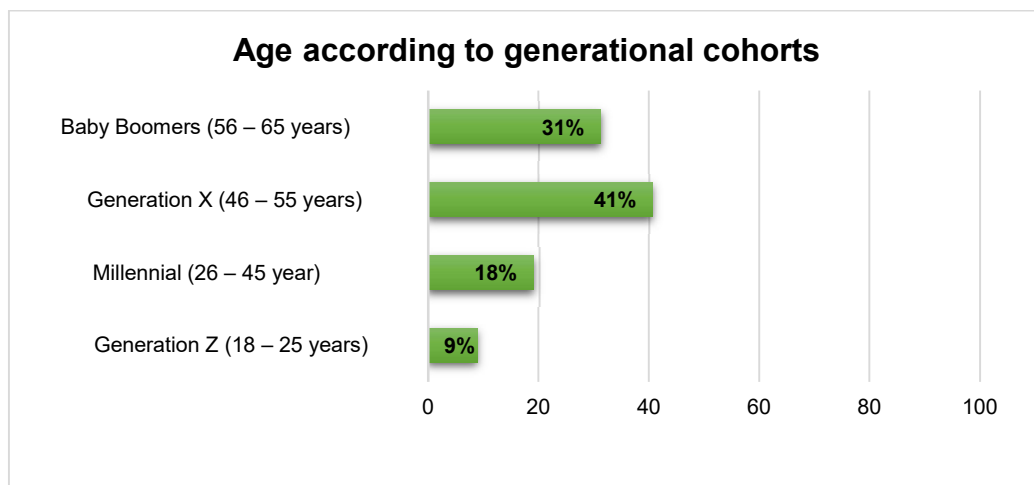
Figure 5.3:   Ages of respondents (potential agritourism visitors) (%)

Figure 5.3 illustrates that the potential agritourist respondents were represented mainly by Generation X (41%), Baby Boomers (31%), Millennials (18%) and Generation Z (9%). Previous research on farm tourists found that Millennials and Generation X had been active participants in agritourism activities (Dubois *et al.*, 2017:303).

While Generation X dominates the potential agritourist market in the current study, it is crucial to recognise the potential of other generational cohorts, and to develop tailored marketing strategies that address the preferences and interests of Baby Boomers, Millennials, and Generation Z as lucrative markets in South Africa. Agritourism marketers can engage with social media influencers and content creators who have a following within the Millennial and Generation Z demographic to attract these audiences to agritourism offerings through their endorsement and authentic experiences.

Previous research also found that Generation X prioritised a work–life balance although they travelled less than other generations due to their work and life commitments. Although they travelled less, they spent more money when they took vacations and they preferred authenticity (Wood, 2019:1). Given Generation X's prioritisation of a work-life balance, agritourism providers can integrate messaging that emphasises work-life balance in agritourism promotional materials, showcasing how

agritourism experiences can provide a refreshing escape from daily routines. Generation X's preference for authenticity aligns well with the genuine experiences agritourism can offer.

Marketing can focus on farm-to-table experiences, hands-on activities, and connections with rural life that resonate with Generation X's preference. Agritourism providers can regularly seek feedback from agritourists of different age cohorts to continuously understand their preferences to ensure that these needs of these groups are met.

To develop the Generation X agritourist market, a suggestion could be made to highlight the work-life balance element more prominently in the marketing promotional materials of agritourism.

The section below presents the results related to the respondents' primary home language.

5.2.3   Primary home language of respondents

The respondents were asked to identify their primary language, which could help build marketing and environmental literacy message material. The results are illustrated in Figure 5.4.
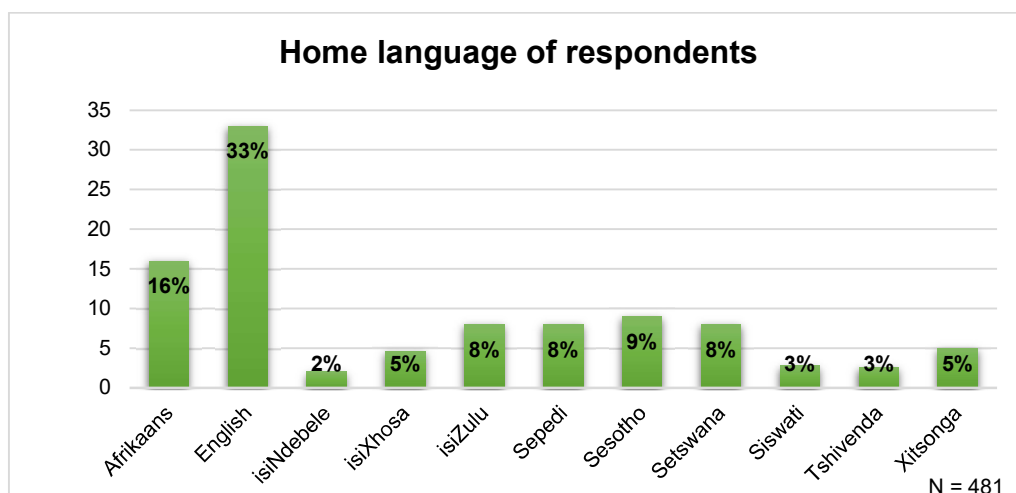
Figure 5.4:   Primary languages of respondents (potential agritourist) (%)

It is clear from Figure 5.4 that the majority (33%) of respondents were English speaking, followed by Afrikaans-speaking respondents (16%). The home language least represented in the study was IsiNdebele (2%). The current findings give direction

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regarding the most preferred language for marketing communication and the education of agritourists about the agri-environment. It should be noted that English is considered an international language for all business communication and is used internationally. English is also the language primarily used in tourism-related communication marketing therefore, marketing and promotion efforts conducted in English will be effective in reaching the typical South African agritourist.

The next section presents the respondents' racial grouping.

5.2.4   Race group of respondents

Figure 5.5 indicates the race groups of the respondents.
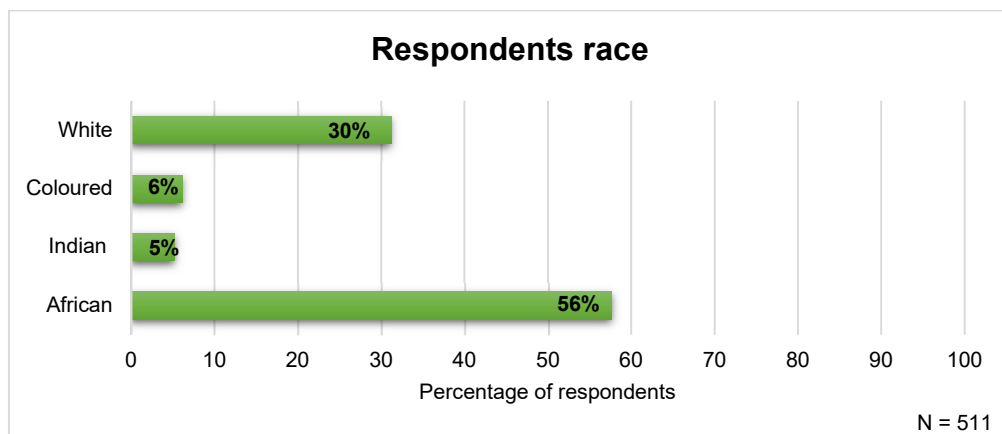
Figure 5.5:   Race group of respondents (potential agritourist) (%)

As illustrated in Figure 5.5, more than half of the respondents were African (56%), followed by white (30%) and coloured (6%) groups. From the sample, this indicates cultural diversity in the potential agritourist market. It is recommended that agritourism providers need to understand the potential market from different racial backgrounds when planning marketing material. Marketing materials and campaigns can be inclusive of different racial backgrounds to void stereotypes and resonate with a diverse potential market audience.

Agritourism providers can collaborate with other service providers, such as local cultural organisations, artisans, and performers, to infuse authentic cultural elements into their agritourism offerings to enrich the agritourist experience.

Agritourism farms can consider training staff members to ensure they are culturally sensitive and aware of the diverse backgrounds of potential agritourists. This fosters an inclusive and welcoming atmosphere at the farm.

The results related to where the respondents live are presented below.

5.2.5 Where respondents live

The respondents were asked to indicate where they live most of the time. Figure 5.6 indicates the results.
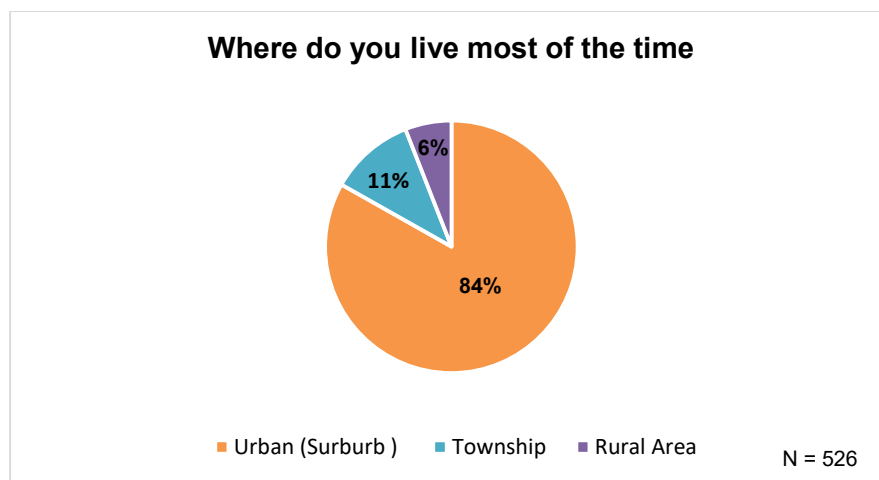
Figure 5.6:   Respondents' residential area (%)

Figure 5.6 illustrates that the majority (84%) of the respondents resided in an urban area, while only 11% of the respondents resided in a township, and about 6% of the respondents indicated living in a rural area.

Gauteng is the largest source market for domestic tourism in South Africa (SAT, 2018:6; 2019:6). However, not all Gauteng residents travel. For example, there is a lack of travel interest among township residents. Previous studies have reported that this is mainly due to affordability and the perception of travel and cost (Dube, Muresherwa & Makuzva, 2023:183). Residents from rural areas have been found to participate in travel, although not for leisure but for other reasons such as educational institutions and religious institutions (StatsSA,2020:17).

Knowing where potential agritourists reside can provide agritourism providers with an understanding of their market and where to market their product offerings. It can thus be assumed that there is a source market for agritourism in Gauteng, specifically in

the urban areas of the province. Recommendation is made for product developers to focus on the underdeveloped markets in this province

The next section presents details regarding the respondents' agritourism awareness.

5.2.6 Respondents' awareness of agritourism

The respondents were asked to indicate whether they had heard about agritourism or farm tourism before. The results are illustrated in Figure 5.7.
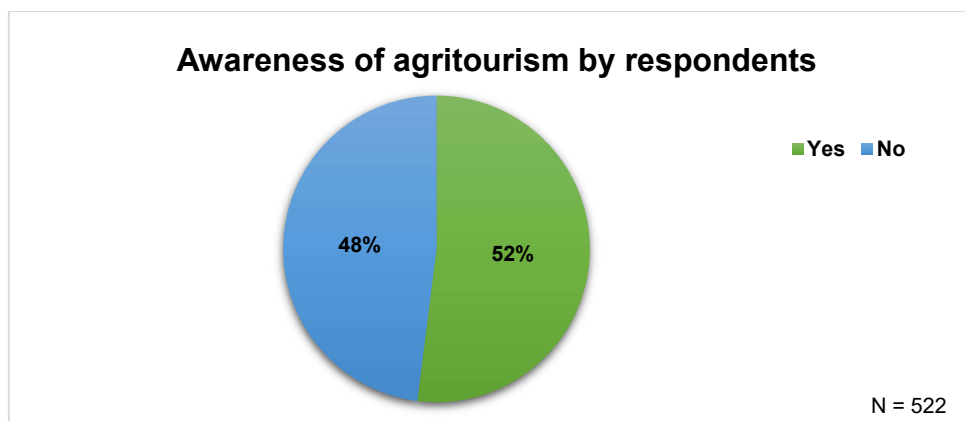
Figure 5.7:   Respondents' awareness of agritourism (%)

According to Figure 5.7, just over half (52%) of the respondents knew what the term agritourism meant, whereas 48% of the respondents were not aware of the term. Service providers of tourism offerings need to promote their offerings, while educating the potential market about agritourism as an activity or an attraction to increase awareness in the market. Recommendation could be made that there is a need for an overall awareness campaign of agritourism to inform the South African market about agritourism.

The next section presents the results concerning whether the respondents have ever lived on a farm before or not.

5.2.7 Respondents have previously lived on a farm or not

Figure 5.8 indicates the percentage of respondents who had lived on a farm before or who had been born on a farm.
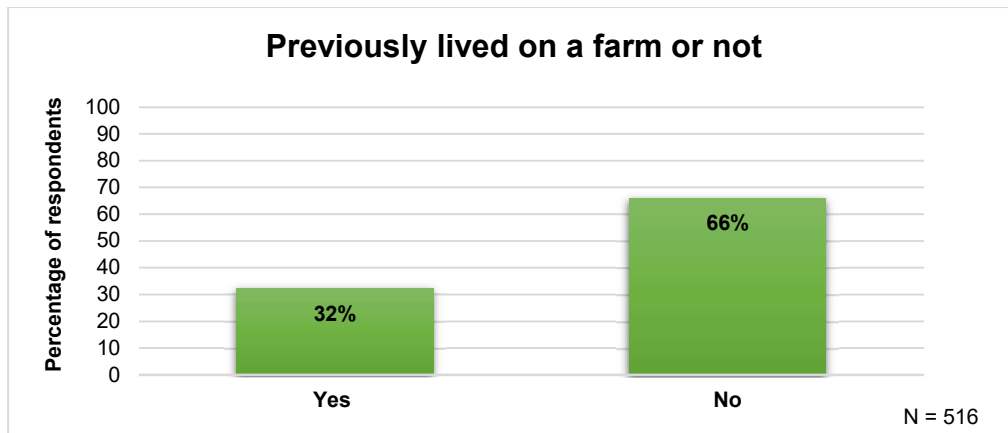
Figure 5.8: Respondents who had lived on a farm before or who had been born on a farm (%)

It is illustrated in Figure 5.8 that over two thirds (66%) of respondents had either not been born on a farm or had never lived on one, while 32% indicated they had lived on a farm or had been born on one. It was assumed that most respondents who had never lived on a farm presented a valuable opportunity for agritourism development and promotion.

Agritourism providers could therefore raise more awareness about agritourism activities. Perhaps existing annual events per province can include the promotion of agritourism to captivate the public's attention, celebrate the beauty of the farmland environment, and educate the public about agriculture and agritourism. Agritourism establishments can also collaborate with existing market organisers and have stalls marketing their accommodation and agritourism offering.

The next section presents results concerning whether respondents have previously visited a farm or not.

5.2.8 Respondents who had previously visited a farm

The respondents were also asked whether they had visited a farm before. Figure 5.9 indicates the percentage of respondents who had visited a farm before.
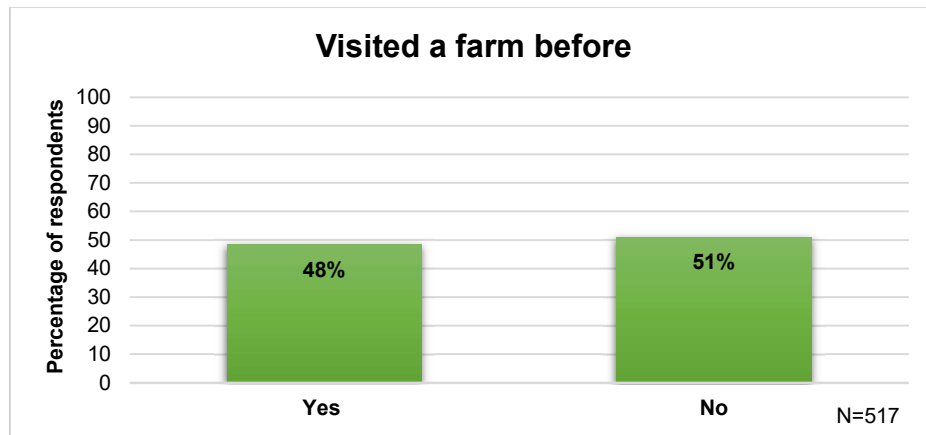
Figure 5.9: Respondents who have visited a farm before (%)

Figure 5.9 shows that 48% of the respondents had visited a farm before, while 51% had never been to a farm before. A relatively even ratio of respondents was observed between those who had visited a farm (agritourists) and those who had not yet visited a farm. Agritourism providers can target the revisit market and assess visitor experiences, gauging their likelihood of returning to the farm and whether they would recommend it to their friends.

Even though the results indicated an existing agritourism market, there is room for improvement. Agritourism providers can access the repeat agritourist market by offering personalised loyalty programmes, such as a Farm-Frequent programme that provides discounts and exclusive benefits to returning agritourists.

Recommendation is made for agritourism providers to regularly interact with past agritourists to understand their experiences and preferences. Encourage them to provide feedback on their visit.

The next section presents the results related to respondents' participation in farm activities.

5.2.9 Respondents' participation in farm activities

The respondents were also asked whether they had participated in farm activities. Figure 5.10 indicates the percentage of respondents who had participated in farm activities.

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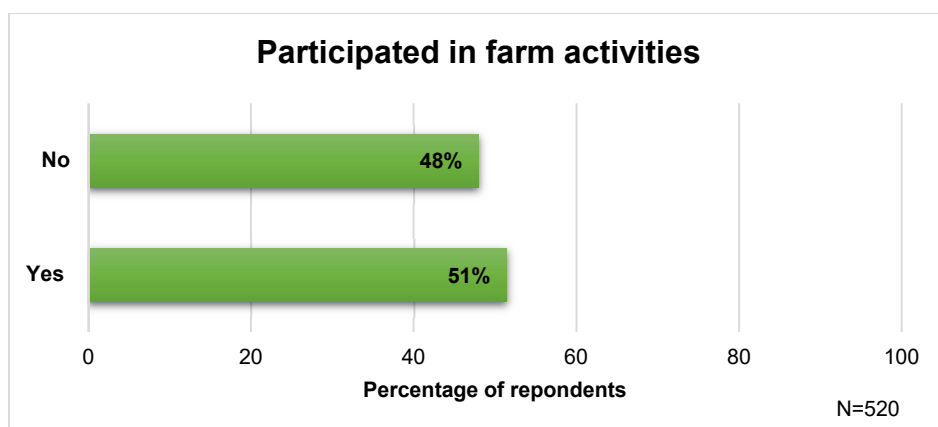
Figure 5.10: Respondents' participation in farm activities (%)

Figure 5.10 indicates that over half of the respondents (51%) had participated in farm activities before, whereas just under half of the respondents (48%) had not done so before. A relatively even ratio of respondents was therefore observed. with only a slightly larger proportion of respondents who had participated in farm activities in the past than those who had not done so yet.

This provides a definite opportunity to increase participation in farm activities by following a targeted approach when planning marketing and promotion of the farm in the South African context. Furthermore, agritourism providers need to use digital marketing tools, such as social marketing tools and Google analytics, that would access the market strategically. Agritourism providers can effectively inform potential agritourists by creating detailed online listings showcasing their farm offering and a variety of farm activities available to participate while visiting. Given the observed interest in farm activities among respondents, the following recommendations could be made to agritourism providers:

- To expand and diversify their range of farm activities. This could include introducing new experiences, workshops, and hands-on interactions that appeal to a broader audience;

- To create targeted marketing campaigns that specifically highlight the various farm activities available. Utilise engaging visuals, descriptions and customer testimonials to showcase the unique and enjoyable experiences visitors can have on the farm.

The section below presents the results of the respondents who would consider visiting a farm for a holiday.

5.2.10   Respondents who would consider visiting a farm for a holiday

The respondents were asked whether they would consider visiting a farm for a holiday. Figure 5.11 presents the respondents' considerations regarding visiting a farm for their holiday.
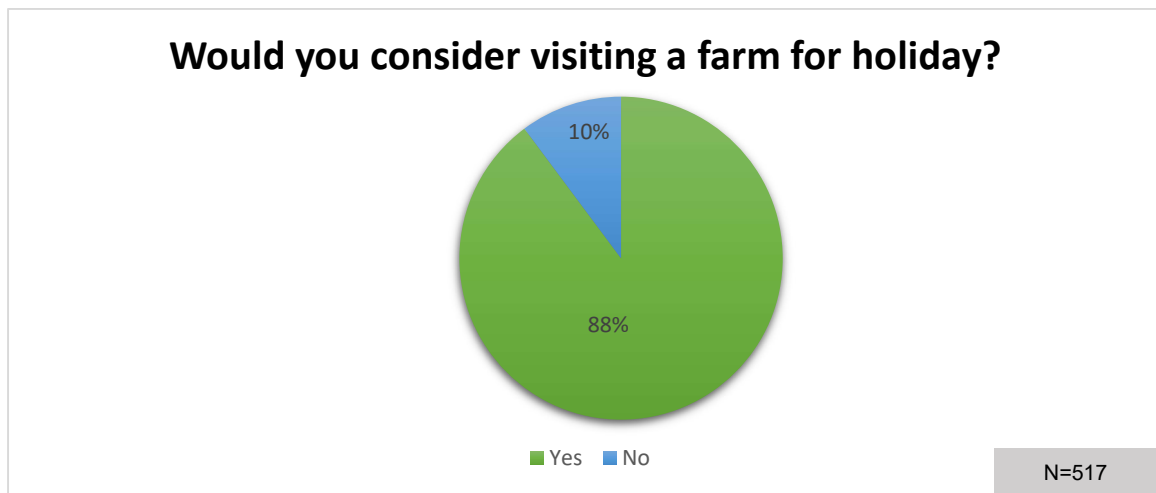
Figure 5.11:   Respondents who would consider visiting a farm for a holiday (%)

Figure 5.11 illustrates that the majority of respondents (88%) indicated that they would consider visiting a farm for a holiday. Only 10% would not consider visiting a farm for a holiday. According to the results, most respondents represent a potential market segment for agritourism.

This finding supports the initiative by the South African government to develop tourism by rebranding, repositioning, and renewing villages, townships, and small-town sectors (VTSDs) (SA Tourism, 2020:1). Collaboration by government and agritourism providers concerning the development and promotion of agritourism is therefore vital.

An integrated marketing campaign aimed at promoting agritourism during the winter school holidays could be put in place to promote government-agritourism collaboration. Agritourism establishments that offer special rates during low season can be rewarded with grants or tax benefits by the government, encouraging families to explore rural experiences. Based on the finding related to respondents' willingness to consider visiting a farm for a holiday agritourism providers can:

- Capitalise on the strong interest expressed by the majority of respondents (88%) in visiting farms for holidays.

- Design a range of holiday offerings that cater to various preferences and interests, such as family-friendly activities, romantic getaways, educational experiences, and relaxation retreats.

- Partner with local tourism authorities and organisations to collectively promote agritourism as a desirable holiday option.

- Develop a focused marketing campaign that highlights the charm of agritourism during the winter school holidays. Showcase the cozy and authentic experiences that farms can offer during this season.

Section 5.2.11 below presents a synthesis of potential agritourists' biographic profile.

5.2.11 Synthesis of the biographic profile of respondents

The descriptive results presented above provide insights into the biographic profile of potential agritourists for the Gauteng market. The biographic profile offered valuable recommendations for agritourism providers. The current study indicates that there is an existing potential agritourism market with a majority of the respondents interested in visiting a farm for holiday.

The respondent sample displayed a relatively balanced gender distribution, with 53% males and 46% females. This highlights the need for agritourism providers to target both genders in their marketing efforts. Generation X emerged as the most prominent age group (41%), followed by Baby Boomers (31%), Millennials (18%), and Generation Z (9%). While Generation X dominated, agritourism service operators need to develop Baby Boomers, Millennials, and Generation Z as lucrative potential agritourism markets in South Africa.

Language diversity emerged, with English (33%) as the primary home language, closely followed by Afrikaans (16%). Given the international prominence of English in business communication and tourism marketing, it is recommended to conduct marketing and promotion efforts in English to effectively reach potential agritourists.

The racial composition of respondents was predominantly African (56%), white (30%), and coloured (6%). The marketing materials for agritourism services should take into account potential markets from different racial backgrounds.

Marketing materials and campaigns can be inclusive of different racial backgrounds in order to void stereotypes and resonate with a diverse potential market audience.

Agritourism providers should focus on underdeveloped markets within Gauteng, particularly among Millennials and Generation Z. Agritourism awareness among the respondents was placed at 52%. An overall agritourism awareness campaign could be recommended to inform the South African market about agritourism.

A comprehensive awareness campaign is recommended to educate the market and increase awareness. Collaborative efforts with social media influencers and local media outlets can effectively raise awareness about agritourism.

Approximately 66% of respondents had never lived on a farm, suggesting the potential for raising awareness about farming opportunities through agritourism. Existing annual events per province may include agritourism promotion to captivate attention, celebrate farmland beauty, and educate the public about agriculture and tourism. Additionally, agritourism establishments can partner with existing farmers' markets and have stalls promoting their accommodation and agritourism offerings.

Around 48% of the respondents had previously visited a farm, indicating an existing agritourism market. To tap into the revisit market, personalised loyalty programmes can be implemented, while actively engaging with past agritourists to understand their experiences and preferences.

Participation in farm activities was noted among over 51% of respondents. An online listing that highlights agritourism services and activities can benefit agritourism providers, as a potential market will be informed about their offerings.

An overwhelming 88% of the respondents expressed their willingness to consider visiting a farm for a holiday, presenting a promising market segment. This provides a basis for government-agritourism collaboration and the development of diverse holiday offerings. Authenticity and tranquillity should be emphasised in marketing materials to attract these potential agritourists.

Agritourism providers should adopt a holistic approach to marketing strategies. By understanding and targeting diverse age groups, languages, racial backgrounds, and preferences, providers can create engaging and inclusive experiences that resonate with potential agritourists. Through awareness campaigns, collaboration, and tailored

offerings, agritourism can effectively capture the attention of a wide-ranging and receptive market.

The section below presents the descriptive statistics of the eight constructs, namely, agri-environmental orientation, agri-environmental knowledge, agri-environmental attitudes, agri-environmental concern, agri-environmental sensitivity, behavioural intention, psychological capital (PsyCap), and important agritourism attributes.

5.3   DESCRIPTIVE STATISTICS: CONSTRUCTS IN THIS STUDY

Eight constructs (126 items) were measured in this study: agri-environmental orientation, agri-environmental knowledge, agri-environmental attitudes, agri-environmental concern, agri-environmental sensitivity, and behavioural intention, PsyCap and agritourism attributes.

This section links to the third secondary research objective of this study, namely[15]:

To determine potential agritourists' biographic information, agri-environmental literacy, behavioural intention, PsyCap and important agritourism attributes.

Table 5.1 summarises the number of constructs and items included in the current study.

Table 5.1:   Research constructs and items

Research construct	Section of questionnaire	Number of items
1. Agri-environmental orientation	B	13
2. Agri-environmental knowledge	C1	11
3. Agri-environmental attitude	C2	19
4. Agri-environmental behavioural intention	C3	16
5. Agri-environmental concern	C4	11
6. Agri-environmental sensitivity	D	10
7. Psychological capital	E	24
8. Agritourism attributes	F	22
Total		**126**

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[15] The percentages of some construct's descriptives presented in this section do not add up to 100% due to the missing values.

The research constructs used in this study were conceptualised from the literature review section in Chapters 2 and 3. Descriptive statistics for each of the eight constructs, as listed in Table 5.1, are presented in the sections below.

5.3.1 Results concerning respondents agri-environmental orientation

As part of this study, respondents (n = 526) were asked to rate their level of agreement (ranging from 'strongly disagree' to 'strongly agree' on a 5-point Likert type-scale) with 13 agri-environmental orientation statements (Section 4.4). The statements about agri-environmental orientation (items B1.5 and B1.6) reflect the general impression related to the awareness of sustainability and the importance of the agri-environment (Conradie, 2017; Larson *et al.*, 2011).

The respondents' orientation in terms of the agri-environment and agritourism are shown in Figure 5.12. For graphical purposes, the 'strongly disagree' and 'disagree' percentages were combined, as well as the 'strongly agree' and 'agree' percentages.
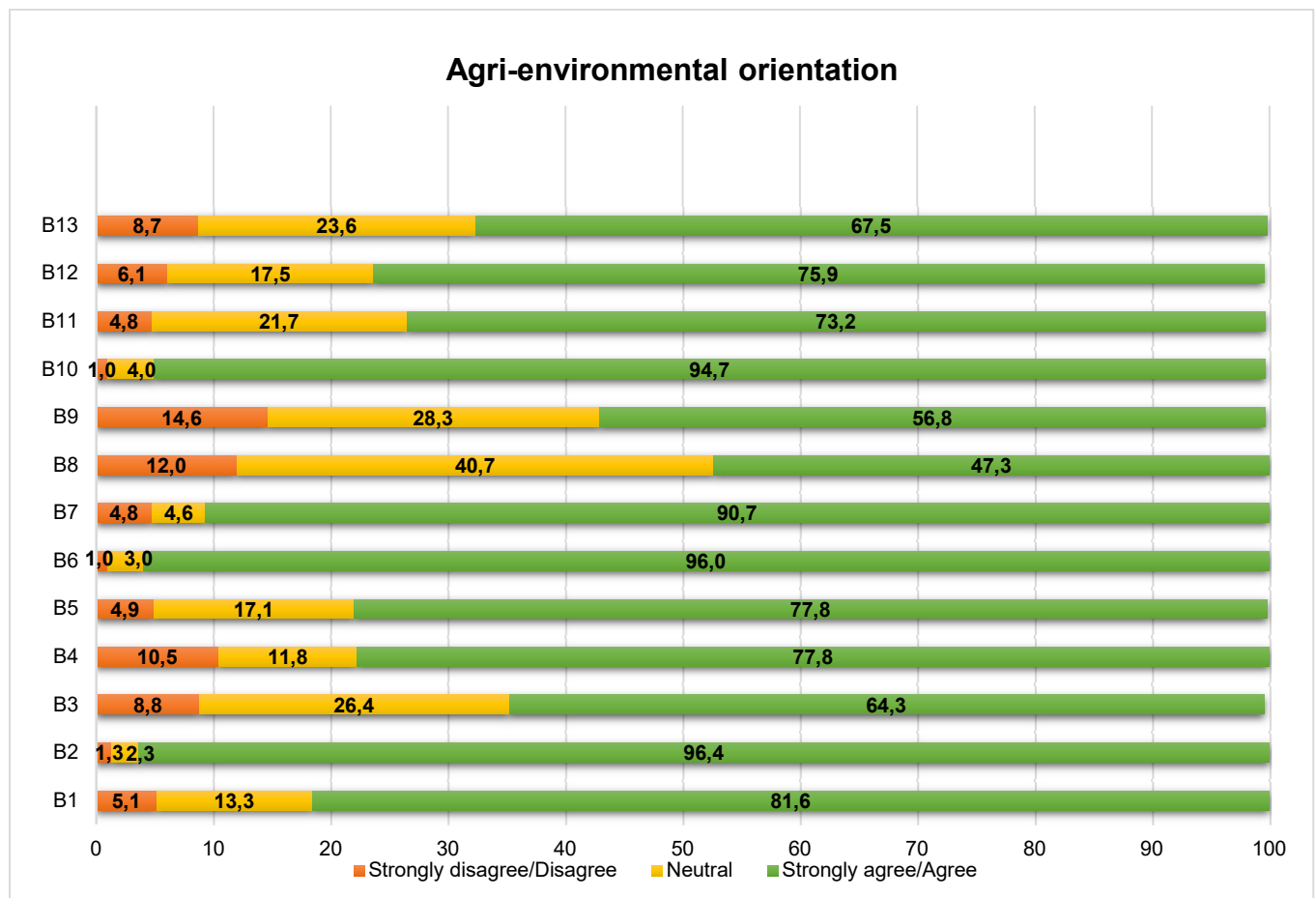
Figure 5.12: Results of respondents agri-environmental orientation (%)

Figure 5.12 shows that respondents are adequately orientated about the general importance and sustainability of the farming environment and farming. The majority of respondents (96.4%) agreed that "Farms and farming are important to people" (B2) while (96%) agreed that "People need farm produce to live" (B6) and 95% of respondents agreed that "We need to take better care of farms for their survival" (B10). Furthermore, 81.6% of the respondents agreed that they would learn about different types of farms and farming (B1).

The results related to the respondents' agri-environmental orientation offer valuable insight into their awareness and sentiments regarding sustainability and the farming environment. Agritourists need a basic knowledge of agri-environmental principles while visiting farms to ensure sustainable agritourism is practised (Bhat, 2018:16).

To ensure the expansion of agritourism without compromising the farm environment, agri-environmental orientation is important. Among the critical types of agritourism, the educational experience can be utilised to attract potential tourists to South African farms. Over two thirds of the respondents (67.6%; B13) stated that they would be willing to help clean up the farm in their community or neighbourhood, while only 57% agreed that they would spend their spare time to do volunteer work on a farm. About 47% of respondents indicated they would give money to help save farms (B8).

There was therefore a distinction between respondents who would volunteer by offering their services, and those who would donate money to a farm-related cause. The respondents were generally favourable towards farming in general, and there are clear opportunities to service providers to translate the respondents' emotional interest in farming activities and the farming environment into agritourism potential or possibilities.

Based on these results, the following recommendations can be made in terms of increasing agri-environmental awareness and leveraging it for sustainable agritourism:

- Due to the respondents' high level of agreement, agritourism providers should consider adding an educational component to their agritourism offerings. Providing agritourists with insights into various types of farms and sustainable farming practices can enrich their experiences, while promoting agri-environmental awareness.

- Agritourism operators should emphasise sustainable practices in their activities. The ability to demonstrate how their operations contribute to the wellbeing of farms and the environment can resonate with potential agritourists who are already inclined to value such initiatives.

- The respondents being willing to participate in cleaning up farms and contributing to farm-related causes present an opportunity for agritourism providers. They can create volunteer programmes or events that allow agritourists to actively contribute to farm maintenance and improvement. This hands-on involvement can foster a deeper connection between agritourists and the agricultural environment (Musa & Chin, 2022).

- In recognising the distinction between respondents who prefer volunteering and those who are more inclined to donate money, agritourism operators could establish transparent mechanisms for visitors to contribute financially to farm preservation. These funds can be earmarked for environmental conservation efforts and enhancing the overall agritourism experience.

- Positive sentiment towards farming and its environment provides an opportunity for agritourism providers to craft marketing messages that resonate with potential agritourists' existing values. Highlighting how their experiences contribute to farm sustainability can attract environmentally conscious agritourists.

The respondents' agricultural and environmental knowledge is discussed below.

5.3.2 Results concerning agricultural and environmental knowledge

Agritourism and a basic understanding of farming products were explored on the specific sample of respondents questioned. This section generated questions to measure several aspects (or topics) of the respondents' farming knowledge. A five-point multiple-choice approach was used to evaluate the respondents' knowledge of farmed goods and the environment in South Africa, allowing them to choose the answer from a list of options. For analysis purposes, the responses demonstrated the respondents' level of understanding of farming, farming goods, and agritourism.

Figure 5.13 displays the percentage of respondents who responded to multiple-choice questions about farming, farming products, and agritourism. Research has revealed that agri-environmental knowledge might enhance the individual's concern and

awareness about environmental problems on farms and, as a result, this would influence pro-agri-environmental behaviour and sustainability in terms of farming (Liobikienė & Poškus, 2019:4).
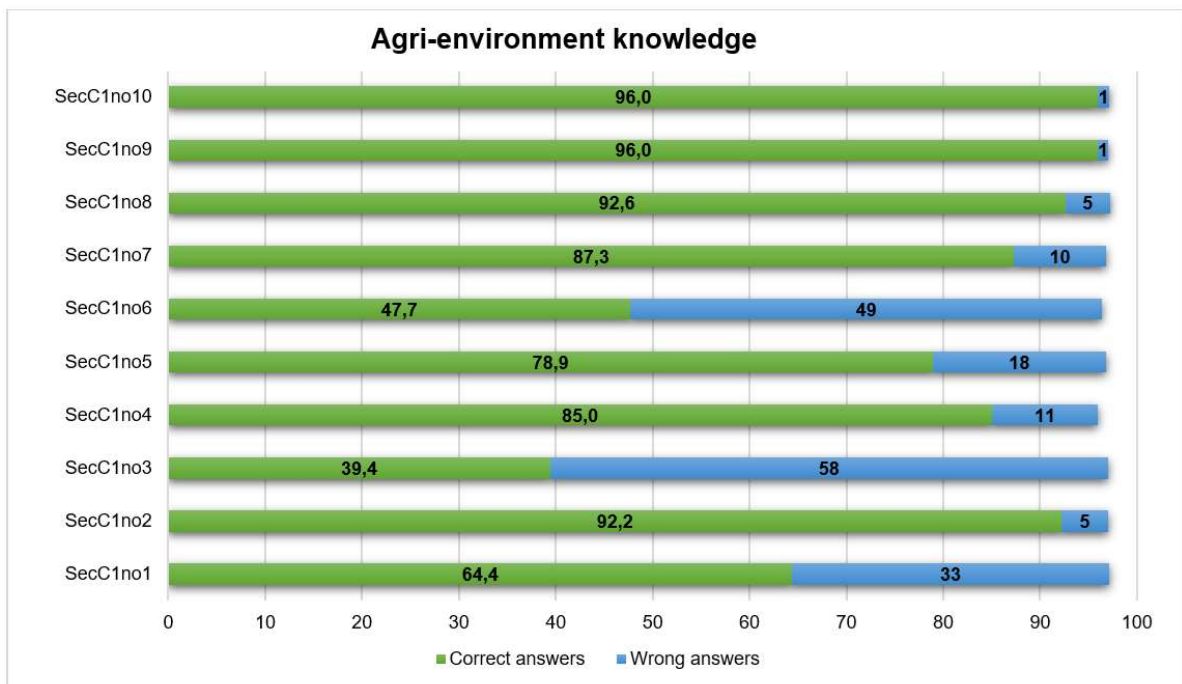
Figure 5.13: **Agricultural and environmental knowledge of respondents (%)**

As illustrated in Figure 5.13, the respondents' basic knowledge of farming in South Africa (C1.1) resulted in 64.41% of the respondents correctly identifying maize as the primary agricultural product of South Africa (Adisa *et.al*., 2019) and (C1.10) 96% of the respondents were aware of what a poultry farm comprises. Over half of the respondents were unaware that grapes are the most often cultivated fruit in South Africa (C1.3; 58%) or knew about or the Cherry Festival that takes place every year in Ficksburg, in the Free State region of South Africa (C1.6; 49%). In terms of the general knowledge questions the respondents achieved an average of 78% on the knowledge comprehension scale. The results suggested that the participating potential agritourists had a good general knowledge of farming in South Africa.

It is known that, to increase sustainable consumption and PEB, agri-environmental knowledge is required (Liobikienė & Pokus, 2019:2). This assumption can be made that by displaying a relatively high knowledge of farming in South Africa, it might be possible to increase the sustainable consumption in this context.

Recommendations can be made to build the agritourists' knowledge by offering educational workshops, where they will be offered experiences that would explore various aspects of farming. Such workshops can focus on lesser-known agricultural products, farming techniques and environmental conservation efforts. To address how it would be possible to raise the respondents' awareness regarding certain events, one solution may be for providers to incorporate local festivals and events into their offerings.

In addition, agritourists can be provided with access to online resources, pre-visit materials, and informative guides that can help them prepare for their agritourism experience. The learning experience can be extended beyond the farm visit by maintaining contact with agritourists through newsletters, social media, and online platforms. Agritourism providers can share informative content, success stories, and provide updates on sustainability initiatives to keep the agritourists engaged and informed.

The respondents' environmental attitudes towards nature, the environment and farming are discussed next.

5.3.3 Attitudes of respondents towards nature, the environment, and farming

The term 'environmental attitude' relates to a person's ideas, values, and intentions about farming and related agritourism operations. Developing a more sustainable relationship with the environment is often associated with the values such persons might have (Biswas, 2020:5925; Lazaric *et al.*, 2019:1344). 'Beliefs' and 'values' refer to ideas, norms, and attributes that are significant for these individuals and influence and govern their behaviour. According to environmental literacy research, environmental values determine pro-environmental behaviour (PEB) (Biswas, 2020:5925; Boeve-de Pauw & Van Petegem, 2013:551; Lazaric *et al.*, 2019:134).

The current study argued that a potential agritourist's environmental beliefs and values would influence how he or she relates to the agri-environment while visiting an agritourism establishment. Taking part in agritourism could motivate the conservation of agricultural landscapes and the preservation of cultural and environmental values (Brune, 2020:1).

The current study, therefore measured potential agritourist's environmental attitudes to determine whether these attitudes are positive or negative in terms of the agri-environment and agritourism. The respondents were asked to rate various nature, environment, and farming statements, using a 5-point Likert-type scale ranging from 'strongly disagree' to 'strongly agree'.

Adapted from the 2-MEV scale (Bogner & Wiseman, 2006:255), items C2.1 to C2.9 represented the preservation and conservation of the agri-environment, while C2.10-C2.19 represented the utilisation of the farming environment (Appendix A: Section C2). The results are illustrated in Figure 5.14.
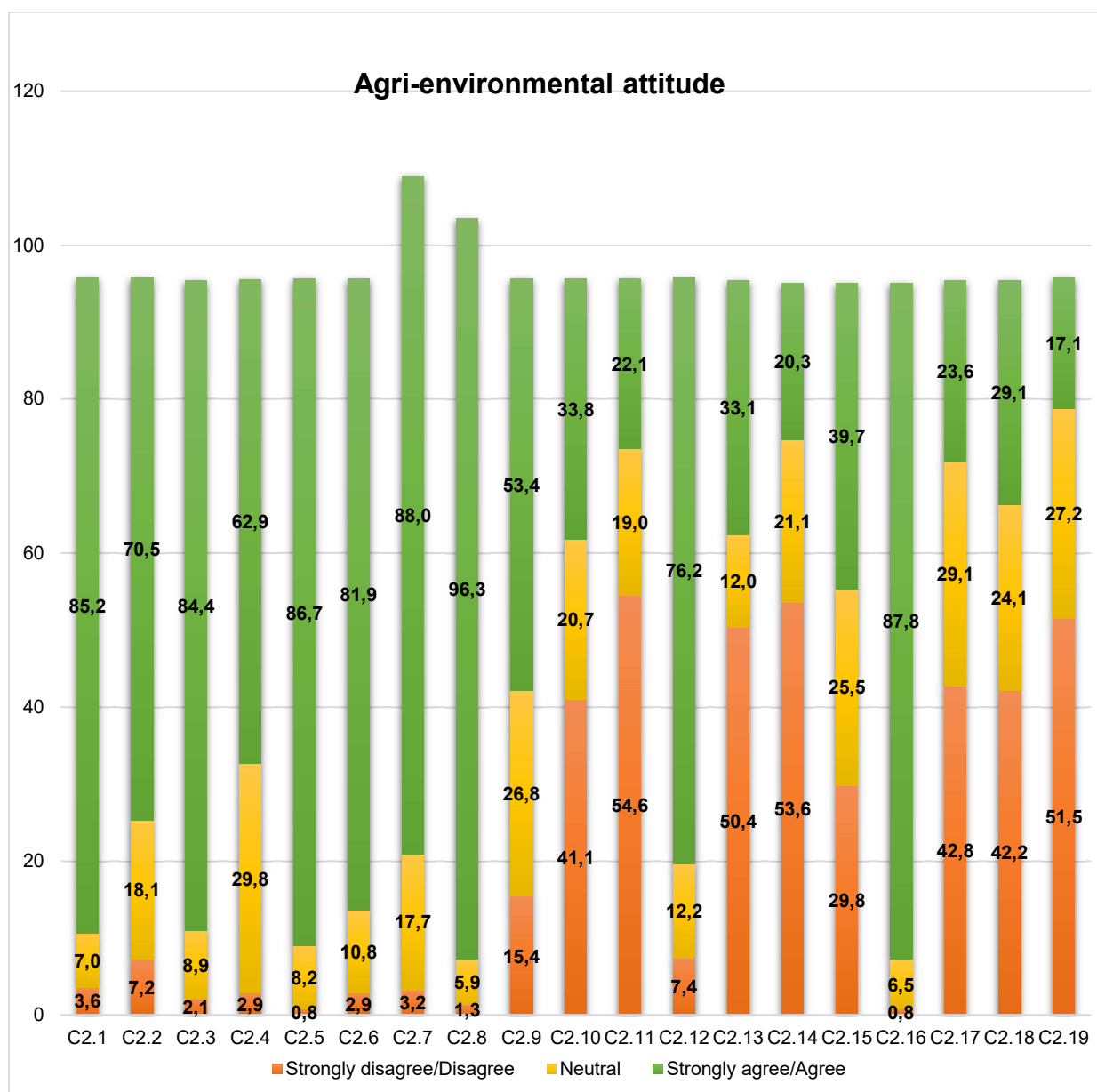
Figure 5.14:   Environmental attitude towards nature, the environment and farming (%)

As illustrated in Figure 5.14, the majority of respondents (96.3%) agreed that farms should be protected (C2.8), while 86.7% of the respondents found it interesting to know what is produced on farms (C2.5). An interest in knowing what is grown on farms may lead to tourists participating in agritourism to satisfy their curiosity in farming.

Regarding the overall preservation or conservation of the farming environment, Figure 5.14 indicated that at least 82% (C2.1-C2.8) of the respondents agreed with preservation or conservation of the farming environment. Regarding utilisation of the environment (C2.10-C2.19), 87.8% of the respondents agreed that farming is important for the economy and needs to be protected (C2.16).

There was also an agreement amongst respondents, as 76.2% of them agreed to adopt practical ways of taking care of the farming environment (C2.12). A solid pro-environmental attitude was therefore evident among the respondents towards nature and farming activities. According to Lazaric *et al.* (2020:1337), environmental attitude stimulates PEB, and a positive agri-environmental attitude will encourage pro-agri-environmental behaviour. A positive agri-environmental attitude and PEB are important to develop sustainable agritourism.

In response to C2.11, 54.6% of the respondents disagreed that forests need to be cleared for crops. Of the respondents, 53.6% disagreed that a farm could restore itself (C2.14), while 51.5% of the respondents disagreed that human beings are more important than taking care of the farming environment (C2.19). The disagreement responses concerning farming and the farm environment (C2.11; C2.14 and C2.19) indicated a solid pro-environmental attitude. Tourists' irresponsible behaviour has been cited as contributing to the depletion of the natural environment (Abdullah *et al.*, 2019:1461).

Attitude has been associated with PEB; thus, agritourists with a positive attitude towards sustainability will behave in a pro-environmental manner (Abdullah *et al.*, 2019; Baker, Davis & Weaver, 2014; Han *et al.*, 2017; Hines, Hungerford & Tomera 1987; Imran, Alam & Beaumont, 2014). It may be assumed that potential agritourists are pro-environment; thus, agritourism is an ideal tool for sustainable development.

Based on these results recommendations can be made for agritourism providers to consider sharing stories and local wisdom that highlight the relationship between farming, the environment, and culture. They may engage agritourists in narratives that

underscore the importance of maintaining a balanced ecosystem and the role of traditional practices in sustaining the farm environment. Agritourism providers can also collaborate with local conservation organisations to offer joint programmes that emphasise the preservation of natural resources and the importance of responsible agritourism. These partnerships can enhance agritourists' understanding of their role in environmental protection.

The respondents' agri-environmental concerns are discussed next.

5.3.4   Respondents' agri-environmental concern

Environmental concerns are embedded mainly in beliefs about how people relate to the natural environment. The 'environmental concern' of an individual or a group of peoples refers to a sympathetic perspective towards the environment (Hungerford & Volk, 1990:11). One of the main categories of variables that have been found to predict environmental literacy and environmentally responsible (ER) behaviour is reflected in personality factors inclusive of environmental concern (Veisi *et al.*, 2019:28).

The current study measure the potential agritourists' concerns about local and global environmental problems, such as air pollution or global warming. The respondents were asked to rate 11 items of concern towards nature, the environment, and farming. These were concerns about local and global environmental problems, such as air pollution or global warming, using a Likert-type scale ranging from 'very concerned' (5) through to 'not at all concerned' (1) (Section C4 in the questionnaire in Appendix A).

Figure 5.15 presents the proportion (%) of respondents expressing their concern regarding local and global environmental problems in a farming context. Once again, for graphical purposes only, the 'not at all concerned' and the 'not very concerned' were grouped, and the 'very concerned' and 'concerned' were grouped.
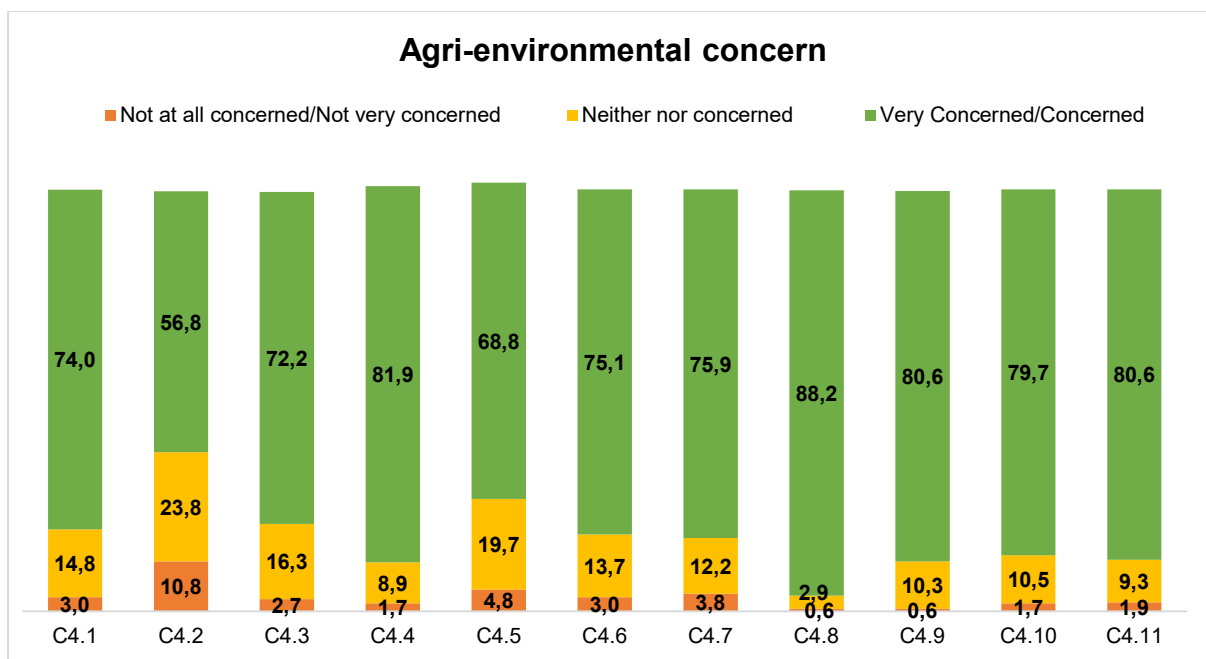
Figure 5.15: Agri-environmental concern (%)

Figure 5.15 reflects the high concern among respondents regarding environmental problems, such as water shortage, waste management, and soil erosion in terms of farms and the farming environment. At least three quarters of the respondents were concerned about all the listed statements, except statement C4.2 (noise pollution). The respondents were least concerned (56.8%) with noise pollution (C4.2). These results contradict results from a previous study, as Veisi *et al.* (2019:34) reported that high noise pollution is a concern amongst university students in Iran.

South Africa has been alleged to be the thirtieth driest country in the world, mainly because of the low and highly variable rainfall, the erratic runoff, high evaporation, and the shallow dam basins in the country (Cole, Biley, Cullis & New, 2017:38). Droughts led to water shortages, especially in the farming industry in South Africa.

Waste is also an environmental challenge, which calls for concern in South Africa with 54.2 million tonnes of general waste generated in 2017. Only 39% of this waste was recycled (Department of Environmental Affairs, 2018:iv).

Agri-environmental concerns highlight the respondents' awareness regarding the environmental challenges listed for the country. Agritourism providers can share case studies and success stories that demonstrate how farms are effectively addressing agri-environmental concerns, highlighting positive outcomes of sustainable practices and inspiring agritourists to adopt similar approaches. Agritourism establishments can

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showcase on-farm practices that directly address specific concerns, such as water-efficient irrigation systems, composting, and erosion control measures. They may provide agritourists with insights into the tangible steps being taken to address agri-environmental concerns. In so doing, the farm might attract environmentally conscious agritourists to their farm.

The agri-environmental sensitivity of the respondents towards nature, the environment, and farming are discussed next.

5.3.5   Respondents agri-environmental sensitivity

Environmental sensitivity is defined as "a predisposition to take an interest in learning about the environment, feeling concerned for it, and acting to conserve it, based on formative experiences" (Chawla,1998:19). Sensitivity towards the environment is therefore inspired by one's appreciation for and meaningful and deep knowledge of the environment, care of and empathy towards it (Cheng & Wu, 2015:557). Environmental sensitivity has been measured previously as a construct of environmental literacy (Kaplowitz & Levine, 2005; Varışlı, 2009; Veisi, 2019).

The study used 10 sensitivity statements regarding nature, the environment, and farming. The respondents were requested to rate these using a five-point Likert-type scale ranging from 'strongly disagree' to 'strongly agree' (Appendix A: Questionnaire; Section D).

Figure 5.16 presents the results related to the respondents' sensitivity towards nature, the environment, and farming.
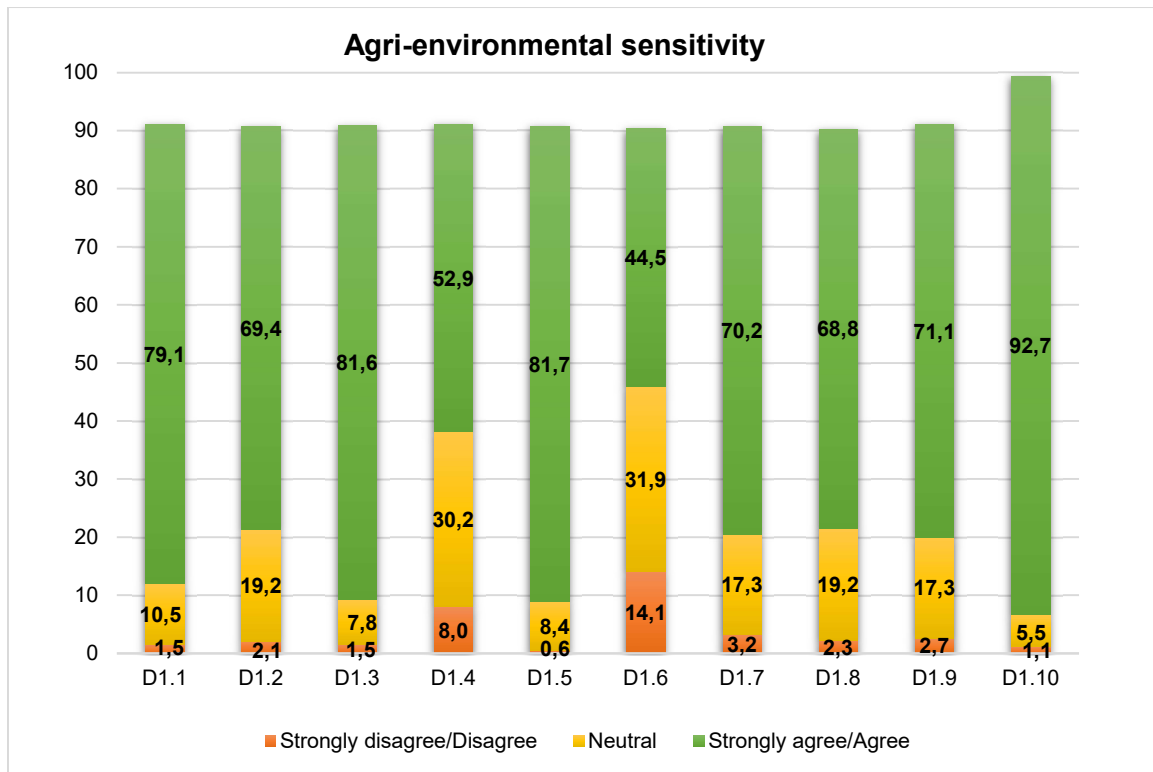
Figure 5.16: Agri-environmental sensitivity of towards nature, the environment and farming (%)

Figure 5.16 illustrates that more than 70% of the respondents agreed or strongly agreed with eight statements, excluding D1.2, D1.4, D1.6 and D1.8. The level of agri-environmental sensitivity was high (92.7%) for the effect of water shortage on the farming industry (D1.10), and for people to be held responsible for any damage caused to the farm environment (81.7%; D1.5). Of the participants, 81.6% agreed that it is important that everyone is aware of the environmental problems related to farming (D1.3). Only 52.9% of respondents disagreed that they were personally responsible for helping to solve the environmental problems related to farming (D1.4), while 44.5% of the respondents disagreed that entertainment services do not value nature and the farm environment (D1.6).

Overall, the respondents showed high sensitivity towards PEB and the sustainability of the farm environment. Agritourism must also be developed and promoted so that it may encourage responsible conduct. There is a clear indication that potential agritourists are sensitive to the environment; it is therefore reasonable to assume that they will behave responsibly while visiting farm environments. Based on these agri-environmental sensitivity results, agritourism providers can provide agritourists with

opportunities to volunteer for environmental restoration projects, encouraging them to actively contribute to the farm's sustainability efforts.

Agritourism farms can collaborate with local environmental experts, conservationists, and scientists to lead workshops and discussions on agri-environmental sensitivity and responsible behaviour. Agritourism providers may consider obtaining certifications or recognition for their farm's sustainable practices. Such accreditations and certifications can be used to attract environmentally conscious agritourists and highlight the farm's commitment to responsible agritourism.

The respondents' behavioural intentions towards nature, the environment, and farming are discussed next.

5.3.6 Results of respondents' behavioural intention towards nature, the environment and farming (%)

'Behavioural intention' refers to the intention or likelihood that one is motivated to perform a specific behaviour (Ajzen, 1991). Measured by self-report assessment, individuals are usually requested to indicate their plans or willingness to perform a given behaviour within a specific timeframe (Conradie, 2017:462; Lange & Dewitte, 2019:93; Wiernik *et al.*, 2013:832).

For the purposes of the current study, intended PEB was defined as behaviour that consciously reduces the negative influence of potential agritourists' acts on the agri-environment. It is possible to contribute to the preservation of the agritourism environment, for example, by minimising energy and resource consumption and waste production to ensure farm sustainability.

Both an environmental and a psychological approach were applied in the current study to measure respondents' behavioural intentions. Measures of PEB were based on 16 intended PEB items (Appendix A: Questionnaire; Section C3).

Figure 5.17 reflects the behavioural intentions of potential agritourists towards the agritourism environment.
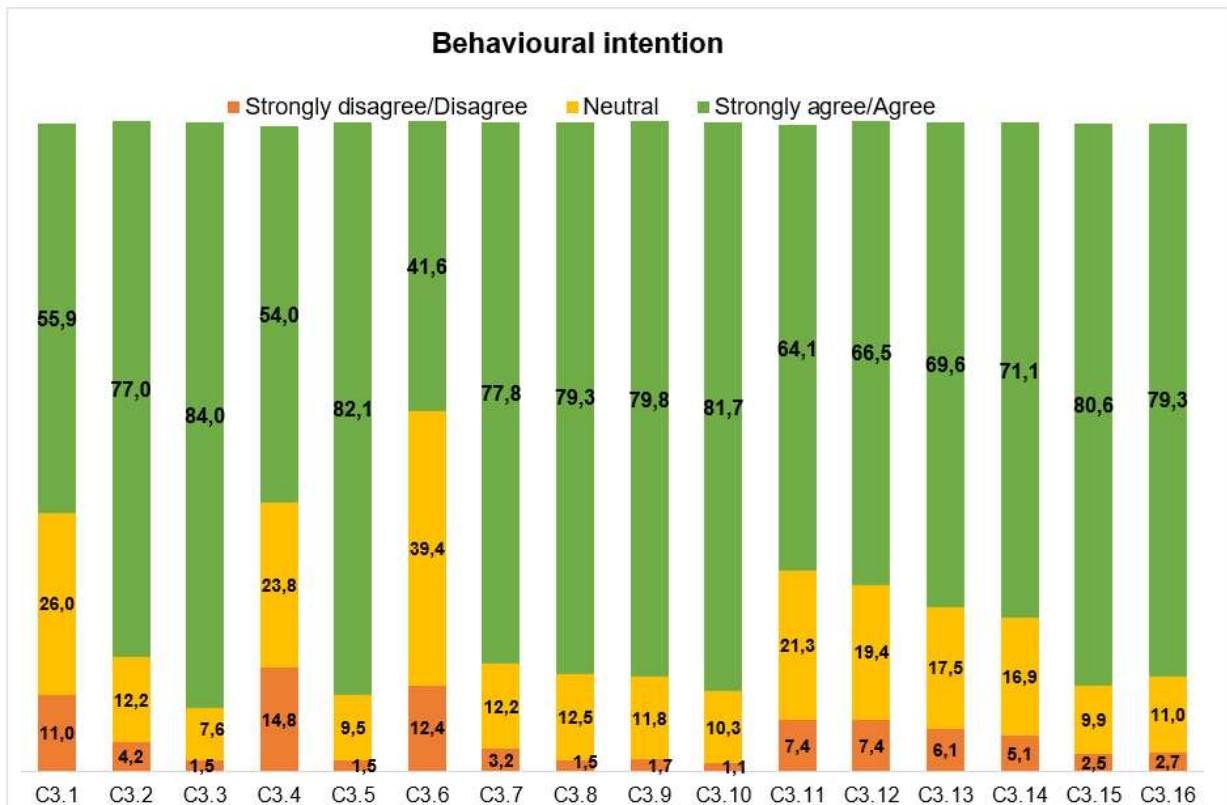
Figure 5.17: **Behavioural intention of respondents towards agritourism environment (%)**

Figure 5.17 shows that 84.3% of the respondents agreed that water saving is important for the survival of farming as a business (C3.3). About 82% agreed that they would be willing to separate their rubbish for recycling if it would contribute to the conservation or preserving of farms (C3.5). At the same time, 80% of the respondents agreed that they would be willing to encourage people to support environmentally friendly farming (C3.10). About 41.6% of the respondents agreed they were willing to give money to protect farms, while 39.4% were neutral (C3.6). About 77.8% of the respondents were willing to turn off the tap when washing their hands (C3.7), and 81.7% of the respondents were willing to separate their garbage if it would contribute to preserving farms (C3.10). However, 58% of the respondents were less inclined to take the bus or walk to places (C3.4).

Although the respondents were willing to turn off the tap while washing their hands (C3.7; 77.8%) and 82.1% said they would separate their rubbish if it would contribute to conserving or preserving farms (C3.5), the respondents were not inclined to take the bus or walk to places (C3.4; 54%). The respondents were not agreeable with monetary intentions or intentions that affected their comfort level, such as taking the

bus. This finding supports the notion that tourists frequently feel powerless and/or unwilling to change their travel behaviour due to a lack of awareness of the available options or a desire to avoid making sacrifices while on holiday (Juvan & Dolnicar, 2014; Miller, Rathouse, Scarles, Holmes & Tribe, 2010).

Considering the high overall rating of positive behavioural intention, agritourism suppliers should also understand the PEB intentions of the potential market. In cases where it is less intended, however, the emphasis of PEB could be on agri-educational experiences for that specific market. High intention towards the agri-environment is ideal for sustainable agritourism development.

According to Lee, Schallert and Kim (2015:455), tourists who aim to minimise their environmental impact, contribute to environmental preservation and/or conservation initiatives, and avoid disrupting the ecosystem and biosphere of a destination during recreation or tourism activities. Such tourists are ideal for the sustainability of any tourism product. The results therefore present a potential agritourist market that would behave pro-environmentally, which is essential for developing sustainable agritourism.

Considering that potential agritourists have positive intentions towards the environment, it is crucial that agritourism providers take advantage of this. Some recommendations to foster pro-environmental behaviour and promote sustainable agritourism may be for providers to collaborate with eco-friendly brands to offer sustainable products and services on the farm. This can include eco-friendly toiletries, reusable water bottles, and locally made crafts. The providers may provide incentives, such as discounts on future visits or exclusive experiences for agritourists who actively participate in sustainable practices while visiting an agritourism farm. Agritourism establishments can also integrate environmental themes into farm activities, games, and entertainment, which will make learning about sustainability a fun and engaging experience. Providers should regularly update agritourists on the collective impact of their pro-environmental actions, by sharing success stories and statistics that highlight their contribution to sustainability on the farms' various social media pages.

The respondents' PsyCap results in terms of their overall life are discussed next.

5.3.7 Respondents' PsyCap regarding their overall life

PsyCap refers to "an individual's positive psychological state of development" (Luthans *et al.*, 2006b:3). The focus of PsyCap is an individual's strength rather than his or her weakness (Luthans *et al.*, 2006b:3). Despite being based on concepts of positive organisational behaviour, previous research confirmed that an individual's PsyCap is positively associated with his or her wellbeing (Avey *et al.*, 2010; Culbertson, Fullagar & Mills, 2010; Luthans *et al.*, 2008).

PsyCap is a beneficial and necessary state for inducing positive agri-environmental attitudes, actions, performance, and wellbeing (Wong *et al.*, 2021:6). After the COVID-19 pandemic, people turned to personal, positive resources to boost their wellbeing (Spenceley, 2021b:24; Spenceley *et al.*, 2021c).

The positive psychology of potential tourists has been linked to how they act, think, and feel (Pearce & Packer, 2013:386). The current study sought to measure potential the agritourist's psychological capital in terms of their overall life. This is associated with wellness and health.

To measure the PsyCap of potential agritourists, a series of 24 PsyCap statements were adapted from Luthans *et al.* (2007c:553-555) for the current study (Appendix A: Questionnaire: Section E). The PCQ-24 consists of four subscales, namely, hope, efficacy, resilience, and optimism. Three items "When I have a setback in my life, I have trouble recovering from it and moving on" (E1.7); "If something should go wrong in my life, it will" (E1.14); and "In my life, things never work out the way I want them to" (E1.17) were reversed scored.

Figure 5.18 presents the PsyCap results of potential agritourists in the study.
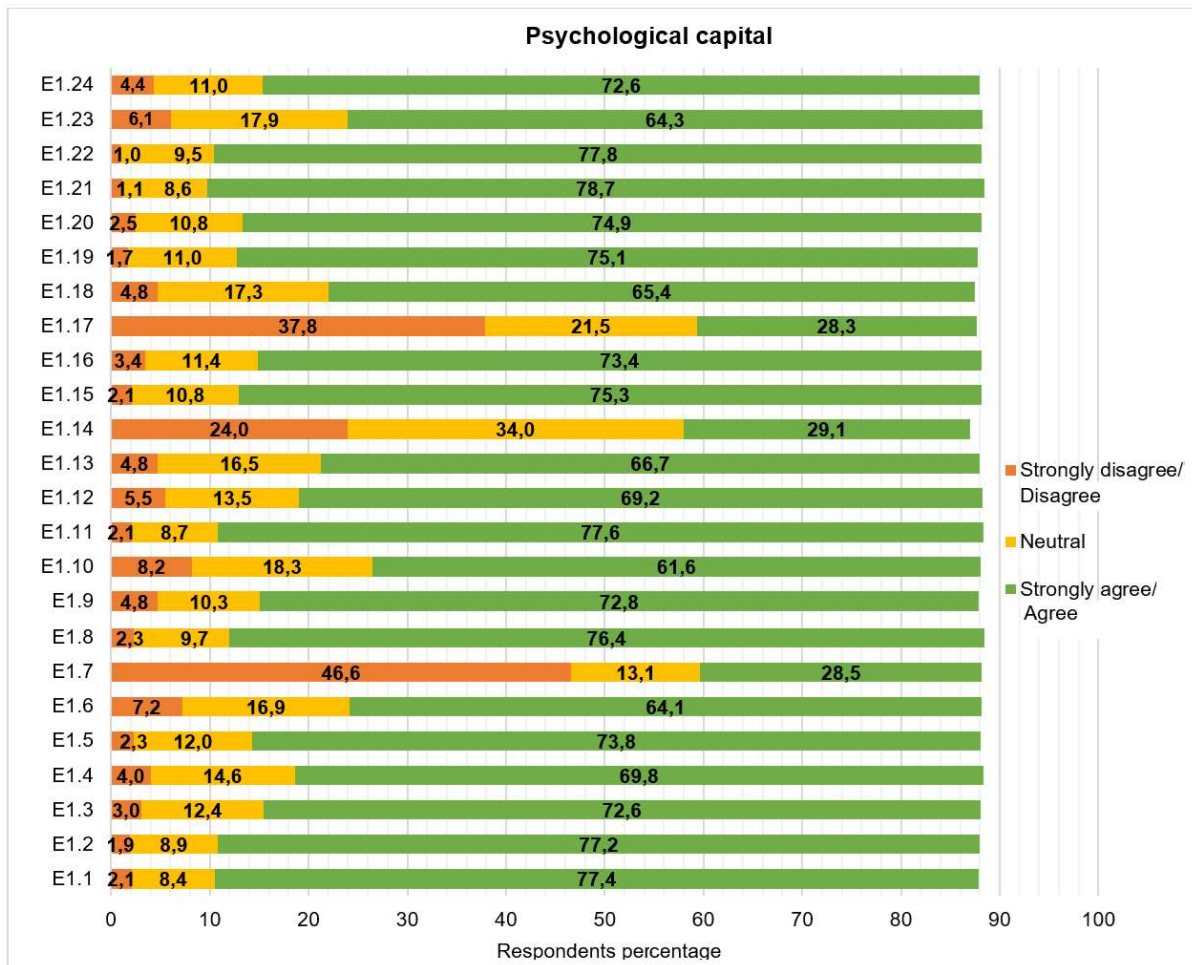
Figure 5.18: Psychological capital of respondents' life overall (%)

Figure 5.18 illustrates that, in general, most of the respondents (70%) agreed or strongly agreed with 21 of the 24 statements, thereby reflecting a high level of PsyCap. Only a few respondents indicated that things never work out the way they want them to in their overall life (E1.17; 28.3%), have trouble recovering from a setback and moving on in their life (E 1.7; 28.5%), and if something can go wrong in their life, it will (E1.14; 29.1%). These items were reverse scored.

The results reveal that, regardless of the environment where respondents found themselves (after the COVID-19 lockdown restrictions had been lifted), they were still confident about their overall life. PsyCap was adopted in the current study to understand potential agritourists' state of mind in efforts to uncover their association with pro-agri-environmental behaviour as key for ensuring the sustainability of agritourism.

PsyCap is related to human wellbeing (Avey *et al.*, 2010:17), and engaging in nature-based tourism products, such as agritourism, has been shown to improve wellbeing. Understanding the potential agritourist's PsyCap could be essential in the promotion of agritourism marketing messages, which can be aligned and crafted so that they ignite the positive PsyCap of a potential agritourist with the intention to improve his or her overall PsyCap towards life. Planners therefore need to interpret the developing of travelling minds while designing promotional material (Pearce & Packer, 2013:386).

Based on the PsyCap results, agritourism providers can promote positive wellbeing through marketing messages that emphasise the positive aspects of agritourism and highlight how spending time on the farm may contribute to the agritourist's overall wellbeing, stress relief and mental rejuvenation.

Agritourism providers can also intentionally create positive spaces therefore, designing a farm environment that evokes positivity and tranquillity by using colours, natural elements, and comfortable seating areas to enhance agritourists' feelings of relaxation. Agritourism activities can incorporate opportunities for meditation, yoga, or mindfulness sessions in serene natural settings on the farm.

These activities might help agritourists enhance their PsyCap and wellbeing. Agritourism farms can offer a variety of experiences that cater to different PsyCap dimensions, such as hope, efficacy, resilience, and optimism. This could include interactive workshops, outdoor adventures, and creative activities.

For example, an agritourism experience can create spaces for agritourists to reflect on their experiences and express gratitude. Agritourists can be provided with journals where they can write down their positive thoughts and reflections. Agritourism providers can partner with psychologists and wellness experts to offer workshops or sessions focused on enhancing agritourists' psychological wellbeing during their stay at the farm. An agritourism experience can be curated, where activities offer the therapeutic benefits of nature by designing sensory trails, nature walks, and guided forest-bathing experiences to highlight the restorative effects of connecting with nature.

Through these various recommendations agritourism providers can create an environment that can possibly nurture agritourists' PsyCap, that might enhance wellbeing and provide a memorable, enriching agritourism experience.

Section 5.3.8 discusses the respondents' attributes affecting agritourism choice.

5.3.8 Results on attributes affecting respondents agritourism choice

Agritourism is generally a recreational or educational activity carried out on a working farm or another agricultural setting (Arroyo *et al.*, 2013). Although the body of literature uses multiple terms to describe and define the activity, such as 'farm tourism' or 'agritourism' or 'agro-tourism', the current study used the term 'agritourism'. The consistent definition used in this study was based on Phillip *et al.*'s (2010:298) model of agritourism. Phillip *et al.* (2010:298) outlined the concept as "the relationship with a working farm, the type of direct or indirect contact with agriculture provided for the tourist and the authenticity of the experience in terms of whether there is engagement with actual farm tasks".

The current study adopted this definition as it includes both direct and indirect contact with agriculture in which a tourist may participate whilst visiting a farm. Attributes, such as the landscape; an authentic farm experience, interaction, activities; basic services; fresh food and traditional farming are important determinants for agritourism choice (Shah *et al.*, 2020:7).

The current study measured the respondents' agritourism attributes (such as landscape, farm activities and authentic farm experience) that would influence their choice. This section therefore discusses important agritourism attributes when choosing an agritourism establishment or activity. The respondents were asked to rate 22 attributes that would influence their choice of an agritourism venue. Items F1–F6 represented landscape; F7–F10 authentic experience; F11–F13 interaction; F14–F16 activities; F17–F20 basic services; F21 fresh food, and F22 traditional farming (Appendix A, Questionnaire).

A Likert-type scale with five categories, ranging from 'not important' to 'critically important', was used to measure respondents' preferences in terms of important agritourism attributes affecting agritourism choice.

Figure 5.19 presents the results. For graphical purposes only, the 'not important' and 'slightly important' percentages were combined, and the 'not important' and 'critically important' percentages were combined.
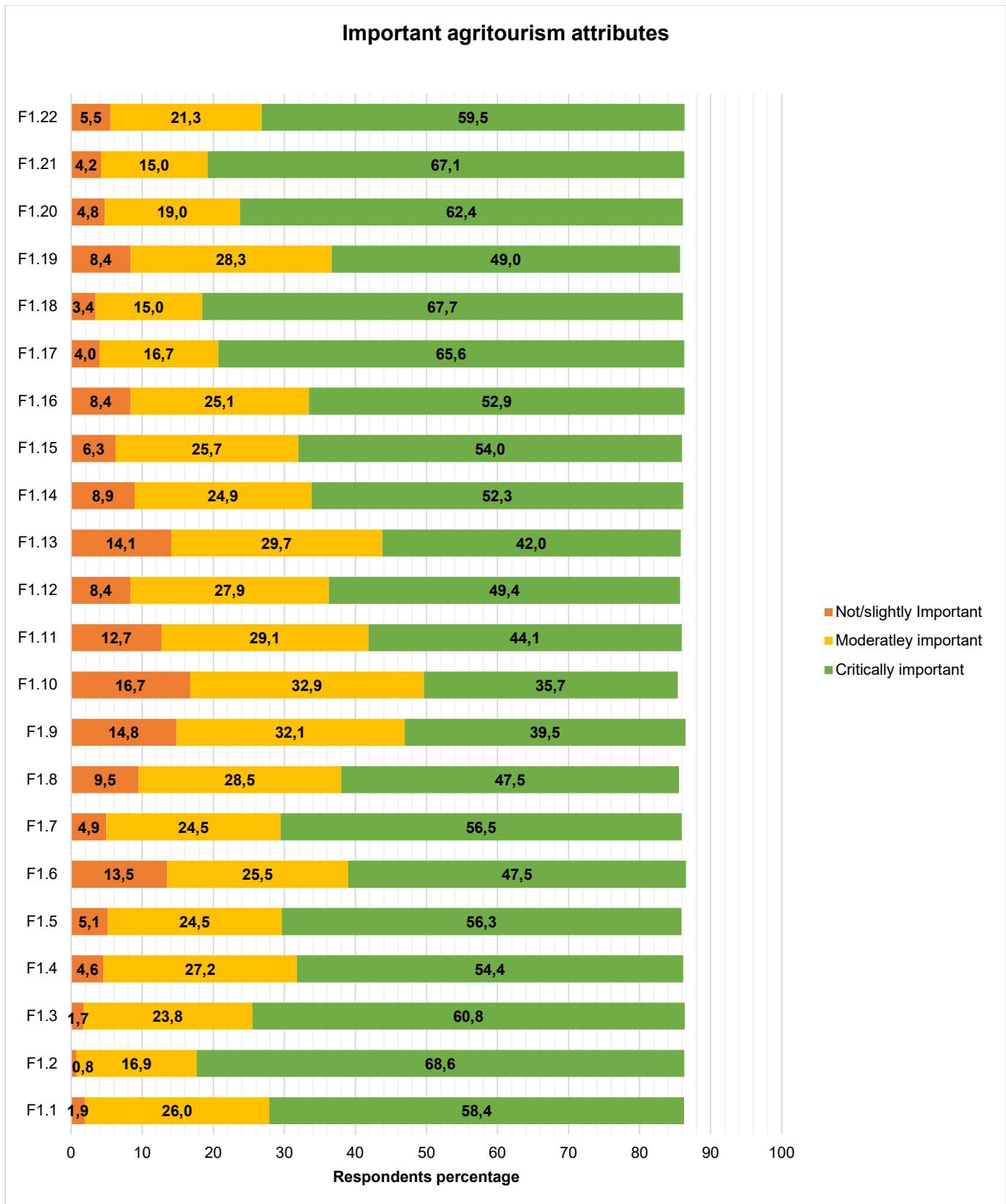
Figure 5.19:   Attributes affecting agritourism choice (%)

As illustrated in Figure 5.19, most respondents (F1.2;68.6%) rated natural surroundings on a farm as 'critically important' when choosing an agritourism farm. These results agree with previous research, as Shah *et al.* (2020) also found that potential tourists rated natural surroundings as important when choosing an agritourism farm.

Farm venue safety (F1.18) was also rated important by 67.7% of the respondents. These results are supported by previous research by Chu and Choi (2000) and Sohrabi *et al.* (2012), where safety was regarded as important when choosing agritourism accommodation. Although safety is regarded as an important agritourism attribute, it depends on the place or location where the research is being conducted (Shah *et al.*, 2020:8).

Of the respondents, 67.1% rated fresh farm food (F1.21) as 'critically important' when choosing an agritourism establishment. A need for farm-grown and fresh food has become an important element directly relating to working farms (Shah *et al.*, 2020). Local cuisine, indigenous speciality foods, and fresh seasonal produce are popular amongst agritourists (Bessière, 1998; Torres, 2002; Tregear, Arfini, Belletti & Marescotti, 2007). Locally grown food products associated with significant cultural roots within a community could improve the image of an agritourism destination and promote traditional farming among the local community (Tregear *et al.*, 2007; Hüller, Heiny & Leonhauser, 2017; Shah *et al.*, 2020). The agritourist's increased preference for fresh farm food thus has the potential to benefit the agritourism establishment and the overall local economy on the farm they visit positively.

About 52.9% of the respondents preferred a farm to host few people while visiting the farm (F1.16). Previous studies have reported that agritourists prefer having a few agritourists visiting a farm at a time (Hüller *et al.*, 2017; Shah *et al.*, 2020; Tregear *et al.* 2007). Although the number of agritourists visiting a farm at a specific time period is not considered important by more than 50% of the respondents, agritourism providers must aim to promote responsible behaviour and control the number of tourists per farm visit.

Based on these results, recommendations can be made for agritourism providers to emphasise the beauty and tranquillity of their farm's natural surroundings in their marketing materials. They could showcase the scenic landscapes, and fauna and flora

to appeal to visitors seeking a peaceful and rejuvenating experience. An agritourism farm can invest in safety measures and provide clear information about the safety protocols on their farm. They could create a safe and secure environment for agritourists by addressing any potential concerns related to farm activities and facilities.

The farm can consider showcasing their farm's commitment to traditional farming practices and heritage by sharing the farm's historical and cultural stories to resonate with agritourists seeking an authentic cultural experience. Agritourism providers can provide options for agritourists to customise their agritourism experience based on their preferences. This could include tailored itineraries, activity packages, or accommodation choices. Agritourism establishments could consider regularly gathering the feedback from agritourists to gain a better understanding of their experiences and preferences. The information gathered can be used to continuously refine and enhance the farm's agritourism offerings.

By aligning agritourism offerings with the preferences and attributes that are important to potential agritourists, the agritourism providers may create an immersive, enjoyable, and sustainable experience that resonates with a wide range of agritourists and contributes to the success of their agritourism establishment.

5.3.9   Synthesis of descriptive statistics of constructs results

The study explored potential agritourists' orientation, attitudes, knowledge, concerns, sensitivity, behavioural intentions, and psychological capital (PsyCap) as related to agri-environmental issues. These findings offer essential insights to inform strategies for the development and marketing of sustainable agritourism. The key findings and corresponding recommendations were presented in Section 5.3.

The respondents exhibited a strong inclination towards valuing the significance of farming sustainability, and the agri-environmental recommendation was thus for agritourism providers to integrate educational workshops into their agritourism offerings to enhance agritourists' understanding of diverse farming practices and their environmental impact.

The respondents demonstrated a commendable level of general knowledge about farming practices in South Africa. Agritourism establishments can consider organising

educational workshops that explore lesser-known agricultural techniques, products, and conservation efforts, and spotlight local festivals and events to enrich agritourists' knowledge.

The respondents expressed consistently positive attitudes towards the preservation, conservation, and productive use of farm environments. By sharing compelling narratives and local wisdom that underscore the role of balanced ecosystems and traditional practices in maintaining the farm environment, the providers can captivate and evoke positive attitudes towards the farm environment.

High levels of concern were observed among respondents regarding both local and global agri-environmental challenges, such as water scarcity, waste management, and soil erosion. It is recommended that providers should showcase case studies and success stories that highlight how farms are effectively addressing agri-environmental concerns.

The respondents displayed a heightened sensitivity towards safeguarding and conserving the farm environment. A recommendation is made for agritourism farms to partner with local environmental experts and scientists to lead workshops that foster agri-environmental sensitivity and responsible behaviour.

The respondents exhibited positive intentions towards adopting behaviours that contribute to the sustainability of farms, such as water conservation and waste separation. Providers should incentivise agritourists to actively engage in sustainable practices during their visits and integrate environmental themes into the various farm activities.

Potential agritourists' PsyCap, reflecting positive psychological states was demonstrated. Agritourism providers can leverage the positive PsyCap of potential agritourists in crafting marketing messages that emphasise the wellbeing advantages of agritourism experiences, and create farm environments and activities that foster wellbeing, stress relief, and mental rejuvenation.

The respondents rated attributes influencing their agritourism choices, highlighting the critical importance of natural surroundings, farm venue safety, fresh farm food, and limited visitor capacity. It is recommended that providers should emphasise the aesthetic and serene qualities of natural surroundings in their marketing materials. It is also recommended that providers implement robust safety measures and

transparently communicate safety protocols. Providers should offer locally sourced and freshly harvested farm produce and consider controlling visitor numbers to facilitate personalised and enjoyable experiences for agritourists.

By incorporating these findings and recommendations into their agritourism offerings, farms stand a chance of offering immersive, educational, and environmentally conscientious experiences. By accentuating sustainability, involving agritourists in meaningful ways, and showcasing the farms' dedication to conservation, agritourism providers can attract eco-conscious agritourists, ultimately nurturing the long-term wellbeing of both the farm and the environment.

To develop and promote sustainable agritourism for a Gauteng source market, the above results provide agritourism providers with information that could be incorporated into marketing messages to encourage agritourism in general. By leveraging the insights provided by the above results, creative strategies can be employed to effectively draw market potential to South Africa. An understanding of the psychological capital (PsyCap) of potential agritourists in Gauteng can serve as a foundation for crafting innovative and appealing marketing messages.

Providers of agritourism services can capture the attention and interest of potential tourists by emphasising the sustainability aspects of the industry and tailoring their messages to align with Gauteng's source market preferences. Besides promoting agritourism in general, this approach positions South Africa as a fun, authentic, and enriching destination for those seeking authentic, sustainable, and enriching experiences.

From a development perspective it is possible to implement strict carrying-capacity measures to limit over-tourism on agritourism farms. As a proactive measure, agritourism farms can set a daily maximum number of guests, based on their ecological capacity and infrastructure.

5.4   CONCLUSION

This chapter presented the descriptive analysis results, which forms Stage 1 of the data analysis process. The chapter addressed Research objective 3, namely:

To determine potential agritourists' biographic information, agri-environmental literacy, behavioural intention, PsyCap, and other critical agritourism attributes.

In Stage 1, descriptive statistics were employed to provide insight into the biographical information of potential agritourists in Gauteng (Section 5.2), their agri-environmental literacy across six constructs (Sections 5.3.1 to 5.3.6), their current psychological capital (PsyCap) (Section 5.3.7), and the attributes influencing their choice of agritourism (Section 5.3.8). These findings are aligned with the third secondary research objective of understanding the respondents' demographics, agri-environmental literacy, PsyCap, and agritourism preferences.

The key results and related recommendations for agritourism providers are presented in the current chapter. The biographical profile of potential agritourists, as revealed in the descriptive statistics (Sections 5.2.1 to 5.2.10), provides insights that can inform strategies aimed at enhancing agritourism experiences.

Examining the demographic distribution of respondents, the study revealed a nearly equal gender distribution, with 53% males and 46% females. This underscores the importance of addressing both genders in targeted marketing initiatives. The dominant age group was Generation X, accounting for 41%, followed by Baby Boomers (31%), Millennials (18%), and Generation Z (9%). These findings advocate for a diversified approach to marketing that catered to the preferences of the different age cohorts.

In terms of language diversity, English emerged as the primary language (33%) and Afrikaans as the second most popular (16%). To effectively engage potential agritourists, an English-focused marketing strategy is recommended.

African respondents made up 56% of the respondents, followed by white respondents (30%) and coloured respondents (6%). As a result, inclusive marketing materials that celebrate diverse racial backgrounds are crucial to increase the number of potential agritourists. Authenticity and diversity could be infused into agritourism by working with local cultural organisations.

The majority of the respondents (84%) live in the urban areas of Gauteng. To optimise this market, operators should consider targeting underdeveloped markets within Gauteng, especially among Millennials and Generation Z. The respondents' awareness of agritourism stood at 52%, indicating the potential for an awareness campaign to inform and engage untapped segments. Collaborative efforts with social

media influencers and local media outlets can be leveraged to enhance agritourism visibility.

The study disclosed that 66% of the respondents had never lived on a farm, highlighting a potential market segment that can be educated about farming opportunities through agritourism experiences. By showcasing farming experiences and income diversification possibilities, providers can tap into this underexplored market.

Around 48% of the respondents had previously visited a farm, indicating an existing market for agritourism experiences. To cultivate repeat visits, providers can implement personalised loyalty programmes and engage with past agritourists to gather insights into their experiences and preferences.

Notably, a substantial 88% of the respondents expressed willingness to consider visiting a farm for a holiday, underscoring the potential of this market segment. This provides a foundation for collaborative efforts between the government and agritourism operators to develop diverse holiday offerings. Marketing materials should emphasise authenticity and tranquillity to attract these potential agritourists.

Agritourism providers are encouraged to adopt a comprehensive marketing approach that considers the diverse demographic factors, preferences, and motivations of potential agritourists. By raising awareness, offering tailored experiences, and collaborating with different entities, agritourism can effectively capture the attention and interest of a wide-ranging and receptive market.

In line with this, the study progresses to Stage 2 and Stage 3 of the data analysis process, presenting the factor analysis and structural equation modelling (SEM) results of the study in Chapter 6.

These stages provide further insights into the underlying constructs and relationships, emphasising the connections between agri-environmental literacy, psychological capital, and sustainable agritourism development.

CHAPTER 6:
FACTOR ANALYSIS AND STRUCTURAL EQUATION MODELLING OF THE STUDY

6.1   INTRODUCTION

The previous chapter (Chapter 5) reported on the interpretation of the descriptive results related to a potential agritourist in the South African context

This chapter presents the results of Stages 2 and 3 of the current study. In Stage 2, factor analysis was employed to determine the validity and reliability of the constructs used in the current study (Section 6.2 to 6.8). Section 6.9 of Stage 2 of the results consists of second-order models analysing the relative strengths of lower-order constructs.

In Stage 3, SEM was applied to empirically test the two conceptual agri-environmental literacy and PsyCap models for agritourism (**Scenario 1** and **Scenario 2**) (Section 6.11 and 6.12). Mediation results are also presented in Stage 3 (Section 6.13), where the underlying mechanism of the association between the various variables within the SEM model (Scenario 2) is discussed. This relates to Secondary research objectives 4 to 6, namely:

- *To develop and test the two conceptual agri-literacy and PsyCap models for agritourism (Scenario 1 & Scenario 2) through SEM;*

- *To determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, agri-environmental concern and agri-environmental sensitivity.*

- *To determine whether behavioural intention, agri-environmental concern, and agri-environmental sensitivity have a mediating effect on the relationship between PsyCap and agritourism attributes.*

Figure 6.1 illustrates the data analysis that was followed in Stages 2 and 3 of the current study.

STAGE 2: FACTOR ANALYSIS RESULTS

6.2 Results of the factor analysis: agri-environment orientation of potential agri-tourists towards nature, the environment and farming

6.3 Results of the factor analysis: attitudes of potential agri-tourists towards nature, the environment and farming

6.4 Results of the factor analysis: behavioural intention of potential agri-tourists towards nature, the environment and farming

6.5 Results of the factor analysis: agri-environment sensitivity of potential agri-tourist

6.6 Results of the factor analysis: environmental concern of potential agri-tourist towards nature, environment and farming

6.7 Results of the factor analysis: psycap of potential agri-tourists towards their overall life

6.8 Results of the factor analysis: agritourism attributes influencing agri-tourists' choice

6.9 Results of second-order models: orientation, attitude, behavioural intention and psycap

STAGE 3: STRUCTURAL EQUATION MODELLING (SEM) RESULTS & MEDIATION RESULTS

6.2 Stage 3: structural equation modelling (SEM) results

6.3 Results of the first structural conceptual model **(Scenario 1)** for agritourism

6.4 Results of the conceptual structural **Scenario 2**: agri-environment literacy and psycap model for agritourism

6.5 Mediating effect of attitude, orientation, concern, behavioural intention and sensitivity in the scenario 2 SEM model

Figure 6.1:   Data analysis Stage 2 and 3

The results of the factor analysis are reported in Sections 6.2 to 6.8. The constructs used are based on existing tourism instruments, as explained in Chapter 4 (Section 4.4). These were adapted to the agri-environment for the purpose of the current study.

The data analysis, as presented in this chapter, commences with the CFA for each construct to determine whether the data fitted the model, as developed in previous research. It should be noted that the CFA misfitted the data for most constructs, even after considering taking out low-loading items. As a result, an EFA was then conducted (Schmitt, 2011:315). A goal of the EFA was to determine if one or more factors could be extracted from the underlying structure of the data.

This chapter presents a comprehensive and lengthy description of the process that was followed in the data analysis. The results of the factor analysis (validity and reliability of the constructs) are presented next (Stage 2 results).

Confirmatory factor analysis (CFA) was employed to assess the validity of categories identified in prior research within the context of this study (specifically, Sections B to F of the questionnaire). The analysis results are presented in the following sequence:

- The CFA was conducted using the constructs previously developed as instruments;

- The results of convergent validity (compCR) are presented;

- The findings from discriminant analysis (HTMT value) are reported; and

- In light of the CFA's failure to demonstrate an acceptable fit between the data and the model postulated in the literature, an exploratory factor analysis (EFA) was conducted.

EFA was conducted to investigate the applicability of the underlying factor structure of the data for the current study. The EFA results are presented in the following order:

- Factor loadings and communality estimates are presented;

- An analysis of convergent validity analysis of factors is conducted;

- The analysis of factors using discriminant analysis (HTMT value) is performed; and

- Descriptive statistics and correlation analyses of the factors are provided.

Before advancing to the SEM analysis, second-order models were conducted (as detailed in Section 6.9) to simplify and clarify the structural relationships between latent constructs. This concluded Stage 2 of data analysis, which was followed by a discussion of Stage 3.

Stage 3 presents the SEM results of the two conceptual agri-environmental literacy and PsyCap models for agritourism (**Scenario 1** and **Scenario 2**) as developed and discussed in Chapter 3. These conceptual agri-environmental literacy and PsyCap for agritourism models were tested to explore the relationships between agri-environmental literacy, PsyCap and underlying behavioural intention towards engaging in agritourism.

The chapter commences with Section 6.2 presenting the CFA results relating to the agri-environmental orientation of the respondents. The results of the factor analysis (validity and reliability of the constructs) are presented next.

6.2 STAGE 2: VALIDITY AND RELIABILITY OF THE CONSTRUCTS

The factor analysis results are presented in these sections, starting with Section 6.2.1 on agri-environmental orientation.

6.2.1 Results of the factor analysis: Agri-environmental orientation of potential agritourists towards nature, the environment and farming

The current study adapted the 13-item environmental orientation scale developed by Larson *et al.* (2011:79) to measure the potential agri-environmental orientation of agritourists (Appendix A: Questionnaire; Section B) in Gauteng. Potential agritourists were requested to rate the items using a Likert-type response scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). Confirmatory factor analysis (CFA) was conducted. If the CFA did not show acceptable fit, an exploratory factor analysis (EFA) was conducted to determine if one or more factors could be extracted from the underlying structure of the data. The next section presents the CFA results of agri-environmental orientation of respondents towards nature, the environment and farming.

6.2.1.1 *CFA: Agri-environmental orientation of potential agritourists towards nature, the environment and farming*

Construct validity was determined by conducting CFA on all 13 items and the two associated constructs, namely, farm affinity and farm eco-awareness. The rationale in the current research was to determine whether these two constructs found in the research on environmental orientation could be seen as two distinct constructs of environmental orientation (Larson *et al.*, 2011:72) and that they could be confirmed in the study.

The two constructs of environmental orientation were adapted for the current study from a broader nature environmental perspective to a narrowed farming orientation perspective. The discussion of CFA in Table 6.1 summarises the items used to measure a respondent's agri-environmental orientation (Appendix A: Questionnaire; Section B).

Table 6.1: Items used to measure potential agritourists' farming-orientation toward nature, the environment and farming

Farming orientation	
1	I like to learn about different types of farms and farming.
2	Farms and farming are important to people.
3	I like to read about farming.
4	Farms are easily damaged by people (e.g. by overcrowding, rapid population growth and increased food demand).
5	I am interested in learning about new ways of protecting farms.
6	People need farm produce to live.
	My life would change if there was no farming, as we may not be able to have enough food.
7	I would give some of my own money to help save farms.
8	I would spend my spare time volunteering at a farm.
9	We need to take better care of farms for their survival.
10	I like to spend time on a farm.
11	It makes me sad to see homes built where farms used to be.
12	I would volunteer at a cleaning-up farm project initiated in my neighbourhood.

Table 6.1 provides an outline of the initial factors and items used in the survey, as found in literature, as in CFA, the theory comes first. Environmental orientation, as derived from the literature discussion presented in Section 3.2.2 of the study (Larson *et al.*, 2011:79), is illustrated and discussed next. Figure 6.2 illustrates the CFA model as postulated originally with regard to the items underlying the environmental orientations of potential agritourists.
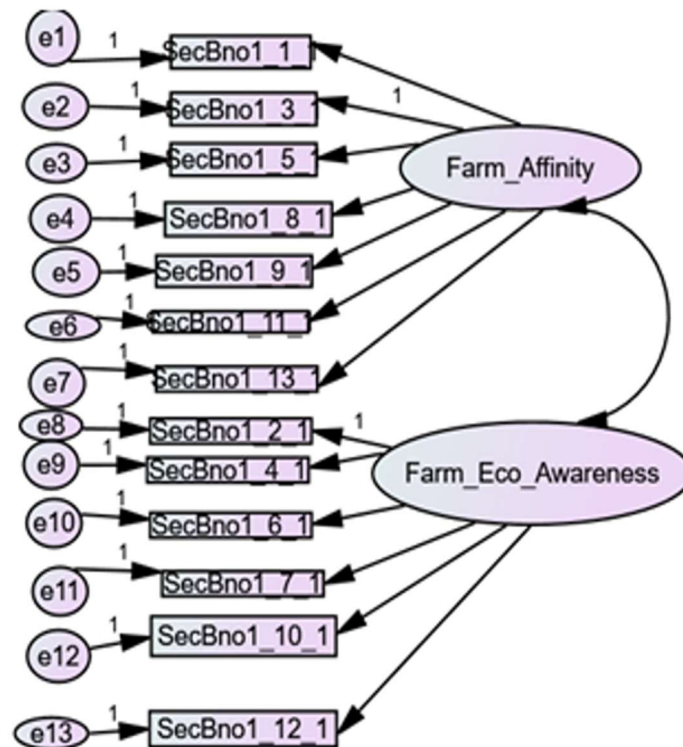
Figure 6.2: CFA Model 1 as originally postulated with respect to the items underlying environmental orientation of potential agritourists

As illustrated in Figure 6.2, the CFA model 1 was initially presented using B1_1_1–B1_13_1 (environmental orientation) for the observed variables, e1–e13, for the error terms associated with the observed variables of the orientation factor for the latent variable. The model was evaluated by goodness-of-fit indices to test whether the proposed model emulated the sample matrix (Raykov & Marcoulides, 2012:95).

Table 6.2 provides the goodness-of-fit indices of the CFA model.

Table 6.2: Goodness-of-fit indices of the CFA model 1 of respondents' environmental orientation

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	GFI	IFI	SRMR
Goodness-of-fit indices	493.013	64	0.000	7.703	.113	.837	.854	.838	.0789
Acceptable fit	-	-	-	< 3	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08

The CFA results presented in Table 6.2. reveal that the model fit for the data did not indicate an acceptable fit. The root mean square error of approximation (RMSEA) model fit metric should preferably be below 0.05 to indicate a good fit, while RMSEA

values between 0.05 and 0.08 indicate an acceptable fit (Hair *et al.*, 2014b:579; Hu & Bentler, 1999; Raykov & Marcoulides, 2012:36). In the current study, the RMSEA was above the accepted threshold (0.113), with the lower and upper 90% confidence interval ranging between 0.104 and 0.122.

Other indices were considered for testing the model fit and CFI, and the IFI should be above 0.90 for acceptable fit and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36).

The model fit indices were as follows: CFI (0.837), IFI (0.838) and GFI (0.854); therefore, all were below 0.90, which did not indicate an adequate model fit. The CMIN/df value of 7.703 was more than the acceptable threshold of 5, thus not indicating a model fit. The standardised root mean square residual (SRMR) indicated an acceptable fit, as the value was below the recommended threshold of 0.08. The first CFA model 1 with 13 items associated with two subconstructs, namely, farm_affinity and farm_eco-awareness, therefore, did not show a satisfactory fit (Table 6.2) according to the set of indices considered.

The CFA model 1 in Figure 6.2, therefore, indicates an unsatisfactory fit with the observed data. The results of the standardised regression weights indicated three items (b4, b7, b12) that had low-loading items (b4 = 0.126, b7 = 0.233,b12 = 0.249). These three items had factor loadings below 0.45, the minimum value required for CFA (Hair *et al.*, 2019:147).

The three items were then deleted from the model, and Figure 6.3 illustrates the CFA model 2 postulated for 10 items underlying the agri-environmental orientation of potential agritourists.
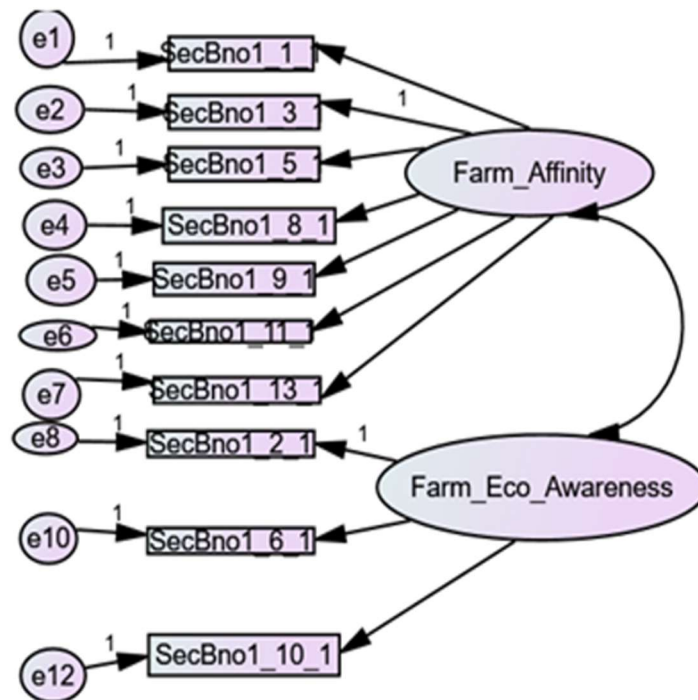
Figure 6.3: CFA Model 2 as postulated for 10 items underlying the environmental orientation of potential agritourists

As illustrated in Figure 6.3, the CFA model 2 was initially presented with only 10 items. Table 6.3 below provides the goodness-of-fit indices of the measurement CFA model 2 after the deletion of the three items.

Table 6.3: Goodness-of-fit indices of the CFA model (10 items)

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	GFI	IFI	SRMR
Goodness-of-fit indices	339.036	34	.000	9.972	.131	.865	.868	.866	.0715
Acceptable fit	–	–	–	< 3	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08

As presented in Table 6.3, with the deletion of the three items, it was shown that the CFA of model 2 still revealed an unimproved acceptable fit on all 10 items, with all fit indices above or below the recommended thresholds, as in Table 6.3, except for SRMR, where the value was below the recommended threshold of 0.08.

Convergent and discriminant validity of the constructs were examined by using the following indices: composite reliability (CR) and heterotrait–monotrait (HTMT) ratio. Table 6.4 provides a summary of the composite reliability statistics.

Table 6.4:   Composite reliability results of environmental orientation factors (10 items)

Environmental orientation factors	CR
Farm_affinity	0.878
Farm_eco_awareness	0.747

As presented in Table 6.4., the composite reliability of Farm_affinity and Farm_eco_awareness is 0.878 and 0.747, respectively. The highest consistency was related to Farm_affinity. High composite reliability indicates that internal consistency exists, meaning that the measures all consistently represent the same latent construct (Shrestha, 2021). Similar to Cronbach's alpha's, the generally accepted threshold is 0.7 or higher (Hair *et al.*, 2010a:125). The two constructs display composite reliability as their values exceed the threshold of 0.7; thus, the reliability of the scale was established.

The HTMT ratio approach was applied to assess the discriminant validity of the constructs further. The HTMT ratio results are presented in Table 6.5.

Table 6.5:   HTMT ratio analysis of farm orientation

Farm orientation factors	Farm_affinity	Farm_eco_awareness
Farm_affinity		
Farm_eco_awareness	0.483	

Table 6.5 presents the HTMT value to assess discriminant validity between Farm_affinity and Farm_eco_awareness as constructs of farm orientation. Although the Fornell-Larcker criterion (Fornell & Larcker, 1981) is an accepted method for assessing the discriminant validity of a SEM model, an alternative criterion, the HTMT ratio (Henseler, Ringle & Sarstedt, 2015:120) was considered (Garson, 2016:69). The HTMT of the correlations is the ratio of the between trait correlations to the within trait correlations (Hair *et al.*, 2014b:688) (that is, the correlations of indicators across constructs measuring different phenomena) divided by the average of the monotrait method correlations (that is, the correlations of the indicator within the same

construct). Heterotrait correlations should be smaller than monotrait correlations, meaning that the HTMT ratio should be below 1.0 in a well-fitting model. It is suggested that the HTMT ratio should be lower than 0.85 (more strict threshold) or 0.90 (more lenient threshold) or significantly smaller than 1 (Hair *et al.*, 2014b:788-789).

Using the HTMT value to assess discriminant validity between Farm_affinity and Farm_eco_awareness as constructs of agri-environmental orientation revealed the following results:

- The HTMT ratio criterion between Farm_affinity and Farm_eco_awareness (0.483) illustrates discriminant validity between these two concepts.

However, considering all the above fit indices (CFA Model 1 and CFA Model 2) presented an unsatisfactory fit with the observed data, an EFA was conducted to determine the reasons for the CFA misfit. The results of the EFA are discussed next.

6.2.2 EFA: Agri-environmental orientation of potential agritourists towards nature, the environment and farming

EFA was applied to responses on the 13-item scale. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (0.874) and Bartlett's test of sphericity was significant (p = 0.000). Both indicated that factor analysis was appropriate, as the KMO exceeded the recommended minimum value of 0.6 (Kaiser, 1970; 1974).

The principal axis factoring (PAF) method extracted the factors, and a Promax rotation with Kaiser normalisation followed this. The PAF method revealed the presence of three factors with eigenvalues exceeding 1, cumulatively explaining 51% of the variance in the data. A two-factor structure was observed in previous studies (Larson *et al.*, 2011:79).

Table 6.6 indicates the communality estimates and factor loadings in the pattern matrix. Factor loadings above 0.32 were considered (Hair *et al.*, 2010a:99).

Table 6.6: Factor loadings and communality estimates from the EFA of the agri-environmental orientation (n = 526)

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
Factor 1: agri-environmental values			0.783	34.679
I would give some of my own money to help save farms.	.461	.673		
I would spend my spare time volunteering at a farm.	.800	.841		
It makes me sad to see homes built where farms used to be.	.374	.481		
I would volunteer at a cleaning-up farm project initiated in my neighbourhood.	.596	.702		
Factor 2: agri-environmental capacity			0.826	10.963
I like to learn about different types of farms and farming.	.802	.959		
I like to read about farming.	.558	.671		
I am interested in learning about new ways of protecting farms.	.582	.487		
I like to spend time on a farm.	.478	.368		
Factor 3: agri-environmental awareness			0.745	5.300
Farms and farming are important to people.	.516	.670		
Farms are easily damaged by people (e.g. overcrowding, rapid population growth and increased food demand).	.181	.334		
People need farm produce to live.	.498	.722		
My life would change if there was no farming, as we may not be able to have enough food.	.295	.575		
We need to take better care of farms for their survival.	.482	.584		

Table 6.6 indicates that the eigenvalue of factor 1 was the highest at 4.939 and explained most of the variance (34.679%). The second factor showed an eigenvalue of 1.928, explaining 10.963% of the variance, followed by factor 3 (1.148), explaining 5.3% of the variance.

All the communalities of the items were above 0.31, and they all demonstrated loadings of more than 0.32 on one of the three extracted factors; therefore, all items were retained for further analysis. Three factors were thus identified to explain the orientation of respondents towards the agri-environment.

These three factors were labelled agri-environmental values, agri-environmental capacity, and agri-environmental awareness. It should be noted that item 11, "I like to spend time on a farm", double-loaded on factors 1 and 2; however, it was found more compatible with factor 2 than factor 1. Factor 1 was concerned with valuing agri-environmental orientation, whereas factor 2 concerned learning and understanding the agri-environment. An assumption could therefore be made be that, if one enjoys learning and reading, and is interested in new ways of protecting farms, one will most likely enjoy spending time on a farm. Item 11, "I like to spend time on a farm", was thus retained under factor 2 for further analysis. Factor 3 maintained previous items outlining eco-awareness as per Larson *et al.* (2011:79).

Table 6.6 indicates that factor 1 (0.783), factor 2 (0.826), and factor 3 (0.745) were internally consistent (reliable), as the Cronbach's alpha coefficient values were above the acknowledged threshold of 0.7.

The following indices examined the convergent and discriminant validity of the newly identified factors: composite reliability (CR) and HTMT ratio were evaluated. Table 6.7 provides a summary of the composite reliability of respondents' agri-environmental orientation factors in order of loading from high to low.

Table 6.7: **Composite reliability results of respondents agri-environmental orientation factors**

Environmental orientation factors	CR
Factor 2: agri-environmental capacity	0.825
Factor 1: agri-environmental values	0.795
Factor 3: agri-environmental awareness	0.749

Table 6.7 indicates that the composite reliability of farm agri-environmental orientation subscales ranged from 0.749 to 0.825. Accordingly, the composite reliability of agri-environmental orientation subscales ranged from 0.749 to 0.825. The highest

consistency was related to agri-environmental capacity factor items (0.825), and the lowest was related to agri-environmental awareness factor items (0.749). The reliability of the scale was established. The HTMT ratio approach was also applied to assess the discriminant validity of the constructs further. The HTMT results are presented in Table 6.8.

Table 6.8:   HTMT analysis: orientation

Orientation factors	F2	F1	F3
Factor 2: agri-environmental capacity			
Factor 1: agri-environmental values	0.737		
Factor 3: agri-environmental awareness	0.470	0.414	

Table 6.8 indicates the HTMT values between agri-environmental values and agri-environmental capacity (0.737), illustrating discriminant validity between these two concepts. This was also the case for agri-environmental awareness and agri-environmental capacity (0.470), as well as agri-environmental values and agri-environmental awareness (0.414). Discriminant validity therefore existed between the three newly identified constructs for orientation. Factor-based scores were subsequently calculated, as the mean score of the variables were included for all three factors.

Descriptive statistics for these three factors representing a respondent's specific orientation towards nature, the environment, and farming are reflected in Table 6.9. This table shows measures of central tendency, the SD, and skewness and kurtosis measures.

Table 6.9: Descriptive statistics for the three extracted factors representing respondents' environmental orientation towards nature, the environment and farming

No	Descriptive statistics for respondents' attitudes towards nature, the environment and farming	Valid number	Mean	Median	Standard deviation (SD)	Skewness	Kurtosis
1.	Agri-environmental values	526	3.718	3.750	0.748	-0.381	0.187
2.	Agri-environmental capacity	526	3.956	4.000	0.725	-0.791	1.001
3.	Agri-environmental awareness	526	4.583	4.750	0.526	-2.031	7.925

*The scale indicates 5 = 'strongly agree', and 1 = 'strongly disagree'

Table 6.9. indicates that respondents strongly agree with agri-environmental awareness (4.583), followed by a tendency to agree with agri-environmental capacity (3.956).

The assumption of normality holds for two of the three orientation constructs, as the skewness and kurtosis values were within the acceptable range of -2 to +2, except the kurtosis value of agri-environmental awareness. However, Byrne (2010) and Kline (2011) maintained that a kurtosis value ranging of -7 to +7 is acceptable for regression and SEM. The two most agreed-upon factors (agri-environmental awareness and agri-environmental capacity) revealed that potential agritourists understand the importance of farming and the sensitivity of the farming environment and are likely to want to learn and know more about this environment.

As a result, this affirms that agritourism can be used to learn about farming and expose potential agritourists to essential issues related to farming. It becomes vital for an agritourism establishment to be aware of this information to align the farm experience or product offering with the tourist. Based on the EFA results for agri-environmental orientation, agritourism operators may consider emphasising the importance of farms and the environment in their promotional materials. Such promotional messages may resonate with potential agritourists who have already expressed their sentiments relating to the importance of the farm environment. Incorporating informative elements into agritourism experiences, such as sustainable farming practices and the role of agriculture in the environment, may enhance the educational aspect of the farm visit.

Section 6.3 presents the factor analysis results of attitude of potential agritourists towards nature, the environment and farming.

6.3 RESULTS OF THE FACTOR ANALYSIS: ATTITUDES OF POTENTIAL AGRITOURISTS TOWARDS NATURE, THE ENVIRONMENT AND FARMING

Construct validity was determined by conducting CFA on all 19 items and the two associated constructs, namely, Utilisation (U) and Preservation (P). The CFA results concerning the agri-environmental attitude of potential agritourists towards nature, the environment and farming are presented in Section 6.3.1.

6.3.1 CFA: Attitude of potential agritourists towards nature, the environment and farming

From the 2-MEV scale of Bogner and Wiseman (2006:253), 19 items were adapted for the current study to measure potential agritourist attitudes towards nature, the environment and farming (Appendix A: Questionnaire; Section C2). The 2-MEV measurement scale was developed to measure Utilisation (U) and Preservation (P) of the general environmental values (Bogner & Wiseman, 2006:253). The research scale of interest included 19 environmental and agri-value items, where potential agritourists were requested to rate these by using an agreement scale ranging from 'strongly disagree' (1) to 'strongly agree' (5).

The two categories of attitude were adapted for the purposes of the current study from environmental studies measuring the factors, Utilisation (U) and Preservation (P) (Bogner & Wiseman, 2006; Conradie, 2017).

Table 6.10 summarises the items used to measure the respondents' agri-environmental attitude towards nature, the environment and farming (Appendix A: Questionnaire; Section C2).

Table 6.10:   Items used to measure potential agritourists' attitude towards nature, the environment and farming

C1: Utilisation	
C2.1	I save water because it is important for the survival of farms.
C2.2	I save electricity because it could decrease air pollution, which endangers farming.
C2.3	Farms will stop to exist if we do not live in tune with nature (farms).
C2.4	I enjoy trips to farms.
C2.5	It is interesting to know what is produced on farms.
C2.6	Industrial smoke from factories that kills farm crops and animals makes me angry.
C2.7	It upsets me to see the farmland taken over by building sites.
C2.8	We must protect farms from an environmental perspective.
C2.9	Society will continue to solve even the biggest environmental problems that affect farming.
C2: Preservation	
C2.10	Human beings have the right to change an agricultural environment as they see fit.
C2.11	We need to clear forests to grow crops.
C2.12	We should remove weeds to help crops grow because they can rob the soil and plants of important nutrients and water.
C2.13	Our planet has unlimited resources to feed everyone on the planet.
C2.14	A farm is always able to restore itself.
C2.15	We must build more roads so that people can travel to farms.
C2.16	Farming is important for the economy and needs to be protected.
C2.17	Worrying about farming often holds up development projects.
C2.18	People worry too much about the impact of a high concentration of air pollutants on farming.
C2.19	Human beings are more important than taking care of the farming environment.

Table 6.10 indicates the CFA model 1, as originally postulated with respect to the items underlying the environmental attitude of potential agritourists regarding their attitude towards nature, the environment and farming agri-environmental attitude, as derived

from the literature (Section 3.4.2) (Bogner & Wiseman, 2006; Conradie, 2017; McBeth & Volk, 2009; Munoz, Bogner, Clement & Carvalho, 2009).

Figure 6.4 illustrates the CFA model 1, as originally postulated with regard to items underlying the environmental attitude of potential agritourists.
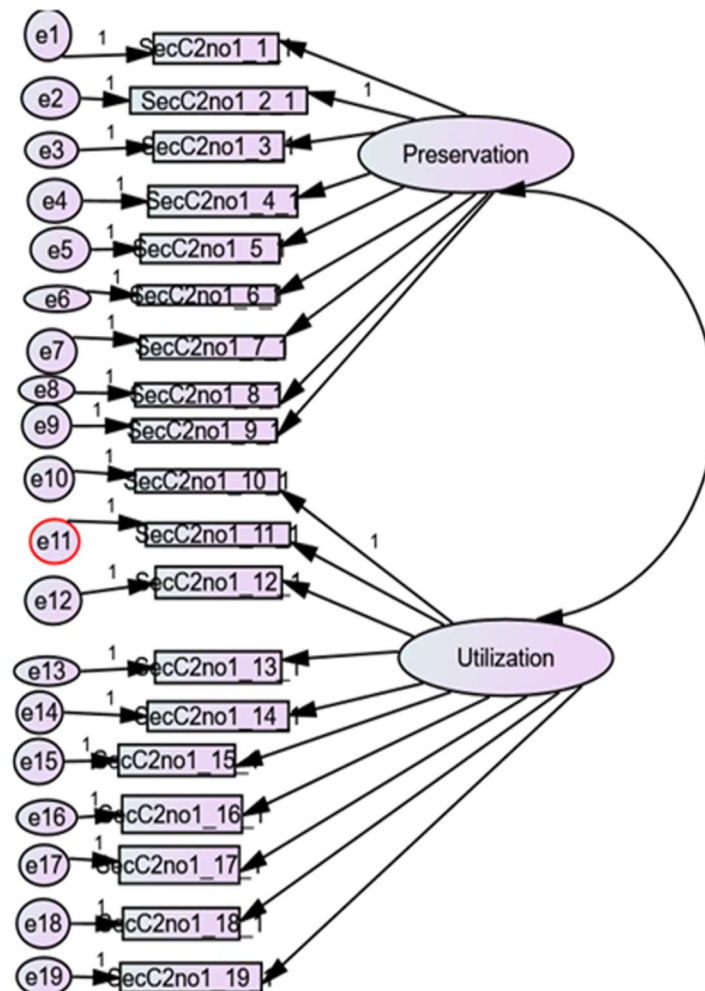
Figure 6.4:   **CFA Model 1 as originally postulated with respect to the items underlying the environmental attitude of potential agritourists**

As illustrated in Figure 6.4, the CFA model 1 was initially presented using C2_1_1_1 – C2_1_1_19 (attitude) for the observed variables, e1–e19, for the error terms associated with the observed variables, and the factor for the latent variable. The CFA model 1 was evaluated by goodness-of-fit indices to test whether the proposed model emulated the sample matrix (Raykov & Marcoulides, 2012:95).

Table 6.11 provides the goodness-of-fit indices of the CFA model.

Table 6.11: Goodness-of-fit indices of the CFA model 1 of attitude towards nature, the environment and farming

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	IFI	SRMR
Goodness-of-fit indices	937.271	151	.000	6.207	.100	.753	.755	0.0596
Acceptable fit	–	–	–	< 3	≤ 0.08	≥ 0.90	≥ 0.90	≤ 0.08

As illustrated in Table 6.11, the value for the RMSEA model fit metric was 0.100, which is more than the acceptable value of 0.08 or smaller. Other indices considered to test the model fit, CFI and IFI, should be above 0.90 for acceptable fit and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36). The model fit indices were CFI (0.753) and IFI (0.755), below 0.90, which is not an adequate model fit. CMIN/DF was larger than 5, indicating an acceptable fit. The SRMR indicated an acceptable fit, as the value was below the recommended threshold of 0.08.

CFA model 1 presented an unsatisfactory fit with the observed data when these fit indices were considered. Three items (items 9, 12, 16) were deleted due to loadings of less than 0.5. The revised model fit is presented in Table 6.12.

Table 6.12: Goodness-of-fit indices of the CFA model 2 measurement model of attitude towards nature, the environment and farming

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	IFI	SRMR
Goodness-of-fit indices	396.749	103	.000	3.852	.074	.889	.889	0.0564
Acceptable fit	–	–	–	< 3 or < 5	≤ 0.08	≥ 0.90	≥ 0.90	≤ 0.08

As illustrated in Table 6.12, the value for the RMSEA model fit metric was found to be 0.074, which is less than 0.08 and indicates an acceptable fit. Further indices considered to test the model fit, CFI and IFI, should be above 0.90 for acceptable fit and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36). The model fit indices were CFI (0.889) and IFI (0.889); all slightly below 0.90, which was not an adequate model fit. CMIN/DF was higher than 3 but lower than 5, indicating an acceptable fit. The SRMR indicated an acceptable fit, as the value was below the recommended threshold of 0.08. When these fit indices are considered, the CFA model 2 with fewer than three items presented an almost adequate fit with the observed data.

The examined convergent and discriminant validity of the constructs: composite reliability (CR) and HTMT ratio were evaluated.

Table 6.13 provides a summary of the CR values on environmental attitude factors.

Table 6.13:   Composite reliability results of environmental attitude factors

Environmental attitude factors	CR
Preservation	0.851
Utilisation	0.820

Table 6.13 indicates the CR of farm_preservation and farm_utilisation which were 0.851 and 0.820. The reliability of the scale was thus established. The HTMT ratio approach was applied to further assess the discriminant validity of the constructs. The HTMT results are presented in Table 6.14.

Table 6.14:   HTMT analysis: attitude

Attitude factors	Preservation	Utilisation
Preservation	■	
Utilisation	0.000	■

Table 6.14 indicates HTMT results assessing discriminant validity between farm_preservation and farm_utilisation. The results of the HTMT inference between these two constructs was 0.000, thus zero; therefore, discriminant validity between these two concepts could be established.

Although the improved CFA fit for model 2 could be considered satisfactory, an EFA was applied to understand the underlying factor structure when applied to the current dataset. The results of the EFA are discussed in the context of the model in Section 6.3.2.

6.3.2 EFA: Agri-environmental attitude of potential agritourists towards nature, the environment and farming

EFA was applied to responses on the 19-item scale. The KMO measure of sampling adequacy (0.864) and Bartlett's test of sphericity were significant (p = 0.000). Both indicated that factor analysis is appropriate, as the KMO exceeds the recommended minimum value of 0.6 (Kaiser, 1974). Table 6.15 indicates the communality estimates and the factor loadings in the pattern matrix.

Table 6.15: Factor loadings and communality estimates from the EFA attitudes towards nature, the environment and farming (n = 526)

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
Factor 1: pro-agri-environmental preservation			0.826	21.732%
Farms will stop to exist if we do not live in tune with nature (farms).	.490	.439		
I enjoy trips to farms.	.358	.699		
It is interesting to know what is produced on farms.	.537	.682		
Industrial smoke from factories that kills farm crops and animals makes me angry.	.541	.776		
It upsets me to see the farmland taken over by building sites.	.511	.730		
We must protect farms from an environmental perspective.	.570	.418		
Factor 2: pro-agri-environmental utilisation			0.824	17.064
Society will continue to solve even the biggest environmental problems that affect farming.	.300	.457		
Human beings have the right to change an agricultural environment as they see fit.	.413	.604		
We need to clear forests to grow crops.	.438	.644		
Our planet has unlimited resources to feed everyone on the planet.	.349	.584		
A farm is always able to restore itself.	.465	.662		

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
We must build more roads so that people can travel to farms.	.397	.586		
Worrying about farming often holds up development projects.	.267	.527		
People worry too much about the impact of a high concentration of air pollutants on farming.	.381	.605		
Human beings are more important than taking care of the farming environment.	.396	.617		
Factor 3: pro-agri-environmental behaviour			0.707	2.541
I save water because it is important for the survival of farms.	.570	.518		
I save electricity because it could decrease air pollution, which endangers farming.	.456	.642		
Factor 4: pro-agri-environmental operation			0.431	2.317
We should remove weeds to help crops grow because they can rob the soil and plants of important nutrients and water.	.388	.616		
Farming is important for the economy and needs to be protected.	.468	.439		

Table 6.15 indicates the EFA identified four factors based on the Kaiser eigenvalues criterion was greater than one, which explained 43.654% of the variance after rotation. To support the interpretation and scientific utility of these four factors, Promax rotation with Kaiser normalisation was performed. The communalities of all the items, except for the item "Worrying about farming often holds up development projects" (0.267), were above 0.30. All the factor loadings demonstrated more than 0.40 on one of the four extracted factors. All items were therefore retained for further analysis.

Four factors were identified to explain the values of potential agritourists' attitudes towards nature, the environment and farming. These factors were labelled pro-agri-environmental preservation, pro-agri-environmental utilisation, pro-agri-environmental behaviour, and pro-agri-environmental operation. It is interesting to note that, even though the current study produced four factors, compared to Bogner and Wiseman's (2006) two factors, the new items reflected the original structure, except for a few

items, such as pro-agri-environmental preservation, that consisted of six items from the original preservation factor by Bogner and Wiseman (2006:251). Factor 2, pro-agri-environmental utilisation, consisted of seven items from factor 2 utilisation (Bogner & Wiseman, 2006:251).

These results reflect similarities between the original factors and the new four factors produced in the current study. Table 6.15 furthermore indicates that factor 1 (0.826); factor 2 (0.824) and factor 3 (0.707) were internally consistent (reliable) as the Cronbach's alpha coefficient values were above the acknowledged threshold of 0.7.

However, the reliability of factor 4, "pro-agri-environmental operation", with a Cronbach's alpha coefficient value of 0.431, could not be accepted; therefore, the factor was eliminated from further analysis.

The following measures further examined convergent and discriminant validity of the factors: composite reliability (CR) and HTMT ratio (HTMT). Table 6.16 provides a summary of the CR.

Table 6.16:   Convergent validity analysis of agri_environmental attitude

Agri_environmental attitude factors	CR
Factor 2: pro-agri-environmental utilisation	0.832
Factor 3: pro-agri-environmental behaviour	0.826
Factor 1: pro-agri-environmental preservation	0.731

Table 6.16 indicates that the CR of farm attitude subscales ranged from 0.731 to 0.832. The reliability of the scale was thus established as all values were above 0.7. The HTMT ratio approach was also applied to assess the discriminant validity of the constructs further.

The HTMT analysis of agri-environmental attitude results is presented in Table 6.17.

Table 6.17:   HTMT analysis of agri-environmental attitude

Agri_environmental attitude factors	paf2*	paf3	paf1
Factor 2: pro-agri-environmental utilisation	■		
Factor 3: pro-agri-environmental behaviour	0.000	■	
Factor 1: pro-agri-environmental preservation	0.746	0.059	■

* paf = pro-attitude factor

Table 6.17 indicates the HTMT inference to assess discriminant validity between the three constructs of agri-environmental attitude, the results indicate the following:

- discriminant validity between pro-agri-environmental preservation and pro-agri-environmental utilisation (0.746) was found; and

- HTMT inference between pro-agri-environmental behaviour and pro-agri-environmental preservation (0.059) illustrates discriminant validity between these two concepts. this was also the case with pro-agri-environmental utilisation and pro-agri-environmental behaviour (0.000).

Discriminant validity amongst the three concepts could therefore be established. Factor-based scores were subsequently calculated as the mean score of the variables included for all three factors. Descriptive statistics for the newly identified factor associated with respondents' attitudes towards nature, the environment and farming are reflected in Table 6.18. This table indicates measures of central tendency, the standard deviation (SD), and skewness and kurtosis measures.

Table 6.18: Descriptive statistics for the three extracted factors representing agri-environmental attitude

No	Descriptive statistics for respondents' attitudes towards nature, the environment and farming	Valid number	Mean	Median	SD	Skewness	Kurtosis
1.	Pro-agri-environmental preservation	526	4.19	4.17	0.51	-0.66	1.52
2.	Pro-environmental resource utilisation	526	2.78	2.78	0.56	0.11	-0.20
3.	Pro-agri-environmental behaviour	526	4.15	4	0.53	-0.94	1.25

*The scale indicated 5 = 'strongly agree' and 1 = 'strongly disagree'

Table 6.18 indicates that respondents tended to agree with the pro-agri-environmental preservation items, as the mean value was 4.19:

- Farms will stop existing if we do not live in tune with nature (farms);

- I enjoy trips to farms;

- It is interesting to know what is produced on farms;

- Industrial smoke from factories that kills farm crops and animals makes me angry;

- It upsets me to see the farmland taken over by building sites; and

- We must protect farms from an environmental perspective.

The three attitude factors can be assumed to follow a normal distribution, as the skewness and kurtosis values were within the acceptable range of -2 to +2.

As a concept, attitudes have been found to be significant towards individuals' adoption of environmentally friendly practices or PEB in general (Hens *et al.*, 2010; Kaiser *et al.*, 1999; Kollmuss & Agyeman, 2002). It is important for agritourism providers to understand potential agritourist attitudes towards nature, the environment and farming, as they will behave in a pro-agri-environmental behaviour while visiting agritourism farms. Furthermore, these agritourists can be ambassadors of pro-agri-environmental behaviour and agritourism. Agritourism providers can include educational content to their agritourism offering which can enhance the overall visitor

experience and contribute to raising awareness about responsible farming and environmental stewardship. Agritourism operators should consider segmenting their offerings based on the diversity among potential agritourist attitudes. Agritourists with a strong inclination toward pro-agri-environmental preservation may appreciate experiences focused on farm conservation efforts and wildlife habitat preservation, while agritourists leaning toward pro-agri-environmental utilisation may be more interested in activities related to sustainable farming practices and resource utilisation.

Tailoring the agritourism offerings to different attitudinal segments, agritourism operators can provide more personalised and engaging experiences for their agritourists, ultimately increasing customer satisfaction and loyalty.

Section 6.4 presents factor analysis results of behavioural intention of potential agritourists towards nature, the environment and farming.

6.4   RESULTS OF THE FACTOR ANALYSIS: BEHAVIOURAL INTENTION OF POTENTIAL AGRITOURISTS TOWARDS NATURE, THE ENVIRONMENT AND FARMING

The behavioural intention scale by Leeming *et al.* (1995:29) and as adapted by Conradie (2017:451) was used in the current study. Only nine items (C3.1-C3.9) were adapted from Leeming *et al.* (1995:29), and the other seven (C3.10-C3.16) were adapted from Conradie (2017:451). These items (C3.1-C3.16) were adapted to measure potential agritourist behavioural intentions towards the environment and farming.

This combined scale was adapted for the current study to measure potential agritourists' behavioural intentions towards farming and related activities and participation in agritourism (Appendix A: Questionnaire; Section C3). The research variable (behavioural intention) comprised of 16 items that potential agritourists were requested to rate using an agreement scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). The CFA and EFA behavioural intention of potential agritourist towards nature, the environment and farming are discussed below.

6.4.1 CFA: Behavioural intention of potential agritourists towards nature, the environment and farming

The construct validity was determined by conducting a CFA on the 16 items. The current study confirmed the proposed construct on behavioural intention towards nature, the environment and farming. Table 6.19 summarises the items used to measure respondents' behavioural intentions towards nature, environment and farming (Appendix A: Questionnaire; Section C3).

Table 6.19:   Initial factorial structure used to measure attitude towards nature, the environment and farming

C3: Behavioural intention	
C3.1	I would be willing to stop buying some products to save farming
C3.2	I would be willing to save electricity if it could avoid destroying farms
C3.3	I would be willing to save water because it is important for the survival of farming
C3.4	I would be willing to ride the bus to more places in order to reduce air pollution
C3.5	I would be willing to separate my rubbish for recycling if it would contribute to preserving farms
C3.6	I would be willing to give my own money to help protect farms
C3.7	I would be willing to turn off the water while I wash my hands if it could preserve farms and farming
C3.8	I would be willing to share environmental information to inform people about farming
C3.9	I would be willing to explain to people who do not recycle how it could help farm life
C3.10	I would be willing to motivate people to support environmentally responsible farming
C3.11	I am willing to buy a farming book to assist me in understanding where my food comes from
C3.12	I am willing to buy a farming book to learn more about farm crops and animals
C3.13	I am willing to talk to my family and friends about attending an agricultural trade show (e.g. Nampo Agricultural Trade Show)
C3.14	I am willing to attend an agricultural trade show (e.g. Nampo Agricultural Trade Show)
C3.15	I would be willing to start a fruit and vegetable garden at home
C3.16	I would be willing to go on a farm tour

Table 6.19 indicates the initial factors and items used in the questionnaire which was adapted from existing literature and applied to the current study. As derived from the literature (Conradie, 2017:451), the CFA model 1 (as originally postulated with respect to the items underlying behavioural intention of potential agritourists) is illustrated and discussed next. Figure 6.5 illustrates the CFA model 1 as originally postulated with respect to the items underlying potential agritourists' behavioural intentions towards nature, the environment and farming.
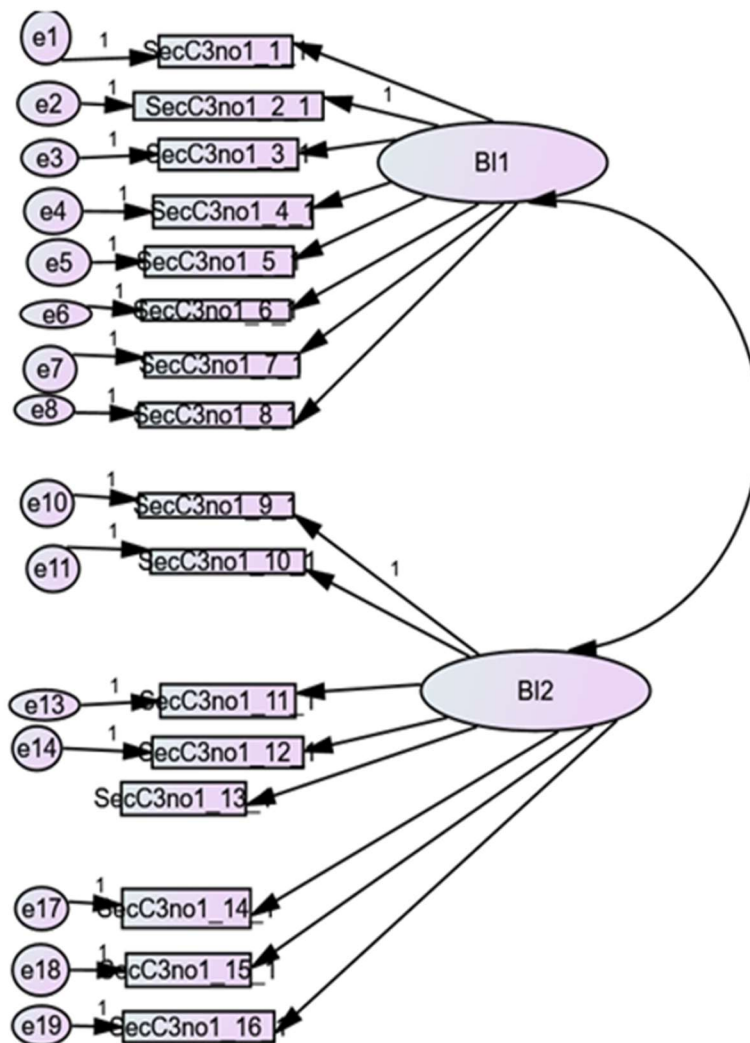
Figure 6.5: **CFA Model 1 as originally postulated with respect to the item underlying behavioural intention of potential agritourists**

*BI = Behavioural intention

As illustrated in Figure 6.5, the CFA model 1 was initially presented using BI1_1_1_1 – BI2_1_1_16 (behaviour intention) for the observed variables, e1–e16, for the error terms associated with the observed variables, and the factor for the latent variable. The CFA model 1 was evaluated by goodness-of-fit indices to test whether the

proposed model emulates the sample matrix (Raykov & Marcoulides, 2012:95). Table 6.20 presents the goodness-of-fit indices of the CFA model 1.

Table 6.20:   Goodness-of-fit indices of the CFA model 1 of behavioural intention towards nature, the environment and farming

Model	CMIN (X2)	df	p	CMIN/ df	RMSE A	CFI	IFI	SRMR
Goodness-of-fit indices	820.718	100	.000	8.207	.117	.880	.880	0.0734
Acceptable fit	-	-	-	< 3;< 5	≤ 0.08	≥ 0.90	≥ 0.90	≤ 0.08

As illustrated in Table 6.20, the value for the RMSEA model fit metric was 0.117, which is more than the acceptable value of 0.08. Further indices that were considered to test the model fit were CFI and IFI, which should be above 0.90 for acceptable fit, and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36).

The model fit indices were CFI (0.880) and IFI (0.880); therefore, all were slightly below 0.90, which is not an adequate model fit. The SRMR was 0.0734, which is lower than the threshold of 0.08, and indicates adequate fit. CMIN/DF was larger than 5, therefore not indicating an acceptable fit. When these fit indices were considered, the model presented an unsatisfactory fit with the observed data, and no modifications, such as deletion of items loadings lower than 0.5, were necessary.

Convergent and discriminant validity of the constructs were also examined by the following measures: CR and HTMT ratio.

Table 6.21 summarises the CR and discriminant validity statistics of respondents' behavioural intention factors.

Table 6.21:   Composite reliability results of behavioural intention factors

Behavioural intention factors	CR
Pro-agri-environmental behaviour	0.852
Intended behaviour	0.905

Table 6.21 outlines the CR of behavioural intention (factor 1) and behavioural intention (factor 2) were 0.852 and 0.905 respectively. As these values were above the threshold value of 0.7, reliability of the scale was therefore established. The HTMT

ratio approach was followed to assess the discriminant validity of the constructs. The HTMT results are presented in Table 6.22.

Table 6.22: HTMT analysis: Behavioural intention

Behavioural intention factors	Behavioural Intention 1	Behavioural Intention 2
Pro- agri-environmental behaviour	■■■	
Intended behaviour	0.841	■■■

Table 6.22 outlines the HTMT analysis to assess discriminant validity between behavioural intention factor 1 pro-agri-environmental behaviour and factor 2 intended behaviour, the HTMT value between these two constructs was 0.841, which is very close to 0.85 (Hair *et al.*, 2014b:788–789). However, it confirmed discriminant validity between the two concepts.

Although the model (Model 1) for behavioural intention towards nature, the environment and farming presented an unsatisfactory fit with the observed data, it was still considered important to perform EFA on the data. The results of the EFA in this context are discussed next.

6.4.2 EFA: Behavioural intention of potential agritourist towards nature, the environment and farming

EFA was applied to responses on the 16-item scale. The KMO measure of sampling adequacy was 0.921, and the Bartlett's test of sphericity was significant ($p = 0.000$). Both indicated that factor analysis was appropriate as the KMO exceeded the recommended minimum value of 0.6 (Kaiser, 1970; 1974). The PAF method was used to extract the factors, and this was followed by a Promax rotation with Kaiser normalisation. The PAF method revealed the presence of three factors with eigenvalues exceeding 1, cumulatively explaining 61.181% of the variance in the data. These results contradict the findings of a previous study, which produced two factors (Conradie, 2017:285). Table 6.23 indicates the communality estimates and the factor loadings as indicated in the pattern matrix.

Table 6.23: Factor loadings and communality estimates from the EFA of the behavioural intention of potential agritourists (n = 526)

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
Factor 1: intended pro-agri-environmental behaviour			0.916	48.752%
I would be willing to save water because it is important for the survival of farming	.554	.447		
I would be willing to separate my rubbish for recycling if it would contribute to preserving farms	.558	.686		
I would be willing to share environmental information to inform people about farming	.783	.865		
I would be willing to explain to people who do not recycle how it could help farm life	.798	.914		
I would be willing to motivate people to support environmentally responsible farming	.769	.870		
I would be willing to start a fruit and vegetable garden at home	.457	.611		
I would be willing to go on a farm tour	.616	.544		
Factor 2: pro-agri-environmental influencer			0.887	8.162%
I would be willing to give my own money to help protect farms	.354	.483		
I am willing to buy a farming book to assist me in understanding where my food comes from	.726	.865		
I am willing to buy a farming book to learn more about farm crops and animals	.827	.966		
I am willing to talk to my family and friends about attending an agricultural trade show (e.g. Nampo Agricultural Trade Show)	.730	.771		
I am willing to attend an agricultural trade show (e.g. Nampo Agricultural Trade Show)	.642	.635		
Factor 3: pro-agri-environmental action			0.741	4.267%
I would be willing to stop buying some products to save farming	.444	.707		
I would be willing to save electricity if it could avoid destroying farms	.606	.728		
I would be willing to ride the bus to more places in order to reduce air pollution	.345	.404		
I would be willing to turn off the water while I wash my hands if it could preserve farms and farming	.578	.435		

Table 6.23 shows that the eigenvalue of factor 1 was the highest at 8.152, and explained most of the variance (48.752%). The second factor showed an eigenvalue of 1.654, explaining 8.162% of the variance, followed by factor 3 (1.139), which explained 4.267% variance. The first three factors were therefore retained for rotation.

The initial communalities were greater than 0.31, sharing at least 10% of their variance with the other items under consideration. Table 6.23 above indicates a number of strong factor loadings (loadings of 0.30 and larger were considered significant). Using these criteria:

- Seven (7) items were found to load on the first factor, which was subsequently labelled intended pro-agri-environmental behaviour;

- Five (5) items loaded on the second factor, which was labelled pro-agri-environmental influencer; and

- Four (4) items loaded on the third factor labelled pro-agri-environmental action.

Intended pro-agri-environmental behaviour (0.916), pro-agri-environmental influencer (0.887), and pro-agri-environmental action (0.741) are reliable, as the Cronbach's alpha coefficient values were above the acknowledged threshold of 0.7.

Table 6.23 reflects the descriptive statistics for the three factors representing the agri-environmental behavioural intention of potential agritourists as a result of EFA. All the factors were therefore retained for further analysis.

Factor-based scores were subsequently calculated, as the mean score of the variables included for behavioural intention of potential agritourists. Discriminant validity of the factors was further examined by way of the following indices: CR and the HTMT ratio of the correlations (HTMT). Table 6.24 provides a summary of the CR of behavioural intention.

Table 6.24:   Composite reliability results of behavioural intention

Behavioural intention factor	CR
Pro-agri-environmental influencer	0.876
Intended pro-agri-environmental intended behaviour	0.919
Pro-agri-environmental action	0.742

As displayed in Table 6.24. the CR results of all factor loadings were higher than the acceptable threshold level of 0.70. Accordingly, the CR of agri_environmental behavioural intention subscales ranged from 0.876 to 0.742. The highest consistency was related to intended pro-agri-environmental behaviour (0.919), and the lowest was related to pro-agri-environmental action (0.742); thus, reliability of the scale was established.

The HTMT ratio approach was applied to further assess the discriminant validity of the constructs. The HTMT results are presented in Table 6.25

Table 6.25:   HTMT analysis of behavioural intention

Behavioural intention factors	Behavioural Intention Factor 2	Behavioural Intention Factor 1	Behavioural Intention Factor 3
Pro-agri-environmental influencer	■		
Intended pro-agri-environmental behaviour	0.755	■	
Pro-agri-environmental action	0.629	0.807	■

Table 6.25 outlines the HTMT inference assessing the discriminant validity between the three constructs of Agri_environmental behavioural intention, it was found that:

- The HTMT inference between pro-agri-environmental influencer and intended pro-agri-environmental behaviour (0.755) illustrates discriminant validity between these two concepts. This was also the case for pro-agri-environmental influencer

and pro-agri-environmental action (0.629); intended pro-agri-environmental behaviour and pro-agri-environmental action (0.807).

Discriminant validity amongst the three factors could therefore be established.

Descriptive statistics relating to the behavioural intention of potential agritourists are discussed next. Factor-based scores were calculated as the mean score of the variables included for behavioural intention of potential agritourists.

Table 6.26: Descriptive statistics for the three extracted factors representing behavioural intention behaviour

Behavioural intention of potential agritourists		Mean	Median	SD	Skewness	Kurtosis
1.	Intended pro-agri-environmental behaviour	4.2589	4.2589	0.59333	-1.023	2.647
2.	Pro-agri-environmental influencer	3.8067	3.8067	0.73203	-0.654	0.964
3.	Pro-agri-environmental action	3.8655	4.0000	0.66383	-0.571	1.162

*The scale indicated 5 = 'strongly agree' and 1 = 'strongly disagree'

The results in Table 6.26 show that respondents tended to agree with pro-agri-environmental intended behaviour, as the mean score was 4.259, while the dispersion of scores around the mean was 0.593. Pro-agri-environmental action was the second most-agreed on item (mean score = 3.866) and the SD was 0.732, although pro-agri-environmental influencer was the least agreed with (mean score = 3.806), although it was very close to pro-agri-environmental action. Asymmetry and kurtosis values between -2 and +2 were considered acceptable to prove a normal univariate distribution (George & Mallery, 2010). Pro-agri-environmental intended behaviour had a kurtosis value that fell outside these threshold values; however, as Kline (2015:190) indicated, a threshold of 7 is deemed acceptable when using SEM.

It is important to have an understanding of the potential agritourists' pro-agri-environmental behavioural intention to mitigate the negative effects of tourist impact on the farm environment. Attracting tourists to participate actively in farm-based activities requires that responsibility is taken to ensure pressure on the environment is avoided (Sharma & Gupta, 2020:829). It is therefore important for agritourism establishments and associations to know the behavioural intentions of their potential market towards an agricultural environment or setting to avoid and minimise negative

effects towards the environment. Furthermore, to gauge environmental perspectives to educate where necessary and to empower agritourists with the relevant knowledge.

Agritourism establishments and associations can conduct agritourist surveys to understand the behavioural intentions of their potential market toward an agricultural environment or setting and should provide informative sessions or workshops to promote responsible behaviour when necessary. To this end, agritourism providers can explore the use of technology, such as offering virtual reality (VR) farming experiences, and develop simulations that allow agritourists to step into the shoes of the farmer to experience the day-to-day activities of farming, from planting crops to tending to animals. By doing so, agritourists will learn about sustainable farming practices, the challenges farmers face, and the importance of preserving farmlands. Such an experience can provide a deeper understanding of agriculture and foster a greater appreciation for the farm environment to foster pro-agri-environmental behaviour. The next section presents the results related to the agri-environmental sensitivity of the respondents.

6.5 RESULTS OF THE FACTOR ANALYSIS: AGRI-ENVIRONMENTAL SENSITIVITY OF POTENTIAL AGRITOURIST

The current study adapted the 10-items environmental sensitivity scale developed by Veisi *et al.* (2019:34) to measure potential agritourists' agri-environmental sensitivity (Appendix A: Questionnaire; Section D). Potential agritourists were requested to rate agri-environmental concern using an agreement scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). The next section presents the CFA results.

6.5.1 CFA: Environmental sensitivity of potential agritourists

Construct validity was determined by conducting a CFA on the 10 items in environmental sensitivity. The study therefore confirmed the proposed construct on environmental sensitivity towards nature, the environment and farming (Veisi *et al.*, 2019:34).

Table 6.27 below summarises the initial factorial structure used to measure the respondents' agri-environmental sensitivity (Appendix A: Questionnaire; Section C4).

	Environmental sensitivity
1.	I pay attention when I hear about farm environmental issues.
2.	Collective action (i.e. movements) is central to solving farm environmental problems.
3.	It is important that everyone is aware of farm environmental problems.
4.	I feel personally responsible for helping to solve farm environmental problems.
5.	People should be held responsible for any damage they cause to the farm environment.
6.	Entertainment services do not value nature and the farm environment.
7.	I perceive myself as very concerned about farming issues in my country.
8.	I perceive myself as someone who is sensitive to responsible farming (i.e. organic farming).
9.	Green purchasing is the most effective way to reduce and minimise the adverse impact on human health and the farm environment.
10.	I am personally concerned about the impact of water shortage on the farming industry.

Table 6.27 outlines the initial items used in the questionnaire adapted from existing literature. The model as originally postulated with respect to the items underlying environmental sensitivity (Veisi *et al.*, 2019:34) of potential agritourists is illustrated in Figure 6.6.

Figure 6.6: CFA Model 1 as originally postulated with respect to the items underlying environmental sensitivity of potential agritourists

From Figure 6.6, the model was evaluated by goodness-of-fit indices to test whether the proposed model emulates the sample matrix (Raykov & Marcoulides, 2012:95). Table 6.28 below provides the goodness-of-fit indices of the CFA measurement model.

Table 6.28: **Goodness-of-fit indices of the CFA model 1 measurement model of respondents' environmental sensitivity**

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	GFI	IFI	SRMR
Goodness-of-fit indices	192.713	27	0.000	7.138	.108	.922	.919	.923	.0459
Acceptable fit	–	–	–	< 3	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.90	≤0.08

As illustrated in Table 6.28, the value for the RMSEA model fit metric was found to be 0.108, which is more than 0.08, and did not indicate an acceptable fit. Further indices considered to test the originally postulated model fit, namely, CFI and IFI, had to be above 0.90 for acceptable fit, and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36). The model fit indices were CFI (0.922) and IFI (0.923). Therefore, all were above 0.90, indicating an acceptable model fit.

Although the CMIN/df value (7.138) was more than the acceptable threshold of 5, it did not indicate an acceptable model fit. The SRMR indicated an acceptable fit, as the value was below the recommended threshold of 0.08. Taking into consideration all the measurements of the fit indices, the originally postulated model did not show a satisfactory fit (Table 6.28). It should also be noted that all the standard regression weight results indicate loading items had factor loads more than 0.45, which is the minimum value required for CFA.

Convergent validity of the construct was additionally examined by the following measure: CR for convergent validity. The CR value was 0.888, thus above 0.7, and the construct therefore had convergent validity. Since the CFA Model 1 (Figure 6.6) for the environmental sensitivity of potential agritourists presented an unsatisfactory fit with the observed data, an EFA was applied to the data. These results are discussed next.

6.5.2 EFA: Agri-environmental sensitivity of potential agritourist towards nature, the environment and farming

EFA was applied to responses on the 10-item scale. The KMO measure of sampling adequacy was 0.910, and Bartlett's test of sphericity was significant (p = 0.000). Both indicated that factor analysis was appropriate as the KMO exceeded the recommended minimum value of 0.6 (Kaiser, 1970; 1974). The PAF method was used to extract the factors, and this was followed by a Promax rotation with Kaiser normalisation. The PAF method revealed the presence of one factor with the eigenvalue exceeding 1, cumulatively explaining 44.93% of the variance in the data. The result of one factor is in line with previous findings (Veisi *et al.*, 2019:34). Table 6.29 indicates the communality estimates and the factor loadings in the pattern matrix.

Table 6.29: Factor loadings and communality estimates from the EFA of the agri-environmental sensitivity (n = 526)

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
Factor 1: Agri-environmental sensitivity			0.878	50%
I pay attention when I hear about farm environmental issues.	.658	.721		
Collective action (i.e. movements) is central to solving farm environmental problems.	.690	.589		
It is important that everyone is aware of farm environmental problems.	.788	.752		
I feel personally responsible for helping to solve farm environmental problems.	.708	.766		
People should be held responsible for any damage they cause to the farm environment.	.662	.734		
Entertainment services do not value nature and the farm environment.	.370	.634		
I perceive myself as very concerned about farming issues in my country.	.745	.591		
I perceive myself as someone who is sensitive to responsible farming (i.e. organic farming).	.709	.728		
Green purchasing is the most effective way to reduce and minimise the adverse impact on human health and the farm environment.	.601	.749		
I am personally concerned about the impact of water shortage on the farming industry.	.682	.649		

As outlined in Table 6.29, the eigenvalue of the revealed factor (agri-environmental sensitivity) was 5.011 and explained 50% of the variance. All the communalities of the items were above 0.31, and all demonstrated loadings of more than 0.50 on one extracted factor. All items were thus retained for further analysis. The factor was therefore identified to explain the potential agritourists' sensitivity towards the agri-environment. The extracted factor was labelled agri-environmental sensitivity. The Cronbach's alpha coefficient value was 0.878, above the acknowledged threshold of 0.7.

Descriptive statistics for respondents' sensitivity towards nature, the environment and farming are reflected in Table 6.30. This table shows measures of central tendency, the standard of deviation (SD), and skewness and kurtosis measures for agri-environmental sensitivity. Factor-based scores were subsequently calculated as the mean score of the variables included for the factor.

Table 6.30: **Descriptive statistics for respondents agri-environmental sensitivity**

Descriptive statistics for respondents' attitudes towards nature, the environment and farming	Valid number	Mean	Median	SD	Skewness	Kurtosis
Agri-environmental sensitivity	526	3.718	3.750	0.748	-0.381	0.187

*The scale indicated 5 = 'critically concerned' and 1 = 'not at all concerned'

Table 6.30 indicates that respondents tended to agree, and thus, considered sensitivity towards an agri-environmental with a mean score of 3.718. According to Canosa, Graham and Wilson (2020:1027), environmentally sensitive individuals actively protect the environment. An agri-environment needs tourists who will not harm, but rather protect the environment while engaging in agritourism activities. The skewness and kurtosis fell within the range of -2 to +2, and the variable could therefore be assumed to have a normal distribution.

Based on the results of the factor analysis related to the agri-environmental sensitivity of potential agritourists, agritourism providers may consider developing a personalised agri-environmental sensitivity profiles for agritourists based on their responses. Experiences that resonate with each agritourist's level of environmental concern can

be created as follows: agritourists with higher sensitivity scores could participate in conservation-focused activities like tree planting, while those with lower scores might engage in educational programmes to increase their awareness.

Agritourism operators can also consider using interactive technology platforms, such as a mobile application or website, that provides visitors with real-time information on the environmental practices of their farm and make use of augmented reality features that allow agritourists to scan QR codes around the farm to access educational content related to sustainability and environmental sensitivity.

The factor analysis results of the agri-environmental concern of the potential agritourist towards nature, environment and farming are presented in Section 6.6.

6.6 RESULTS OF THE FACTOR ANALYSIS: ENVIRONMENTAL CONCERN OF POTENTIAL AGRITOURIST TOWARDS NATURE, ENVIRONMENT AND FARMING

The current study adapted the 11-item environmental concern scales developed by Veisi *et al.* (2019:34) to measure potential agritourists' agri-environmental concern (Appendix A: Questionnaire; Section C4). Potential agritourists were requested to rate their agri-environmental concern using an agreement scale ranging from 'not at all concerned' (1) to 'critically concerned' (5). The CFA of potential agritourists' environmental concern towards nature, environment and farming is discussed next.

6.6.1 CFA: Behavioural intention of potential agritourists towards nature, the environment and farming

Construct validity was determined by conducting a CA analysis on all 11 items. It could be confirmed that one construct is a distinct dimension of agri-environmental concern (Veisi *et al.*, 2019:34).

Table 6.31 summarises the initial factorial structure used to measure the respondents' agri-environmental concerns (Appendix A: Questionnaire; Section C4).

Table 6.31: **Initial factorial structure used to measure environmental concern is as a dimension of potential agritourists**

Environmental concerns	
1.	Soil erosion
2.	Noise pollution
3.	Loss of biodiversity
4.	Waste management
5.	Energy intensity
6.	Overhunting
7.	Overpopulation
8.	Water shortage
9.	Groundwater depletion
10.	Global warming
11.	Air pollution and dust

Table 6.3.1 outlines the items underlying environmental concern derived from the literature, as originally postulated by Veisi *et al.* (2019:34). The CFA model is illustrated and discussed next. Figure 6.7 shows this CFA model 1 as it was originally postulated.
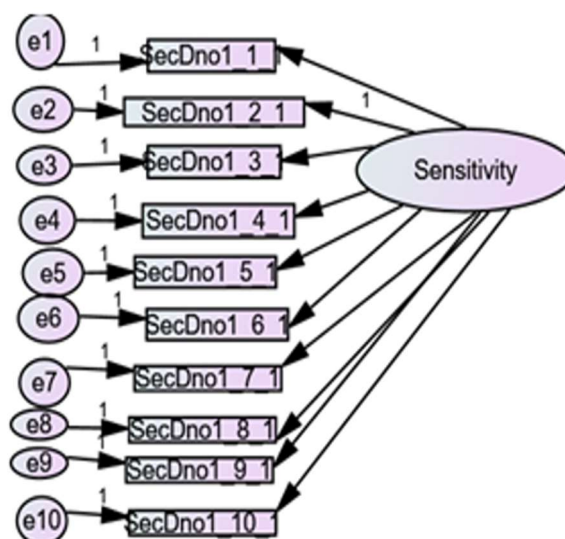

Figure 6.7: **CFA Model as originally postulated with respect to the items underlying environmental concern of potential agritourists**

CFA Model 1 (Figure 6.7) was evaluated in terms of goodness-of-fit indices to test whether the proposed model emulated the sample matrix (Raykov & Marcoulides, 2012:95). Table 6.32 provides the goodness-of-fit indices of the CFA model.

Table 6.32: **Goodness-of-fit indices of the CFA model of respondents environmental concern**

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	GFI	IFI	SRMR
Goodness-of-fit indices	261.623	43	0.000	6.084	.098	.924	.917	.925	.098
Indicate acceptable fit	-	-	-	< 3	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.90	≤0.08

As illustrated in Table 6.32, the value for the RMSEA model fit metric was 0.98, which was more than 0.08. It did not indicate an acceptable fit. Further indices that were considered to test the model fit, namely, CFI and IFI, had to be above 0.90 for acceptable fit and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36).

The originally postulated model fit indices were as follows: CFI (0.924) and IFI (0.925); therefore, all were above 0.90, indicating an acceptable model fit. Although the CMIN/df value (6.084) was more than the acceptable threshold of 5, it did not indicate a good model fit. The SRMR also did not indicate acceptable fit, as the value was above the recommended threshold of 0.08.

Taking into consideration all the fit indices measurements, the model therefore, did not show a satisfactory fit (Table 6.32). All the standard regression weight results indicated loading items had factor loads of more than 0.45, which is the minimum value required for CFA.

The convergent validity of the construct was examined using CR. The CR value was 0.911; thus above 0.7, and the concern construct therefore had convergent validity. The next section presents the EFA results of the environmental concern of potential agritourist towards nature, the environment and farming.

6.6.2 EFA: Agri-environmental concern of potential agritourists towards nature, the environment and farming

EFA was applied to the responses on the 11-item scale. The KMO measure of sampling adequacy was 0.924, and Bartlett's test of sphericity was statistically significant (p = 0.000). Both indicated that factor analysis was appropriate, as the KMO exceeded the recommended minimum value of 0.6 (Kaiser, 1974). The PAF method was used to extract the factors, and a Promax rotation with Kaiser normalisation followed this. The PAF method revealed the presence of one factor with an eigenvalue exceeding 1, cumulatively explaining 48.5% of the variance in the data. These results are in line with previous findings (Veisi *et al.*, 2019:34).

Table 6.33 indicates the communality estimates and the factor loadings as indicated in the pattern matrix.

Table 6.33: Factor loadings and communality estimates from the EFA of the agri-environmental concern (n = 526)

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
Factor 1: agri-environmental concern			0.906	48.5%
Soil erosion	.519	.721		
Noise pollution	.347	.589		
Loss of biodiversity	.566	.752		
Waste management	.587	.766		
Energy intensity	.538	.734		
Overhunting	.402	.634		
Overpopulation	.349	.591		
Water shortage	.529	.728		
Groundwater depletion	.561	.749		
Global warming	.421	.649		
Air pollution and dust	.513	.716		

Table 6.33 indicates the eigenvalue of the revealed factor (agri-environmental concern) 5.834 and explained 48.5% variance. All the item communalities were above 0.31, and they all demonstrated factor loadings of more than 0.50 on one extracted

factor. All items were thus retained for further analysis. The factor was identified to explain the potential agritourists' concerns towards the agri-environment. The extracted factor was labelled agri-environmental concern. The Cronbach alpha coefficient value for agri-environmental concern was 0.906 and was above the acknowledged threshold of 0.7. A factor-based score was subsequently calculated as the mean score for the variables included in the factor.

Descriptive statistics for respondents' concern about nature, the environment and farming are reflected in Table 6.34. This table shows measures of central tendency, the SD, and skewness and kurtosis measures for agri-environmental concern.

Table 6.34: **Descriptive statistics for the factor representing respondents' agri-environmental concern**

Descriptive statistics for respondents' attitudes towards nature, the environment and farming	Valid number	Mean	Median	SD	Skewness	Kurtosis
Agri-environmental concern	526	3.718	3.750	0.748	-0.381	0.187

*The scale indicated 5 = 'critically concerned' and 1 = 'not at all concerned'

Table 6.34 indicates that respondents were concerned about the agri-environment, with a tendency to agree with a mean score of 3.718. Therefore, potential agritourists' environmental concern towards nature, the environment and farming are high. Based on the mean score of 3.718, it is evident that respondents were concerned about the agri-environment. Potential agritourists' environmental concern about nature, the environment and farming were therefore high.

A high concern for the environment is encouraging as it could lead to agritourists having a smaller effect in terms of pollution and the overexploitation of resources (Dunlap & Jones, 2002). According to Schultz *et al.* (2004), tourists' concern for the environment is related to the type of tourism activity in which they engage. The skewness and kurtosis fell within the range of -2 to +2, and the variable X could be assumed to have a normal distribution.

Based on the results of the factor analysis on potential agritourists' agri-environmental concern towards nature, the environment and farming, a recommendation can be made for agritourism providers to tailor agritourism experiences. These experiences

can match the specific environmental concerns of the individual agritourist. When booking, potential agritourists can complete a brief survey indicating their top environmental concerns (for example, biodiversity loss, global warming), so that specialised tours and activities can be created to address such concerns, providing in-depth knowledge and practical solutions.

Agritourism operators can make use of technology to educate and engage agritourists, for example, by creating mobile apps or interactive games that educate and engage agritourists about agri-environmental concerns. They could for example, incorporate augmented reality features, scavenger hunts, or quiz challenges related to soil erosion, biodiversity, and other topics.

The factor analysis results of potential agritourists' PsyCap towards their overall life are presented in Section 6.7.

6.7 RESULTS OF THE FACTOR ANALYSIS: PSYCAP OF POTENTIAL AGRITOURISTS TOWARDS THEIR OVERALL LIFE

The variables of interest in the current study comprised 24 items relating to the PsyCap of potential agritourists towards their overall life that were informed by Luthans *et al.*'s (2006b:237-238) measurement scale, which was used to measure PsyCap (Section 4.4). The CFA results are discussed in Section 6.7.1.

6.7.1 CFA: PsyCap of potential agritourists towards overall life

Construct validity was determined by conducting a CFA on all 24 items and the associated four constructs: hope, efficacy, resilience, and optimism. The four constructs proposed in research on PsyCap towards overall life (Luthans *et al.*, 2007b:237–238) could be confirmed in this study. The four categories of PsyCap were adapted from the work environment to an individual's overall life, in other words, how a person may think about or perceive him- or herself.

Table 6.35 summarises the items used to measure the respondents' PsyCap towards their overall life (Appendix A: Questionnaire; Section E). The CFA and EFA are discussed in each case.

Table 6.35: **Initial factorial structure used to measure respondents' PsyCap towards overall life**

	E1: Hope
E1.1	If I should find myself in difficulty, I could think of many ways to get out of it.
E1.2	At the present time, I am energetically pursuing my overall life goals.
E1.3	There are many ways around any problem that I am facing now.
E1.4	Right now, I see myself as fairly successful at life overall.
E1.5	I can think of many ways to reach my current overall life goals.
E1.6	At this time, I am meeting the goals that I have set for myself.
	E2: Resilience
E2.1	When I have a setback in my life, I have trouble recovering from it and moving on.
E2.2	I usually manage difficulties one way or another in my life overall.
E2.3	I can be "on my own", so to speak, if I have to.
E2.4	I usually take stressful things regarding my life in my stride.
E2.5	I can get through difficult times in my life because I have experienced difficulty before.
E2.6	I feel I can handle many things at a time in my life.
	E3: Optimism
E3.1	When things are uncertain in my life, I usually expect the best.
E3.2	If something goes wrong in my life, it will.
E3.3	I always look on the bright side of things in my life.
E3.4	I am optimistic about what will happen in my life in the future.
E.3.5	In my life, things never work out the way I want them to.
E3.6	I approach my life as if "every cloud has a silver lining".
	E4: Efficacy
E4.1	I feel confident analysing a long-term problem in my life to find a solution.
E4.2	I feel confident about my life.
E4.3	I feel confident contributing to discussions about life in general.
E4.4	I feel confident helping to set targets or goals in my life.
E4.5	I feel confident contacting people to discuss life problems.
E4.6	I feel confident presenting information to a group of my peers.

Table 6.35 outlines the initial factors and items used in the questionnaire adapted from the literature, is provided in Table 6.35 as theory comes first in CFA.

As derived from the literature (Luthans *et al.*, 2007b:237–238), the CFA model 1, as originally postulated with respect to the items underlying PsyCap of potential agritourists, is illustrated and discussed next.

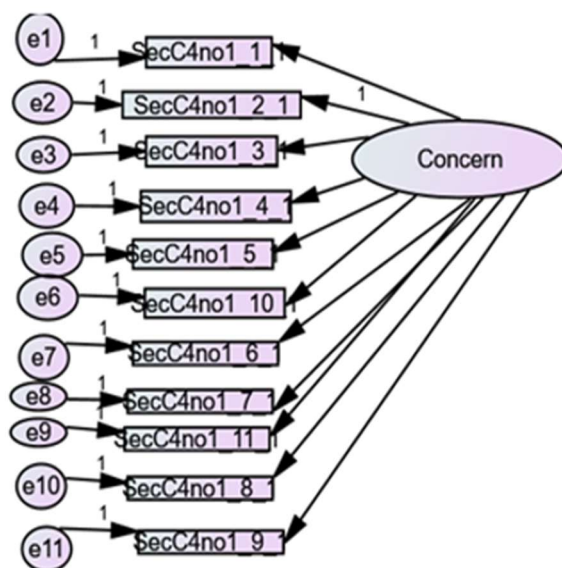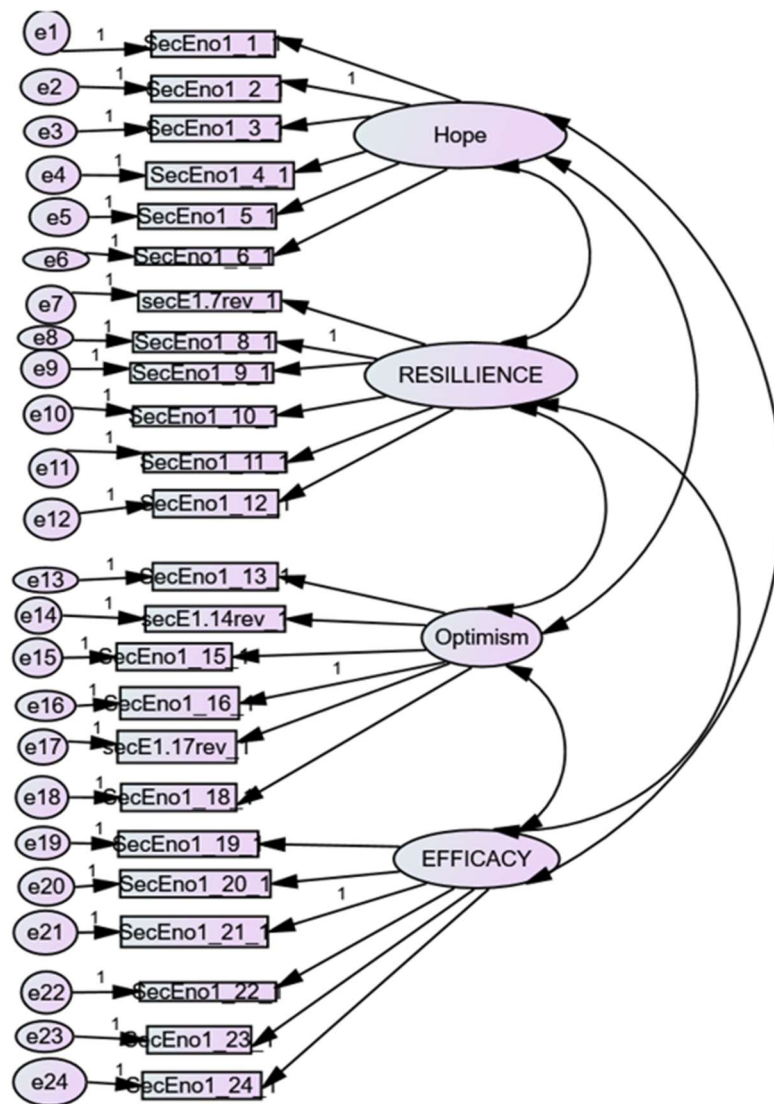**Figure 6.8:   CFA Model 1 as originally postulated with respect to the items underlying PsyCap of potential agritourists**

CFA Model 1 was evaluated by goodness-of-fit indices to test whether the proposed model emulated the sample matrix (Raykov & Marcoulides, 2012:95).

Table 6.36 provides the goodness-of-fit indices of the measurement model.

Table 6.36: **Goodness-of-fit indices of the CFA model 1 of respondents' PsyCap towards overall life**

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	GFI	IFI	SRMR
Goodness-of-fit indices	1229.598	246	0.000	4.998	.087	0.843	0.823	0.844	.00741
Acceptable fit	-	-	-	< 3; < 5	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08

Table 6.36 indicates that the model fit for the data did not indicate an acceptable fit. The RMSEA model fit metric should preferably be between 0.05 and 0.08 to indicate an acceptable fit) and below 0.05 for a good fit (Hair *et al.*, 2014b:579; Raykov & Marcoulides, 2012:36; Hu & Bentler, 1999). The RMSEA model fit metric should preferably be between 0.05 and 0.08 to indicate an acceptable fit and be below 0.05 for a good fit (Hair *et al.*, 2014b:579; Hu & Bentler, 1999; Raykov & Marcoulides, 2012:36). It is also noted that the RMSEA was above the accepted threshold (0.87), with the lower and upper 90% confidence interval ranging between 0.082 and 0.092. The SRMR was 0.0741, which is lower than the threshold of 0.08, and indicated adequate fit.

Further indices were considered for testing the model fit. CFI and IFI should be above 0.90 for acceptable fit and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36). The model fit indices were as follows: CFI (0.843), IFI (0.844) and GFI (0.823). All were therefore below 0.90, which is not an adequate model fit. The CMIN/DF value was 4.998, suggesting that the above model was permissibly fit because its value was lower than 5.

The first analysis, with 24 items, did not show a satisfactory fit when considering the set of critical indices (Table 6.36). These three reversed scored items (E7, E14 and E17) had factor loadings below 0.45, which is the minimum value required for CFA, according to Tabachnick *et al.* (2013). The three items mentioned above were deleted from the resilience and optimism scales (self-efficacy = 6, hope = 6, resilience = 5 and optimism = 4) and the PCQ-24 scale was changed to 21 items.

Figure 6.9 illustrates the CFA Model 2, as postulated with respect to 21 items underlying the PsyCap of potential agritourists.
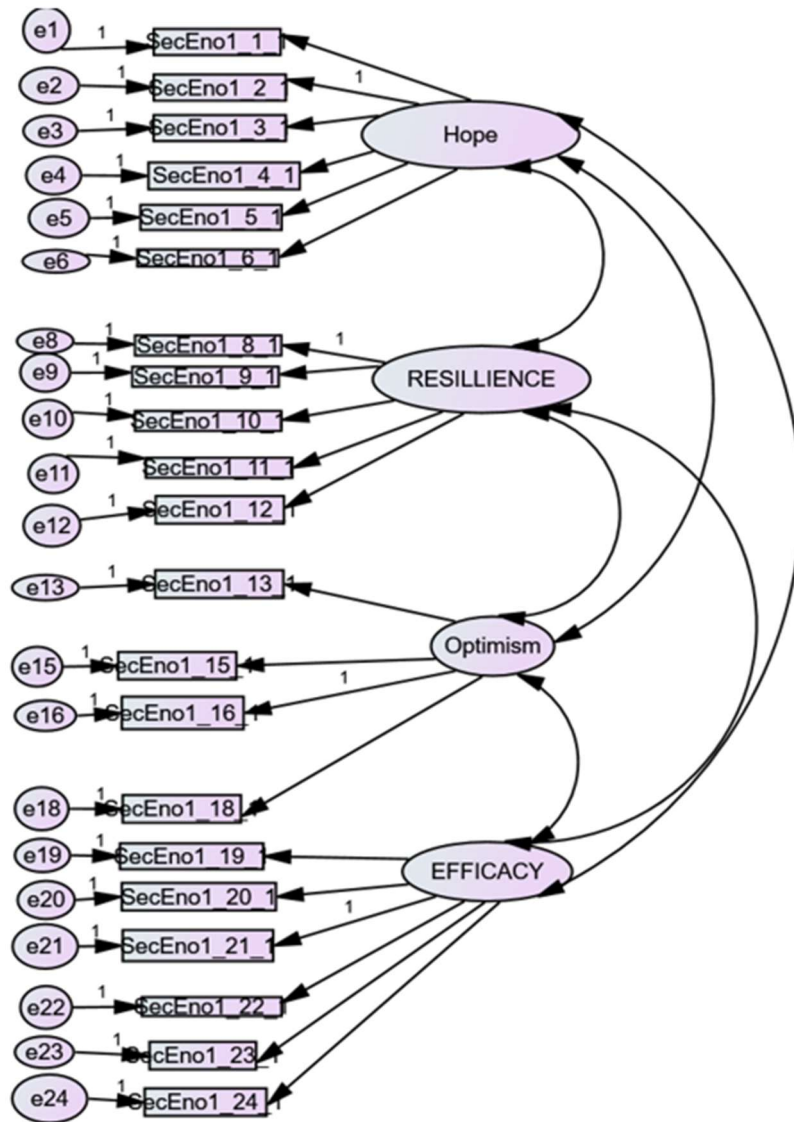
Figure 6.9: **CFA Model 2 as postulated with respect to the 21-PCQ items underlying PsyCap of potential agritourists.**

CFA Model 2 was evaluated by goodness-of-fit indices to test whether the proposed model emulated the sample matrix (Raykov & Marcoulides, 2012:95). Table 6.37 provides the goodness-of-fit indices of the CFA of respondents' PsyCap model after the deletion of the three inverse items.

Table 6.37: **Goodness-of-fit indices for the CFA model of respondents' PsyCap (21 items)**

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	IFI	SRMR
Goodness-of-fit indices	839.484	183	0.000	4.587	0.083	0.889	0.890	0.0632
Acceptable fit	–	–	–	< 3;< 5	≤ 0.08	≥ 0.90	≥ 0.90	≤0.08

With the deletion of three items (Table 6.37), it was estimated that the CFA revealed an improved but still not an acceptable fit on all 21 items and the associated four subscales, according to the set of fit indices considered, with values of 0.889 and 0.890 for CFI and IFI (very close to the threshold value of 0.9). The RMSEA of 0.083 was fairly close to the upper threshold of 0.08, indicating that the model fit was not adequate. The RSMR value was 0.0632, thus lower than 0.08, indicating an adequate fit. The CMIN/df value of 4.587 was more than 3 but less than 5 and was within the acceptable threshold.

Convergent and discriminant validity of the constructs was examined by CR and the HTMT ratio was evaluated. Table 6.38 summarises the CR statistics for PsyCap towards overall life.

Table 6.38: Composite Reliability (CR) of PsyCap

PsyCap factor	CR
Hope	0.858
Optimism	0.783
Efficacy	0.892
Resilience	0.766

Table 6.38 outlines the CR of PsyCap subscales ranging from 0.766 to 0.858. High CR indicates that internal consistency exists, meaning that the measures all consistently represent the same latent construct. Similar to Cronbach's alpha, the rule of thumb is 0.7 or higher (Hair *et al.*, 2010b:125).

All the constructs displayed CR, as their values exceeded the threshold of 0.7. Discriminant validity entails that two latent variables that represent two different concepts are statistically significant or not. This indicates the extent to which a construct is truly distinct from other constructs (Hair *et al.*, 2014b:788). The HTMT ratio approach was adopted to assess the discriminant validity of the PsyCap constructs further. The HTMT analysis of PsyCap results are presented in Table 6.39.

Table 6.39:   HTMT analysis PsyCap

PsyCap Factors	Hope	Optimism	Efficacy	Resilience
Hope				
Optimism	0.779			
Efficacy	0.865	0.909		
Resilience	0.658	0.663	0.670	

The two results marked in bold indicate discriminant validity problems, according to the HTMT.85 criteria, while the one problem regarding the HTMT.90 criteria is shaded; HTMT inference does not indicate discriminant validity problems.

Table 6.39 presents the HTMT analysis results. In a well-fitting model, the HTMT ratio should be below 1.0. It is suggested that the HTMT value should be lower than 0.85 (strict threshold) or 0.90 (lenient threshold) or significantly smaller than 1 (Hair *et al.*, 2014b:788–789). Using the HTMT ratio to assess discriminant validity between the four constructs of PsyCap, the results are as follows:

- The HTMT value between optimism and hope (0.779) illustrated discriminant validity between these two concepts. This was also the case for hope and resilience (0.658), optimism and resilience (0.663), as well as efficacy and resilience (0.670) and

- A lack of discriminant validity was found between hope and efficacy, and between efficacy and optimism, as the estimates of these constructs were above the acceptable thresholds.

An EFA was conducted based on all the above fit indices, which presented an unsatisfactory fit with the observed data and the lack of discriminant validity across all constructs. The results of the EFA of PsyCap of potential agritourist towards overall life are discussed in Section 6.7.2.

6.7.2   EFA: PsyCap of potential agritourists towards overall life

EFA was applied to responses on the 24-item scale in which PsyCap was applied to respondents' overall life. The KMO measure of sampling adequacy (0.936) and

Bartlett's test of sphericity was statistically significant (p = 0.000). Both indicated that factor analysis was appropriate as the KMO exceed the recommended minimum value of 0.6 (Kaiser, 1970, 1974).

Table 6.40 presents the results of the factor analysis and the reliability statistics for respondents' PsyCap.

Table 6.40:   Factor loadings and communality estimates from the EFA of the PsyCap (n = 526)

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
Factor 1: Hope-efficacy			0.908	37.188%
If I should find myself in difficulty, I could think of many ways to get out of it.	0.552	0.775		
At the present time, I am energetically pursuing my overall life goals.	0.648	0.721		
There are many ways around any problem that I am facing now.	0.570	0.751		
I usually manage difficulties one way or another in my life overall.	0.502	0.319		
I approach my life as if "every cloud has a silver lining".	0.606	0.449		
I feel confident contributing to discussions about life in general.	0.679	0.717		
I feel confident helping to set targets or goals in my life.	0.781	.687		
I feel confident contacting people to discuss life problems.	0.472	.616		
I feel confident presenting information to a group of my peers.	0.524	.668		
Factor 2: Optimism			0.817	5.643%
When things are uncertain in my life, I usually expect the best.	0.420	0.415		
I always look on the bright side of things in my life.	0.608	0.788		
I am optimistic about what will happen in my life in the future.	0.583	0.569		
I feel confident about my life.	0.674	0.500		

Factor items	Commu-nalities	Factor loading	Cronbach's alpha	Variance explained
Factor 3: Resilience			0.733	4.824%
I can be "on my own", so to speak, if I have to.	0.328	0.628		
I usually take stressful things regarding my life in my stride.	0.404	0.649		
I can get through difficult times in my life because I have experienced difficulty before.	0.526	0.636		
I feel I can handle many things at a time in my life.	0.547	0.602		
Factor 4: Self-motivation			0.763	3.050%
Right now, I see myself as fairly successful at life overall.	0.519	0.680		
I can think of many ways to reach my current overall life goals.	0.627	0.437		
At this time, I am meeting the goals that I have set for myself.	0.545	0.739		
Factor 5: Hopeless			0.650	2.258%
When I have a setback in my life, I have trouble recovering from it and moving on(rev).	0.420	0.648		
If something goes wrong in my life, it will (rev).	0.327	0.591		
In my life, things never work out the way I want them to (rev).	0.473	0.639		

rev = reversed items

As shown in Table 6.40, the EFA identified five factors based on the Kaiser eigenvalue criterion greater than 1, which explained 53% of the variance. This is in contrast to the four-factor structure reported in previous findings (Avey *et al.*, 2010; Diedericks, 2016; Luthans *et al.*, 2007a, Pillay, Buitendach & Kanengoni, 2014).

Utilising PAF extraction and Promax rotation, the resulting structure revealed five components (factors) with the three reversed items loading (7, 14 and 17), once again, on one factor. The results indicated a five-factor solution, with the three reverse-scored items forming a construct X on their own.

Although the items loading on hope and efficiency did not emerge as reported in the literature (Luthans *et al.*, 2007a), the following was found:

- The eigenvalue of factor 1 was the highest at 9.345 and explained most of the variance (37.188%);

- The second factor showed an eigenvalue of 1.922, explaining 5.643% of the variance;

- Factor 3 (1.68) explained 4.824% variance;

- Factor 4 (1.194) explained 4.824% of the variance and

- The eigenvalue of factor 5 was 1.036, explaining 2.258% of the variance.

The first five factors were therefore retained for rotation. To aid in the interpretation and scientific utility of these five factors, Promax rotation with Kaiser normalisation was performed. Because communalities of all the items were above 0.31 and they all demonstrated loadings of more than 0.40 on one of the five extracted factors, all items were retained for further analysis.

The rotated solution revealed the presence of five factors showing a number of strong factor loadings. Five factors were therefore identified to explain the values of the potential agritourists' PsyCap towards their overall life. These first three factor's labels were adapted from literature, namely: (i) hope and efficacy; (ii) optimism; (iii) resilience: and (iv) self-motivation.

Table 6.40 indicates that factor 1 (0.908), factor 2 (0.817), factor 3 (0.733), and factor 4 (0.763) demonstrated acceptable internal consistency (reliability) for an established instrument as illustrated by Cronbach's alpha coefficients. Although factor 5 had a Cronbach alpha value of less than 0.7, values above 0.6 are deemed acceptable in exploratory research (Hair *et al.*, 2006:137).

It should be noted that, as this was an established instrument, it was decided to discard factor 5. Convergent validity of the factors was further examined by the CR measure. Table 6.41 provides a summary of the CR of PsyCap.

Table 6.41: Composite reliability (CR) results of the PsyCap factors

PsyCap factors	CR
Optimism	0.821
Hope-efficacy	0.870
Resilience	0.740
Self-motivation	0.752

Table 6.41 indicates that according to the CR results, all factor loadings were higher than the acceptable threshold level of 0.70. The CR of PsyCap subscales ranged from -.752 to 0.821.

The HTMT ratio was applied to assess the discriminant validity of the four constructs further. The HTMT ratio results are presented in Table 6.42.

Table 6.42: HTMT Analysis of PsyCap

PsyCap factors	Optimism	Hope-efficacy	Resilience	Self-Motivation
Optimism				
Hope-efficacy	0.882			
Resilience	0.559	0.610		
Self-motivation	0.774	0.807	0.534	

Thresholds were 0.850 for strict and 0.900 for liberal discriminant validity.

Table 6.42 presents the HTMT ratio that should be below 1.0 in a well-fitting model. It is suggested that the HTMT ratio should be lower than 0.85 (more strict threshold) or 0.90 (more lenient threshold) or significantly smaller than 1 (Hair *et al.*, 2014b:788–789).

As a result of using the HTMT ratio to measure discriminant validity between the four constructs of PsyCap, the following results were found: The HTMT value between optimism and hope-efficacy (0.882) illustrates discriminant validity between these two concepts. This was also the case for the other, namely, optimism and resilience (0.559), optimism and self-motivation (0.774), hope-efficacy and resilience (0.610), hope-efficacy and self-motivation (0.807), as well as self-motivation and resilience (0.534). Discriminant validity amongst the four concepts was confirmed.

Factor-based scores were subsequently calculated, as the mean score of the variables included all factors.

Descriptive statistics for respondents' PsyCap towards their overall life are presented in Table 6.43. This table shows measures of central tendency, the SD, and skewness and kurtosis measures of respondents' PsyCap towards their overall life.

Table 6.43:   Descriptive statistics for the five extracted factors

Descriptive statistics for the five extracted factors representing potential agritourists' PsyCap towards their overall life	Valid number	Mean	Median	SD	Skewness	Kurtosis
1. Hope-efficacy	526	4.07	4.0	0.51	-0.70	3.47
2. Optimism	526	4.02	4.0	0.56	-0.66	1.91
3. Resilience	526	3.95	4.0	0.53	-0.56	2.45
4. Self-motivation	526	3.90	4.0	0.57	-0.58	2.08

*The scale indicates 5 = strongly agree and 1 = strongly disagree

Table 6.43 shows that the respondents tended to agree on hope-efficacy; thus, resembling a more hopeful and efficacious view towards their overall life. The mean score was 4.07, while the dispersion of scores around the mean was 0.51. The respondents tended to agree on optimism; therefore, they were more optimistic towards their overall life, as the mean was 4.02, while the dispersion of scores around the mean was 0.56.

This information might be helpful to agritourism establishments, as they can design and promote activities that stimulate positive emotions and PsyCap to develop thriving

individuals, families, and communities. More exposure to the natural environment has been reported to improve PsyCap (Tu, 2020:1). Consequently, an assumption can be made that agritourists' exposure to the natural farm environment could help to improve their PsyCap in cases where it is low, or to maintain it.

Skewness and kurtosis values between -2 and +2 are considered acceptable to prove a normal univariate distribution (George & Mallehy, 2010; Hair *et al.,* 2010b). Bryne and Van de Vijver (2010) also argued that skewness values between -2 to +2, and kurtosis between -7 to +7 are acceptable in regression and SEM. Hope-efficacy, optimism, resilience, and self-motivation all had skewness and kurtosis values that were within the threshold values, as stated above by Hair *et al.* (2010b) and Byrne and Van de Vijver (2010), thereby indicating that these four constructs can be assumed to be normally distributed.

Overall, it might be helpful for agritourism operators to understand potential agritourists' PsyCap to package farm experiences that would improve PsyCap. Furthermore, marketing messages can also be crafted to emphasise the improvement of one's overall life, for example, "take some time and experience simple things by spending time on a farm or in a farm environment".

Based on the results of the factor analysis related to PsyCap, potential agritourists exhibit different PsyCap profiles. A recommendation can be for agritourism providers to consider tailoring their agritourism experiences to cater to these varying psychological characteristics. For example, by offering workshops or activities that specifically target hope-building or resilience enhancement.

Section 6.8 presents the factor analysis results of the agritourism attributes that are important to the potential agritourists' choice of farm.

6.8 RESULTS OF THE FACTOR ANALYSIS: AGRITOURISM ATTRIBUTES INFLUENCING THE AGRITOURIST'S CHOICE

The research variables of interest included 22 questions relating to attributes that would influence the respondent's choice of an agritourism activity or holiday. The respondents rated these attributes on a 5-point Likert-type scale, where '1' was 'Not important, '5' was 'Critically important'. These attributes were derived from previous

research by Shah *et al.* (2020). The CFA results for the attributes determining the agritourism choice are discussed next.

6.8.1   CFA of attributes determining agritourism choice

Construct validity was determined by conducting a CFA on all 22 items and the associated seven constructs. The purpose was to determine whether the seven constructs, as reported in the research, are applicable to the underlying attributes directed towards choosing an agritourism activity and could be confirmed by the current study.

Table 6.44 displays the initial factorial structure used to determine which attributes the respondents perceived as important for agritourism life choices (Appendix A: Questionnaire; Section F).

Table 6.44:   Initial factorial structure used to measure underlying attributes determining agritourism choice

F1: Landscape	
1.1	The experience of trying something different.
1.2	The farm's natural surroundings.
1.3	The farm's agricultural landscape.
1..4	The value for money offered by visiting the farm.
1.5	The accessibility of the farm venue.
1.6	The basic medical facilities available on the farm.
F2: Authentic farm experience	
2.1	It is an actual operational farm.
2.2	The farm offers food and beverage choices.
2.3	The farm is officially classified as an agritourist farm.
2.4	The farm only caters for a few people at a time.
F3: Interaction	
3.1	There is an opportunity to interact in self-harvesting.
3.2	There is an opportunity to interact in agricultural value-added processes.
3.3	I can interact in handicraft making.

	F4: Activities
4.1	The presence of livestock.
4.2	The farm offers on-farm activities.
4.3	The farm offers off-farm activities (e.g. pick fruit or vegetables, farm tour, farm cooking class and farm stall).
	F5: Basic services
5.1	The farm venue is hygienic.
5.2	The farm venue is safe.
5.3	The farm offers accommodation.
5.4	The farm offers farm grown food.
	F6: Fresh food
6.	I prefer fresh food.
	F7: Traditional farming
7.	I am interested in seeing traditional farming techniques.

Table 6.44 outlines the initial factors and items used in the questionnaire as adapted from the literature is provided in Table 6.44, as theory comes first in CFA. As derived from the literature (Shah *et al.*, 2020:8), the CFA Model 1 as originally postulated with respect to the items underlying attributes determining agritourism choice is illustrated and discussed next.
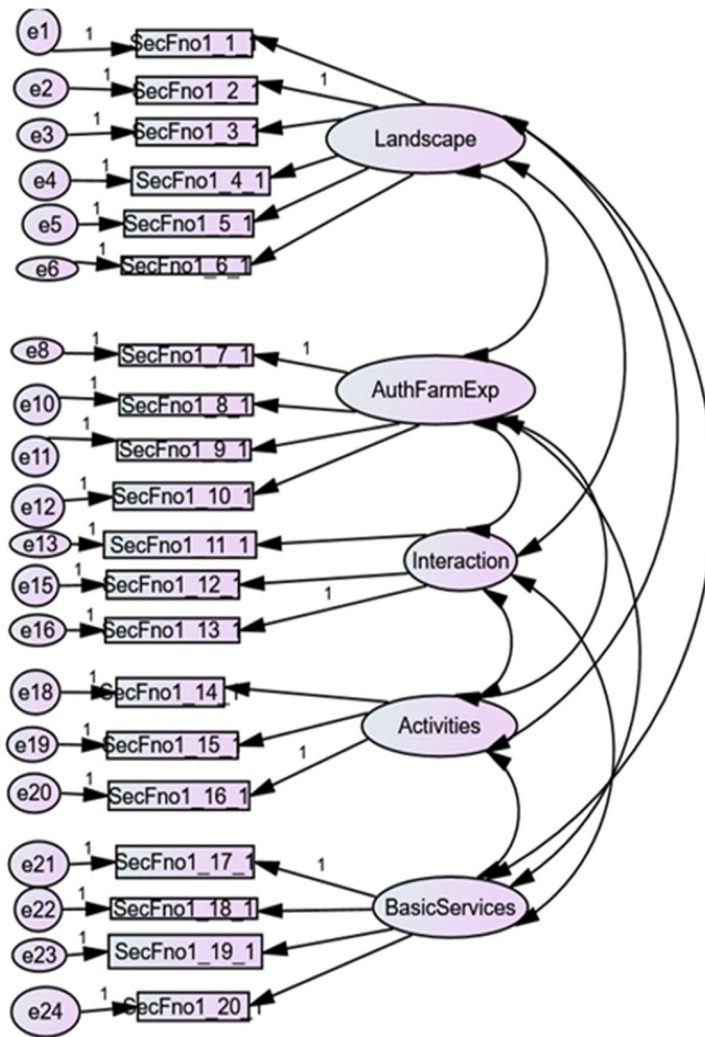
Figure 6.10:   CFA Model 1: The model as originally postulated with respect to the items underlying attributes determining agritourism choice

As shown in Figure 6.10, the CFA model 1 was evaluated by goodness-of-fit indices to test whether it emulated the sample matrix (Raykov & Marcoulides, 2012:95). Table 6.45 provides the goodness-of-fit indices of the CFA model.

Table 6.45:   Goodness-of-fit indices of the CFA model 1 of respondents' underlying attributes determining agritourism choice

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	IFI	SRMR
Goodness-of-fit indices	1079.974	160	0.000	6.750	.105	.846	.846	0.0833
Acceptable fit	-	-	-	< 3	≤ 0.08	≥ 0.90	≥ 0.90	

Table 6.45 outlines that the model fit for the data did not indicate an acceptable fit. The RMSEA model fit metric should preferably be below 0.05, and the upper limit of the

90% confidence interval of the RMSEA, below 0.08 to indicate good fit, while RMSEA values between 0.05 and 0.08 indicate an acceptable fit (Hair *et al.*, 2014b:579; Hu & Bentler, 1999; Raykov & Marcoulides, 2012:36). It is also noted that the RMSEA is above the accepted threshold (0.105), with the lower and upper 90% confidence interval ranging between 0.05 and 0.08.

Additional indices were considered for testing the model fit and CFI. IFI should be above 0.90 for acceptable fit and above 0.95 for a very good fit (Hair *et al.*, 2014b:580; Raykov & Marcoulides, 2012:36). The model fit indices were CFI (0.846) and IFI (0.846), and all were below 0.90, which is not an adequate model fit. The CMIN/df value of 6.750 was more than double the minimum expected ratio (3) and higher than 5; therefore, it does not indicate a good model fit. The SRMR did not indicate an acceptable fit, as the value was above the recommended threshold of 0.08. All fit indices indicated an inadequate fit.

CFA Model 1, therefore, presented an unsatisfactory fit with the observed data. One item (F10) had factor loadings below 0.45, the minimum value required for CFA, according to Tabachnick *et al.* (2013). The item was thus deleted, and the scale was changed to 19 items (landscape = 6, authentic farm experience = 3, interaction = 3, activities = 3, basic services = 4).

Figure 6.11 illustrates the model postulated with respect to the 19 items underlying attributes determining agritourism choice.
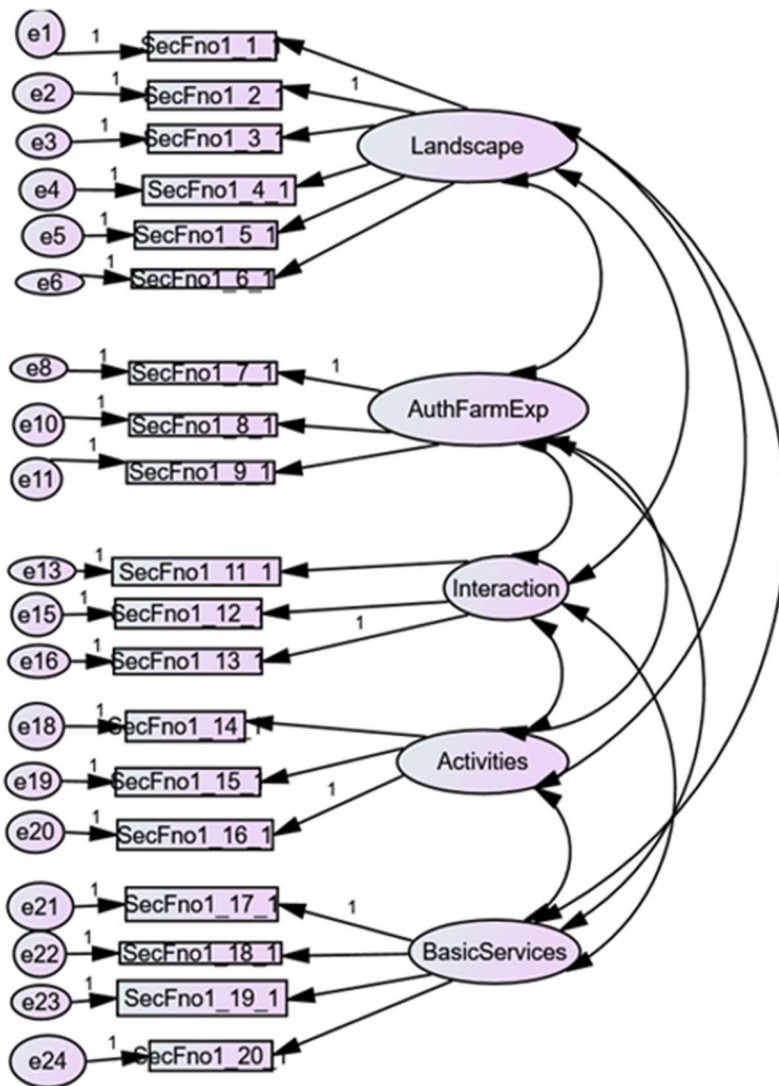
Figure 6.11:   CFA Model 2 (19-item model) postulated with respect to the items underlying attributes determining agritourism choice

Figure 6.11 presented the 19 items of agritourism attributes and the goodness-of-fit indices evaluated the CFA Model 2 to test whether it emulated the sample matrix (Raykov & Marcoulides, 2012:95).

Table 6.46 below provides the goodness-of-fit indices of the CFA model of underlying attribute items determining agritourism choice.

Table 6.46:   Goodness-of-fit indices of the CFA model of respondents' underlying attributes determining agritourism choice

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	IFI	SRMR
Goodness-of-fit indices	933.390	142	0.000	6.573	.103	.863	.864	0.0816
Acceptable fit	–	–	–	< 3	≤ 0.08	≥ 0.90	≥ 0.90	

Table 6.46 indicates that the model fit for the data did not indicate an acceptable fit. The RMSEA model fit metric should preferably be below 0.05, and the upper limit of the 90% confidence interval of the RMSEA below 0.08, to indicate good fit, while RMSEA values between 0.05 and 0.08 indicate an acceptable fit (Hair *et al.*, 2014b:579; Hu & Bentler, 1999; Raykov & Marcoulides, 2012:36;). It is also noted that the RMSEA was above the accepted threshold (0.103), with the lower and upper 90% confidence interval ranging between 0.05 and 0.08.

Additional indices were considered to test the model fit and CFI. IFI should be above 0.90 for acceptable fit and above 0.95 for a very good fit (Hair *et al.*, 2014:580b; Raykov & Marcoulides, 2012:36). The model fit indices were as follows: CFI (0.863), IFI (0.864). All were therefore below 0.90, which is not an adequate model fit. The CMIN/df value of 6.573 was more than double the minimum expected ratio (3) and higher than 5; therefore, not indicating a good model fit. The SRMR did not indicate an acceptable fit, as the value was above the recommended threshold of 0.08.

As all fit indices indicated inadequate fit, CFA Model 2 presented an unsatisfactory fit with the observed data. In order to determine convergent and discriminant validity, the CR, AVE and the HTMT ratio of the correlations were evaluated to determine convergent and discriminant validity.

Discriminant validity entails that two latent variables that are meant to represent two different theoretical concepts are statistically different. This indicates the extent to which a construct is genuinely distinct from other constructs (Hair *et al.*, 2014b:788). The AVE is a conservative measure of convergent validity. The CR value is computed as the squared sum of the factor loading for each construct divided by the sum of the error variance terms for that construct (Hair *et al.*, 2010b:710). High CR indicates that internal consistency exists, meaning that all the measures consistently represent the same latent construct. Similar to the Cronbach's alpha, the rule of thumb is 0.7 or

higher (Hair *et al.*, 2010a:125). Table 6.47 summarises the convergence and discriminant validity statistics based on the improved model.

Table 6.47:   CR and average variance extracted (AVE)

Agritourism attributes factors	CR
Farm landscape	0.842
Farm interaction	0.869
Farm activities	0.855
Farm experience	0.790
Farm (basic services)	0.799

From Table 6.47 it can be observed that according to the CR results, all factor loadings were higher than an acceptable threshold level of 0.70. The CR of the agritourism attribute subscales ranged from 0.790 to 0.869; therefore, there was internal consistency. The HTMT ratio approach was applied to assess the discriminant validity of the constructs further. The HTMT results are presented in Table 6.48.

Table 6.48:   HTMT analysis of agritourism attributes

Agritourism factors	Landscape	Interaction	Activities	Authentic farm experience	Basic services
Landscape	■				
Interaction	0.727	■			
Activities	0.759	0.845	■		
Authentic farm experience	0.855	0.824	0.832	■	
Basic services	0.637	0.476	0.556	0.616	■

Thresholds are 0.850 for strict and 0.900 for liberal discriminant validity.

Table 6.48 indicates that the HTMT analysis should be below 1.0 in a well-fitting model. It is suggested that the HTMT value should be lower than 0.85 (more strict threshold) or 0.90 (more lenient threshold), or significantly smaller than 1 (Hair *et al.*, 2014b:788–789). Using the HTMT ratio to assess discriminant validity between the five constructs of agritourism, the results were as follows:

- HTMT value between landscape and interaction (0.727) illustrated discriminant validity between these two concepts. This was also the case for landscape and activities (0.759), landscape and authentic farm experience (0.855), as well as landscape and basic services (0.637).

- Discriminant validity was also reported between interaction and activities (0.845), between interaction and authentic farm experience (0.824), as well as between interaction and basic services (0.476).

- HTMT value between activities and authentic farm experience (0.832) illustrated discriminant validity between these two concepts. This was also the case for activities and basic services (0.556), as well as for authentic farm experience and basic services (0.616).

Considering all the above fit indices that presented an unsatisfactory fit with the observed data, and the lack of discriminant validity across all constructs, an EFA was conducted to determine the reasons for the CFA misfit and to address discriminant validity violation. The results of the EFA agritourism attributes influencing potential agritourist farm choice are discussed next.

6.8.2 EFA: Agritourism attributes influencing potential agritourist farm choice

EFA was applied to the responses on the 22-item scale. The KMO measure of sampling adequacy (.929) and Bartlett's test of sphericity was significant (p = 0.000). Both indicated that factor analysis was appropriate, as the KMO exceeded the recommended minimum value of 0.6 (Kaiser, 1970, 1974). The EFA identified four factors based on the Kaiser eigenvalue criterion of greater than 1, which explained 57% of the variance.

This is in contrast with the seven-factor structures reported in previous findings (Shah *et al.*, 2020:8). The eigenvalue of factor 1 explained most of the variance (42.6%). The second factor explained 6.8% of the variance, followed by factor 3, which explained

4.9%, and factor 4, which explained 2.7% of the variance. Table 6.49 indicates the communality estimates and the factor loadings in the pattern matrix.

Table 6.49: **Factor loadings and communality estimates from the EFA of the underlying agritourism attributes determining agritourism choice (n = 526)**

Items used to construct a factor	Commu-nalities	Factor loading			
		1	2	3	4
The experience of trying something different.	.542				.538
The farm's natural surroundings.	.767				.910
The farm's agricultural landscape.	.649				.688
The value for money offered by visiting the farm.	.388				.470
The accessibility of the farm venue.	.542		.696		
The basic medical facilities available on the farm.	.596		.714		
It is an actual operational farm.	.542		.547		
The farm offers food and beverage choices.	.609		.726		
The farm is officially classified as an agritourist farm.	.584		.586		
The farm only caters for a few people at a time.	.231			.447	
There is an opportunity to interact in self-harvesting.	.644	.773			
There is an opportunity to interact in agricultural value-added processes.	.679	.771			
I can interact in handicraft making.	.550	.740			
The presence of livestock.	.587	.777			
The farm offers on-farm activities.	.656	.781			
The farm offers off-farm activities (e.g. pick fruit or vegetables, farm tour, cooking class and farm stall).	.567	.619			
The farm venue is hygienic.	.612			.736	
The farm venue is safe.	.633			.845	
The farm offers accommodation.	.394			.629	
The farm offers farm grown food.	.635			.486	
I prefer fresh food.	.611				
I am interested in seeing traditional farming techniques.	.526	.483			

Table 6.49 outlines that all items were retained for further analysis because the communalities of all the items were above 0.31 and all demonstrated loadings of more

than 0.30 on one of the four extracted factors. These four factors were labelled Factor 1 "farm activities"; Factor 2 "farm experience"; Factor 3 "farm-basic services", and Factor 4 "farm landscape".

One item, "I prefer fresh food", loaded similarly on both Factors 2 and 3, although this item was found not compatible with other items grouped under Factors 2 and 3. Factor 2 items were related to the farm experience offering, whereas Factor 3 was about available basic services on the farm, such as hygiene, accommodation, and farm-grown food. Item 21 was therefore deleted, and Factor 4 grouped items that describe the farm landscape, whereas Factor 1 was outlined by the activities and offerings available on an agritourism farm.

Table 6.50 indicates the reliability statistics of the four extracted factors.

Table 6.50: **Reliability statistics of the four extracted factors representing important attributes determining agritourism choice of potential respondents**

Subscale	Description	No. of items	Cronbach's alpha
F1	Farm activities	7	0.909
F2	Farm experience	5	0.859
F3	Farm-basic services	5	0.781
F4	Farm landscape	4	0.818

Table 6.50 indicates that the factors (1) farm activities, (2) farm experience, (3) farm-basic services, and (4) farm landscape demonstrated acceptable internal consistency, all above the 0.7 threshold value. This is illustrated by Cronbach's alpha coefficients. Convergent validity of the factors was further examined by CR.

Table 6.51 provides a summary of the CR results of agritourism factors.

Table 6.51:   Composite reliability (CR) results in agritourism factors

Agritourism factors	CR
Farm activities	0.910
Farm experience	0.861
Farm basic services	0.741
Farm landscape	0.830

Table 6.51 shows that the CR of agritourism attribute subscales ranged from 0.830 to 0.910; they were therefore above 0.7, the threshold, and could thus be assumed to have convergent validity. The HTMT ratio was applied to assess the discriminant validity of the constructs further. The HTMT results are presented in Table 6.52.

Table 6.52:   HTMT analysis of agritourism attributes

Agritourism attributes factors	FA	FE	FBS	FL
Farm activities				
Farm experience	0.859			
Farm basic services	0.572	0.613		
Farm landscape	0.693	0.709	0.555	

Thresholds were 0.850 for strict and 0.900 for liberal discriminant validity.

Table 6.52 indicates the HTMT analysis results. The HTMT ratio should be below 1.0 in a well-fitting model. It is suggested that the HTMT value should be lower than 0.85 (more strict threshold) or 0.90 (more lenient threshold) or significantly smaller than 1 (Hair *et al.*, 2014b:788–789). Using the HTMT ratio to assess discriminant validity between the four constructs of agritourism, the results were as follows:

- HTMT value between farm activities and farm experience (0.859) illustrates discriminant validity between these two concepts. This was also the case for farm

activities and farm basic services (0.572), farm activities and farm landscape (0.693), as well as landscape and basic services (0.637).

- There was also discriminant validity between farm experience and farm basic services (0.613), between farm experience and farm landscape (0.709), as well as farm basic services and farm landscape (0.476).

Discriminant validity amongst the four concepts was therefore confirmed. Factor-based scores were subsequently calculated, as the mean score of the variables was included for all factors. Table 6.53 reflects the descriptive statistics of the four factors representing important underlying attributes that determine the agritourism activity choice or visit. This table shows measures of central tendency, the SD, and skewness and kurtosis measures of the five extracted factors representing agritourism attributes determining agritourism choice.

Table 6.53: Descriptive statistics for the five extracted factors representing respondents' agritourism attributes

Descriptive statistics for the five extracted factors representing potential agritourists' PsyCap towards their overall life	Valid number	Mean	Median	SD	Skewness	Kurtosis
1. Farm activities	526	3.6	3.61	0.72	-0.48	0.94
2. Farm experience	526	3.6	3.60	0.71	-0.38	0.80
3. Farm basic services	526	3.8	3.80	0.63	-0.61	1.76
4. Farm landscape	526	3.8	3.88	0.58	-0.15	0.94

Table 6.53 presents the most important agritourism attributes which determine the respondents' agritourism choice. Regarding the most important agritourism attributes, which determine the respondents' agritourism choice, the following are reported: the mean score for farm basic services and farm landscape was 3.8 for both, while the dispersion of scores around the mean was 3.80 and 3.88, respectively. Farm experience and farm activities were the second most important attributes that would determine respondents visiting an agritourism establishment, as the mean score was 3.6 for both, while the dispersion of scores around the mean was 3.60 and 3.61, respectively.

These important agritourism attribute factors are crucial in developing and marketing agritourism products. Several studies have pointed out that novelty or experiencing something different is a significant motivation for tourists to travel or visit a place (Kim Lian Chan & Baum, 2007; Pearce & Lee, 2005). Likewise, this proved to be an important attribute in choosing an agritourism activity or visit to a farm. Agricultural landscapes are always already visible and known on most farms; it thus becomes important for farm operators to market and promote farm landscapes to draw potential agritourists to their establishment.

Furthermore, agritourism providers may collaborate to provide innovation, and may partner with local businesses, such as restaurants or wineries, to enhance the overall agritourism experience, and offer package deals that combine visits to their farm with dining experiences or wine tasting. They may also explore innovative partnerships with educational institutions or researchers to create unique agritourism programmes that allow agritourists to participate in research activities or experimental farming practices.

The next section presents the results of the second-order models, focusing on agri-environmental orientation, agri-environmental attitude, behavioural intention, and PsyCap.

6.9 RESULTS OF SECOND-ORDER MODELS: ORIENTATION, ATTITUDE, BEHAVIOURAL INTENTION AND PSYCAP

Higher-order constructs enable the analysis of the relative strengths of lower-order constructs. Structural path coefficients (standardised) show how reliable a high-order construct reflects the lower-order constructs, and the importance of each lower-order construct (Hong & Thong, 2013:281). Higher-order models are more parsimonious, and are therefore, less prone to consuming degrees of freedom, and as a result, they should perform better on indices reflecting parsimony (Hair *et al.*, 2019:735). The target coefficient (T) is the ratio of the chi-square value of the first-order model to that of the second-order model. This is used to determine whether a higher-order construct can be used.

T has an upper value of 1 when the covariance between the first-order factors is completely accounted for by the second order, and a value of 0.9 or greater suggests

the high-order factor provides a good explanation for the correlations (Marsh & Hocevar, 1985) between the lower-order factors or constructs.

Figures 6.12 to 6.15 depict the second order-order factor models for agri-environmental orientation, agri-environmental attitude, PsyCap and behavioural intention.
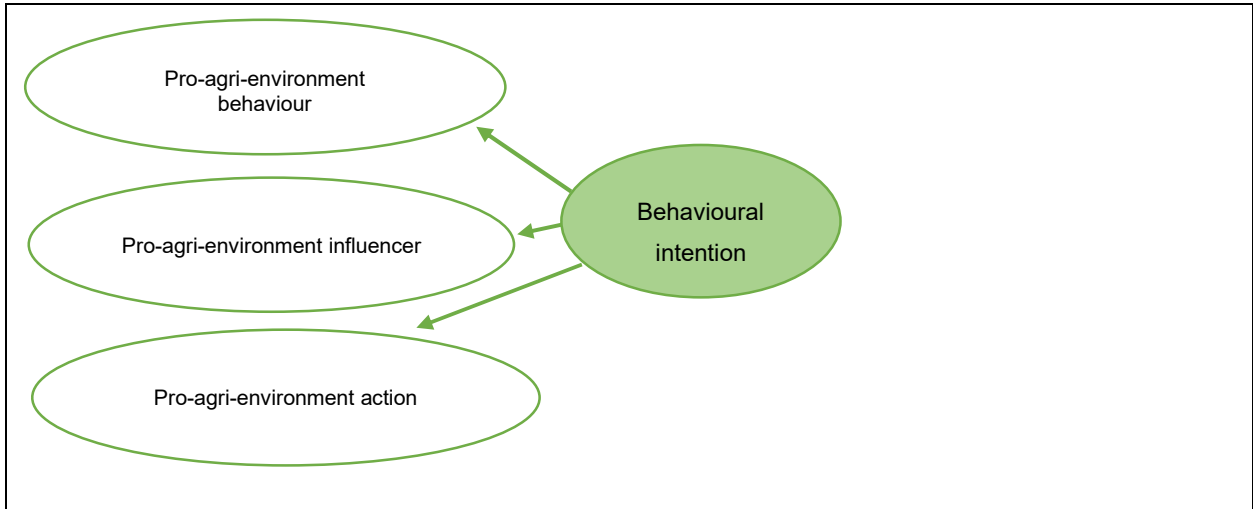
Figure 6.12:   Second-order model with respect to factors underlying behavioural intention
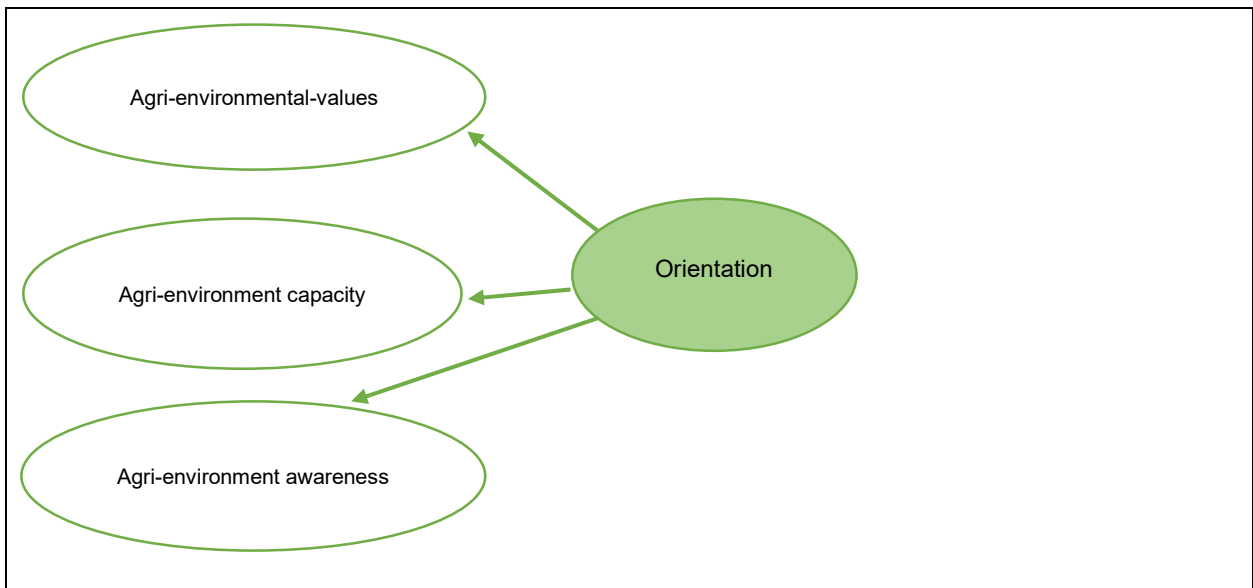
Figure 6.13:   Second-order model with respect to factors underlying orientation
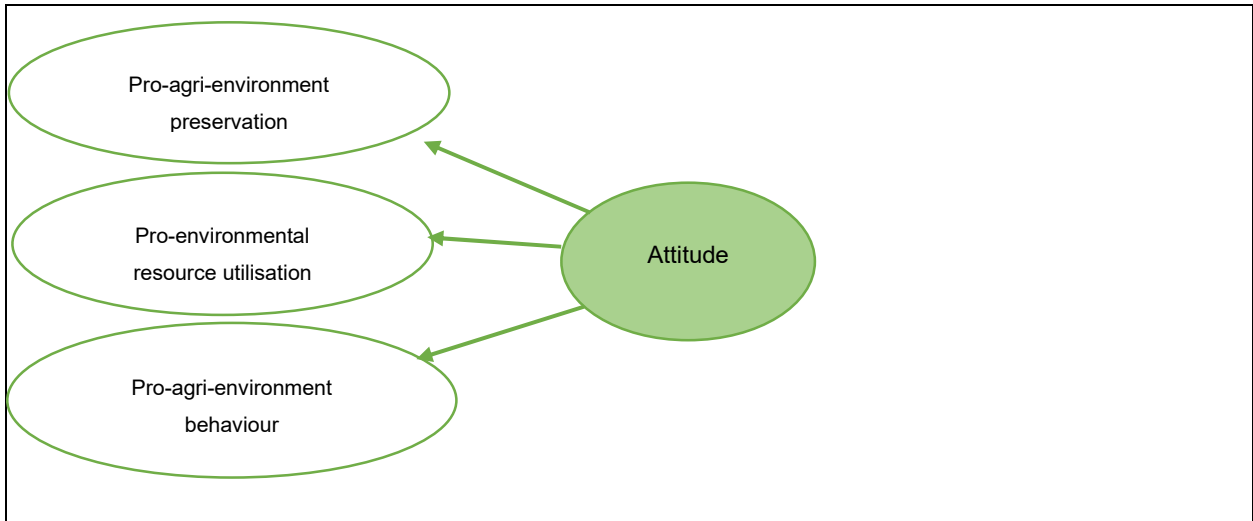
Figure 6.14:   Second-order model with respect to factors underlying attitude
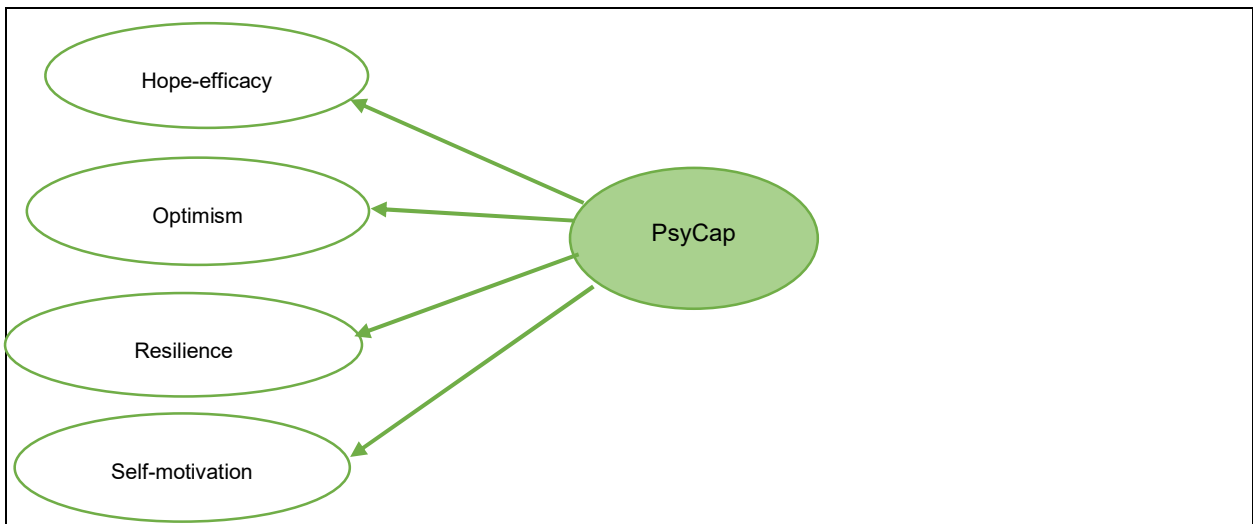
Figure 6.15:   Second-order model with respect to factors underlying PsyCap

As illustrated in the second-order model representing behavioural intention, orientation and attitude consists of three first-order factors, where the PsyCap second-order model is represented by four first-order factors of hope-efficacy, resilience, optimism, and self-motivation. As the associated target coefficient for these constructs was 0.9 or higher, the second-order model representation was used in the conceptual SEM for this study.

Table 6.54 indicates the target coefficient values for each construct or factor.

Table 6.54:   Chi-square values and target coefficients for the second order models

Factor	First-order chi square	Second-order chi square	Target coefficient
Behavioural intention	465.916	465.916	1
Orientation	240.824	240.824	1
Attitude	396.127	440.080	0.9
PsyCap	1875.981	1877.087	0.999

As presented in Table 6.54, the target coefficient CMIN (x^2) ratios of all the above factors were 0.9 or above; therefore, providing enough explanation for their correlations. The target coefficient CMIN (x^2) ratios of all the above factors were 0.9 or above; therefore, providing enough explanation for their correlations. The outputs for the higher-order models for behavioural intention, orientation, attitude, and PsyCap models are displayed in Appendix B.

Section 6.10 presents Stage 3 of data analysis results, which formed part of Phase 3 of the methodological process. In Phase 1, the body of knowledge on agritourism, agri-environmental literacy (knowledge, orientation, attitude, sensitivity, and concern), PsyCap and behavioural intention literature was outlined (Chapter 2). Two conceptual agri-environmental literacy and PsyCap models for agritourism aimed at developing agritourism were developed which forms Phase 2 of the methodology (Chapter 3).

Sections 6.10 to 6.13 present Stage 3 of the current research. The two conceptual agri-environmental literacy and PsyCap models for agritourism had to be tested empirically (Section 6.10). Furthermore, mediation was conducted to determine the underlying associations between the various variables within the confirmed SEM model (Section 6.13).

Sections 6.10 to 6.13 therefore link to the fifth and sixth secondary research objectives, namely:

- *To develop and test the two conceptual agri-literacy and PsyCap models for agritourism through SEM; and*

- *To determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, concern, and sensitivity.*

An agri-environmental literacy and PsyCap model for agritourism had to be tested empirically, which is reflected in this chapter. Chapter 6 links to the fourth secondary objective, namely, *To develop conceptual agri-literacy and PsyCap models for agritourism,* which were tested using SEM, which is presented in the next section.

The next section presents Stage 3 of data analysis, where the SEM results are presented.

6.10 STAGE 3: STRUCTURAL EQUATION MODELLING (SEM) RESULTS

SEM was used to test the structural relationships among the constructs (Hair *et al*., 2010b:675). In this study, two potential structural models, the agri-environmental literacy and PsyCap model for agritourism **(Scenario 1)** and **Scenario 2** included seven constructs and a composite score: agri-environmental knowledge, agri-environmental attitude, agri-environmental orientation, behavioural intention, agri-environmental concern, agri-environmental sensitivity, PsyCap, and agritourism attributes.

The measurement of agri-environmental knowledge consisted of 10 multiple-choice questions, and a single composite score was calculated for each respondent based on the percentage of correct answers. Agri-environmental knowledge is thus represented as an observed variable in the model using the composite score. All the items used to measure the seven latent constructs, namely, agri-environmental literacy (agri-environmental attitude, agri-environmental orientation, agri-environmental sensitivity, and agri-environmental concern), behavioural intention, and agritourism attributes were subjected to CFA before performing structural path analyses (Zhang, Dawson & Kline, 2021).

In Section 6.2 to 6.8, the results of the CFA were reflected. The purpose of the CFA was to evaluate whether the factors suggested in theory fit the data using CFA. The CFA model conducted for agri-environmental attitude; behavioural intention; agri-environmental concern; agri-environmental orientation, agri-environmental sensitivity; PsyCap, and agritourism attributes presented an unsatisfactory fit with the observed data, based on the goodness-of-fit indices, and therefore, an EFA was conducted to determine the reasons for misfit and the underlying factor structure of the data.

Section 6.2 to 6.8 reported on the EFA. By applying EFA, several factors were identified pointing to the reasons for misfit in the original data to explain each construct, except agri-environmental concern and agri-environmental sensitivity, with each confirming a one-factor structure. Single factor CFAs, especially those with small degrees of freedom, result in RMSEAs with values above the threshold, while IFI and CFI indicated good fit (Kenny & McCoach, 2003), which was the case for the agri-environmental concern and agri-environmental sensitivity constructs. It was therefore decided to use an EFA to confirm the uni-dimensionality of each of the single factor constructs.

In the current study, all the factors demonstrated acceptable internal consistency (reliability), convergent validity, as illustrated by Cronbach's alpha coefficients, and CR and discriminant validity, as presented in the discussion of the CFA and EFA results.

The results of the conceptual structural path models for agri-literacy and PsyCap in an agritourism context are presented in the next section.

6.11 RESULTS OF THE FIRST STRUCTURAL CONCEPTUAL MODEL (SCENARIO 1) FOR AGRITOURISM

Stage 3 commences by presenting the first conceptual agri-environmental literacy and PsyCap model for agritourism (Scenario 1) as discussed in Chapter 3 (refer to Figure 3.1), and also illustrated in Figure 6.16. The conceptual agri-environmental literacy and PsyCap model was then tested to explore the relationships between agri-literacy, PsyCap, behavioural intention, and the underlying agri-environmental attitudes towards engaging in agritourism. The research hypotheses developed for the study are presented in Tables 4.12 and 4.13 in Chapter 4. The relationships presented in Table 4.12 were tested in the agri-environmental literacy and PsyCap model for agritourism Scenario 1, whereas the relationships presented in Table 4.13 were tested in the agri-environmental literacy and PsyCap model for agritourism Scenario 2.

Figure 6.16 illustrates the first structural equation model applied in the study, comprising all seven constructs and the knowledge score: agri-environmental orientation, agri-environmental attitude, behavioural intention, agri-environmental concern, agri-environmental sensitivity, PsyCap and agritourism attributes.
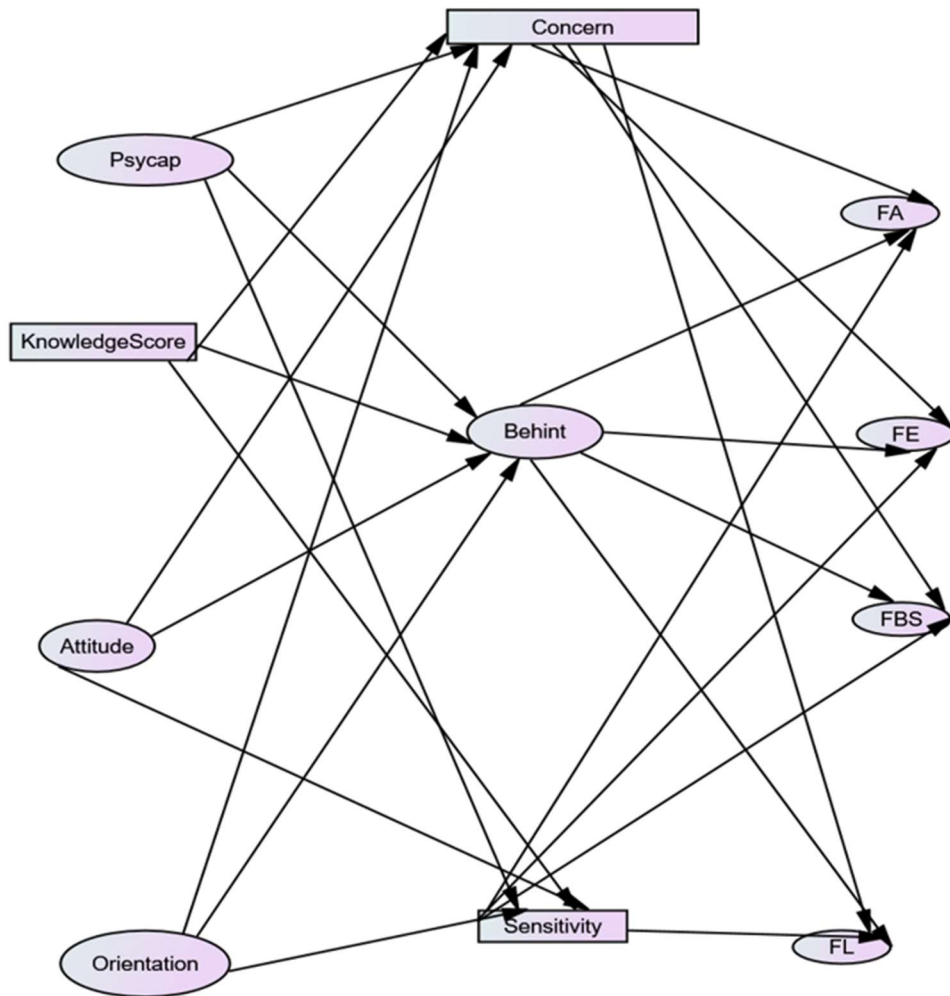
Figure 6.16: <u>Conceptual structural Scenario 1</u>: Agri-environmental literacy and PsyCap model for agritourism

Behint = behavioural intention; FL = Farm landscape; FBS = Farm basic services; FE = Farm experience and FA = Farm activities

The agri-environmental literacy and PsyCap model for agritourism **Scenario 1** (Model 1) shows the following:

- **PsyCap** is represented by the following four sub-constructs:

    o SelfMot (self-motivation), Resil (resilience), Hope-efficacy, and Optimism;

- **Agri-environmental orientation** is represented by the following three sub-constructs:

    o BF1: agri-environmental values, BF2: agri-environmental capacity and BF3: agri-environmental awareness;

- **Agri-environmental attitude** is represented by the following three sub-constructs:

- o PAPress: pro-agri-environmental preservation, PAUtil: pro-agri-environmental resource utilisation, and PABeh: pro-agri-environmental behaviour;

- **Behavioural intention** (Behint) is represented by the following two sub-constructs:

  - o BI12: pro-agri-environmental influencer, and BIF3: pro-agri-environmental action; and

- **Agritourism attributes** is represented by the following four sub-constructs:

  - o farm activities (FA); farm experience (FE); farm basic services (FBS), and farm landscape(FL).

The SEM Model was evaluated by goodness-of-fit indices to test if it emulates the sample matrix (Raykov & Marcoulides, 2012:95). Table 6.55 provides the goodness-of-fit indices of the conceptual structural **Scenario 1** model.

Table 6.55: **Goodness-of-fit indices of the conceptual structural Scenario 1**

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	IFI	TLI
Goodness-of-fit indices	18817.388	5541	.000	3.396	.068	.618	.619	.609
Acceptable fit	–	–	–	< 3	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.90

Table 6.55 indicates that in the current study it was evident that when the structural model was fitted to the data, the model did not adequately fit the data according to the set of fit indices. The RMSEA was good at 0.068, and less than 0.08, indicating an acceptable fit, whereas the CMIN/df value of 3.396 did not fit the data under the threshold of < 3 (Schumacker & Lomax, 2004). The CFI (0.618), TLI (0.609) and IFI (0.619) were far below 0.9, indicating that the model fit could not be considered adequate. When all these fit indices were considered, this conceptual SEM model, **Scenario 1** presented an unsatisfactory fit with the observed data.

Furthermore, conceptual paths were investigated to improve the model fit. Model improvements (statistically) can be achieved by:

- Deleting an item (observed variables) with loadings less than 0.5; or

- Deleting non-significant paths; and

- Modification of indices (with the condition that these are theoretically justified) for potential additional covariances.

It is important that changes are not purely made by improving **Scenario 1** fit statistics but are portraying the theoretical model postulated. The first conceptual model (**Scenario 1**) provided an unsatisfactory fit with the observed data. Subsequently, the second conceptual **Scenario 2** was tested, and the results are presented in the next section.

6.12 RESULTS OF THE CONCEPTUAL STRUCTURAL SCENARIO 2: AGRI-ENVIRONMENTAL LITERACY AND PSYCAP MODEL FOR AGRITOURISM

The second conceptual agri-environmental literacy and PsyCap model for agritourism as discussed in Chapter 3 (refer to Figure 3.2), are illustrated in Figure 6.16. The conceptual agri-environmental literacy and PsyCap model for agritourism was then tested to explore relationships between agri-literacy, PsyCap, behavioural intention, and underlying agri-environmental attitudes towards engaging in agritourism. The research hypotheses developed for the study are presented in Table 4.8 in Chapter 4.

The relationships concerning H_1 to H_{12} were tested in the agri-environmental literacy and PsyCap model for agritourism **Scenario 2**. Figure 6.17 illustrates the second structural equation model applied in the study, comprising all seven constructs and the knowledge score: agri-environmental orientation, agri-environmental attitude, behavioural intention, agri-environmental concern, agri-environmental sensitivity, PsyCap and agritourism attributes.
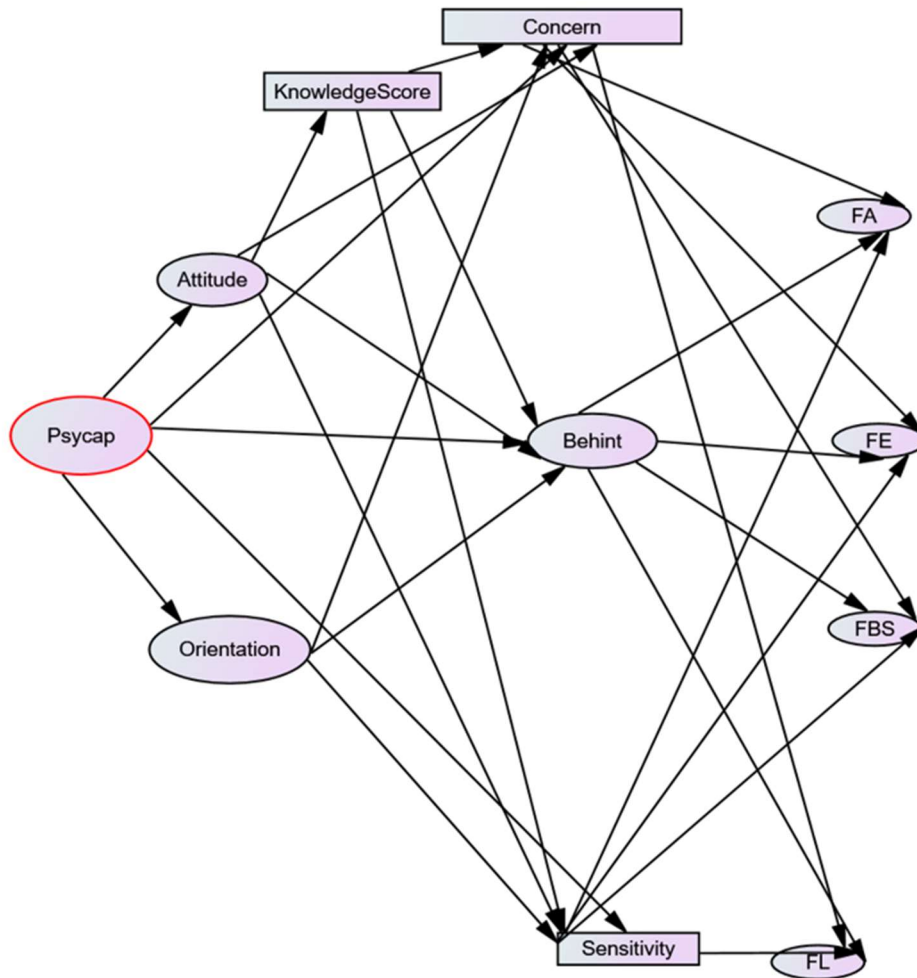
Figure 6.17: Conceptual structural Scenario 2 agri-environmental literacy and PsyCap model for agritourism

Behint = behavioural intention; FL = Farm landscape; FBS = Farm basic services; FE = Farm experience and FA = Farm activities

Figure 6.17, the second SEM model (**Scenario 2**), presents the relationships of potential agritourist PsyCap, agri-environmental attitude, agri-environmental orientation, knowledge score, agri-environmental concern; agri-environmental sensitivity; behavioural intention and important agritourism attributes. This model illustrates a path from PsyCap to agri-environmental attitude, PsyCap to agri-environmental orientation and agri-environmental attitude to knowledge, which was not present in the conceptual **Scenario 1** model (Figure 6.16).

SEM **Scenario 2** model was evaluated by goodness-of-fit indices to test whether it emulated the sample matrix (Raykov & Marcoulides, 2012:95). Table 6.56 provides the goodness-of-fit indices of the structural **Scenario 2** Model.

Table 6.56: Goodness-of-fit indices of the conceptual structural Scenario 2 Model

Model	CMIN (X2)	df	p	CMIN/df	RMSEA	CFI	IFI	TLI
Goodness-of-fit indices	8035.574	3115	.000	2.580	.055	.814	.815	.806
Acceptable fit	–	–	–	< 3	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.90

Table 6.56 indicates that when the SEM model was fitted to the data, the model could be regarded as an adequate fit the data according to the set of constructs. The RMSEA was good at 0.055 and the CMIN/df value of 2.580 fitted the data under the threshold of < 3 (Schumacker & Lomax, 2004). Although the CFI (0.814), TLI (0.80) and IFI (0.815) were not above 0.9, the generally accepted threshold, as discussed by Lai and Green (2016:233), these models could be considered adequate.

Further evidence can be found in Hu and Bentler (1999:4) who stated that values above 0.8 for parsimony indices can be permissible indices. In addition, Wisting *et al.* (2019:3) were also of the view that an index of >.8 is permissible. Wisting *et al.* (2019:3) suggested the following range of fit index: (CFI) >.95 (good fit), >.90 (traditional fit) and >.8 (sometimes permissible).

Inconsistent fit indices have been found to be common in applications of SEM, and are not diagnostic of problems in model specification or data (Lai & Green, 2016:233).

When considering all the fit indices, the SEM agri-environmental literacy and PsyCap Scenario 2 model was found to be permissible, keeping in mind that the model tested was investigative in nature. Stricter thresholds were applied in the CFA results to ensure validity of the latent constructs used in the SEM. The unstandardised and standardised regression weights for the dependence relationships in the SEM model 2 are presented in Table 6.57.

Table 6.57: Structural parameter estimates: SEM Scenario 2 model

Relationships			Unstandardised regression weights	P	Standardised regression weights
Attitude	<---	PsyCap	.428	***	.411***
KnowledgeScore_perc	<---	Attitude	-2.567	.164	-.067
Orientation	<---	PsyCap	.662	***	.317***
Concern_1	<---	PsyCap	-.035	.456	-.032
Concern_1	<---	Orientation	.197	**	.383***
Concern_1	<---	Attitude	.589	***	.573***
Sensitivity_1	<---	PsyCap	.103	.011	.100*
Sensitivity_1	<---	Orientation	.278	***	.561***
Sensitivity_1	<---	Attitude	.526	***	.531***
Concern_1	<---	Knowledge Score_perc	-.001	.275	-.038
Sensitivity_1	<---	Knowledge Score_perc	.000	.673	-.012
Behavioural intention	<---	Attitude	4.525	***	.637***
Behavioural intention	<---	Orientation	2.100	***	.592***
Behavioural intention	<---	PsyCap	.559	.055	.076
Behavioural intention	<---	Knowledge Score_perc	.000	.940	-.002
FA	<---	Sensitivity_1	.434	***	.331***
FE	<---	Sensitivity_1	.284	***	.291***
FBS	<---	Sensitivity_1	.116	.244	.107
FL	<---	Sensitivity_1	.120	.109	.125
FA	<---	Concern_1	.128	.068	.101
FE	<---	Concern_1	.115	.038	.122*
FBS	<---	Concern_1	.155	.019	.148*
FL	<---	Concern_1	.137	.006	.147**

Relationships			Unstandardised regression weights	P	Standardised regression weights
FL	<---	Behint	.059	***	.443***
FBS	<---	Behint	.049	.003	.327**
FE	<---	Behint	.022	.108	.161
FA	<---	Behint	.030	.087	.162

*** Significant at 0.1% level of significance (p-value < 0.001); ** Significant at 1% level of significance (p-value < 0.01)

* Significant at 5% level of significance (p-value < 0.05);

Table 6.57 indicated the relationships of different constructs in the SEM **agri-environmental literacy** and PsyCap **Scenario 2** model. The results indicate the following statistical and non-statistically significant relationships, as presented below. (The beta value is the standardised regression weight of each relationship.)

The relationships between PsyCap and attitude ($\beta = 0.411$; $p < 0.001$) and between PsyCap and orientation ($\beta = 0.317$; $p < 0.001$) were positive and of moderate strength. The relationship between PsyCap and agri-environmental sensitivity was weak ($\beta = 0.100$, $p < 0.05$). No statistically significant relationship was found between PsyCap with agri-environmental concern ($\beta = -0.032$; $p = 0.456$) and PsyCap with behavioural intention ($\beta = 0.076$, $p = 0.055$).

No statistically significant relationships were found between the knowledge score and agri-environmental concern ($\beta = -0.032$; $p = 0.275$), knowledge score and agri-environmental sensitivity ($\beta = -0.012$; $p = 0.673$), and between knowledge score and behavioural Intention ($\beta = -0.002$; $p = 0.940$). The relationship of agri-environmental attitude with agri-environmental concern ($\beta = 0.573$; $p < 0.001$); agri-environmental attitude and agri-environmental sensitivity ($\beta = 0.531$; $p < 0.001$); agri-environmental attitude and behavioural intention ($\beta = 0.637$; $p < 0.001$); were positive, strong and highly statistically significant. No significant relationship was found between agri-environmental attitude and knowledge score ($\beta = -0.067$; $p = 0.164$). The relationship between agri-environmental orientation and agri-environmental concern ($\beta = 0.383$; p < 0.001) was positive and moderate. Agri-environmental orientation had a positive

strong relationship with agri-environmental sensitivity (β = 0.561; $p < 0.001$), and a positive strong relationship with behavioural intention (β = 0.592; $p < 0.001$).

Behavioural intention had a positive moderate relationship with farm landscape (β = 0.443; $p < 0.001$) and a positive moderate relationship with farm basic services (β = 0.327; $p < 0.01$). No statistically significant relationship was found between behavioural intention with farm experience (β = 0.161; $p = 0.108$); and farm activities (β = 0.162, $p = 0.087$) respectively. Agri-environmental concern had a positive weak relationship with farm experience (β = 0.122; $p < 0.05$), farm basic services (β = 0.148; $p < 0.05$) and farm landscape (β = 0.147; $p < 0.01$). No statistically significant relationship was found between agri-environmental concern and farm activities (β = 0.101; $p = 0.068$).

The relationships of agri-environmental sensitivity with farm activities (β = 0.331; $p < 0.001$) and farm experience (β = 0.291; $p < 0.001$) were positive, moderate and weak respectively. No statistically significant relationship was found between agri-environmental sensitivity and farm basic services (β = 0.107; $p = 0.244$) and farm landscape (β = 0.125; $p = 0.109$). The relationships indicated in SEM agri-environmental literacy and PsyCap **Scenario 2** model (Figure 6.17) were therefore, interpreted and represented the research hypothesis that was set for building the model. The research hypotheses (H_1-H_{13}) presented in Table 4.12, were further evaluated.

The null hypothesis was rejected when the relationship was statistically significant (Saunders *et al.*, 2019:537). Table 6.58 provides the results of the structural model hypotheses (H_1-H_{13}).

Table 6.58:   Results of the structural model hypotheses of conceptual Model 2

	Null hypothesis			Outcome (Null hypothesis)
H_{11}	Attitude	<---	PsyCap	Rejected
H_{13}	KnowledgeScore_perc	<---	Attitude	Not rejected
H_{12}	Orientation	<---	PsyCap	Rejected
H_5	Concern_1	<---	PsyCap	Not rejected
H_{3b}	Concern_1	<---	Orientation	Rejected
H_{3c}	Concern_1	<---	Attitude	Rejected
H_6	Sensitivity_1	<---	PsyCap	Rejected
H_{4b}	Sensitivity_1	<---	Orientation	Rejected
H_{4c}	Sensitivity_1	<---	Attitude	Rejected
H_{3a}	Concern_1	<---	Knowledge Score_perc	Not rejected
H_{4a}	Sensitivity_1	<---	Knowledge Score_perc	Not rejected
H_{1c}	Behavioural intention	<---	Attitude	Rejected
H_{1b}	Behavioural intention	<---	Orientation	Rejected
H_2	Behavioural intention	<---	PsyCap	Not rejected
H_{1a}	Behavioural intention	<---	Knowledge Score_perc	Not rejected
H_{7b}	FA	<---	Sensitivity_1	Rejected
H_{7a}	FE	<---	Sensitivity_1	Rejected
H_{7d}	FBS	<---	Sensitivity_1	Not rejected
H_{7c}	FL	<---	Sensitivity_1	Not rejected
H_{8b}	FA	<---	Concern_1	Not rejected
H_{8a}	FE	<---	Concern_1	Rejected
H_{8d}	FBS	<---	Concern_1	Rejected
H_{8c}	FL	<---	Concern_1	Rejected
H_{9c}	FL	<---	Behint	Rejected
H_{9d}	FBS	<---	Behint	Rejected

	Null hypothesis			Outcome (Null hypothesis)
H_{9a}	FE	<---	Behint	Not rejected
H_{9b}	FA	<---	Behint	Not rejected

The results of the structural **Scenario 2** hypotheses, as reported in Table 6.58, provided the outcome of the null hypothesis for the second conceptual model. The main findings regarding the structural model hypotheses of the second model are summarised below.

- For the relationship of agri-environmental orientation between agri-environmental concern, agri-environmental sensitivity PsyCap and behavioural intention, the structural path estimates were statistically significant. The null hypothesis regarding the relationships between agri-environmental orientation and agri-environmental concern, agri-environmental sensitivity, PsyCap, and behavioural intention (H_{1b}, H_{3b}, H_{4b}) was consequently rejected.

    - H_{3b}: agri-environmental orientation is related to agri-environmental concern;

    - H_{4b}: agri-environmental orientation is related to agri-environmental sensitivity and

    - H_{1b}: agri-environmental orientation is related to behavioural intention.

- The structural path estimates for the relationship between agri-environmental attitude and agri-environmental concern, agri-environmental sensitivity, and behavioural intention were statistically significant. The null hypotheses regarding the relationships between agri-environmental attitude, agri-environmental concern, agri-environmental attitude and agri-environmental sensitivity, and agri-environmental attitude and behavioural intention, the null hypotheses for $H_{1c;}$ H_{3c} and H_{4c} were rejected.

    - H_{3c}: agri-environmental attitude is related to agri-environmental concern;

    - H_{4c}: agri-environmental attitude is related to agri-environmental sensitivity and

- o H_{1c}:   agri-environmental attitude is related to behavioural intention.

- The structural path estimates for the relationship between PsyCap and agri-environmental attitude, orientation and behavioural intention, were statistically significant. The hypotheses regarding the relationships between PsyCap, agri-environmental attitude, orientation and behavioural intention (H_{11} & H_{12}) were rejected:

    - o H_{11}:   PsyCap is related to agri-environmental attitude;

    - o H_{12}:   PsyCap is related to agri-environmental orientation.

The structural path estimates for the relationship between agri-environmental sensitivity and farm activities (FA), agri-environmental sensitivity and farm experience (FE), as well as agri-environmental sensitivity and farm landscape (FL) ($H8a$-$H8c$) were statistically significant. Consequently, the null hypothesis regarding the relationships between agri-environmental sensitivity with FA, FE and FL (H_{7a}-H_{7b}) were rejected.

    - o H_{7a}:   agri-environmental sensitivity is related to farm experience;

    - o H_{7b}:   agri-environmental sensitivity is related to farm activities.

- The structural path estimates for the relationship between agri-environmental concern and farm activities, agri-environmental concern and farm experience, as well as agri-environmental concern and farm landscape were statistically significant. The null hypotheses regarding the relationships between agri-environmental concern with FA, FE and FL (H_{8a},H_{8c}-H_{8D}) was consequently rejected.

    - o H_{8a}:   agri-environmental concern is related to farm experience;

    - o H_{8d}:   agri-environmental concern is related to farm basic services; and

    - o H_{8c}:   agri-environmental concern is related to farm landscape.

- The structural path estimates for the relationship between behavioural intention and farm landscape (FL) (H_{10c}), behavioural intention and farm basic services (FBS) (H_{10d}), were statistically significant. The null hypothesis regarding the relationship between behavioural intention with FL (H_{9c}-H_{9d}) was consequently rejected.

- o H$_{9c}$: agri-environmental behavioural intention is related to farm landscape a

- o H$_{9d}$: agri-environmental behavioural intention is related to farm basic services.

Given the exploratory nature of the tested conceptual agri-environmental literacy and PsyCap model for agritourism (Scenario 2), potential mediation effects were also explored in the SEM model and the results are presented next.

6.13 MEDIATING EFFECT OF ATTITUDE, ORIENTATION, CONCERN, BEHAVIOURAL INTENTION AND SENSITIVITY IN THE SCENARIO 2 SEM MODEL

The purpose of testing for mediation in the current study was to determine the underlying mechanism of the association between various variables within the Scenario 2 agri-environmental literacy and PsyCap for agritourism SEM model (Zhu *et al.*, 2020). Mediation is found where the effect of one independent variable on a dependent variable can best be explained by using a third mediator variable, which is caused by the independent variable and is itself a cause of the dependent variable (Hayes, 2017:7). In other words, instead of X directly causing Y, X is causing the mediator M, and M, in turn, is causing Y. In this case, X and Y were causally related indirectly. The following relationships tested were:

- Attitude is a mediator in the relationship between psycap and behavioural intention;

- Attitude is a mediator in the relationship between PsyCap and agri-environmental concern; and

- Attitude is a mediator in the relationship between PsyCap and agri-environmental sensitivity.

The bias-corrected percentile method (Rijnhart *et al.*, 2021:14-15) is used to assess whether a mediation effect exists.

The structural parameter estimates concerning attitude as a mediator between PsyCap and behavioural intention, agri-environmental concern and agri-environmental sensitivity are presented in Table 6.59.

Table 6.59: Structural parameter estimates: attitude as a mediator between PsyCap and behavioural intention, concern and sensitivity

Relationships			Standardised indirect effect	Lower (lower-level confidence interval)	Upper (upper-level confidence interval)	p-value
PsyCap	→	Behavioural intention	0.416	0.330	0.528	0.004
PsyCap	→	Concern	0.339	0.269	0.423	0.007
PsyCap	→	Sensitivity	0.359	0.288	0.453	0.005

The results reported in Table 6.59 above provide a summary of the mediating effect of attitude in the relationship between:

- PsyCap and behavioural intention;
- PsyCap and agri-environmental concern; and
- PsyCap and agri-environmental sensitivity.

As illustrated in Table 6.59, the standardised indirect effects were statistically significant ($p < 0.01$) for behavioural intention, agri-environmental concern and agri-environmental sensitivity, also evident from the confidence intervals that do not include 0. Attitude is thus a mediator between PsyCap and behavioural intention, PsyCap and agri-environmental concern, and PsyCap and sensitivity. Attitude towards the environment has been associated with PEB (Biswas, 2020:5925).

Agritourism operators can therefore increase awareness of agritourism benefits amongst agritourists. By doing so, agritourists will become aware of their positive contribution when participating in agritourism. For example, participating in agritourism activities increases the revenue of family farms and the on-farm sales of agricultural products (Brune, 2020:1). In the long run, agritourism will promote the sustainability of a farm by attracting agritourists who have a positive agri-environmental attitude, which will be beneficial because of their behaviour, agri-environmental concern and agri-environmental sensitivity towards the farm environment.

The following relationships were tested:

- Orientation is a mediator in the relationship between PsyCap and behavioural intention;

- Orientation is a mediator in the relationship between PsyCap and agri-environmental concern; and

- Orientation is a mediator in the relationship between PsyCap and agri-environmental sensitivity.

The results of the bias-corrected percentile method used to assess whether a mediation effect existed is reported in Table 6.60.

Table 6.60:   Structural parameter estimates: orientation as a mediator between PsyCap and behavioural intention, concern and sensitivity

Relationships			Standardised indirect effect	Lower (lower-level confidence interval)	Upper (upper-level confidence interval)	p-value
PsyCap	→	Behavioural intention	0.293	0.227	0.368	0.011
	→	Concern	0.239	0.189	0.301	0.009
	→	Sensitivity	0.260	0.199	0.320	0.013

The results reported in Table 6.60 provided a summary of the mediating effect of orientation in the relationship between:

- PsyCap and behavioural intention;

- PsyCap and agri-environmental concern and

- PsyCap and agri-environmental sensitivity.

As illustrated in Table 6.60, the standardised indirect effects were statistically significant for behavioural intention ($p < 0.05$), agri-environmental concern ($p < 0.01$) and agri-environmental sensitivity ($p < 0.05$), also evident from the confidence intervals that do not include 0. Orientation is thus a mediator between PsyCap and behavioural intention, PsyCap and agri-environmental concern, and PsyCap and agri-environmental sensitivity.

For the sustainable development of agritourism, it is essential to have responsible visitors who are pro-agri-environmentally orientated. It is critical for destination management to understand agritourists' environmental orientation. Because of this understanding, destination planners could use the information beneficial to design,

develop, and position appropriate cues to create the best interaction between agritourists and the available agritourism products and services.

A further set of relationships tested involved the following:

- Agri-environmental concern is a mediator in the relationship between PsyCap and farm landscape;

- Agri-environmental concern is a mediator in the relationship between PsyCap and farm basic services;

- Agri-environmental concern is a mediator in the relationship between PsyCap and farm experience; and

- Agri-environmental concern is a mediator in the relationship between PsyCap and farm activities.

The results of the bias-corrected percentile method after testing whether the mediation effect exists, are presented in Table 6.61.

Table 6.61: **Structural parameter estimates: concern as a mediator between PsyCap and farm landscape, farm basic services, farm experience and farm activities**

Relationships			Standardised indirect effect	Lower (lower-level confidence interval)	Upper (upper-level confidence interval)	p-value
PsyCap	→	Farm landscape	0.178	0.124	0.239	0.009
	→	Farm basic services	0.150	0.107	0.214	0.006
	→	Farm experience	0.143	0.098	0.202	0.005
	→	Farm activities	0.143	0.102	0.191	0.008

The results reported in Table 6.61 provided a summary of the mediating effect of agri-environmental concern in the relationship between:

- Psychological capital and farm landscape;

- Psychological capital and farm basic services;

- Psychological capital and farm experience, as well as

- Psychological capital and farm activities.

As illustrated in Table 6.61, the standardised indirect effects were statistically significant ($p < 0.01$) for farm landscape, farm basic services, farm experience and farm activities, also evident from the confidence intervals that do not include 0. Agri-environmental concern is thus a mediator between PsyCap and farm landscape, PsyCap and farm basic services, PsyCap and farm experience, and PsyCap and farm activities.

In addition to generating on-farm jobs for family members, agritourism provides farmers the opportunity for income diversification. It is thus a motivation to protect agricultural landscapes and their cultural and environmental assets to preserve the area for future benefit. A lack of concern about agritourism could therefore affect the agri-environment negatively. It thus becomes vital to align the agritourism marketing and promotion material with the farm environment.

The benefits received from agritourism should be linking the marketing to the benefits of supply and demand. Consequently, this will raise awareness that will not only benefit agritourists who participate in agritourism but also the farm and the local community at large.

The following relationships were also tested for mediation:

- Agri-environmental sensitivity is a mediator in the relationship between PsyCap and farm landscape;

- Agri-environmental sensitivity is a mediator in the relationship between PsyCap and farm basic services;

- Agri-environmental sensitivity is a mediator in the relationship between PsyCap and farm experience; and

- Agri-environmental sensitivity is a mediator in the relationship between PsyCap and farm activities.

The results of the bias-corrected percentile method after testing whether the mediation effect exists, are presented in Table 6.62.

Table 6.62: Structural parameter estimates: agri-environmental sensitivity as a mediator between PsyCap and farm landscape, farm basic services, farm experience and farm activities

Relationships			Standardised indirect effect	Lower (lower-level confidence interval)	Upper (upper-level confidence interval)	p-value
PsyCap	→	Farm landscape	0.302	0.240	0.361	0.015
	→	Farm basic services	0.243	0.196	0.312	0.007
	→	Farm experience	0.252	0.200	0.324	0.012
	→	Farm activities	0.271	0.218	0.330	0.012

As illustrated in Table 6.62 a summary of the mediating effect of agri-environmental concern in the relationship between:

- PsyCap and farm landscape;

- PsyCap and farm basic services;

- PsyCap and farm experience and

- PsyCap and farm activities.

As illustrated in Table 6.62, the standardised indirect effects were statistically significant ($p < 0.05$) for farm landscape, farm basic services ($p < 0.01$), farm experience ($p < 0.05$) and farm activities ($p < 0.05$), also evident from the confidence intervals that do not include 0. Agri-environmental sensitivity thus plays a significant role in mediating the relationships between PsyCap and farm landscape, PsyCap and farm basic services, PsyCap and farm experience, and PsyCap and farm activities.

Based on these mediating relationships, agritourism marketing and promotion could strategically focus on agritourism benefits and the importance of sensitive behaviour towards maintaining agritourism and the farm environment. Emphasising the privilege of enjoying the farm is therefore centred on responsible behaviour and consumption of it. The following relationships were also tested for mediation:

- Behavioural intention is a mediator in the relationship between attitude and farm landscape;

- Behavioural intention is a mediator in the relationship between attitude and farm basic services;

- Behavioural intention is a mediator in the relationship between attitude and farm experience; and

- Behavioural intention is a mediator in the relationship between attitude and farm activities.

The results of the bias-corrected percentile method that is used to assess whether a mediation effect exists, are presented in Table 6.63.

Table 6.63: **Structural parameter estimates: behavioural intention as a mediator between attitude and farm landscape, farm basic services, farm experience and farm activities**

Relationships			Standardised indirect effect	Lower (lower-level confidence interval)	Upper (upper-level confidence interval)	p-value
Attitude	Behavioural intention	Farm landscape	0.446	0.390	0.548	0.009
Attitude	Behavioural intention	Farm basic services	0.385	0.283	0.478	0.012
Attitude	Behavioural intention	Farm experience	0.359	0.273	0.438	0.016
Attitude	Behavioural intention	Farm activities	0.373	0.290	0.450	0.012

Table 6.63 presents a summary of the mediating effect of behavioural intention in the relationship between: 1) attitude and farm landscape; 2) attitude and farm basic services; 3) attitude and farm experience; and 4) attitude and farm activities.

As illustrated in Table 6.63, the standardised indirect effects were statistically significant ($p < 0.01$) for farm landscape, farm basic services ($p < 0.05$), farm experience ($p < 0.05$) and farm activities ($p < 0.05$), also evident from the confidence intervals that do not include 0. Behavioural intention thus plays a significant role in mediating the relationship between attitude and farm landscape, attitude and farm basic services, attitude and farm experience, and attitude and farm activities.

In this section, the study presents and interprets the results of the second conceptual model, referred to as 'Scenario 2: the agri-environmental literacy and PsyCap Model

for agritourism'. The focus is on exploring the relationships between key variables including agri-literacy, Psychological Capital (PsyCap), behavioural intention, and underlying agri-environmental attitudes towards engaging in agritourism. The hypotheses formulated for this study are tested within this model, and the goodness-of-fit indices indicate that the model provides an adequate fit to the data.

The results illustrate the complex web of relationships within the model, highlighting the interplay between various constructs. Notable findings include:

- Attitude and orientation as mediators: The results demonstrate that attitude plays a mediating role in several relationships. It acts as a mediator between PsyCap and behavioural intention, PsyCap and agri-environmental concern, and PsyCap and agri-environmental sensitivity. Additionally, orientation also serves as a mediator between PsyCap and behavioural intention, PsyCap and agri-environmental concern, and PsyCap and agri-environmental sensitivity. These findings suggest that cultivating positive agri-environmental attitudes and orientations can enhance the behavioural intention and awareness of agri-environmental concerns and agri-environmental sensitivities within the context of agritourism.

- Agri-environmental concern and agri-environmental sensitivity as mediators: The study reveals that agri-environmental concern and agri-environmental sensitivity mediate the relationship between PsyCap and various aspects of the agritourism experience, such as farm landscape, farm basic services, farm experience, and farm activities. This suggests that addressing agri-environmental concerns and promoting a heightened agri-environmental sensitivity among agritourists can lead to more responsible and sustainable behaviours during their agritourism visits, benefiting both the farm environment and the local community.

- Behavioural intention as a mediator: The results highlight that behavioural intention acts as a mediator between attitude and various agritourism attributes, including farm landscape, farm basic services, farm experience, and farm activities. This suggests that fostering positive agri-environmental attitudes can influence behavioural intentions, leading to more favourable attitudes towards specific agritourism aspects. This insight can be valuable for marketers and developers aiming to align their offerings with agritourists' environmental attitudes.

The study's emphasis on mediation effects provides a nuanced understanding of the mechanisms through which various factors interact to influence agritourists' attitudes and behaviours. By identifying these mediating relationships, the study provides valuable insights for the development and promotion of sustainable agritourism practices. The integration of environmental literacy variables further strengthens the foundation for creating responsible and ecologically mindful agritourism experiences.

The study underscores the importance of considering these interrelationships when designing agritourism products and marketing strategies, with a focus on enhancing agri-environmental awareness, attitudes, and intentions among potential agritourists. By leveraging these insights, agritourism stakeholders can contribute to the broader goals of sustainable development, while fostering a positive relationship between agritourists, the farm environment, and the local community.

6.14 CONCLUSION

The results of the current study are arranged and presented according to three stages. The first stage of the data analysis (Figure 6.1) presented descriptive statistics in Chapter 5. Factor analysis (Stage 2) and SEM results were presented in Chapters 6. Chapter 6 therefore linked to Secondary research objectives 3 to 6 of this study, namely:

- To determine the respondent's biographic information, agri-environmental literacy, PsyCap, and important agritourism attributes (Objective 3).

- To develop and test the conceptual agri-literacy and PsyCap models for agritourism through structural equation modelling (Objective 4).

- To determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, concern, and sensitivity (Objective 5).

- To determine whether behavioural intention, concern, and sensitivity have a mediating effect on the relationship between PsyCap and agritourism attributes (Objective 6).

This chapter also discussed the results of the two-factor analyses (confirmatory and exploratory) conducted on various sections of the questionnaire. It provided information about the construct validity and reliability of the questionnaire due to the

good reliability indicated by all Cronbach's alpha coefficients in Sections 6.2 to 6.8. As outlined in Chapter 3, the two conceptual models were tested empirically, and the results were reported in the current chapter (Stage 3 of the data analysis in Figure 6.1). As a multivariate data analysis technique, SEM was applied, and these results were also reported in Chapter 6.

Figure 6.15 presented the conceptual **Scenario 1** model developed from the agri-literacy, PsyCap, and agritourism literature (refer to Figure 3.1). This model was studied to understand agri-environmental literacy (knowledge, orientation, and attitude) and the PsyCap effect on potential agritourists' behavioural intentions, and their consideration of important attributes that pertain to choosing an agritourism establishment.

In the conceptual **Scenario 1** model (behavioural intention between agri-environmental knowledge, orientation, attitude, PsyCap, concern, sensitivity and agritourism attributes), the goodness-of-fit indices indicated an acceptable RMSEA value (0.068). However, CFI (0.618), TLI (0.609) and IFI (0.619) were far below 0.90, indicating that the model fit was not adequate.

The **Scenario 2** model represented the relationship between behavioural intention and PsyCap agri-environmental knowledge, orientation, attitude, concern, sensitivity, and agritourism attributes. Model 2 (Figure 6.16) provided an adequate fit (the RMSEA value indicated a good fit [0.055], the CFI, TLI and CFI values were slightly below 0.90).

Due to the investigative nature of the current study, the study investigated the mediating effects on various relationships. Mediation was tested to determine the underlying mechanism of the association between various variables within SEM model 2 (Section 6.12). The results indicated that the following aspects need to be considered in the development and marketing of agritourism: agritourists' PsyCap, agri-environmental attitude, orientation, behavioural intention, as well as the farm landscape and basic services, as they all play a role in the choice of a farm holiday.

The results indicated that agri-literacy and PsyCap played a role towards potential agritourists' important agritourism attributes. The conclusions and recommendations for agri-environmental literacy and the PsyCap model for agritourism, limitations of the study, and recommendations for future research are discussed in Chapter 7.

CHAPTER 7:
DISCUSSION, INTERPRETATION OF RESULTS, CONCLUSION AND RECOMMENDATIONS

7.1   OVERVIEW OF THE STUDY PROCESS

As an economic sector and an activity, tourism has flourished through the years despite the continuous challenges faced by the global economy (UN-WTO, 2019:1). Global development in both developing and developed countries is supported by growth in the tourism sector, as is the case in South Africa (Cooper, 2020:4; WTTC, 2020:3). Globally and locally, it is the domestic tourism markets that sustain and assist sought-after global tourist destinations and their continued promotion (NDT, 2022:3).

Following the COVID-19 pandemic, there is a renewed focus on local tourism, and developing and promoting the tourist sector, both locally and internationally (NDT, 2022:2; UNWTO, 2020:1). South African domestic tourism faced a number of challenges prior to COVID-19, including a lack of marketing and promotion, product development, and information availability and distribution; and the existing products did not meet the needs of certain segments of the market (NDT, 2011-2020:15; NDT, 2022:23). However, domestic tourism in South Africa can be successfully developed through marketing, promotion, increased awareness, and the dissemination of information (NTSS 2016-2026, 2017:20; NDT, 2022:24). Research is necessary to develop and tailor agritourism experiences according to agritourist preferences and to effectively market them to the intended target market. Therefore, it is important to conduct research to comprehend the specific needs and interests of agritourists.

One of the niche tourism offerings that has the potential to rethink, reinvent, reignite, and revive domestic tourism, is agritourism (NDT, 2022:89). A key aspect of niche tourism is rural tourism, which is grounded in local agricultural and sustainable practices (Robinson & Novelli, 2007:1). There are a variety of macro-niche tourism activities available, such as sports, adventures, cultural, and heritage activities. These can be further divided into micro-niches, such as farm tourism, walking safaris, eco-tourism, slum tours, and extreme sports (Novelli, 2022).

Agritourism is emerging as a prominent form of niche tourism that is characterised by sustainability, small and homogeneous tourist groups, and product differentiation

(Sorea & Csesznek, 2020). The continued growth of agritourism has allowed it to emerge as an alternative economic activity for farmers, as evidenced by the research studies done by Arroyo *et al.* (2013) in Missouri and North Carolina. Moreover, agritourism promotes the adoption of sustainable farming practices, such as the protection of biodiversity on farms (Dangol & Ranabhat, 2007).

Although tourism growth is an important component of the socio-economic improvement of host destinations, it can also be associated with environmental degradation due to mass tourism (Kyara *et al.*, 2022:1). Rapid development of tourism has been associated with consequences related to continuous economic growth without consideration for environmental sustainability, which has caused concern amongst different tourism stakeholders in the industry (Ammirato *et al.*, 2013:295). Therefore, the sustainable development of tourism requires that economic growth must be balanced with the economic, social, and environmental sustainability sphere (Kim *et al.*, 2019).

Urbanisation and the intense rhythm of city life have led to rural green tourism becoming popular, and the increasing need for individuals to be with nature (Dziamulych *et al.*, 2021:260). Agritourism has thus received recognition as one of niche tourism products that could balance the needs of people, planet, and prosperity on earth (Bhatta & Ohe, 2020:23). Both developing and developed economies turn to agritourism due to a growing interest in agriculture among tourists and the importance of the agricultural sector (Sznajder *et al.*, 2009). South African domestic tourism could be reshaped, reinvented, rekindled and revitalised through agritourism (NDT, 2022:89).

The aim of the current study was to develop a comprehensive model integrating agri-environmental literacy and Psychological Capital (PsyCap), specifically tailored for agritourism. This model aims to be a valuable tool for providers in the agritourism sector, providing valuable insights into both product development and successful marketing strategies. The goal is to synchronise agritourism offerings and marketing efforts with the specific needs of agritourists.

The size of the global agritourism market by 2028 is projected to reach $10.7 billion, growing at a compound annual growth rate (CAGR) of 10.7% over the forecast period (Anil & Roshan, 2022:1). At an international level, the growth is evident, although at

the local level, the agritourism market share and prediction have not yet been recorded and reported in such detail in South Africa (Fourie, 2014; Meyer & De Crom, 2013; Mguni, 2010; Rogerson & Rogerson, 2014; Van Niekerk, 2013).

The agritourism literature has mostly focused on the provider's perspective, examining topics, such as entrepreneurship, farm business diversification, farmers' perspectives, and farm providers' motivations for diversifying into agritourism. It then follows on that the critical success factors (CSFs) of agritourism have also been explored to identify key drivers for success in agritourism (Chase *et al.*, 2019; Comen, 2017; Fatmawati *et al.*, 2021; Kumbhar, 2020). Some of the CSFs that have been identified in the literature are the development of agritourism products, education of farmers, funding, and marketing, as well as collaboration and partnerships (Baipai *et al.*, 2022:617).

The following question needs to be asked: In order to ensure that the resulting agritourism products are aligned with the specific needs and requirements of the potential agritourist market and the effective marketing of agritourism, what are the important agritourism attributes that would motivate potential agritourists to visit an agritourism farm?

Two conceptual models, the agri-environmental literacy and PsyCap model for agritourism in **Scenario 1** and **Scenario 2** were developed during the study (Chapter 3) to recommend an agritourism model for the development and marketing of agritourism products. Relevant research into the important agritourism attributes, agri-environmental literacy and PsyCap of potential agritourists, or gaining a better understanding thereof, can address the gap that was identified as the reason for the research this study is based upon.

The current study aimed to develop a comprehensive model integrating agri-environmental literacy and PsyCap, specifically tailored for agritourism. This model is intended to serve as a valuable resource for agritourism service providers, offering insights for product development and effective marketing strategies within the agritourism domain. In so doing, to align the agritourism offering and marketing with agritourists' needs.

The current study therefore focused on agritourists by investigating important attributes that would motivate potential agritourists to visit an agritourism farm, the relationships between agri-environmental literacy, PsyCap and behavioural intention

of potential agritourists. Therefore, uncover the above-mentioned relationships in order to develop and recommend an agri-environmental literacy and PsyCap model to develop and market agritourism in South Africa.

To address the purpose of the study, a flow diagram is presented in Figure 7.1 to summarise the study process.

PRIMARY OBJECTIVES

SECONDARY OBJECTIVES

CHAPTERS

METHODOLOGICAL PROCEDURE

DISCUSSION, INTERPRETATION OF RESULTS, CONCLUSION AND RECOMMENDATIONS

To develop an agri-environment literacy and PsyCap model for agritourism market potential

To Conceptualise agri-environment literacy , behavioural intention and agritourism attributes from existing literature

Explore the relationships between agri-environment literacy , PsyCap, behavioural intention, and agritourism attributes from existing literature;

Determine the respondents biographic information, agri-environment literacy, PsyCap, and important agritourism attributes;

Develop and test the conceptual agri-environment literacy and PsyCap models (Scenario 1 & Scenario 2) for agritourism through structural equation modelling;

Determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, concern, and sensitivity;

Determine whether behavioural intention, concern, and sensitivity have a mediating effect on the relationship between PsyCap and agritourism attributes; and

Draw conclusions from and to make recommendations based on the results of the study

CHAPTER 2

CHAPTER 3

CHAPTER 5

CHAPTER 6

CHAPTER 7

CHAPTER 4

Phase 1:

Literature review agritourism, environmental literacy and PsyCap

Phase 2:

Develop an agri-environment and PsyCap model Scenario 1 and Scenario 2 for agritourism

Phase 3:

Empirical analysis of agri-environment literacy PsyCap and agritourism

CHAPTER 7

Phase 1: Summary and conclusions of literature review: agri-environment, PsyCap and agritourism model concepts

Empirical findings

Descriptive statistics:

Phase 2: Biographic information of potential agri-tourist

Phase 3: Empirical analysis of agri-environment literacy, psycap and agritourism model concepts

Phase 3: Empirical analysis of agri-environment literacy, psycap and agritourism model concepts

Phase 4: Summary of results and conclusions: structural equation modelling (SEM)

Phase 5: Summary of results and conclusions: mediating effect of attitude, orientation, concern, behavioural intention, and sensitivity in the second SEM model

Phase 6: Evaluation and contributions of the study

Figure 7.1:   Overview of the study process

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As illustrated in Figure 7.1, the primary objective of the study was to develop an agri-environmental literacy and PsyCap model for agritourism. To achieve this objective, seven secondary objectives were formulated and operationalised by the methodological procedure applied in this study (Section 1.3).

The methodological procedure (detailed in Chapter 4) was executed in three phases as discussed below.

Phase 1 which was related to the first and second secondary research objective: *To conceptualise agri-environmental literacy, behavioural intention, PsyCap, and agritourism attributes*, included a literature review (Chapter 2); *To explore the relationships between agri-environmental literacy, PsyCap, behavioural intention, and agritourism attributes from existing literature*. A variety of sources were used to explore agri-environmental literacy, which is understood as the culmination of knowledge, attitudes, orientation, behavioural intention, concern and sensitivity. To address the research question, extant literature on agritourism and PsyCap was consulted to conceptualise the constructs applied in this study, namely, agri-environmental orientation, agri-environmental attitude, behavioural intention, agri-environmental concern, agri-environmental sensitivity, and agri-environmental knowledge, which achieved Secondary research objective 1 and 2 (Chapter 2).

Phase 2 achieved the fourth secondary research objective: *To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling* (Section 3.1). This was achieved by the development of two agri-environmental literacy and PsyCap conceptual models for agritourism **Scenario 1** and **Scenario 2,** based on the literature review performed in Phase 1. The development of these two conceptual models was discussed in Chapter 3 (Figures 3.1 and 3.2) and contributed to the body of knowledge in the tourism management field.

Phase 3 (Chapters 5 and 6) of the study was of an empirical nature. An online survey utilising an online panel was used to collect primary data. Data were obtained from 543 potential agritourists residing in Gauteng. A purposive panel sample was drawn for the current study. This method was considered the most economical, convenient, and relevant sampling technique, as it suited the requirements for gaining access to the target population (potential agritourists) during the COVID-19 national lockdown.

A link to an online survey was sent to qualifying respondents, as potential agritourists residing in Gauteng, to obtain data on the following nine key areas:

1. Biographic information;

2. Agri-environmental orientation;

3. Agri-environmental and agritourism knowledge;

4. Attitudes towards nature, the environment, and farming;

5. Behavioural intention towards the agri-natural environment and agritourism;

6. Agri-environmental concern;

7. Agri-environmental sensitivity;

8. Psycap towards overall life; and

9. The attributes of agritourism.

Data were analysed using descriptive statistics and the multivariate statistical methods, EFA, CFA and SEM (Figure 5.1). The descriptive statistics (Chapter 5, Sections 5.2 to 5.3) provided information on the demographic profile of a potential agritourist residing in Gauteng and their agri-environmental literacy, PsyCap, and important agritourism attributes, which realised the third secondary objective: *To determine the respondents' biographic information, agri-environmental literacy, PsyCap, and important agritourism attributes.*

SEM was applied to determine the directional relationships between the constructs and variables used in this study (Figure 7.1). **Phase 4** relates to the fourth secondary research objective, namely: *To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling* (Section 6.10). This was achieved when the two conceptual agri-environmental literacy and PsyCap models for agritourism **Scenario 1** and **Scenario 2** were tested empirically, which resulted in the selection of the final model (Figure 7.4).

Considering the exploratory nature of the conceptual agri-environmental literacy and PsyCap model for agritourism **Scenario 2**, potential mediation effects (**Phase 5**) were explored, which achieved Secondary objectives 5 and 6, namely:

To determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, concern, and sensitivity; and

Objective 6: To determine whether behavioural intention, concern, and sensitivity have a mediating effect on the relationship between PsyCap and agritourism attributes (Section 7.5).

Finally, in this chapter, conclusions are drawn, and recommendations are made based on the results of the study, as well as discussions which lead to the achievement of Secondary objective 7, namely: *To draw conclusions from and make recommendations based on the results of the study* (**Phase 6**).

The outline of Chapter 7 is illustrated in Figure 7.2.

7.1. OVERVIEW OF THE STUDY PROCESS

7.2. PHASE 1: SUMMARY OF FINDINGS AND CONCLUSIONS: LITERATURE REVIEW ON AGRI-ENVIRONMENTAL PSYCAP AND AGRITOURISM CONCEPTS PER MODEL

7.2.2   Agritourism as micro-niche of the rural tourism

7.2.3   Environmental literacy in the context of agritourism

7.2.4   Conceptualising psychology, positive psychology and psychological capital in agritourism

7.3. DEVELOPMENT OFCONCEPTUAL AGRI-ENVIRONMENT LITERACY AND PSYCAP MODELS FOR AGRITOURISM

7.4. PHASE 2: BIOGRAPHIC INFORMATION OF A POTENTIAL AGRI-TOURIST

7.5. PHASE 3: EMPIRICAL ANALYSIS OF AGRI-ENVIRONMENTAL AL LITERACY, PRESENTED AS PSYCAP AND AGRITOURISM MODEL CONCEPTS

7.5.1   Agri-environmental orientation of potential agri-tourists towards farming environment and agritourism

7.5.2   Agri-environmental knowledge of potential agri-tourists towards nature, the environment, and farming

7.5.3   Agri-environmental attitude of potential agri-tourists towards nature, the environment, and farming

7.5.4   Behavioural intention of agri-tourists towards nature, the environment, and farming

7.5.5   Agri-environmental concern and sensitivity of agri-tourists towards nature, the environment, and farming

7.5.6   PsyCap of potential agri-tourists towards their overall life

7.5.7   Potential agri-tourists' and agritourism attributes

7.6 PHASE 4: SUMMARY OF RESULTS AND CONCLUSIONS ON STRUCTURAL EQUATION MODELLING (SEM)

7.6.1   Summary of results and conclusions: SEM Model 1

7.6.2   Summary of results and conclusions: SEM Scenario 2

7.6.3. Decisions concerning the research hypotheses

7.7 PHASE 5: SUMMARY OF RESULTS AND CONCLUSIONS: MEDIATING EFFECT OF ATTITUDE, ORIENTATION, CONCERN, BEHAVIOURAL INTENTION, AND SENSITIVITY IN THE SECOND SEM MODEL

7.8 PHASE 6: EVALUATIONS AND CONTRIBUTIONS OF THE STUDY

7.8.1. Value added at a theoretical level

7.8.2. Value added at an empirical level

7.8.3. Value added at a practical level

7.9 LIMITATIONS OF THE STUDY

7.10 RECOMMENDATIONS FOR FUTURE RESEARCH
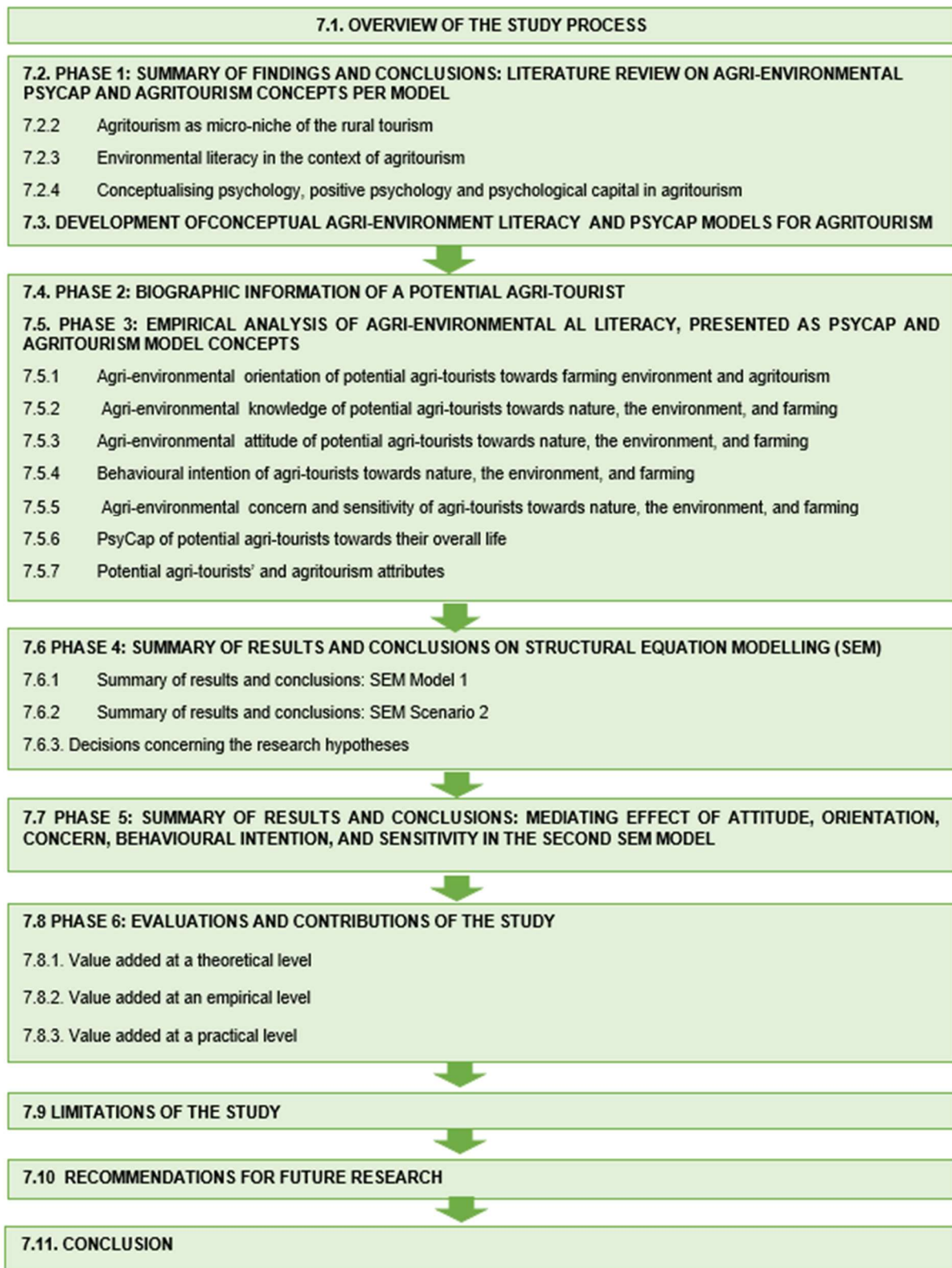
7.11. CONCLUSION

Figure 7.2:   Outline of the chapter

7.2 PHASE 1: SUMMARY OF FINDINGS AND CONCLUSIONS: LITERATURE REVIEW OF AGRI-ENVIRONMENTAL PSYCAP AND AGRITOURISM CONCEPTS PER MODEL

Phase 1 (Chapter 2) of the study included a discussion of the body of knowledge on agritourism, environmental literacy (orientation, knowledge, attitude, sensitivity and concern) and PsyCap. These concepts were further conceptualised within the agritourism context, and resulted in the development of two conceptual models, the agri-environmental literacy and PsyCap model for agritourism **Scenario 1** and **Scenario 2** (Chapter 3).

Various possible relationships that might influence pro-behavioural intention, agri-environmental sensitivity, agri-environmental concern, and the agritourism attributes determining agritourism choice were identified and discussed in Chapters 2 and 3. This linked to the first, second and third secondary objectives of the current study (Section 1.3).

- Objective 1: *To conceptualise agri-environmental literacy, PsyCap, behavioural intention, and agritourism attributes from existing literature.*

- Objective 2*: To explore the relationships between agri-environmental literacy, PsyCap, behavioural intention, and agritourism attributes from existing literature.*

- Objective 3: *To determine the respondents' biographic information, agri-environmental literacy, PsyCap, and important agritourism attributes.*

The above proved valuable to understand the potential agritourism market and to contribute to the gap identified in the secondary literature.

7.2.1 Introduction

This section outlines the conclusions that were drawn from the literature review. Section 7.2.2 summarises the main conclusions relating to the literature review on agritourism, agri-environmental literacy and PsyCap.

7.2.2 Agritourism as micro-niche of the rural tourism

Agritourism is a niche form of tourism that caters to specific market segments that have unique interests and needs (refer to Section 2.2). Niche tourism has emerged as

an alternative to mass tourism, which typically offers standardised leisure services to a broad audience. Niche tourism focuses on tailoring products and services to meet the specialised needs of market segments. These niche markets can be further divided into micro-niches, such as geo-tourism, gastronomy tourism and agritourism.

Agritourism provides diverse solutions to the socio-economic issues confronting local communities The continuous growth of agritourism in recent years and its promising potential have facilitated recognition of this niche tourism as an alternative economic activity, especially among farmers (Arroyo *et al.*, 2013). Agritourism provides a means of diversifying farming activities, and it offers an alternative source of income for both farmers and their communities (Chatterjee & Prasad, 2019; Colton & Bissix, 2005). Based on the secondary literature, a definition of agritourism was developed and presented in Section 2.3.1 as used in this study:

> Agritourism can be outlined as a direct or indirect interaction of visitors with a working or non-working farm product, where they can experience a directly staged, authentic experience or an indirect interaction with agritourism products.

By adapting Flanigan *et al.*'s (2014) typology of agritourism, the current study identified different types of agritourism offerings within a dual-perspective frame (namely, the demand and supply perspective). The nature of agritourism activities can be classified as integral or peripheral, depending on where they take place (on or off farm), and their degree of tying into agriculture (Section 2.3.3). Three fundamental groups of agricultural tourism, namely, direct market agritourism, experience and education agritourism, and events and recreation agritourism were introduced as activities in which tourists usually engage.

Agritourism is found to be a sustainable strategy that benefits those involved in it; therefore, creating entertainment and leisure activities for visitors (Tugade, 2020:6237). It further provides several socio-economic benefits for farmers and communities (Ciolac *et al.*, 2019:3; Tugade, 2020: 6237). The experiential nature of agritourism and place-based education allows agritourists to gain knowledge, which can foster higher-order thinking skills through learning. Fostering agricultural literacy among agritourists is one of the reasons why farmers developed agritourism (Baipai *et al.*, 2022).

Agritourism can therefore be considered as an extension of environmental literacy referred to as 'agri-environmental literacy' in the current study. Developing sustainable agritourism practices require a common strategy involving the creation of innovation practices in agritourism (Roman *et al.*, 2020). Agritourism innovations refer to the development of original products and creative marketing based on nature and local culture, and the improvement of existing tourism products on a farm (Roman *et al.*, 2020).

The literature relating to agritourism generally focuses on the provider perspective and not on that of the agritourist (Arroyo *et al.*, 2013; Bagi & Reeder, 2012; Baipai *et al.*, 2022; Bernardo *et al.*, 2004; McGehee *et al.*, 2007; Tew & Barbieri, 2012). For example, the dominating themes in agritourism literature that has been presented from provider perspective studies are 'agritourism entrepreneurship', 'diversification of farm businesses', 'farmer perspectives', 'motivations', and 'critical success factors' (Arroyo *et al.*, 2013; Bagi & Reeder, 2012; Baipai *et al.*, 2022; Bernardo *et al.*, 2004; Chase *et al.*, 2019; Comen, 2017; Fatmawati *et al.*, 2021; McGehee *et al.*, 2007; Tew & Barbieri, 2012).

Agritourism has been associated with the following: 1) agricultural literacy among agritourists, affecting their behaviour towards agricultural products (Petroman *et al.*, 2016); 2) intergenerational learning; 3) choice to visit a farm, and environmental education; and 4) the significant role played by attitude in people's intention to visit a farm in the future.

Therefore, environmental education has a definite and important effect on behavioural and normative beliefs, consequently leading to a positive attitude and subjective norm (Leelapattana *et al.*, 2019:10).

The factors affecting agritourists' motivations for visiting a farm, important farm attributes in terms of visiting a farm, and the reasons for participation in agritourism activities have been rather seldom addressed in literature. Srikatanyoo and Campiranon (2010:170) reported on what agritourists need when visiting a farm, namely, activities and shopping; facilities, services, and location, as well as attractions and environment. Shah *et al.* (2020) assessed important agritourism attributes that would influence potential agritourists' choice of an agritourism farm, such as landscape, authentic farm experience, basic services, and fresh food and activities.

These agritourism attributes were applied in the current study to uncover farm attributes that would lead potential agritourists to visiting a farm.

In order to develop and grow agritourism as an industry in South Africa, agritourism providers need to understand what would drive a potential agritourist to visit a farm to develop and market offerings that would evoke action to visit a farm. Furthermore, the agritourism products and experiences that are developed need to be aligned to what agritourists deem as important.

Amongst the other critical success factors identified in literature, are the marketing and development of agritourism products (Baipai *et al.*, 2022:617). Product development and marketing cannot be disintegrated from knowledge about agritourists. Research concerning information that can allow agritourism providers to profile agritourists is needed, which is important as it can inform agritourism development and marketing.

It is also important that an agritourist who engages in agritourism does so responsibly without harming the environment. Sustainability is propelled by education, thus it is key to educate individuals about sustainable living practices and to inform them why it is important to adopt sustainable behaviour to be able to achieve sustainability in tourism (Zheng *et al.*, 2020:314).

The concept of environmental literacy has thus become prevalent in promoting sustainability and, more specifically, environmental sustainability. The concept 'agri-environmental literacy' is summarised below.

7.2.3 Environmental literacy in the context of agritourism

The concept of environmental literacy has been identified as one of the earliest explicit extensions of literacy that extend beyond conventional reading and writing (Alneyadi, Abulibdeh & Wardat, 2023; Bland, 2022). Roth initially introduced this concept in 1968 and subsequently expanded upon it, defining it as the capability to assess the overall health of environmental systems and to take appropriate measures to maintain, restore, or enhance the wellbeing of those environmental systems (Roth, 1992).

The Tbilisi framework (UNESCO, 1978:15) defined environmental literacy by segmenting it into four interrelated components: knowledge, dispositions, competencies, and behaviour. In addition to the four interrelated components, other components, such as 'sentiments and beliefs' (Peçanha de Miranda Coelho *et al.*,

2016), 'concern' (Hungerford & Volk, 1990) and 'sensitivity' (Petersen, 1982) were suggested in environmental literacy literature.

The current study analysed the environmental literacy definitions in literature with the aim of adopting an inclusive definition (Section 2.3.3). The definition by Roth (1992:2) was subsequently applied, namely: "[e]environmental literacy is the capacity to perceive and interpret the relative health of environmental systems and take appropriate action to maintain, restore, or improve the health of those systems".

The concept of 'environmental literacy' was adapted from the environmental domain to the tourism domain for the current study, focusing specifically on the agricultural environment and agritourism. A definition for agri-environmental and agritourism literacy was therefore developed from secondary literature (Section 2.4.2). In the context of the current study, the term 'agri-environmental literacy' was uniquely defined as:

> A learning process that increases an individual's knowledge and awareness about the agri-environment and its associated challenges, and during which the individual develops the necessary skills and expertise to address the challenges and foster an attitude to make informed decisions and take responsible action towards the agri-environment through agritourism, bearing in mind the present and future generations.

Agri-environmental literacy therefore involves:

- A learning process focusing on the agricultural environment and agritourism;

- Engaging agritourist communities and agritourism organisations;

- Knowledge about the agri-environment and the social economic issues that influence both the health of the farm environment and the farmers' quality of life;

- Everything obtained from natural resources such as clean air and clean water, healthy food and healthy communities;

- Not only about knowing about or being aware of agri-environmental issues and their effect on quality of life, but also the skills required to solve problems;

- Environmental literacy, which empowers people by giving them the tools and practice to take informed action; and

- Influence on attitudes, values and assumptions underlying agri-environmental behaviour.

From the literature review, environmental literacy was found to be a strategy aimed at improving environmental issues and achieving sustainability. A sustainable agri-environment involves increasing the agri-environmental literacy of prospective agritourists.

To achieve environmental literacy requires various aspects, such as ecological knowledge, affecting awareness and concern about the environment, pro-environmental attitudes, environmental sensitivity, cognitive skills to analyse environmental issues and solve problems, and yo prevent new problems, and demonstrate environmental behaviour, such as by adopting attitudes and behaviours aimed at minimising any adverse effects on the natural environment (Hollweg *et al.*, 2011; Marcinkowski *et al.*, 2013; Monroe 2003; Stevenson *et al.*, 2013).

The environmentally literate (EL) individual therefore possesses the knowledge, disposition, commitment, and skills that both motivate and enable environmental interaction responsibility (Goldman, Pe'er & Yavetz 2017:487). A clear focus on behaviour is also one of the distinguishing characteristics of environmental literacy (Monroe, 2003:115). An EL person makes choices that are usually environmentally friendly, and which are identified by their behaviour (Monroe, 2003:115).

It is the goal of environmental literacy to build EL literate individuals, and outdoor learning activities are strongly recommended to achieve this goal (Erdogan *et al.*, 2012; Goldman *et al.*, 2006; Hsu 2004; Stevenson *et al.*, 2013).

Considerable research has been conducted on assessing and evaluating environmental literacy among a variety of populations in various contexts, as well as developing instruments to facilitate the process. Environmental knowledge and dispositions toward the environment (emotional aspect) influence competencies (skills), and vice versa. Assessing environmental literacy can be difficult due to its interconnected to nature (Klein, Watte & Zion, 2021:1726).

The interrelated components between the environmental literacy components and pro-environmental behaviour are not always obvious, for instance, environmental

knowledge does not necessarily lead to environmental concern or behaviours (Clayton *et al.*, 2019).

For environmental education to be effective, it should consider the cognitive, affective, and action factors in environmental literacy; thus, translating knowledge into caring behaviour, taking responsibility, and taking action (Varela-Losada, Vega-Marcote, Pérez-Rodríguez & Álvarez-Lires, 2016).

Agri-environmental and agritourism literacy involves a culmination of different components, which were contextualised and applied in the current study, namely:

- agri-environmental orientation;

- agri-environmental knowledge;

- agri-environmental attitude;

- agri-environmental sensitivity;

- agri-environmental concern; and

- agri-environmental behavioural intention.

These components were defined within the context of the study and measured the overall agri-environmental and agritourism literacy of potential agritourists. According to the literature review reported in Section 2.5, pro-environmental behaviour (PEB) is the ultimate expression of environmental literacy.

Based on the literature, an agri-environmentally literate person has the following:

- Knowledge: That which fills one's head with information about the physical, ecological, social, cultural and political systems. It has been reported that knowledge can influence an individual's attitude, leading to responsible actions (Biswas, 2020:5923);

- Dispositions that reflect a heart or feelings towards the agri-environment;

- Sensitivity to agri-environmental issues; and

- Competencies, such as the skills to investigate, analyse, evaluate and make informed decisions.

The above allows an individual to take what comes to mind and heart, and to bring it into action. This action is taken based on individual behaviour, including concern for

and sensitivity to the environment. Based on the presumption that an individual's environmental behaviour, concern and sensitivity are a direct reflection of such person's environmental literacy, various models have been developed and make use of environmental attitude, belief, conservation knowledge and responsible environmental (ER) behaviour, and the interrelationships of these components (Ajzen & Fishbein, 1980; Goldman *et al.*, 2014; Kollmuss & Agyeman 2002; Roth, 1992; Simmons,1995; Wilke, 1995). These environmental literacy models were developed based on variables that are understood to influence the realisation of environmentally responsible (ER) behaviour as a way of achieving sustainability.

Various variables that predict environmental literacy, and ultimately, ER behaviour have been reported in literature, such as:

- Personality factors (perception of moral responsibility, environmental concern, environmental sensitivity, locus of control, environmental attitudes, responsibility, verbal commitment, values);

- Cognitive factors (knowledge and skills);

- Demographic factors (age, gender, income, residence, level of parental education level); and

- External factors (external influences, pressure groups, opportunities to choose different actions).

Demographic and economic factors, such as age, educational level, or place of residence, have been proved to have less relevance compared to environmental attitudes, beliefs, and sensitivity to explain the notion of PEB (López-Mosquera, Lera-López & Sánchez, 2015).

The determinants of PEB have shifted due to the complexities associated with the social and psychological determinants of PEB. Psychological factors, such as attitudes, beliefs, and subjective norms, have been established to be successful in predicting PEB (Li *et al.*, 2019:31). Furthermore, literature reports that having a good understanding of PEB can be provided by psychological factors instead of demographic and other external factors (Li, 2019:31).

Individual psychological factors differ but are treated as similar in relation to their effect on PEB. Psychological factors should be more specific when they are used or imported

to any model, as the individual's roles vary within the context (Li, 2019:31). Positive environmental attitudes lead to positive PEB (Erdogan *et al.*, 2012; Goldman *et al.*, 2006; Hsu 2004; Stevenson *et al.*, 2013). A positive-minded individual, as reflected in their positive environmental attitude, is likely to exhibit positive pro-environmental behaviours (PEB) (Erdogan *et al.*, 2012; Goldman *et al.*, 2006; Hsu 2004; Stevenson *et al.*, 2013).

The current study explored whether a potential agritourist has a positive psychological state of development with relation to agri-environmental literacy, behavioural intention and agritourism. The next section discusses the concept of PsyCap.

7.2.4 Conceptualising psychology, positive psychology and psychological capital in agritourism

The application from one field of psychology to another is that tourism management is inspired by positive psychology (or PsyCap) that captures an individual's psychological capacities. This is important, as tourism by means of spending time in nature and other related tourism products has the potential to improve an individual's PsyCap. Capacities, such as hope, efficacy, resilience and optimism, can be measured and developed to fit the purposes of the research on which this study is based.

PsyCap reflects an open state of mind, with each component capable of modification through practical intervention. The current study adopted Luthans *et al.*'s (2006b:3) definition of PsyCap as:

> [A]n individual's positive psychological state of development […] characterised by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success.

The literature usually presents the four components of PsyCap, namely, hope, efficacy, resilience and optimism (HERO) (Section 2.6.3) in the workplace context or environment, whereas potential tourists holding these characteristics are known to be

more positive in their outlook on life. The application of PsyCap is prevalent in the workplace domain; thus, HERO has been associated with variables, such as job commitment and satisfaction, performance at the workplace and in society, anxiety, perceived stress, ability to handle pressure and problems, and happiness and wellbeing. The literature has identified one PsyCap component, namely, self-efficacy that is a critical component of environmental literacy, and which had relevance to the current study (Hollweg *et al.*, 2011; Marcinkowski *et al.*, 2013; Monroe 2003; Stevenson *et al.*, 2013).

The PsyCap literature has been applied to other main life domains, such as health and relationships, quality of life, and tourism, although to a lesser extent. Although PsyCap studies have been conducted in the tourism industry, these were done from a workplace perspective and focused on employees. Thus, the current study applied PsyCap in a tourism environment by focusing on agritourists to explore any relationships with agri-environmental literacy and agritourism attributes.

From a tourist perspective, Wong *et al.* (2021:16) established that educational tourism products that are appeal-focused, such as agritourism, can effectively achieve environmental and psychological sustainability. PsyCap has been found to contribute to psychological sustainability (Wong *et al.*, 2021:16). Tourists' awareness of natural resource conservation and protection has grown through site visits and interactions, leading to an enhanced sense of responsibility among tourists for the preservation of the natural environment. (Wong *et al.*, 2021:16). To achieve sustainable agritourism, agritourists who are environmentally responsible and intend behaving in a pro-environmental manner are required (Pan *et al.*, 2018:1).

The current study explored the relationship between PsyCap and environmental literacy. It is necessary to understand the potential agritourist's PsyCap to be able to explore potential agritourists' agri-environmental literacy and PsyCap in relation to their behavioural intention and the attributes that would determine an agritourism farm visit. Such understanding would help agritourism service providers to develop and optimise their marketing strategies for their establishments.

The conceptualisation of the literature on agri-environmental literacy, agritourism, and PsyCap, as discussed in Chapters 2 and 3, led to the development of two models,

namely: the agri-environmental literacy and PsyCap model for agritourism **Scenario 1** and agri-environmental literacy and PsyCap model for agritourism **Scenario 2**.

These two conceptual models are intended to uncover and explore concepts that can be aligned with the sustainable development of agritourism from an agritourist perspective to enrich and fill the current gap in literature. Section 7.3 below presents the two conceptual models that were developed.

7.3 DEVELOPMENT OF CONCEPTUAL AGRI-ENVIRONMENTAL LITERACY AND PSYCAP MODELS FOR AGRITOURISM

Two conceptual models based on the literature review were developed during Stage 2 of the methodology process. These two models were discussed in Chapter 3. The current section relates to the fourth secondary objective of the study, namely:

To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling.

The first conceptual model (**Scenario1**) for agritourism is presented in Figure 7.3 below.
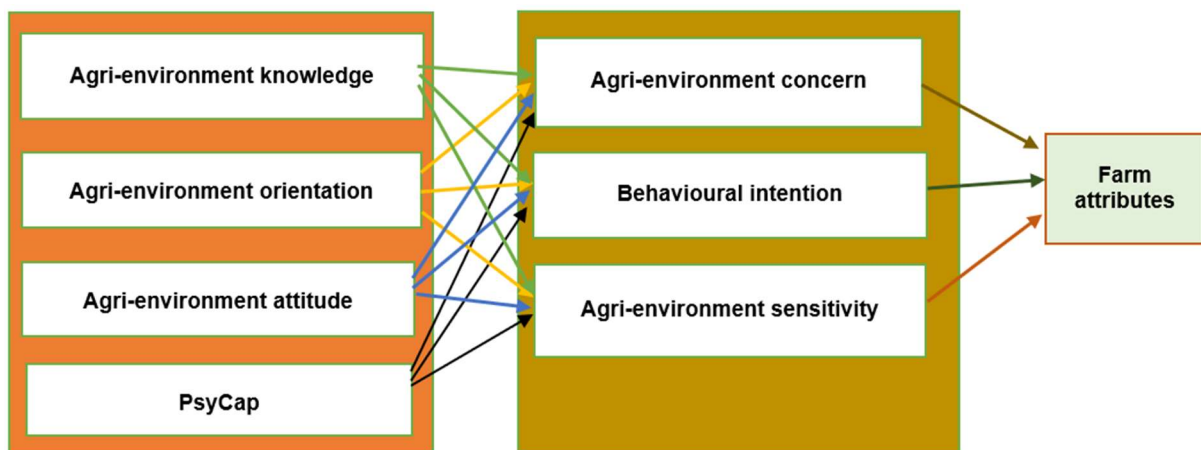
Figure 7.3: **Scenario 1 Model 1: an agri-environmental literacy and PsyCap model for agritourism market potential**

Figure 7.3 depicted the components of the agri-environmental literacy and PsyCap model for agritourism literature, borrowed from the domains of environmental education, environmental literacy, and positive psychology.

Six environmental literacy components were adapted for the current study, namely, agri-environmental orientation, agri-environmental knowledge, agri-environmental

attitudes, behavioural intention, agri-environmental concern, and agri-environmental sensitivity. A brief description of each component of the conceptual framework is provided below, and a more detailed discussion is presented in Chapter 3 (reaching Secondary research objective 1).

- **Agri-environmental orientation** refers to the way in which a potential agritourist perceives the agricultural environment. This is reflected in the way agritourists view agriculture, their consciousness about the importance of agriculture, and their personal interest in agriculture, the agri-environment and agritourism.

- **Agri-environmental and agritourism knowledge** is defined as the potential agritourist's knowledge and ability to comprehend and assess facts, information and principles relating to the agri-environment (farm) as the host of agritourism, the factors that cause environmental problems affecting the agri-environment, and possible social remedies for these problems.

- **Agri-environmental attitude** is defined as a collection of beliefs, affects, and behavioural intentions a potential agritourist holds regarding an agri-environment and its related activities or issues.

- **Behavioural intention** refers to:

  o The perceived likelihood or subjective probability that a potential tourist would engage in actual pro-agri- and environmental behaviour;

  o How hard a potential agritourist is willing to try engaging in, or how much effort an agritourist is planning to exert to perform a particular pro-agri-environmental behaviour; and

  o Affirmation that the agritourist intends to perform environmentally sustainable behaviour towards the agri-environment and agritourism in the future.

  Behavioural intention forms part of the action that indicates environmental literacy.

- Based on formative experiences, **agri-environmental sensitivity** refers to the readiness of potential agritourists to take an interest in, feel concern for, and act to conserve the farming environment.

- **Agri-environmental concern** refers to agritourists displaying a sympathetic attitude toward the farming environment (Hungerford & Volk, 1990:11). The main reason people are concerned about the environment is based on their assumptions

and the way they view or feel about the natural world. Concern is demonstrated through an act to conserve nature.

- **PsyCap** displays potential agritourists' positive psychological state of development (Luthans *et al.*, 2007a), which is characterised by having high levels of HERO, the four elements of hope (self-)efficacy, resilience, and optimism.

- **Agritourism attributes** mainly form part of product offering and which are considered important to draw a potential agritourist to visit a farm.

As illustrated by **Scenario 1** in Figure 7.3:

- **Agri-environmental knowledge, attitude, orientation and PsyCap** act as independent variables and have relationships with agri-environmental concern, sensitivity and behavioural intention;

- **Agri-environmental concern, sensitivity and behavioural intention** act as independent variables that have relationships with important agritourism attributes; and

- Agri-environmental knowledge, attitude, orientation, and PsyCap are **exogenous** variables in the model, while agri-environmental concern, sensitivity, behavioural intention, and important agritourism attributes are **endogenous** variables in the model.

The first model: the agri-environmental literacy and PsyCap model for agritourism (**Scenario 1**) depicts the relationship of agri-environmental knowledge, attitude, orientation, and PsyCap with the agri-environmental concern, sensitivity, and behavioural intention of a potential agritourist.

The relationship between agri-environmental concern, sensitivity, and behavioural intention with the attributes, which would be important when one is choosing to visit an agritourism farm, are also depicted in the agri-environmental literacy and PsyCap model for agritourism **Scenario 1**. These relationships were translated to hypotheses and were reflected in the methodology chapter (Chapter 4). These relationships are presented in Table 4.12.

The second conceptual model (**Scenario 2**) is presented in Figure 7.4. This second conceptual model (**Scenario 2**) proposes different relationship paths.
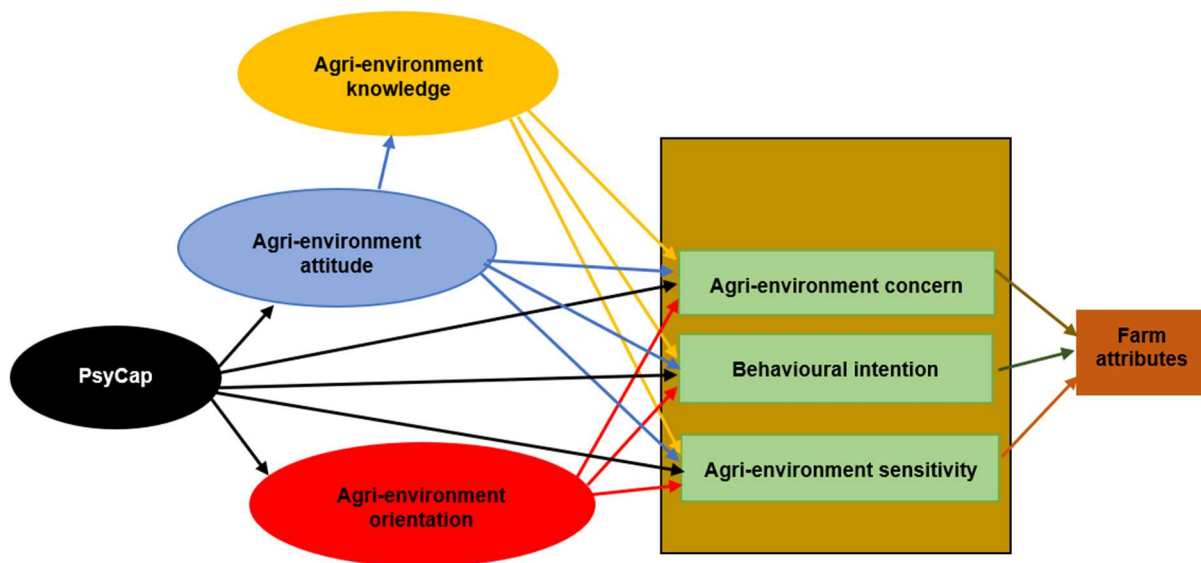
Figure 7.4: **Scenario 2 Model: a conceptual agri-environmental literacy and PsyCap model for agritourism market potential**

Figure 7.4 presents the Model 2 variables tested in the current study. The relationships developed and tested in relation to the conceptual agri-environmental literacy and PsyCap model for agritourism **Scenario 2** are presented in Chapter 4 (Table 4.13).

In the conceptual agri-environmental literacy and PsyCap model for agritourism **Scenario 2,** the following relationships were proposed:

- PsyCap acts as an independent variable that has a relationship with agri-environmental attitude, orientation, behavioural intention, concern, and sensitivity. Agri-environmental attitude and orientation therefore act as dependent variables;

- Agri-environmental attitude acts as an independent variable that has a relationship with agri-environmental knowledge;

- Psycap and agri-environmental knowledge, attitude, and orientation act as independent variables that have relationships with agri-environmental concern, sensitivity, and behavioural intention;

- Agri-environmental concern, sensitivity, and behavioural intention are proposed as independent variables that have relationships with agritourism attributes; and

- PsyCap is the only exogenous variable in the model, while agri-environmental knowledge, attitude, orientation, agri-environmental concern, sensitivity, behavioural intention, and important agritourism attributes are endogenous variables in the model.

The purpose of the second model, namely, the agri-environmental literacy and PsyCap model for agritourism **Scenario 2** was to consider the role of PsyCap as an antecedent of agri-environmental orientation and attitude, as well as the relationship between attitude and knowledge. The relationships depicted in agri-environmental literacy and the PsyCap model for agritourism **Scenario 2** were those of agri-environmental orientation, agri-environmental attitude, PsyCap, and knowledge score with behavioural intention, concern, and sensitivity. Finally, the relationship between agri-environmental concern, sensitivity, and behavioural intention with agritourism attributes is also depicted in the **Scenario 2** model.

The agri-environmental literacy and PsyCap model for agritourism **Scenario 1** and **Scenario2** propose variables that can be used to develop sustainable agritourism.

The two models were developed from a demand perspective (agritourist). The two sustainability factors proposed in the current study were agri-environmental literacy and positive PsyCap, although they both play different roles, as illustrated in agri-environmental literacy and the PsyCap model for agritourism **Scenario 1** and **Scenario 2**. The aim was to establish which role they play in influencing concerns, sensitivity, and behavioural intention, and the effect these have, in turn, on key agritourism attributes when choosing to visit a farm.

Uncovering the strength and direction of these relationships could assist agritourism providers to develop and market agritourism products based on important agritourism attributes, considering potential agritourists' agri-environmental literacy, concerns, sensitivity, and their PsyCap.

Section 7.4 presents the empirical findings of the study, namely, the conclusions and recommendations of the empirical analysis of agri-environmental literacy and PsyCap descriptive statistics and factor analysis.

7.4 PHASE 2: BIOGRAPHIC INFORMATION OF A POTENTIAL AGRITOURIST

This section links to the achievement of the third secondary objective of the study, namely:

To determine potential agritourists' biographic information, agri-orientation, agri-knowledge, agri-attitude (values), behavioural intention, PsyCap and important underlying agritourism attributes influencing a visit to an agritourism farm.

This section commences with a description of the potential agritourist's profile. Starting with a summary of the biographical profile (Section 5.2) of the respondents and farm-related participation (farm-life experience and agritourism exposure).

The biographical profile of a potential agritourist was outlined in Chapter 5 (Section 5.2). In terms of personal characteristics, potential agritourists were predominantly African (58%), male (53%), between the ages of 46 and 55 (Generation X) (41%) and residing in the urban areas of Gauteng (84%). These results highlight the need for agritourism providers to target both genders in their marketing efforts.

The current study found Generation X to be pro-environmental in their actions. Generation X is therefore an ideal potential market for agritourism. Agritourism providers should develop Baby Boomers, Millennials, and Generation Z as potential agritourist markets in South Africa, not solely focusing on Generation X. Language diversity was observed in the current study results, with English (33%) being the primary home language, followed by Afrikaans (16%). Marketing and promotion efforts should be conducted primarily in English to effectively reach potential agritourists due to its international prominence.

The respondents represented various racial backgrounds, with a predominantly African (56%), white (30%), and coloured (6%) composition. Marketing materials and campaigns should be inclusive of different racial backgrounds to avoid stereotypes and to resonate with a diverse potential market audience.

As only 52% of the respondents were aware of agritourism, in efforts to educate the market and raise awareness, a comprehensive awareness campaign is recommended for agritourism providers, including collaboration with social media influencers and local media outlets to promote agrotourism. There is a strong potential to raise awareness about farming opportunities through agritourism due to a significant percentage (66%) of the respondents never having lived on a farm.

Agritourism providers can partner with existing farm markets and annual events to promote their offerings. Around 48% of the respondents had previously visited a farm,

indicating an existing agritourism market. To tap into the revisit market, personalised loyalty programmes can be implemented, while actively engaging with previous agritourists to understand their experiences and preferences. More than 51% of the respondents have participated in farm activities. An online listing that highlights agritourism services and the activities offered at a farm can benefit agritourism providers by informing the potential market about their offerings.

About 88% of the respondents expressed a willingness to consider visiting an agritourism farm for a holiday, presenting a promising market segment for agritourism providers. This provides an opportunity for a government-agritourism collaboration and the development of diverse holiday offerings, emphasising authenticity and tranquillity of a farm environment in marketing materials.

Based on the above results concerning potential agritourists, agritourism providers should:

- Adopt an integrated approach to agritourism product development and marketing strategies, considering diverse age groups, languages, racial backgrounds and preferences; for example, they should consider campaigns that are inclusive of different racial backgrounds to avoid stereotypes and that resonate with a diverse potential market audience.

- Engage in awareness campaigns, collaboration, and tailored offerings, to effectively capture the attention of a wide-ranging and receptive agritourism potential market.

- Highlight the work-life balance element more prominently in the marketing promotional materials of agritourism to Generation X.

- English will be effective means of communication, considering an agritourist when developing marketing materials and promotions.

- Collaboration is important between agritourism providers and other service providers, such as local cultural organisations, artisans, and performers, to infuse authentic cultural elements into their agritourism offerings to enrich the agritourist experience.

- Agritourism providers need to raise awareness about agritourism activities by targeting respondents who have not been exposed to farm life. This can be done

through collaborative marketing at existing farm events to promote their agritourism offerings.

Section 7.5 below presents Phase 3 the descriptive results (item results) and factor analysis results, conclusions, and recommendations for each of the seven components (constructs) measured in this study.

7.5 PHASE 3: EMPIRICAL ANALYSIS OF AGRI-ENVIRONMENTAL LITERACY, PRESENTED AS PSYCAP AND AGRITOURISM MODEL CONCEPTS

This section links to the achievement of the third secondary objective of the study, namely:

To determine potential agritourists' biographic information, agri-orientation, agri-knowledge, agri-attitude (values), behavioural intention, PsyCap and important underlying agritourism attributes influencing a visit to an agritourism farm.

This section presents item results from the descriptive statistics (Section 5.3) and factor analysis (Sections 6.2 to 6.9). The interpretation of these, confirmation of the literature, and valuable recommendations are discussed with respect to the six concepts (agri-environmental orientation, agri-environmental knowledge, environmental and agri-values, behavioural intention, PsyCap, and agritourism) as applied in this study. Section 7.5.1 presents a discussion of the agri-environmental orientation of potential agritourists towards the farming environment and agritourism.

7.5.1 Agri-environmental orientation of potential agritourists towards farming environment and agritourism

Section 7.2.3 outline different components of agri-environmental literacy, and of which agri-environmental orientation was one.

In this section, the respondents were required to rate their level of agreement regarding their agri-environmental orientation towards the farming environment and agritourism (Section 5.3.1).

Two empirically identified components of agri-environmental orientation, namely, agri-environmental awareness, and agri-affinity, were used (as presented in Section 4.4) to measure potential agritourists' orientation towards the farming environment and

agritourism. Measuring potential agritourists' agri-environmental orientation identified potential agritourists' awareness, to see if any educational priorities are required. This can be used in intervention programmes to improve individuals' agri-environmental orientation.

As a component of agri-environmental literacy, it is important to orientate agritourists in terms of the farm environment to avoid environmental damage and to be able to sustain the farm environment and agritourism practices.

From the exploratory factor analysis (EFA) results related to agri-orientation (Section 6.1.2), three new factors were identified, namely, agri-environmental values, agri-environmental capacity, and agri-environmental awareness. The potential agritourists' mean level of agreement towards pro-agri-environmental awareness (4.583) and capacity (3.956) tended to be at the agreement level of the scale, while the mean level of agreement towards agri-environmental values (3.718) was low towards agreement. Factors with the highest level of agreement indicated that potential agritourists were orientated in terms of farming and the importance of learning about the farm environment.

There was a fit between potential agritourists and agritourism products, since there was high orientation in terms of the farm environment. Individuals who were orientated towards the environment exhibited PEB (Donmez-Turan & Kiliclar, 2021:1). Learning through agritourism experiences can be a more effective way of promoting PEB amongst agritourists.

Based on the agri-environmental orientation results, agritourism operators might consider highlighting the significance of farms and the environment in their promotional materials. Crafting promotional messages that align with the values of potential agritourists who already appreciate the importance of farms and the environment can be impactful. Integrating informative elements into agritourism experiences, such as showcasing sustainable farming practices and explaining the role of agriculture in environmental preservation, could significantly enrich the educational dimension of the farm visit.

Previous experience is an effective way of encouraging the PEB of agritourists after a farm visit (Donmez-Turan & Kiliclar, 2021:1). Agritourism destinations that want to develop sustainably, need to adopt a positive environmental orientation. For

agritourism to develop sustainably in South Africa, it is therefore important to consider agri-environmental orientation amongst agritourists. Incentives, such as discounted rates, could also be used to foster agri-environmental orientation and PEB (Donmez-Turan & Kiliclar, 2021:1).

Based on the results and conclusions regarding agri-environmental orientation, the following are recommendations to improve agri-environmental values and enhance pro-agri-environmental awareness:

- Encourage 'eat local' or produce 'buy local, eat local' programmes. Encourage volunteering and giving back to farming. For example, potential agritourists and the local community choose restaurants that purchase their products from neighbouring farms and suppliers. The results will be that the meal uses less energy to get to the table. Even if the individual is unwilling or unable to donate some amount of money to assist in the eat local programmes intended to save farms, the individual can still be helping indirectly. Agritourism therefore has the potential to be aligned with the UN-WTO (2021:1) Tourism Recovery Plan strategy. By supporting local farms, local communities it can benefit economically, socially and environmentally.

- Agritourism providers could promote agritourism benefits as a way of orientating potential agritourists in terms of a farm environment, as well as agritourism (Donmez-Turan & Kiliclar, 2021). For example, a promotion message could follow a narrative such as the following:

  Visiting a farm is more than what you think, and economically empowers the farmer, workers, and the larger local community. Agritourism can therefore improve quality of life in rural areas.

  By doing so, potential agritourists can understand the role they play in agritourism.

- Educating people about agriculture and the environment can be a key part of marketing material. Generation X has been found to use social media for reading news stories; agri-environmental orientation content can therefore be featured in news stories using social media (Smeekes, 2022:25).

Based on these results, agri-education priorities and interventions could be used to encourage positive agri-environmental orientation and enhance agri-environmental

values, capacity, and awareness. Agritourism is highly dependent upon the natural resource base (the farm environment); agritourists with a positive agri-environmental orientation will therefore not harm the environment but will protect it and might also be ambassadors of sustainable farming, the farm environment, as well as agritourism.

The results regarding agricultural and environmental knowledge of potential agritourists are discussed below.

7.5.2   Agri-environmental knowledge of potential agritourists towards nature, the environment, and farming

One of the agri-environmental literacy components is knowledge (Section 7.2.3). The results presented in this section aim to achieve Secondary objective 3 of the study, which was to determine the respondents' agri-environmental literacy.

The growing concern about environmental safety and the effects tourism has on travel destinations is one of the prominent global tourist challenges (SAT, 2021:21; WTTC 2021:16). The rapid development of tourism may lead to an upsurge in environmental degradation if not managed in a sustainable manner (Chin & Pehin Dato Musa, 2021:1).

Environmental education in this regard has the potential to improve environmental knowledge. Questions were generated for this section to measure participants' knowledge related to different aspects of (or topics on) farming in South Africa. A five-point multiple-choice approach was used to assess knowledge and how well the respondents understood the concepts regarding the environment, farmed goods, and agritourism products in South Africa. Right answers were indicative of respondents' knowledge of agriculture, farming goods, and agritourism (Section 5.3.2).

The respondents' overall knowledge comprehension scores resulted in an average of 80.51% for agri-environmental knowledge that was in line with those obtained in previous research. Ramayah *et al.* (2012) found that, through effective and modern communication channels, one can impart environmental knowledge to individuals. Such knowledge is good for nature and the environment in the long term (Gautam, 2020:6). Educating current and potential agritourists about the agri-environment and agritourism will thus benefit the environment, agritourism, and the local community.

Tourists' awareness and knowledge concerning deteriorating environmental conditions have led them to prefer sustainable tourist practices (Bhagat & Chauhan, 2021:21). Evaluating potential agritourists' agri-environmental knowledge provides agritourism providers with information that could inform education intervention that may be developed and implemented by agritourism providers.

To continuously improve agritourists' knowledge and to engage them in terms of farming, the farming environment, and agritourism knowledge may implement the following:

- Agritourism service providers could introduce special offers in the form of incentives based on a visitor's knowledge score about the farm, the environment, and agritourism;

- Quiz nights held at a farm could be introduced, where agritourists could participate in an agritourism quiz for prizes;

- Different social media platforms could be used as mediums for sharing knowledge about the importance of farming, the farming environment, and the role of agritourism in terms of farming, the local community, and the overall socio-economic benefits at a destination.

The results regarding the agri-environmental attitude of potential agritourists are discussed next.

7.5.3 Agri-environmental attitude of potential agritourists towards nature, the environment, and farming

Agri-environmental attitude is a component of environmental literacy (Section 7.2.3). This section therefore forms part of Secondary objective 3, which was to determine the respondents' agri-environmental attitude.

The current study made use of and applied a two-dimensional model of ecological values adapted for the current study (2-MEV) (Bogner & Wiseman, 2006:253) to measure the agri-attitudes of potential agritourists towards nature, the environment, and farming.

According to the results on environmental preservation related to farming (Section 5.3.3), there is strong awareness among potential agritourists about nature, the environment, and farming challenges. Potential agritourists agreed that preserving the

farm environment and agritourism is important for sustainability. Regarding the utilisation of the farm environment, the respondents agreed that farming is vital for the economy and should be protected.

Environmental attitudes (Section 5.4.2) are therefore directly influenced by exposure to various environmental awareness programmes, such as food and trees for Africa (Biswas, 2020:5928). Agritourism therefore provides exposure to farm environments, which could improve agri-environmental literacy. The goal is to increase agritourists' awareness in efforts to shape positive attitudes towards the farm environment and agritourism. As opposed to comments suggesting irresponsible behaviour on the part of tourists, agritourism is ideal to encourage responsible behaviour (Abdullah *et al.*, 2019:1461).

The EFA results (Section 6.2.2) revealed the existence of three new factors, namely, pro-agri-environmental preservation, pro-environmental resource utilisation, and pro-agri-environmental behaviour.

The potential agritourists' mean level of agreement with the pro-environmental attitude and behaviour factors tended to be positive (4.19 and 4.15, respectively), while for pro-environmental resource utilisation, it was below the neutral value; thus, potentially indicating a tendency towards disagreement (2.78). As a result, the attitude of potential agritourists with regards to preservation and their behaviour towards farming and the environment was positive, while utilisation was low. Tourists with a positive attitude towards the environment tend to reduce the negative effect of their actions on the environment (Han, McCabe, Wang & Chong, 2017:651).

Agritourism providers should understand potential agritourists' attitudes towards nature, environment, and farming to create a pro-agri-environmental experience. By including educational content and segmenting offerings based on attitudes, they can provide personalised experiences and raise awareness about responsible farming and environmental stewardship. This approach can increase customer satisfaction and loyalty, ultimately benefiting the overall agritourist experience.

Considering the low levels of attitude towards the pro-agri-environmental utilisation of farming and the farming environment in the current study, it is essential to emphasise and intervene to encourage agritourists to:

- Understand farming challenges, such as the impact of water shortages on farming; and

- Focus on water conservation initiatives while participating in agritourism.

It is essential to foster sustainable practice in agritourists' behaviour for sustainable agritourism development, and the adoption of such behaviour is influenced by environmental attitudes (Biswas, 2020:5928). To ensure agritourists know how agritourism contributes to sustainable development, the agritourism industry needs to focus on and promote the sustainability of agritourism. This can be achieved by developing marketing content that focuses on the importance of adopting PEB, not only while engaging in agritourism, but also beyond the visit (Ammirato *et al.*, 2020:2).

The basis of PEB is driven by the awareness component, which leads to positive environmental attitudes (Han *et al.*, 2017:600). An enjoyable learning experience is key in influencing agritourists' attitude, which can also lead to positive word of mouth. Agritourists might thus be encouraged to share their experiences with others, especially if their experiences are meaningful to the preservation of the farm environment. This could also lead to the adoption of pro-environmental habits, such as buying only organic foods from local producers on the farm or markets.

The main results, conclusions and recommendations regarding agri-environmental behavioural intention of potential agritourists are discussed in Section 7.5.4.

7.5.4 Behavioural intention of agritourists towards nature, the environment, and farming

The concept 'environmental behaviour' is regarded as one of the components of environmental literacy. Environmental literacy can be identified through PEB (Monroe, 2003:115). This section thus relates to Secondary objective 3, namely: To determine respondents' behavioural intention in the agritourism context.

The intention to act is a major factor that stimulates environmental behaviour, and therefore intention is seen as one of the most influential variables. A major factor in terms of environmental behaviour is people's intention to act; therefore, intention is the most favourable variable that influences action (Lai & Nepal, 2005).

The behavioural intention's scale of the verbal commitment subscale of CHEAKS, as originally developed by Leeming *et al.* (1995:29) and further adapted by Conradie

(2017:451) was used in the current study. The study adapted this scale to measure potential agritourists' behavioural intentions and participation in agritourism activities. The EFA results (Section 6.3.2) identified three factors, namely, the pro-agri-environmental influences, pro-agri-environmental intended behaviour, and pro-agri-environmental action that comprise environmentally significant behaviour.

Potential agritourists' mean level of agreement towards the items, pro-agri-environmental behaviour (4.3), pro-agri-environmental influencer (3.8), and pro-agri-environmental (3.9) factors, tended to be positive. In the current study, an overall high agreement towards pro-agri-environmental intention was observed. This result illustrates that potential agritourists are willing to behave in a pro-environmental manner towards farming, the farming environment and agritourism. Human activities that are pro-environmental in nature help reduce negative environmental outcomes (Bamberg *et al.*, 2015:1).

Understanding potential agritourists' pro-agri-environmental behavioural intention is important to mitigate the negative effects of tourist activities on the farm environment. It is essential that the way tourists are attracted to participate actively in farm-based activities is done responsibly to ensure that no extra pressure is placed on the environment (Sharma & Gupta, 2020:829). It therefore becomes important for agritourism establishments and associations to know the behavioural intentions of their potential market towards an agricultural environment or setting to avoid and minimise negative effects towards the environment. Furthermore, gauging agritourists' environmental perspectives can be done so that the necessary education can be provided where necessary to empower agritourists. Agritourism providers can conduct agritourist surveys to understand the behavioural intentions of their potential market toward the agricultural environment and should provide informative sessions or workshops to promote responsible behaviour when necessary.

Agritourism providers can also explore the use of technology, such as offering virtual reality (VR) farming experiences, therefore, developing simulations that allow agritourists to step into the shoes of a farmer and experience the day-to-day activities of farming, from planting crops to tending to animals. By doing so, agritourists will learn about sustainable farming practices, the challenges farmers face, and the importance of preserving farmlands. Such an experience can provide a deeper understanding of

agriculture and foster a greater appreciation for the farm environment to foster pro-agri-environmental behaviour.

A great deal of tourism activities, and indeed, the competitiveness of destinations are directly influenced by environmental factors (Han *et al.*, 2017:600). To promote sustainable agritourism, it is important to attract tourists who have an interest in protecting the environment and who, consequently, develop more pro-environmental attitudes and behaviours.

It is thus inferred that agritourism has the potential to promote sustainability through raising awareness and an alignment between general sustainable goals and agritourists' behaviour.

The main results, conclusions and recommendations regarding potential agritourists' environmental concern and sensitivity towards the farming environment are discussed next.

7.5.5 Agri-environmental concern and sensitivity of agritourists towards nature, the environment, and farming

Agri-environmental concern and sensitivity were outlined as components of agri-environmental literacy (Section 7.2.3) in the current study, and the results presented in this section are therefore aligned with Secondary research objective 3, which was to determine the agri-environmental literacy of potential agritourists residing in Gauteng.

A concern for the environment refers to the sympathetic approach that an individual or a group of people adopts towards the environment (Hungerford & Volk, 1990:11). A high regard for the responsibility towards the environment and environmental sensitivity are key factors in the development of environmental literacy (Erdogan *et al.*, 2012; Roth 1992; Szczytko *et al.* 2019). In addition, it can be seen as a belief about the way one interacts with the natural environment and that which drives the individual's environmental concerns.

Increases in tourist numbers may result in a type of mass tourism which can affect the environment negatively. There is thus a potential threat that can be associated with a growth in agritourism, as it could have a negative effect on the environment. Responsible tourists are fully aware of this practice. The potential agritourists'

concerns regarding their potential environmental effects on the agri-environment were measured. There was consensus amongst potential agritourists in assuming that environmental concern plays a greater role in decision-making than being a direct predictor of actual behaviour (Bamberg & Rees, 2015:1).

In the current study, a high overall concern (3.7) among potential agritourists regarding environmental problems in terms of farms and the farming environment was reported. There is thus an assumption made that the potential agritourist would behave in a pro-agri-environmental manner when visiting a farm.

Previous studies on the environmental literacy of university students in Iran found that university students were mostly concerned with air pollution, dust, and noise pollution (Veisi *et al.*, 2019:34).

The results from the current study indicated that noise pollution was found to be the least of a potential agritourist's concerns. In South Africa, water shortages are prevalent, particularly in the farming sector. According to the results reported on concern, the assumption is made that environmental concerns depend on the setting or destination.

Based on the results of the factor analysis on potential agritourists' agri-environmental concern towards nature, the environment, and farming, a recommendation can be made for agritourism providers to tailor their agritourism experiences. These experiences can match the specific environmental concerns of the individual agritourist. When booking, potential agritourists can complete a brief survey indicating their top environmental concerns (for example, biodiversity loss, global warming) and then specialised tours and activities can be created to address such concerns, providing in-depth knowledge and practical solutions.

Agritourism operators can make use of technology to educate and engage agritourists, for example, by creating mobile applications or interactive games that educate and engage agritourists about agri-environmental concerns. These may incorporate augmented reality features, scavenger hunts, or quiz challenges related to soil erosion, biodiversity, and other topics.

The potential agritourist's sensitivity towards the farming environment was also measured. Agri-environmental sensitivity is the result of one's formative experiences, a tendency to learn about the environment, to feel concerned about it, and to act in

order to conserve it. The current study adapted general environmental sensitivity statements to a farm setting (Kaplowitz & Levine 2005; Varışlı, 2009; Veisi *et al.*, 2019).

The item results (Section 5.3.5) indicated a high sensitivity towards the effect that a shortage of water has on farming. A high sensitivity towards farm environment damage was also reported. Potential agritourists agreed that people should be held accountable for any damage done to the farm environment to maintain agri-environment sustainability.

The EFA results (Section 6.4.2) identified one factor, namely, agri-environmental sensitivity, and one concern factor, agri-environmental concern. The respective mean levels of agreement of potential agritourists were (3.7) for agri-environmental sensitivity, and (3.7) for agri-environmental concern.

Based on the results of the factor analysis related to the agri-environmental sensitivity of potential agritourists, agritourism providers may consider developing a personalised agri-environmental sensitivity profile for agritourists based on their responses. Experiences that resonate with each agritourist's level of environmental sensitivity can be created, for example, agritourists with higher sensitivity scores could participate in conservation-focused activities like tree planting, while those with lower scores might engage in educational programmes to increase their awareness.

Agritourism operators can also consider using interactive technology platforms such as a mobile application or a website that provides visitors with real-time information on the environmental practices of their farm. The could make use of augmented reality features that allow agritourists to scan QR codes around the farm to access educational content related to sustainability and environmental sensitivity.

Tourism types are known to be directly related to tourists' environmental concerns, which results in potential agritourists visiting a farm and having a high level of environmental sensitivity after their visit. Individuals who are sensitive to the environment also contribute actively to the protection of the environment. It is assumed that potential agritourists will not behave or act in a manner that would damage the farming environment but would rather protect it.

The results regarding potential agritourists' PsyCap towards their overall life are discussed in Section 7.5.6 below.

7.5.6   PsyCap of potential agritourists towards their overall life

To determine respondents' PsyCap formed part of Secondary research objective 3 of the study, namely: *To determine the respondents' biographic information, agri-environmental literacy, and PsyCap.*

The results presented in this section mainly address how this objective was achieved. The PsyCap of an individual mainly refers to the psychological state of the person (Luthans *et al.*, 2006b:3). PsyCap focuses on an individual's strengths, rather than his or her weaknesses. This is regarded as a protective factor in mental health (Luthans *et al.*, 2007c). Potential tourists should be considered from a psychological perspective, since they are influenced by how they behave, think, and feel (Pearce & Packer, 2013:386).

A series of 24 statements relating to PsyCap were adapted from Luthans *et al.* (2007c) for the current study to assess potential agritourists' PsyCap. Research has indicated that nature plays an important role in the humans' mental wellbeing (Santisi *et al.*, 2020:5238).

Nature-based tourism products, such as agritourism, can lift and improve the spirits of those who are less optimistic about life (Filep & Pearce, 2014:1). An assumption is made that agritourism can improve optimism, while reducing stress. Being aware of their state of mind could help the agritourism service provider to meet the potential agritourists' needs more effectively.

As their state of mind can affect how agritourists behave, it is necessary for agritourists to receive a personal touch such as individual tours and attention while visiting farms. As a result, agritourism farms can position their offering to attract agritourists who want to achieve overall wellbeing, while providing some valuable learning opportunities at the same time. Engaging in agritourism activities could contribute to the sustainability of farming practices and the local economy.

The EFA results (Section 6.6.2) identified four factors, namely, hope and efficacy, optimism, resilience and self-motivation. The potential agritourists' mean levels of agreement in terms of hope and efficacy (4.07), optimism (4.02); resilience (3.95) and self-motivation (3.90) tended towards positive PsyCap. Tourism has been associated with positive psychology (Filep & Deery, 2010). According to Filep and Deery

(2010:399), a tourist is happy when he or she experiences a positive emotion, is involved in an activity, and finds meaning in what he or she is doing.

Agritourism activities, such as harvesting produce in the lands, as an example of the experiences offered on a farm, could evoke positive emotions and happiness in an agritourist. As a result of such experiences, agritourists might become agents by indirectly marketing relevant agritourism farms through word-of-mouth referrals.

Based on the results of the factor analysis related to PsyCap, potential agritourists exhibit different PsyCap profiles. A recommendation can be for agritourism providers to consider tailoring their agritourism experiences to cater to these varying psychological characteristics. For example, they may offer workshops or activities that specifically target hope-building or the enhancement of resilience.

Overall, it might be helpful for agritourism operators to understand the potential agritourists' PsyCap to be able to package farm experiences that would improve PsyCap. Furthermore, marketing messages can also be crafted to emphasise the improvement of one's overall life, for example, "take some time and experience simple things by spending time on a farm or in a farm environment".

The next section discusses the results regarding potential agritourists important agritourism attributes.

7.5.7   Potential agritourists' and agritourism attributes

The current study adapted a series of 22 statements relating to agritourism attributes from Shah *et al.* (2020) to assess which attributes potential agritourists deemed important when considering visiting an agritourism farm. The agritourism attributes referred to landscape of the farm, authentic farm experiences, interactions, activities, basic services, fresh foods, and traditional farming (Melstrom & Murphy, 2017:360; Shah *et al.*, 2020:7). The focus was therefore on determining which of the attributes are key when considering a visit to an agritourism farm.

The results are similar to that of previous research done by Chu and Choi (2000) and Sohrabi *et al.* (2012) that found that safety is a critical factor when choosing to visit an agritourism farm, although safety as an agritourism attribute differs based on its location (Shah *et al.*, 2020:13). In addition, Shah *et al.* (2020) noted that potential

agritourists considered natural surroundings as important when choosing an agritourism farm.

Understanding which potential agritourists' attributes are important when considering visiting a farm allows the service providers to analyse preferences regarding destination attributes. The results indicated that 42% of the respondents value the farm having few visitors at a time. For this reason, agritourism providers should consider capacity control to avoid overcrowding on the farm when developing and marketing their offerings.

The EFA results (Section 6.7.2) identified four factors, namely, farm activities, farm experience, farm basic services and farm landscape. The study found that, on average, potential agritourists placed the highest importance on farm basic services and farm landscape, whereas farm experience and farm activities were slightly less important. The important agritourism attributes results suggest that when potential agritourists are considering visiting an agritourism farm, they pay attention to the basic services offered by the farm, like how clean and safe it is, whether they offer their own food products, and if there are places to stay. Additionally, the attractiveness of the farm's landscape is also important to potential agritourists. Farm activities and overall farm experience are also important but slightly less so.

Agritourism providers can make informed decisions about how to develop and market their offerings, for example, they might want to focus on improving their basic services and highlight the beauty of the farm landscape in promotional materials to attract potential agritourists.

Hygiene factors are especially important in the service environment, where the first impression has significant implications (Vilnai-Yavetz & Gilboa, 2010; Vos, Galetzka, Mobach, Van Hagen & Pruyn, 2019). Hygiene of the tourism accommodation facilities is a key factor in determining tourist behaviour, such as tourist satisfaction, perceived service quality, and revisit intention (Barber & Scarcelli, 2010; Han, Moon & Yoon, 2017; Pizam & Tasci, 2019). Previous studies indicated that hygiene management, as perceived by the tourists plays an important role in explaining tourist decision-making processes and purchasing behaviour (Barber & Scarcelli, 2010; Moon *et al.*, 2017; Faulkner, 2001; Vilnai-Yavetz & Gilboa, 2010). Hygiene management therefore becomes very important when developing agritourism product offerings.

The concept of safety while travelling is a very important aspect because of the risk for potential tourists that could negatively affect travel intentions and decision-making to visit farms (Perić Dramićanin & Conić, 2021:14; Weng *et al.*, 2022:1). From a health and safety perspective, agritourism farms have been perceived as safe holiday travel destinations for families with small children (Wojcieszak-Zbierska *et al.*, 2020, 10–11).

The absence of safety on farms, however, indicates a potential risk, such as psychological harm on a farm (Matiza, 2020). Potential tourists may develop positive emotions and motivations, and may therefore, be more likely to participate in travel activity if they perceive it to be safe environment. However, the impression of safety might not be the same for different agritourists. It is thus important for agritourism providers to further examine agritourists' perceptions regarding risks and safety. Understanding agritourists' perception regarding risks could provide an opportunity for agritourism management to formulate a risk management strategy (Fuchs & Reichel, 2006).

Social media might be an effective tourism risk management tool to regain public trust and to minimise the negative associations of the destination's image, and could help lower tourists' perceived risks (Sigala, 2011; 2020). Sharing safety-related content on social media, for example, Instagram or Facebook, could assist to promote a positive destination image. As an online platform of user-generated content, Instagram plays a significant role in forming perceptions about places (Lopes *et al.*, 2019).

Regarding the locally grown or own-grown farm food being offered, tourists seek new experiences and are keen to reconnect with their cultural roots in terms of food from the places where they grew up or from where they originate (Fanelli, 2019). Incorporating food in the agritourism product offering could lead to direct interaction between producers (farmers) and consumers (agritourists). Selling and purchasing fresh food ingredients without third-party intervention will generate a direct income to farmers and increase agritourists' awareness of food sources (Pehin Dato Musa & Chin, 2022:668).

Agritourism studies have reported on the influence of local culinary experiences in creating changed behaviour, for example, the adoption of pro-green food consumption behaviour (Kline *et al.*, 2016:643; Giaccio *et al.*, 2018:216). Food-related activities in agritourism may support sustainable development through indirect economic effects,

such as job creation, in the community where agritourists visit (Pehin Dato Musa & Chin, 2022:661). Food consumption thus forms a crucial part of the agritourism experience (Fanelli, 2019).

The available accommodation at an agritourism farm provides an opportunity for the owners to generate extra income by introducing additional services (Bhatta & Ohe, 2020:34). The additional income generated could serve as enabler to modernise the farm infrastructure and keep the farm active in the long run (Stotten, Maurer, Herrmann & Schermer, 2019:17). Investment in the accommodation infrastructure is therefore important, as it provides the potential for return on investment and sustainability of farming.

Decision-making processes related to accommodation in tourism are not completely rational, as they are influenced by social and psychological factors (Mayo & Jarvis, 1981), ethical issues (Randle, Kemperman & Dolnicar, 2019), and by the mental image about the destination (Obenour, Langfelder & Groves, 2005; Nuraeni, Arru & Novani, 2015 Um & Crompton, 1990). Developing agritourism accommodation in a farm environment should therefore be aligned with sustainable agri-environmental guidelines (Bhatta & Ohe, 2020:34).

The farm landscape is also regarded as important to potential agritourists when considering visiting an agritourism farm. As an agritourism attribute, the farm landscape contributes to product differentiation, which could lead to a variety of tourists visiting a farm (Melstrom & Murphy, 2017:360). An agritourism farm might therefore consider conducting a landscape differentiation analysis to understand what makes them different from their competitors. In earlier agritourism research conducted by Melstrom and Murphy (2017:360), it was found that the landscape attribute is more important than the demand for overnight agritourism destinations. It is therefore assumed that the respondents who regard landscape as an important attribute, are potential overnight agritourists.

For the purposes of the current study, the attribute 'farm experience' was related to:

- The accessibility of the farm venue;

- Basic medical facilities available on the farm;

- The farm is operational;

- Food and beverage offering; and

- Official classification of the farm as an agritourist farm.

It is important to align agritourism experiences with the potential agritourists' expectations (Busby & Rendle, 2000; Daugstad & Kirchengast, 2013; Liang *et al.*, 2018). Items which inform the attribute 'farm experience' will therefore enable operators to focus their design processes when developing agritourism experiences for their farms. Developing authentic experiences that meet agritourist expectations could inform agritourism marketing strategies. Effective marketing strategies that present meaningful agritourism experiences will entice agritourists to participate in agritourism (Liang, Cao, Zhou, Li & Zhang, 2020:108).

The attribute 'farm activities' correlates with sales revenue in agritourism (Bhatta & Ohe, 2020:34). The attribute 'agritourism farm activities' can be developed according to the available resources on the farm. It is also important to introduce unique agritourism activities to attract agritourists, such as planting, harvesting, pruning and mulching the land. These activities could form part of marketing promotions to attract potential agritourists to the farm. The heterogeneity of important attributes has implications for developing agritourism. Furthermore, the possibility of different market segments is also revealed. This could be explored further for marketing purposes.

Part of agritourism development is based on the tourists' interest in visiting agritourism farms (Choo & Petrick, 2014; Ohe & Ciani, 2012; Roman & Golink, 2019). It is important to have an understanding of the important factors or attributes that would lead an agritourist to visit a farm when developing and marketing sustainable agritourism.

Novelty is a significant motivator for tourists to visit a place, making agritourism activities and farm visits crucial. Farm operators should market and promote farm landscapes, collaborate with local businesses, offer package deals, and explore partnerships with educational institutions or researchers to create unique programmes that allow agritourists to participate in research activities or experimental farming practices.

The results presented in this section achieve Secondary research objective 3, which was to determine the respondent's important agritourism attributes when considering visiting a farm.

Two conceptual models were developed in the current study (Chapter 3). The empirical analysis of the agri-environmental literacy and PsyCap SEM is presented in Section 7.6.

7.6 PHASE 4: SUMMARY OF RESULTS AND CONCLUSIONS ON STRUCTURAL EQUATION MODELLING (SEM)

The results presented in this section are related to Secondary research objective 4 namely:

To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling.

The construct variables identified to explain most of the variance in **agri-environmental literacy** (knowledge, orientation, attitude, concern, sensitivity and behavioural intention), **PsyCap** (hope, efficacy, resilience and optimism), and **agritourism attributes** (farm landscape, farm experiences, farm activities and farm basic services) were retained for the structural model. Two models were tested (Tables 6.55 and 6.56). The results were reported in Figures 6.16 and 6.17. These results are discussed and interpreted in this section with reference to the literature.

The difference between the two developed agri-environmental literacy and PsyCap for agritourism **Scenario 1** and agri-environmental literacy and PsyCap for agritourism **Scenario 2** is that in the first model, agri-environmental literacy (knowledge, orientation, attitude, concern, sensitivity and behavioural intention) and PsyCap are antecedents of agri-environmental behavioural intention, concern and sensitivity. In the second model, PsyCap is an antecedent of agri-environmental orientation and attitude, attitude an antecedent of knowledge, concern, sensitivity and behavioural intention, orientation an antecedent of concern, sensitivity and behavioural intention. Orientation and attitude, as well as PsyCap are considered antecedents of agri-environmental behavioural intention, concern and sensitivity. The main results and conclusion of these two SEM models are summarised in Sections 6.2.1 (**Scenario 1**) and 6.2.2 (**Scenario 2**). Section 7.6.1 presents a summary of the results and conclusions of the agri-environmental and PsyCap model for agritourism **Scenario 1**.

7.6.1   Summary of results and conclusions: SEM Model 1

The first structural equation model developed and tested in the current study is illustrated in Figure 6.16. The structural equation modelling (SEM) results showed that the agri-environmental and PsyCap model for agritourism **Scenario 1** did not offer a good overall model fit. The proposed relationship of PsyCap, knowledge, orientation and attitude, as exogenous variables, with potential agritourist concern, sensitivity and behavioural intention, which are related to agritourism attributes that will be important when choosing to visit an agritourism farm, did not provide an acceptable fit.

Statistical modifications were considered and tested. It did not improve the model sufficiently for it to be considered sound and acceptable. The next stage was to test the second model, the agri-environmental and PsyCap model for agritourism **Scenario 2**. This is presented in Section 7.6.2.

7.6.2   Summary of results and conclusions: SEM **Scenario 2**

The second SEM model that was developed and tested in the current study is illustrated in Figure 6.17. The second SEM model offered acceptable model fit, and the model was retained.

The SEM results showed several statistically significant structural paths. PsyCap was a statistically significant antecedent of agri-environmental orientation and agri-environmental attitude and sensitivity. Agri-environmental orientation and attitude had positive, statistically significant relationships with agri-environmental concern, sensitivity and agri-environmental behavioural intention. Knowledge, however, did not indicate any statistically significant structural paths. Furthermore, agri-environmental sensitivity, agri-environmental concern, and behavioural intention were related to the important farm attributes considered by potential agritourists when choosing to visit an agritourism farm. The results and conclusions regarding SEM **Scenario 2** are based on the strength of the relationships emphasised in Figure 7.4.

The SEM results of Model 2 revealed that PsyCap had a positive moderate statistically significant relationship with attitude (0.411) and orientation (0.317). The relationship between PsyCap and sensitivity was statistically significant, positive but weak (0.10). Higher levels of PsyCap can thus be associated with a potential agritourists' attitude, orientation and sensitivity towards the farm environment and agritourism.

The association between PsyCap and attitude has been confirmed in work context research (Tsaur *et al.*, 2019:138). Employees with higher levels of overall PsyCap than employees with lower levels of overall PsyCap were shown to have better work engagement attitudes than employees with lover overall PsyCap, which boosted their vigour and raised their job engagement attitude (Tsaur *et al.*, 2019:138). An assumption can be made that agritourists with high PsyCap will have better engagement with the farm environment than agritourists with low PsyCap, which could boost their vigour and agri-environmental literacy. No statistically significant relationships were found between PsyCap and behavioural intention, as well as between PsyCap and agri-environmental concern. Although done in a work context, a study by Afshar Jahanshahi *et al.* (2020), found that employees with positive PsyCap demonstrated pro-environmental behaviour.

Agri-environmental orientation had a positive, statistically significant relationship with agri-environmental concern, sensitivity, and agri-environmental behavioural intention. It also had a strong statistically significant positive relationship with behavioural intention (0.592), followed by agri-environmental sensitivity (0.561). The relationship with concern was positive and of moderate strength (0.383). Based on the two components of orientation, it can be assumed that potential agritourists have a personal interest in the natural farm environment and understand the farm environment issues related to the general importance and sustainability of natural ecosystems (Larson *et al.*, 2011:83). Potential agritourists' agri-environmental concern and sensitivity can therefore be assumed.

Agri-environmental attitude also indicated a positive, strong, statistically significant relationship with agri-environmental concern (0.573), agri-environmental sensitivity (0.531), and agri-environmental behavioural intention (0.637). This finding corroborates the significant positive relationship between environmental attitude and pro-environmental behavioural intention found in previous research (Biswas, 2020:5928; Jhanji & Kaur, 2019:1055; Li *et al.*, 2019:28; Liu *et al.*, 2020:1) and sensitivity toward the environment (Veisi *et al.*, 2019:34).

In the context of this study, increased agri-environmental attitude was assumed to increase pro-agri-environmental behaviour and sensitivity while visiting a farm environment.

However, the relationship between attitude and knowledge was not statistically significant, or was of negligible strength. No statistically significant relationships were found between knowledge score with sensitivity, concern, and behavioural intention. Earlier studies have also not related knowledge to pro-environmental intention or behaviour (Bartiaux, 2008; Frick *et al.*, 2004; Hungerford & Volk, 1990). A person's knowledge has an indirect effect on behaviour towards the environment (Hungerford & Volk, 1990).

Agri-environmental sensitivity had a positive moderate, statistically significant, relationship with farm activities (0.331), as well as a positive weak, statistically significant relationship with farm experience (0.291). Agri-environmental concern had a weak positive, statistically significant relationship with farm experience (0.122), farm basic services (0.148), and farm landscape (0.147).

The association between sensitivity, concern, farm experience, and farm activities, suggests that agritourism providers need to design farm activities and offer experiences to minimise the negative environmental effects related to mass tourism activities, and experiences need to be agri-environmentally friendly, as potential agritourist agri-environmental sensitivity is related to activities and experience.

Behavioural intention indicated a positive moderate, statistically significant relationship with farm landscape (0.44), and farm basic services (0.327). This result suggests that the maintenance of the natural farm landscape of a farm is important, as it is associated with the behavioural intention of potential agritourists. Furthermore, basic services need to be developed in a sustainable manner, as they are also associated with the behavioural intention of potential agritourists.

Agritourism providers need to follow a holistic approach to design and develop agritourism products sustainably. Holistic sustainable design and product development consider the three pillars of sustainability, namely, **people** (social sustainability), **profit** (economic sustainability), and **planet** (environmental sustainability) (Haid & Albrecht, 2021:9).

The association between behavioural intention and farm activities and farm basic services confirms that agritourism is a sustainable strategy that benefits all stakeholders involved, providing entertainment and leisure activities for visitors, and

socio-economic benefits for farmers and local communities (Addinsall *et al.*, 2015; Ciolac *et al.*, 2019; Tugade, 2020).

Section 7.6.3 present the decisions concerning the research hypotheses in the current study.

7.6.3 Decisions concerning the research hypotheses

The results provided supportive evidence for the 18 stated research hypotheses. Table 7.1 provides a summary of these hypotheses, the statistical procedures used to test them, and the main findings relating to each hypothesis.

The conceptual model for agri-environmental literacy and PsyCap in agritourism (Scenario 2) is primarily exploratory, thus the current study also examined possible mediation effects within the structural equation model.

Section 7.7 presents a summary of the results and conclusions of the mediation effect evident in the study.

Table 7.1: Summary of the findings relating to research hypotheses

Empirical research objectives	Research hypotheses	Supportive evidence provided
Secondary research objective 4: To develop and test the conceptual agri-environmental literacy and PsyCap models for agritourism through structural equation modelling.	H3b: Agri-environmental orientation is related to agri-environmental concern.	Yes, positive and moderate strength and support.
	H4b: Agri-environmental orientation is related to agri-environmental sensitivity.	Yes, positive, strong strength and support.
	H1b: Agri-environmental orientation is related to behavioural intention.	Yes, positive and strong strength and support.
	H3c: Agri-environmental attitude is related to agri-environmental concern.	Yes, positive and strong strength and support.
	H4c: Agri-environmental attitude is related to agri-environmental sensitivity.	Yes, positive and strong strength and support.
	H1c: Agri-environmental attitude is related to behavioural intention.	Yes, positive and strong strength and support.
	H_{11}: PsyCap is related to agri-environmental attitude.	Yes, positive and moderate strength and support.
	H_{12}: PsyCap is related to agri-environmental orientation.	Yes, positive and moderate strength and support.
	H_2: PsyCap is related to behavioural intention.	Yes, positive and weak strength and support.
	H_{7a}: agri-environmental sensitivity is related to farm experience.	Yes, positive and weak strength and support.
	H_{7b}: Agri-environmental sensitivity is related to farm activities.	Yes, positive and weak strength and support.

Empirical research objectives	Research hypotheses	Supportive evidence provided
	H_{7c}: Agri-environmental sensitivity is related to farm landscape.	Yes, positive and weak strength and support.
	H_{8b}: Agri-environmental concern is related to farm activities.	Yes, positive and weak strength and support.
	H_{8a}: Agri-environmental concern is related to farm experience.	Yes, positive and weak strength and support.
	H_{8d}: Agri-environmental concern is related to farm basic services.	Yes, positive and weak strength and support.
	H_{8c}: Agri-environmental concern is related to farm landscape.	Yes, positive and weak strength and support.
	H_{9c}: Agri-environmental behavioural intention is related to farm landscape.	Yes, positive and moderate strength and support.
	H_{9d}: Agri-environmental behavioural intention is related to farm basic services.	Yes, positive and moderate strength and support.

7.7 PHASE 5: SUMMARY OF RESULTS AND CONCLUSIONS: MEDIATING EFFECT OF ATTITUDE, ORIENTATION, CONCERN, BEHAVIOURAL INTENTION, AND SENSITIVITY IN THE SECOND SEM MODEL

This section is related to the achievement of Secondary research objectives 5 and 6, namely:

- *To determine whether attitude and orientation have a mediating effect on the relationship between PsyCap and behavioural intention, concern, and sensitivity.*

- *To determine whether behavioural intention, concern, and sensitivity have a mediating effect on the relationship between PsyCap and agritourism attributes.*

The current study explored mediation further to determine the underlying mechanism of the association between various variables within the second SEM model (Zhu *et al.*, 2020). The bias-corrected percentile method (Rijnhart *et al.*, 2021:14–15) was used to assess whether a mediation effect existed. Various mediation effects were found, as discussed below.

- **Attitude as a mediator between PsyCap and behavioural intention, PsyCap and concern, and PsyCap and sensitivity:** Attitude towards the environment has been associated with PEB (Biswas, 2020:5925). A potential agritourist's PsyCap will therefore have an influence on behavioural intention due to a positive agri-environmental attitude. Furthermore, PsyCap will have an influence on potential agritourists' concern for the environment due to a positive attitude towards the agri-environment. PsyCap will influence sensitivity due to a positive agri-environmental attitude.

  The findings indicate that attitude plays a significant role in linking PsyCap to behavioural intention, agri-environmental concern, and sensitivity. This relationship suggests that agritourism operators can increase awareness among agritourists by promoting the benefits of agritourism. Agritourism operators can attract agri-environmental tourists by highlighting the positive impact of agritourism activities on farm revenues and product sales. This in turn can influence agritourists' behaviour, agri-environmental awareness, and sensitivity to the farm environment, which will contribute to the sustainability of the farm.

- **Agri-orientation as a mediator between PsyCap and behavioural intention, PsyCap and concern, and PsyCap and sensitivity:** A potential agritourist's PsyCap will therefore have an influence on behavioural intention because of a positive agri-environmental orientation. Furthermore, PsyCap will have an influence on potential agritourists' concern for the environment due to a positive orientation towards the agri-environmental. Lastly, PsyCap will influence sensitivity due to a positive agri-environmental orientation.

  Based on these results, orientation functions as a mediator between behavioural intent and agri-environmental concern in the development of sustainable agritourism. It emphasises the importance of responsible agritourists who are pro-agri-environmental. Therefore, to effectively manage agritourism, it is crucial to understand the agri-environmental orientation of agritourists. To enhance the interaction between agritourists and available agritourism products and services, destination planners can use this insight to design and position appropriate cues that resonate with the agritourists.

- **Agri-environmental concern was a mediator between PsyCap and farm landscape, PsyCap and farm basic services, PsyCap and farm experience, and PsyCap and farm activities**: A potential agritourist's PsyCap will have an influence on the farm landscape because of a positive agri-environmental concern. Furthermore, PsyCap will have an influence on potential agritourists' farm basic services due to a positive agri-environmental concern. PsyCap will influence farm experience because of a positive agri-environmental concern. Lastly, PsyCap will have an influence on potential agritourist farm activities because of a positive agri-environmental concern.

- **Agri-environmental sensitivity was a mediator between PsyCap and farm landscape, PsyCap and farm basic services, PsyCap and farm experience, and PsyCap and farm activities:** A potential agritourist's PsyCap will have an influence on farm landscape because of a positive agri-environmental sensitivity. Moreover, PsyCap will have an influence on potential agritourists' experience of basic farm services because of a positive agri-environmental sensitivity. PsyCap will influence farm experience based on a positive agri-environmental sensitivity. Lastly, PsyCap will have an influence on potential agritourist farm activities

because of positive agri-environmental sensitivity. PsyCap and various farm-related aspects can be mediated by agri-environmental sensitivity.

According to this insight, the marketing and promotion efforts in agritourism should strategically emphasise the benefits of agritourism and the importance of maintaining agritourism sites and farm environments. Experiences on the farm should be framed in the context of responsible behaviour and consumption.

- **Behavioural intention as a mediator between attitude and farm landscape, attitude and farm basic services, attitude and farm experience, and attitude and farm activities:** A potential agritourist's agri-environmental attitude will have an influence on the farm landscape because of a positive behavioural intention. Furthermore, agri-environmental attitude will have an influence on potential agritourists' experience of basic farm services as an important agritourism attribute, and ultimately, result in positive behavioural intention. Agri-environmental attitude will have an influence on farm experience due to a positive behavioural intention. Lastly, agri-environmental attitude will have an influence on potential agritourist farm activities because of a positive agri-environmental behavioural intention. Through their behavioural intentions, a potential agritourist's agri-environmental attitude significantly influences various aspects of the farm experience. Positive attitudes toward the farm's environmental aspects lead to positive behaviour. Potential agritourists' agri-environmental attitudes influence their willingness to participate in various farm activities.

The results of the current study suggest that an agritourist's positive agri-environmental attitude is significantly associated with how they perceive and engage with the farm experience, and this in turn, influences their behaviour. For agritourism operators, this illustrates the importance of promoting and emphasising the environment of the farm to positively influence the behaviour of potential guests. Agritourism operators may create a more immersive and satisfying agritourism experience by emphasising these positive traits to effectively attract and engage agritourists who share the farm's environmental values.

These results provide agritourism operators with a means of aligning their marketing strategies, messaging, and services with potential agritourists' environmental values and behaviour intentions. It is possible to improve visitor experiences, attract a more

environmentally conscious market, and contribute to the sustainability of the farm by incorporating these insights into their marketing and operational strategies. In addition, this will ensure a more enriching and engaging agritourism experience for agritourists.

The next section also outlines the evaluations and contributions of the study.

7.8 PHASE 6: EVALUATIONS AND CONTRIBUTIONS OF THE STUDY

The current study explored agritourism demand to recommend an agri-environmental literacy and PsyCap model for agritourism market potential. The existence of interrelationships between a potential agritourist's agri-environmental knowledge, agri-environmental attitude, agri-environmental orientation, PsyCap, behavioural intention, agri-environmental concern, agri-environmental sensitivity, and important agritourism attributes were examined. Decisive agritourism attributes indicate potential attributes in agritourism products or features that may be of interest to potential agritourists, and which can be used in the design process of agritourism products.

It was posited that examining the interrelationships between these variables would contribute to a better understanding of the potential agritourist as a possible market for agritourism, which would then lead to the development and marketing of sustainable agritourism.

The findings suggest that potential agritourists' agri-environmental orientation, attitude, concern, sensitivity, behavioural intention and PsyCap influence the potential market (relating to important agritourism attributes) are significant to consider in developing and marketing agritourism in a sustainable manner. The findings furthermore indicate that there are specific interactions between the variables that might provide new insight into potential agritourists when developing and marketing agritourism.

7.8.1 Value added at a theoretical level

The theoretical contribution of this study is to apply the concepts taken from the domains of environmental education, environmental literacy, psychology and psychological capital to the context of the present study, namely, agritourism and the farm environment, thus contributing to the body of knowledge in the tourism management field.

Two conceptual agri-environmental and PsyCap models for agritourism **Scenario 1** and **Scenario 2** were developed, based on the components of agri-environmental, PsyCap and agritourism attributes. The agri-environmental literacy components were taken from the environmental education and environmental literacy domain and applied to the context of this study. The PsyCap components were taken from psychology, the workplace context, specifically employees, and applied to the context of this study. The conceptual agri-environmental and PsyCap model for agritourism **Scenario 2** that was developed contributes to the body of knowledge in the tourism management field.

Theoretical models: Similarly, two theoretical models were developed in the current study, namely, the agri-environmental literacy and PsyCap model for agritourism **Scenario 1** and **Scenario 2**. The two models explore the relationships between agri-environmental literacy, PsyCap, and the agritourism attributes from a demand context. These models help conceptualise the complex interactions among the variables of agri-environmental literacy, PsyCap and agritourism attributes.

The current study contributes to agritourism management literature by examining the relationships between variables that have been rarely explored in both global and local contexts. The insights gained from this research can inform product development, marketing strategies, and sustainable practices for the potential agritourist market residing in the Gauteng province in South Africa, and may guide future research in various related areas.

The current study contributes to a better understanding of how to develop and market agritourism sustainably by considering factors such as environmental literacy, PsyCap and agritourism attributes, while filling gaps in existing literature.

7.8.2   Value added at an empirical level

The agri-environmental, PsyCap and agritourism components presented in the conceptual agri-environmental and PsyCap model for agritourism **Scenario 1** and **Scenario 2** were tested empirically, and the agri-environmental and PsyCap model for agritourism **Scenario 2** was confirmed based on the SEM results. Additionally, critical paths were identified in the final SEM model that will enhance the likelihood of pro-agri-environmental behaviour, and enhance the development and marketing of agritourism products and experiences based on important agritourism attributes.

The current study explored mediating effects in the relationships between PsyCap, agri-environmental attitude, orientation, concern, and sensitivity, as well as their impact on important agritourism attributes. This sheds light on the role of these factors in relation to potential agritourists' pro-environmental behaviour. The empirical results present factors that agritourism providers and destination marketing organisations should consider when developing and marketing agritourism offerings. The factors presented in the current study will enable agritourism service operators to make informed decisions about resource allocation, and enhance their marketing efforts.

The study also highlighted the agri-environmental literacy and PsyCap factors that may require interventions to increase awareness and participation in agritourism. This insight can guide agritourism providers in their efforts to promote agritourism sustainability.

The psychometric properties of measurement instruments were assessed and used in the current study. This validation of measurement tools in the Gauteng context encourages further research in the fields of tourism, agritourism, agri-environmental literacy, and PsyCap within other provinces and countries, contributing to the development of these constructs in the local context.

7.8.3   Value added at a practical level

Based on the insight from this study, gained from a theoretical as well as an empirical perspective, a final agri-environmental literacy and PsyCap model agritourism Scenario 2 was proposed, explaining the practical application and usefulness to product development, marketing, agri-environmental education, and agritourism service providers. Details regarding the purpose and essence of the model, followed by an explanation on when and how to use the model, are provided in Figure 7.6.

The final SEM model for agri-environmental literacy and PsyCap Model for agritourism for this study that derived from the SEM, including the mediation relationships, is presented in Figure 7.5. Figure 7.5 provides a simplified illustration, indicating the results of the final SEM model, while incorporating the hypothesised path diagram, the measurement and structural relationships, as well as the mediation relationships.
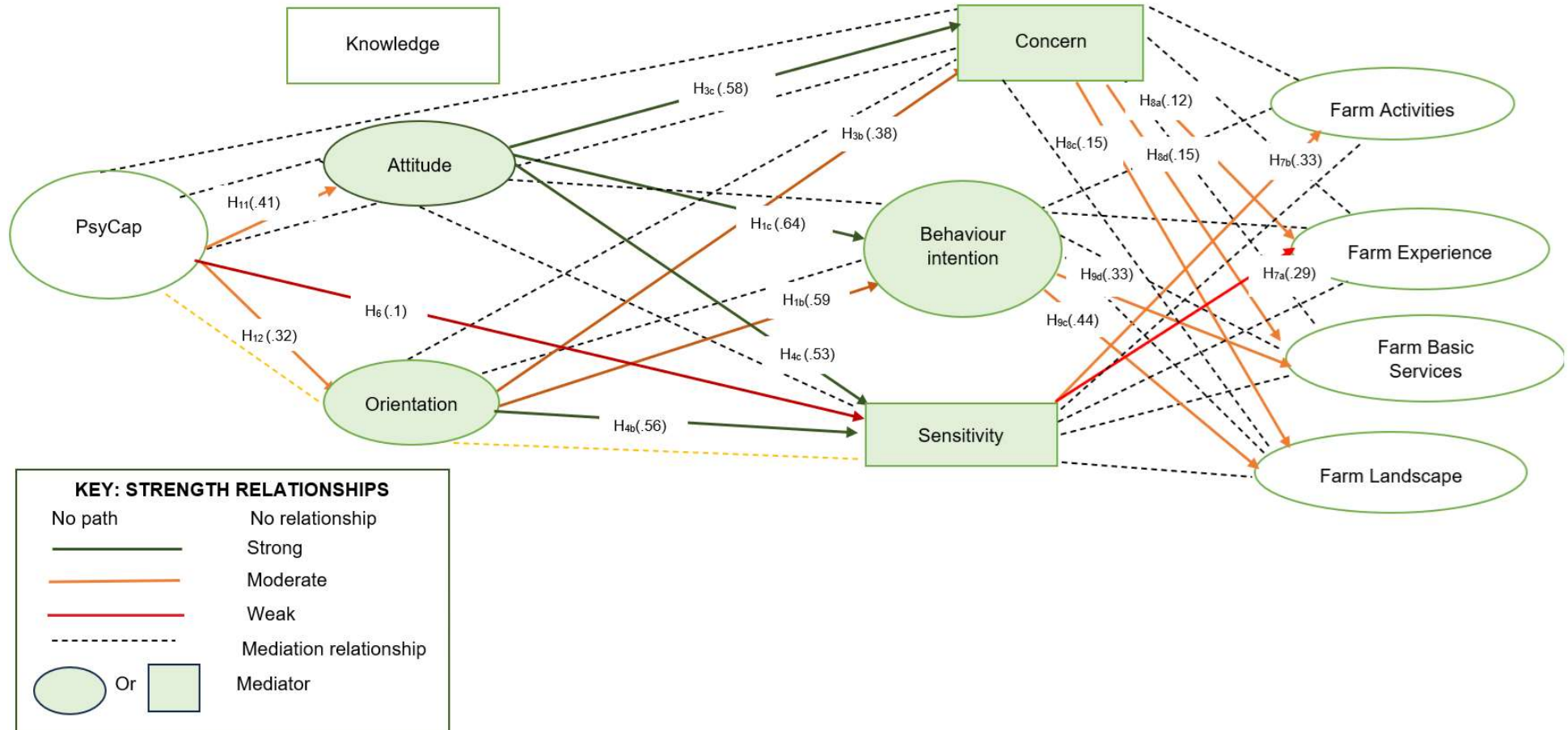
Figure 7.5: A simplified Scenario 2 illustration of the final SEM model for agri-environmental literacy and PsyCap model for agritourism

These results and conclusions regarding the final SEM agri-environmental literacy and PsyCap model for agritourism **Scenario 2** for this study, based on the strength of the relationships emphasised in Figure 7.5, are summarised below:

- The relationships between PsyCap and attitude (.41) and between PsyCap and orientation (.32) were positive and of moderate strength.

- The relationship of agri-environmental attitude with agri-environmental concern (.57); agri-environmental attitude and agri-environmental sensitivity (.53); agri-environmental attitude and behavioural intention (.64), were positive, strong and highly statistically significant.

- The relationship between agri-environmental orientation and agri-environmental concern (.38) was positive and moderate. Agri-environmental orientation had a positive strong relationship with agri-environmental sensitivity (.56), and a positive strong relationship with behavioural intention (.59).

- Behavioural intention had a positive moderate relationship with farm landscape (.44) and a positive moderate relationship with farm basic services (.33).

- Agri-environmental concern had a positive weak relationship with farm experience (.12), farm basic services (.15) and farm landscape (.15).

- The relationships of agri-environmental sensitivity with farm activities (.33) and farm experience (.29) were positive, moderate and weak respectively.

- The relationship between PsyCap and agri-environmental sensitivity was weak (.10).

- No statistically significant relationship was found between PsyCap with agri-environmental concern (-.03) and PsyCap with behavioural intention (.08).

- No statistically significant relationships were found between the knowledge score and agri-environmental concern (-.03), knowledge score and agri-environmental sensitivity (-.01), and between knowledge score and behavioural Intention (-0.00).

- No significant relationship was found between agri-environmental attitude and knowledge score (-.07).

- No statistically significant relationship was found between behavioural intention with farm experience (.16); and farm activities (.16), respectively.

- No statistically significant relationship was found between agri-environmental concern and farm activities (.10).

- No statistically significant relationship was found between agri-environmental sensitivity and farm basic services (.12) and farm landscape (.13).

Figure 7.5 shows the key relationships in the agri-environmental literacy and PsyCap model for agritourism **Scenario 2.** These key relationships that agritourism providers need to be mindful of when developing and marketing agritourism are the strong relationship concepts, namely, agri-environmental attitude, orientation, behaviour intention, sensitivity and concern. This does not mean that moderate relationships should not be considered, as these were found to be important through mediation relationships.

Considering the SEM results, mediation results, descriptive results and factor analysis results, a practical model is presented illustrating how agritourism providers can use the current study's results for sustainable agritourism development and marketing.

Recommendations were formulated by means of a practical illustration of the model, which agritourism providers could implement in product development and marketing (Figure 7.6). The practical illustration of the model is based on the descriptive results presented in Chapter 5, factor analysis results, SEM results, as well as the mediating results presented in Chapter 6.

Figure 7.6 presents the practical illustration of the agri-environmental literacy and PsyCap model for agritourism.
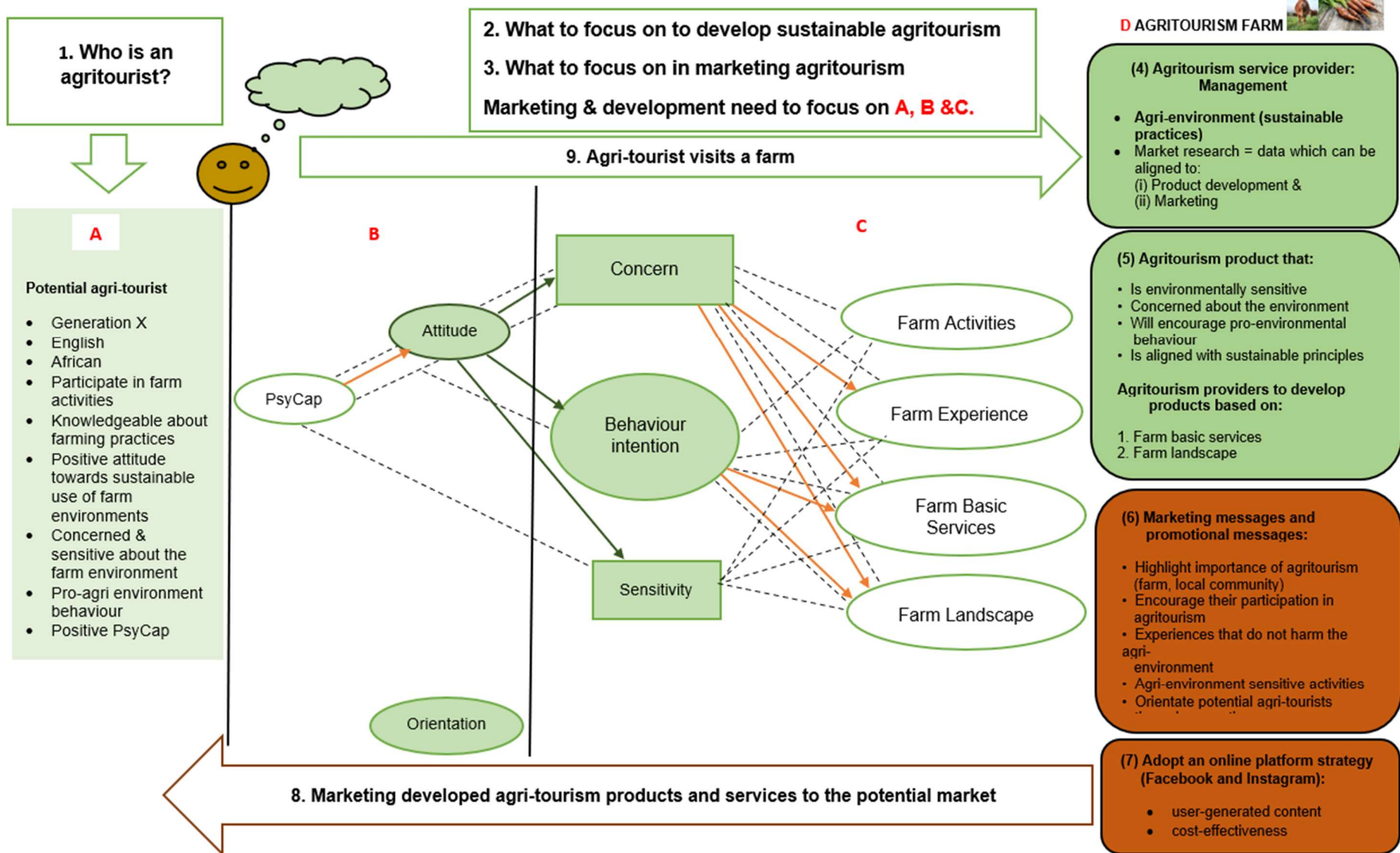
Figure 7.6:   Agri-environmental literacy and PsyCap model for agritourism

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As illustrated in Figure 7.6, the agri-environmental literacy and PsyCap model for agritourism illustrates the nine steps that agritourism operators can follow to develop and market sustainable agritourism.

Step 1 commences with the identification of the potential agritourist, and asks the question: Who is the agritourist and its potential market? The agritourism potential agritourist is explained in block A.

For agritourism providers to develop and market their agritourism offering they need to conduct market research to find out who their potential customer (block A) is. In doing so they will:

- develop their agritourism product offering (steps 3, 4 & 5);

- manage different aspects of agritourism at the establishment, for example, safety, as well as agri-environmental management;

- market these products through social media to the potential agritourist (step 8).

- In light of steps 2 to 8, step 9 will result in the agritourist visiting an agritourism farm.

Market research is important in ensuring an understanding of the agritourism market, informing agritourism product development, marketing, and management of agritourism establishments. The current study conducted research to uncover agritourism's potential agritourist market. The results related to the potential agritourist market are presented in Chapter 5 (Sections 5.2 and 5.3) by means of descriptive statistics. The descriptive statistics presented in Section 5.2 and Section 5.3 profile potential agritourist market in Gauteng, as described in block A of Figure 7.6.

Even though Generation X formed the majority of the potential agritourists, it will be valuable for agritourism service operators to consider and grow other generational cohorts as lucrative markets for agritourism. An increasing number of potential agritourists are inclined to visit an agritourism farm for a holiday, indicating that Gauteng has a viable agritourism market. Potential agritourists are interested in agritourism and prefer an agritourism establishment to be a working farm. If agritourism providers understand the different characteristics of potential agritourists, products can be developed that are aligned to these different characteristics.

Step 2 and 3 (Blocks B and C): The agri-environmental literacy and PsyCap model for agritourism **Scenario 2,** as discussed in Chapter 3 (refer to Figure 3.2), indicates the role of PsyCap in association with the components of agri-environmental literacy, and ultimately, the agritourism attributes (block C) by means of mediation. PsyCap is an independent factor in the proposed model. Even though there is no direct relationship between PsyCap and important agritourism attributes, there is an indirect relationship mediation by behavioural intention, agri-concern, attitude, and sensitivity. The enhancement of PsyCap was previously related to engaging in tourism experiences, especially nature-based tourism (Wong *et al.*, 2021:14). It can therefore be assumed that engaging in agritourism will improve potential agritourists with hope, confidence, optimism, and resilience, provided they are orientated about the agri-environment and agritourism, have a positive attitude, are sensitive towards, and concerned about the agri-environment.

Agritourism can be regarded as a possible pathway and intervention programme that could alleviate the mental and social obstacles of agritourists, provided they possess agri-environmental literacy knowledge, dispositions, competencies and behaviour (Luthans *et al.*, 2006b, 2008). Farmlands and forests present good opportunities for relaxation and escape from a mundane city lifestyle (Wong *et al.*, 2021:16). Agritourism can contribute to tourists' learning, positive feedback, and psychological arousal, and as a result, improve their PsyCap characteristics (Luthans *et al.*, 2006b).

Block C illustrates that potential agritourists intend to behave in a pro-environmental manner, where they are concerned and sensitive towards the farm environment. Therefore, the agritourism potential market will likely not harm the environment while participating in agritourism. Developing a sustainable agritourism product will likely encourage the pro-environment behaviour of potential agritourists. An agritourism product that is aligned with sustainable principles that match the potential agritourism market characteristics is indicated in block C.

The information presented in blocks A, B and C informs agritourism providers regarding the agritourism product development process, as well as marketing (block D: steps 3 to 9).

Step 4: Agritourism establishments will need to conduct continuous research to make informed decisions regarding developmental and marketing decision making.

Step 5: The agritourism product development process. Potential agritourists are regarded as sensitive and concerned about the environment. When developing agritourism products, agritourism providers can focus on products that are agri-environmentally friendly and of an educational nature. Agritourism products can include outdoor activities that educate agritourists about agri-environmental sustainability.

Agritourism attributes are used to inform product development to increase interest in agritourism amongst potential agritourists. Potential agritourists desire an authentic experience, where basic services are available on the premises, and natural farm landscapes are naturally maintained. Development can therefore begin by offering basic services on the farm, followed by landscape, authentic experience, and activities.

It would be ideal to adopt a priority-focused development strategy in instances where the farm does not have enough capital to develop all the products at the same time. Potential agritourists mostly prefer operational farms that promote hospitality services, with a clear focus on quality, safety, and fresh farm food or produce (Barbieri *et al.*, 2016; Barbieri & Mshenga, 2008; Shah *et al.*, 2020).

Agritourism activities regarded by potential agritourists as of meaningful interest are pick-your-own food, agricultural-value additions, and demonstrations of the making of local handicraft, along with traditional farming techniques and a cultural touch to the agritourism product (Ohe & Ciani, 2012; Shah *et al.*, 2020), resulting in the sustainable development of agritourism over time (Ciolac *et al.*, 2019).

Agritourism providers need to be multi-skilled and should be able to manage different aspects of the farming business: product development, market research, and aligning product offering and marketing with agritourist needs in a sustainable manner. This is important because the essence of competitiveness requires diligent agritourism operators who can manage change and reinvent their product offering to avoid entrepreneurial stagnation and result in the failure of the agritourism enterprise (Chin & Pehin Dato Mosa, 2021:15).

Step 6: Marketing strategies for agritourism should also cater to the agritourists' needs for escapism, novelty, and nostalgia (Wong *et al.*, 2021:16). Marketing training is required to avoid trial and error, as agritourism providers can study marketing by

similar businesses before they start their own promotions (Miller, 2021:1). Marketing will have to be centred on attributes, factors, and the items important to potential agritourists to evoke interest.

Step 7: Adopting an online social media marketing strategy could be a cost-effective effort, as it can present potential agritourists with 'try before you buy' experiences before travelling to a farm. Social media platforms, such as Facebook and Instagram, have been adopted mostly in promoting agritourism (Miller, 2021:1). Agritourism providers could utilise social media to foster a greater degree of agritourism-site interactions to promote tourists' appreciation and a sense of responsibility for the agri-environment. However, it requires knowledge to use social media marketing effectively (Ansari, Ansari, Ghori & Kazi, 2019).

Step 8: This step involves the marketing of developed agritourism products to the potential agritourist which will result in step 9 which is when an agritourist visits a farm.

Figure 7.6 highlights the different aspects of potential agritourist and farm attributes that would be suitable for developing and marketing agritourism in South Africa. This is important because the development of agritourism varies from tourist destinations in various regions, and even from country to country (Sun, Yang, Busby & Guo, 2007:836). A one-size-fits-all development approach is not feasible. Development path strategies should be customised for different places (Jin *et al.*, 2022). South Africa will therefore require its own customised agritourism development and marketing.

The operational model presented in Figure 7.6 provides agritourism providers with a step-by-step outline on how to develop, manage, and market agritourism. This can be achieved through focused market information, which could be collected continuously to make informed development, operation, and marketing decisions. Research is thus at the core of agritourism development and marketing.

Agritourism and agritourist needs are constantly changing, and agritourism providers and other stakeholders (agritourism industry associations, government) should examine new solutions, such as innovative products and marketing strategies, and should take advantage of new opportunities for the long-term sustainable development of agritourism (Jin *et al.*, 2021:10).

The current study pointed out the importance of agritourism management (**Step 4**). Operators need to evolve constantly, and tourists need to make sustainable decisions

in terms of their agritourism business. In doing so, they will ensure their future viability, long-term profitability and development, while the farm, as well as the tourist who engages in agritourism, is sustained (Ciolac *et al.*, 2019:1).

The current study theoretically synthesised an agritourism development and marketing path leading from PsyCap, agri-environmental attitude, orientation, and knowledge to behavioural intention, agri-environmental concern, sensitivity and important agritourism attributes.

The study put forth a model that presents a potential agritourists market and how agritourism providers can use this model to develop their offering sustainably and manage different items and market agritourism.

Furthermore, the model explains the role of PsyCap and agri-environmental literacy in the development of sustainable agritourism. It also shows how engaging in agritourism experiences can enhance one's mental resources (PsyCap). This inquiry shed light on the two types of sustainability, namely, PsyCap and agri-environmental literacy in the context of agritourism. As illustrated in the SEM model and the mediation results, PsyCap and agri-environmental literacy play a role in the sustainable development of agritourism.

The current study was among the first attempts to explore agritourism demand, in other words, the consumer (agritourist) of agritourism in the South African context. Furthermore, the attempt to assess PsyCap and agri-environmental literacy as variables that could lead to sustainable agritourism development, was amongst the first studies to do so.

The effectiveness of PsyCap in terms of agri-environmental literacy, and ultimately, the important attributes that will influence agritourism choice were explored to uncover relationships that would lead to the development, management, and marketing of agritourism. The integrated PsyCap and agri-environmental literacy model considers the psychological sustainability of an agritourist (by improvement of PsyCap) and the sustainability of the agri-environment and agritourism.

The findings of this study suggest that agritourists are complex, as they are characterised by the variables related to their demographics, agri-environmental literacy and PsyCap. Deciding to visit a farm will therefore not be a linear decision-making process but will include many variables that will ultimately lead to the visit.

Developing and marketing agritourism is thus not a simplistic process but needs to be informed by market research. Agri-environmental literacy plays a key role in agritourism development and marketing. Informed marketing is required to entice the potential agritourists psychologically to visit a farm.

Marketing should promote the sustainability of farming, the environment and preservation of local culture, experiences and the landscape. This research further filled the methodological gap by exploring the mediating relationships between PsyCap, agri-environmental literacy, and agritourism attributes.

It was emphasised that potential agritourists' demographics, agri-environmental literacy factors, PsyCap, and results in terms of farm attributes be taken into consideration in agritourism development and marketing. Agritourism development was related to the attributes that the potential agritourist considered important, while considering the agri-environmental literacy variables influencing a specific farm attribute. Priority agritourism development, marketing, and promotion were based on factors ranked most important by potential agritourists when using the agritourism establishment's resources effectively.

Finally, it is anticipated that implementing the suggested practical development and marketing strategies would enable the sustainable growth of agritourism. Agritourism providers are empowered regarding methods they could follow to enquire about their potential market and important farm attributes they could emphasise in the development and promotion messages. The current study offers possible intervention in cases where a need arises to empower potential agritourists through agritourism experiences that would educate the market.

7.9   LIMITATIONS OF THE STUDY

There are limitations of this study that could offer directions for future research.

Firstly, the research context was specific to resident in the Gauteng region in South Africa. Since the data were only collected in Gauteng and a panel was used, these results may not be generalisable to all agritourists.

Secondly, as the COVID-19 lockdown impacted the data collection process, panel data from a market research company, BMR, was used for online data collection. The panel existed of people residing in Gauteng province.

Thirdly, the data for the current study were collected from August 2020 to January in 2021 and are reported in 2024. The data were analysed in 2021, and interpreted and written up from 2021 to 2023.

7.10 RECOMMENDATIONS FOR FUTURE RESEARCH

A few avenues for future research were provided by the findings of this study.

Firstly, the study investigated potential agritourists, agri-environmental literacy, PsyCap, and behavioural intention towards the preferred agritourism attributes when planning to visit. Future studies could examine agritourists' agri-environmental literacy, PsyCap, and behavioural intention towards agritourism attributes that influenced choosing a farm stay or farm activity. Furthermore, it is recommended that future studies involve a longitudinal data-collection approach to enable a better exploration of the explored concepts; therefore, to conduct research before the visit, during the visit and after the visit to evaluate any differences.

Secondly, the sample for the current study comprised potential agritourists residing in Gauteng. Future studies could focus on other provinces in South Africa, or do a comparison study between the provinces.

Thirdly, future studies could explore different age groups to provide a comparative analysis amongst different generations. The focus could also be on one generation to provide a generation-focused agritourist segment for targeted marketing. Future studies could also test the model developed during the current research in other settings to examine the robustness of the observed relationships.

Fourthly, future research should assess the agritourist's PsyCap before the trip and after the trip. The current study used quantitative analysis to answer the research questions. A qualitative analysis among farmers and agriculture and tourism policymakers would also have enhanced the findings, and may be implemented in future research.

Fifthly, it is recommended that the model be expanded to include different mediating effects, such as the potential agritourist's age and exposure to agritourism or the lack of such exposure, and behaviour related to local food purchase before and after the visit. Including mediating effects could provide agritourism operators with a comprehensive market characteristic, and assist in understanding the components

that influence decisions to engage in agritourism. Sustainable agritourism that is beneficial to local communities, agritourists, farmers and the economy at large should therefore continuously be developed and grown.

7.11 CONCLUSION

The current study aimed to address the challenges associated with domestic tourism, such as a lack of marketing and promotion, product development, and information availability and distribution; and that existing products do not meet the needs and requirements of particular segments of the market. It is important to develop tourism products that will offer if not all, most of these benefits. Agritourism has been acknowledged as a distinctive tourism sector with the potential to reshape, reinvent, rekindle, and revitalise domestic tourism in South Africa.

The development and marketing of agritourism that is sustainable and that meets agritourists' needs requires an understanding of agritourists as consumers of agritourism. The study identified important agritourism attributes that have been reported as the reason why agritourists visit an agritourism establishment. In knowing potential agritourists' important agritourism attributes when considering visiting a farm, agritourism service providers can use these attributes to develop and market agritourism, and thus, grow agritourism as a domestic niche offering.

Tourism growth, while crucial for socio-economic improvement, can also lead to environmental degradation. Rapid development without considering sustainability has raised concerns among stakeholders. Environmental literacy is one of the most important concepts associated with sustainability. Sustainability in tourism requires environmental literacy, and in particular, pro-environmental behaviour among tourists. The current study investigated potential agritourist agri-environmental literacy to understand their agri-environmental knowledge, agri-environmental orientation, agri-environmental sensitivity, agri-environmental attitude, agri-environmental concern and behaviour intention in relation with agritourism environment. An environmentally literate individual makes sustainable choices and protects the environment by making environmentally conscious choices.

Tourism experiences strengthen tourists' psychological fortitude, contributing to sustainability and confidence. This study explored potential agritourists' psychological

capital (PsyCap), a resource that influences attitudes, behaviours, performance, and wellbeing, highlighting its positive impact on mental toughness and resilience.

The aim of this research was to develop a model that combines agri-environmental literacy and PsyCap, specifically customised for the field of agritourism. This model is meant to be a valuable tool for agritourism service providers, providing insights for both product development and successful marketing strategies within the agritourism sector. The aim is to ensure that agritourism offerings and marketing efforts are aligned with the specific needs of agritourists.

In Phase 1, the literature review conceptualised the components used in this study and contributed to the development of the two conceptual agri-environmental literacy and PsyCap model for agritourism, on which this study was based (Phase 2). In Phase 3, the study took an empirical nature, based on agri-environmental literacy, PsyCap and the agritourism attributes of an online panel database of residents residing in Gauteng.

Based on results obtained from the online survey completed by a panel database of residents in Gauteng (n = 526), aged 18–65 years, this study provides insight into the agri-environmental, PsyCap and agritourism attributes of potential agritourists. These insights include potential agritourist agri-environmental orientation, agri-environmental knowledge, agri-environmental concern, agri-environmental sensitivity, agri-environmental attitude, behavioural intention, hope, efficacy, resilience, optimism, and important agritourism attributes when visiting a farm.

Furthermore, the empirical analysis tested the two conceptual agri-environmental literacy and PsyCap model for agritourism **Scenario 1** and **Scenario 2** that were derived from this analysis. Critical paths were identified in the final agri-environmental literacy and PsyCap model for agritourism **Scenario 2** SEM model that will facilitate the product development and marketing of agritourism. In addition, the proposed agri-environmental literacy and PsyCap model for agritourism will focus on developing a sustainable agritourism product. The proposed agri-environmental literacy and PsyCap model for agritourism could be applied to other niche tourism products, for example, in mine tourism.

The contribution of this study is threefold. The study made a theoretical, empirical, and practical contribution by means of recommendations to domestic tourism and agritourism service providers and destination marketers:

- Theoretical contribution: Two conceptual agri-environment literacy and PsyCap model for agritourism **Scenario 1** and **Scenario 2** were developed, based on the agri-environmental literacy, PsyCap and agritourism attributes components. The components were taken from the environmental education and environmental literacy domain, psychology, specifically positive psychology, and applied to the context of this study. The two agri-environmental literacy and PsyCap models for agritourism that were developed contribute to the body of knowledge in the tourism management field.

- Empirical contribution: The agri-environmental, PsyCap and agritourism attribute components presented in the conceptual agri-environmental literacy and PsyCap models for agritourism **Scenario 1** and **Scenario 2** were tested empirically and were confirmed based on the SEM results. Additionally, critical paths were identified in the final conceptual agri-environmental literacy and PsyCap model for agritourism **Scenario 2** SEM model that will enhance the product development and marketing of agritourism. Based on the mediation results, agri-environmental literacy plays a significant role in agritourism, specifically in terms of attitudes, orientations, concerns, sensitivity, and behaviours. The study found an association between PsyCap and farm landscape, farm basic service, farm activities, as well as farm experience mediated by agri-environmental concern. PsyCap was also related to agri-environmental orientation and attitude, and the way these factors could influence agritourism behaviour, concerns, and sensitivity. Agritourism attributes that ultimately influence tourists' choices of agritourism establishments were related to potential agritourists' pro-environmental behaviour, concern, and sensitivity.

- Practical contribution: Based on the insight provided by this study, that was gained from a theoretical as well as an empirical perspective, a final agri-environmental literacy and PsyCap model for agritourism was proposed, explaining the practical application and usefulness to the product development and marketing of agritourism that is aligned to agritourists' needs. The model's purpose and essence, as well as when and how it should be used, were described.

In addition, the study contributed to the following niche research focus areas: research on agritourists, agri-environmental education, PsyCap, agri-environmental sustainability, and niche tourism, more specifically, agritourism. The research findings and recommendations may complement and enhance domestic tourism product development that is aligned to target market needs and which may lead to the effective marketing of agritourism in South Africa.

In conclusion, based on the results of this study, product development and marketing is informed by consumer needs, and it is essential to align product development and marketing to these needs. When developing a niche product, such as agritourism, it is important to include the sustainability of the natural environment to avoid environmental degradation and mass tourism. The model for sustainable agritourism development introduces a process that begins with identifying the potential agritourist market. The study provides detailed insights into the demographics of the potential market, emphasising the importance of understanding the characteristics and preferences of agritourists residing in Gauteng. Gauteng has been found to be the domestic tourism's source market.

The model incorporates the agri-environmental literacy and PsyCap framework, highlighting the role of psychological capital in mediating the relationship between agri-environmental literacy and agritourism attributes. It suggests that engaging in agritourism experiences can enhance agritourists' mental wellbeing, particularly if they possess knowledge, attitudes, and concerns related to the agri-environment.

Agritourism product development is a key focus, with an emphasis on creating offerings that are both environmentally friendly and educational. The model suggests a priority-focused development strategy, considering the preferences of potential agritourists, such as their interest in operational farms that prioritise hospitality services, safety, and fresh farm food. Marketing strategies play a crucial role, addressing the needs of agritourists for escapism, novelty, and nostalgia. The model recommends the adoption of online and social media marketing strategies, particularly on platforms like Facebook and Instagram, to effectively reach and engage potential agritourists.

The model emphasises the importance of continuous research, adaptation to changing agritourism and agritourist needs, and the exploration of innovative products. The

model encompasses an understanding of the potential agritourist market, incorporating the agri-environmental literacy and PsyCap model, prioritising sustainable product development, implementing effective marketing strategies, and ensuring continuous research and adaptation to ensure long-term viability in the agritourism industry and other niche domestic tourism products.

Agritourism in South Africa has the potential to cultivate unforgettable experiences that will reap a harvest of lasting memories for agritourists, sowing the seeds of a thriving and sustainable future for agritourism providers and local communities at large.

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AGRITOURISM SURVEY OF POTENTIAL MARKET

Conducted by Ms LT Nduna

Dear participant

The Department of Applied Management of the University of South Africa, together with Agritourism SA, is conducting research with the intend to understand your thoughts and behaviour towards farm environments and farm stays in South Africa (agritourism or farm tourism).

> *Agritourism or farm tourism is the practice of touring to agricultural areas to see farms or stay on farms and often participating in farming activities while visiting.*

Farming plays a pivotal role in society, as farms ensure food supply and could lower the negative impact of poverty on people in South Africa. However, the farming industry is experiencing various challenges, for example lack of sufficient funding and drought. Most farms need funding to carry out their day to day operations, particularly small and medium-scale farms. As a result, these farms seek ways to survive and diversify their farming business. One way to achieve this is through farm tourism or agritourism.

As an individual, your decisions and influence are authentic and important. Therefore, this study is aimed at understanding your overall life view, thoughts and behaviour towards the environment, farm tourism and farm stays. The results of the study will assist farmers in understanding their potential market better and package tailor-made farming experiences for tourist needs. This will help farmers to diversify their business operations successfully and sustain their farms.

Please note the study's population is respondents between the ages of 18 and 65 only. Ethical clearance [2018_CRERC_014(FA)] for this study was granted by Unisa's CEMS Ethics Committee. This survey should take less than 20 minutes to complete and you are free to withdraw at any time. All answers will be kept strictly confidential and will only be used for statistical purposes.

Please sign the form to indicate that:

- You have read and understand the information provided above.

- You give your consent to participate in the study on a voluntary basis.

_____   _____[16]

Participant's signature   **Date**

Instruction

Please read the questions carefully and write your answer in the space provided or circle the correct answer.

1. **Have you ever heard of the concept of farm tourism or agritourism?**

Yes	1	No	2

2. **Please indicate your gender.**

Female	1	Male	2

3. **Please indicate which generation you belong to.**

Generation Z	18 – 25 years	1
Millennial	26 – 45 years	2
Generation X	46 – 55 years	3
Baby Boomers	56 – 65 years	4

Thank you very much for aiding me in the study. I value your participation.

4. What is your home language?

Afrikaans	1	Sesotho	7
English	2	Setswana	8
isiNdebele	3	Siswati	9
isiXhosa	4	Tshivenda	10
isiZulu	5	Xitsonga	11
Sepedi	6	Other (specify) _____	

5. What is your race group?

African	1
Indian	2
Coloured	3
White	4
Asian	5
Other (specify)_____	6

6. Where do you live most of the time? (name of suburb, township or rural area)

_____

7. Were you born on, or have you lived on a farm?

Yes	1	No	2

8. Have you participated in farm activities?
   (e.g. U-pick fruit, farm to table events and farm markets)

Yes	1	No	2

9. Would you visit a farm for a holiday?

Yes	1	No	2

AGRI-ENVIRONMENTAL ORIENTATION Please indicate your level of agreement with each of the following statements, (Mark only one response to each statement.)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I like to learn about different types of farms and farming.	1	2	3	4	5
2. Farms and farming are important to people.	1	2	3	4	5
3. I like to read about farming.	1	2	3	4	5
4. Farms are easily damaged by people (e.g. overcrowding, rapid population growth and increased food demand).	1	2	3	4	5
5. I am interested in learning about new ways of protecting farms.	1	2	3	4	5
6. People need farm produce to live.	1	2	3	4	5
7. My life would change if there was no farming, as we may not be able to have enough food.	1	2	3	4	5
8. I would give some of my own money to help save farms.	1	2	3	4	5
9. I would spend my spare time volunteering at a farm.	1	2	3	4	5
10. We need to take better care of farms for their survival.	1	2	3	4	5
11. I like to spend time on a farm.	1	2	3	4	5
12. It makes me sad to see homes built where farms used to be.	1	2	3	4	5
13. I would volunteer at a cleaning-up farm project initiated in my neighbourhood.	1	2	3	4	5

C1: AGRICULTURAL AND ENVIRONMENTAL KNOWLEDGE

Please circle the number of the correct answer in the column to the right.

1. What do you think is the largest farming product produced in South Africa? 1) Cattle 2) Maize 3) Wheat 4) Sugar cane 5) Sunflower	1	2	3	4	5
2. Which one of these is a dairy cow breed? 1) Braham 2) Limousin 3) Bonsmara 4) Boran 5) Friesian	1	2	3	4	5
3. What is the most produced fruit in South Africa? 1) White grapes 2) Cherries 3) Oranges 4) Apples 5) Strawberries	1	2	3	4	5

4. The national flower of South Africa is the … .	1	2	3	4	5
1) protea 2) sunflower 3) rose 4) rooibos flower 5) orchid					
5. What is the national animal of South Africa? 1. Lion 2. Buffalo 3. Leopard 4. Rhinoceros **5.** Springbok	1	2	3	4	5
6. Every year in Ficksburg, there is a festival that is based on fruit. What is the name of this festival? 1. Pear festival 2. Apple festival 3. Cherry festival 4. Cheese festival 5. Strawberry festival	1	2	3	4	5
8. Aquaculture refers to … farming. 1. fish 2. fruit 3. meat 4. chicken 5. cheese	1	2	3	4	5

9. A dairy farm focuses on … .	1	2	3	4	5
1. floriculture					
2. fruit farming					
3. chicken farming					
4. livestock farming					
5. all dairy-related products (e.g. milk, yoghurt and cheese).					
10. A poultry farm focuses on … .	1	2	3	4	5
1. fruit farming					
2. flower farming					
3. cheese farming					
4. vegetable farming					
5. raising chickens and domestic fowl (e.g. turkeys, ducks and geese)					
11. A crop farm … .	1	2	3	4	5
1. produces milk					
2. grows flowers					
3. produces meat					
4. produces cheese					
5. grows crops (e.g. fruits, vegetables and/or grain)					

The natural environment plays an important role in tourism, especially farm tourism or agritourism. Sustaining our natural environment requires responsible use of resources. As an individual, indicate your thoughts/conduct towards nature, the environment and farming.

C2: ATTITUDES TOWARDS NATURE, ENVIRONMENT AND FARMING (Mark only one response to each statement.)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I save water because it is important for the survival of farms.	1	2	3	4	5
2. I save electricity because it could decrease air pollution, which endangers farming.	1	2	3	4	5
3. Farms will stop to exist if we do not live in tune with nature (farms).	1	2	3	4	5
4. I enjoy trips to farms.	1	2	3	4	5
5. It is interesting to know what is produced on farms.	1	2	3	4	5

		1	2	3	4	5
6.	Industrial smoke from factories that kills farm crops and animals makes me angry.	1	2	3	4	5
7.	It upsets me to see the farmland taken over by building sites.	1	2	3	4	5
8.	We must protect farms from an environmental perspective.	1	2	3	4	5
9.	Society will continue to solve even the biggest environmental problems that affect farming.	1	2	3	4	5
10.	Human beings have the right to change an agricultural environment as they see fit.	1	2	3	4	5
11.	We need to clear forests to grow crops.	1	2	3	4	5
12.	We should remove weeds to help crops grow because they can rob the soil and plants of important nutrients and water.	1	2	3	4	5
13.	Our planet has unlimited resources to feed everyone on the planet.	1	2	3	4	5
14.	A farm is always able to restore itself.	1	2	3	4	5
15.	We must build more roads so that people can travel to farms.	1	2	3	4	5
16.	Farming is important for the economy and needs to be protected.	1	2	3	4	5
17.	Worrying about farming often holds up development projects.	1	2	3	4	5
18.	People worry too much about the impact of a high concentration of air pollutants on farming.	1	2	3	4	5
19.	Human beings are more important than taking care of the farming environment.	1	2	3	4	5

Agritourism is an important tool sustaining farms financially and socially. It offers educational benefits to tourists, an opportunity to experience openness, freedom of experiencing nature and fresh air. With this in mind, indicate your level of agreement with each of the following statements.

C3: BEHAVIOUR INTENTION Please indicate your level of agreement with each of the following statements. (Mark only one response to each statement.)		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	I would be willing to stop buying some products to save farming.	1	2	3	4	5
2.	I would be willing to save electricity if it could avoid destroying farms.	1	2	3	4	5
3.	I would be willing to save water because it is important for the survival of farming.	1	2	3	4	5
4.	I would be willing to ride the bus to more places in order to reduce air pollution.	1	2	3	4	5
5.	I would be willing to separate my rubbish for recycling if it would contribute to preserving farms.	1	2	3	4	5
6.	I would be willing to give my own money to help protect farms.	1	2	3	4	5
7.	I would be willing to turn off the water while I wash my hands if it could preserve farms and farming.	1	2	3	4	5
8.	I would be willing to share environmental information to inform people about farming.	1	2	3	4	5
9.	I would be willing to explain to people who do not recycle how it could help farm life.	1	2	3	4	5
10.	I would be willing to motivate people to support environmentally responsible farming.	1	2	3	4	5
11.	I am willing to buy a farming book to assist me in understanding where my food comes from.	1	2	3	4	5
12.	I am willing to buy a farming book to learn more about farm crops and animals.	1	2	3	4	5
13.	I am willing to talk to my family and friends about attending an agricultural trade show (e.g. Nampo Agricultural Trade Show).	1	2	3	4	5
14.	I am willing to attend an agricultural trade show (e.g. Nampo Agricultural Trade Show).	1	2	3	4	5

15.	I would be willing to start a fruit and vegetable garden at home.	1	2	3	4	5
16.	I would be willing to go on a farm tour.	1	2	3	4	5

Responsible tourists are concerned with the effects of tourism on the environment, farms and farming.

How concerned are you about the following potential environmental impacts on farms and farming?

C4: ENVIRONMENTAL CONCERN Mark only one response to each statement.	Not at all concerned	Slightly concerned	Moderately concerned	Very concerned	Critically concerned.
1.	Soil erosion	1	2	3	4	5
2.	Noise pollution	1	2	3	4	5
3.	Loss of biodiversity	1	2	3	4	5
4.	Waste management	1	2	3	4	5
5.	Energy intensity	1	2	3	4	5
6.	Overhunting	1	2	3	4	5
7.	Overpopulation	1	2	3	4	5
8.	Water shortage	1	2	3	4	5
9.	Groundwater depletion	1	2	3	4	5
10.	Global warming	1	2	3	4	5
11.	Air pollution and dust	1	2	3	4	5

SECTION D: FARM ENVIRONMENTAL SENSITIVITY

Indicate your level of sensitivity towards the farm environment. (Mark only one response to each statement.)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I pay attention when I hear about farm environmental issues.	1	2	3	4	5
2. Collective action (i.e. movements) is central to solving farm environmental problems.	1	2	3	4	5
3. It is important that everyone is aware of farm environmental problems.	1	2	3	4	5
4. I feel personally responsible for helping to solve farm environmental problems.	1	2	3	4	5
5. People should be held responsible for any damage they cause to the farm environment.	1	2	3	4	5
6. Entertainment services do not value nature and the farm environment.	1	2	3	4	5
7. I perceive myself as very concerned about farming issues in my country.	1	2	3	4	5
8. I perceive myself as someone who is sensitive to responsible farming (i.e. organic farming).	1	2	3	4	5
9. Green purchasing is the most effective way to reduce and minimise the adverse impact on human health and the farm environment.	1	2	3	4	5
10. I am personally concerned about the impact of water shortage on the farming industry.	1	2	3	4	5

Indicate your level of agreement with each of the following statements relating to your hope, efficacy, resilience and optimism about your life overall. (Mark only one response to each statement.)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
E1: Hope					
1. If I should find myself in difficulty, I could think of many ways to get out of it.					
2. At the present time, I am energetically pursuing my overall life goals.					
3. There are many ways around any problem that I am facing now.					
4. Right now, I see myself as fairly successful at life overall.	1	2	3	4	5
5. I can think of many ways to reach my current overall life goals.	1	2	3	4	5
6. At this time, I am meeting the goals that I have set for myself.	1	2	3	4	5
E2: Resilience					
7. When I have a setback in my life, I have trouble recovering from it and moving on.	1	2	3	4	5
8. I usually manage difficulties one way or another in my life overall.	1	2	3	4	5
9. I can be "on my own", so to speak, if I have to.	1	2	3	4	5
10. I usually take stressful things regarding my life in my stride.	1	2	3	4	5
11. I can get through difficult times in my life because I have experienced difficulty before.	1	2	3	4	5
12. I feel I can handle many things at a time in my life.	1	2	3	4	5
E3: Optimism					
13. When things are uncertain in my life, I usually expect the best.	1	2	3	4	5
14. If something goes wrong in my life, it will.	1	2	3	4	5
15. I always look on the bright side of things in my life.	1	2	3	4	5

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		Not important	Slightly important	Moderately important	Very important	Critically important
16.	I am optimistic about what will happen in my life in the future.	1	2	3	4	5
17.	In my life, things never work out the way I want them to.	1	2	3	4	5
18.	I approach my life as if "every cloud has a silver lining".	1	2	3	4	5
E4: Efficacy						
19.	I feel confident analysing a long-term problem in my life to find a solution.	1	2	3	4	5
20.	I feel confident about my life.	1	2	3	4	5
21.	I feel confident contributing to discussions about life in general.					
22.	I feel confident helping to set targets/goals in my life.	1	2	3	4	5
23.	I feel confident contacting people to discuss life problems.	1	2	3	4	5
24.	I feel confident presenting information to a group of my peers.	1	2	3	4	5

## SECTION F: AGRITOURISM'S PERCEIVED IMPORTANT ATTRIBUTES

If you had an opportunity to be an Agritourist or farm tourist, which factors would motivate and influence you to visit an agritourism farm. (Mark only one response to each statement.)	Not important	Slightly important	Moderately important	Very important	Critically important
F1: Landscape					
1.1 The experience of trying something different	1	2	3	4	5
1.2 The farm's natural surroundings	1	2	3	4	5
1.3 The farm's agricultural landscape	1	2	3	4	5
1.4 The value for money offered by visiting the farm	1	2	3	4	5
1.5 The accessibility of the farm venue	1	2	3	4	5
1.6 The basic medical facilities available on the farm					
F2: Authentic Farm Experience					

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1.7	It is an actual operational farm.	1	2	3	4	5
1.8	The farm offers food and beverage choices.	1	2	3	4	5
1.9	The farm is officially classified as an Agritourist farm	1	2	3	4	5
1.10	The farm only caters for a few people at a time	1	2	3	4	5
F3: Interaction						
1.11	There is an opportunity to interact in self-harvesting	1	2	3	4	5
1.12	There is an opportunity to interact in agricultural value-added processes	1	2	3	4	5
1.13	I can interact in handicraft making					
F4: Activities						
1.14	The presence of livestock					
1.15	The farm offers on-farm activities					
1.16	The farm offers off-farm activities (e.g. pick fruit or vegetables, farm tour, farm cooking class and farm stall).					
F5: Basic Services						
1.17	The farm venue is hygienic					
1.18	The farm venue is safe					
1.19	The farm offers accommodation					
1.20	The farm offers farm grown food.					
F6: Fresh Food						
1.21	I prefer fresh food.					
F7: Traditional Farming						
1.22	I am interested in seeing traditional farming techniques.					

Thank you very much for your time and for participating in this survey!!!
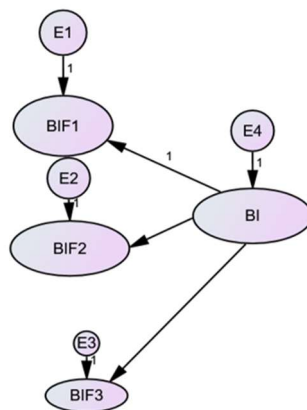
APPENDIX B:
THE OUTPUTS FOR THE HIGHER-ORDER MODELS FOR BEHAVIOURAL INTENTION, ORIENTATION, ATTITUDE, AND PSYCAP MODELS

Behaviour Intention Second order results
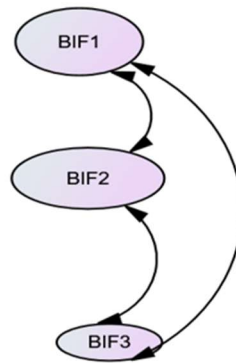
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	38	465,916	98	,000	4,754
Saturated model	136	,000	0		
Independence model	16	6101,294	120	,000	50,844

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	38	465,916	98	,000	4,754
Saturated model	136	,000	0		
Independence model	16	6101,294	120	,000	50,844

TARGET COEFFICIENT = 1 (465,916/465,916), THEREFORE GREATER THAN 0.9 (SEE HIGHLIGHT IN ARTICLE ATTACHED)

With three first-order factors the higher-order factor is just-identified. Without adding additional constraints (e.g. constraining the higher-order loadings equal), the fit should be the same. With three first order factors there are three correlations (1 with 2, 1 with 3, and 2 with 3). In a second order model there are three second order loadings, so the same number of parameters are being estimated. This is why all the fit statistics are the same

AGRI-ENVIRONMENTAL ORIENTATION
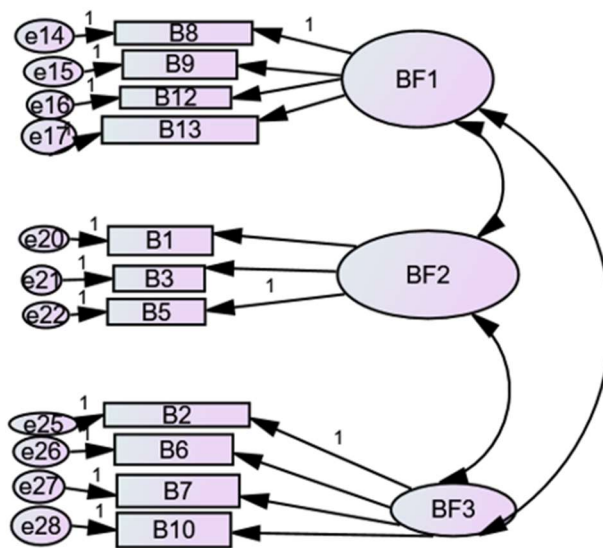
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	25	240,824	41	,000	5,874
Saturated model	66	,000	0		
Independence model	11	2302,791	55	,000	41,869
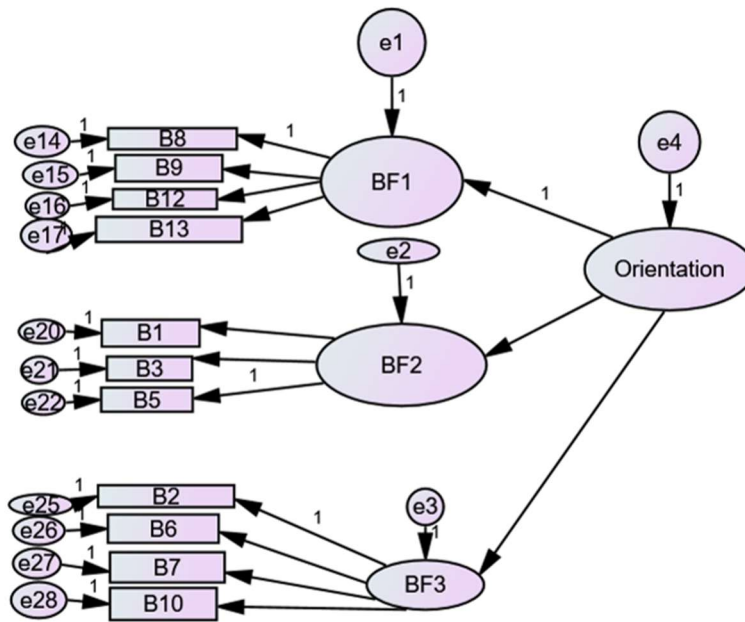
CMIN

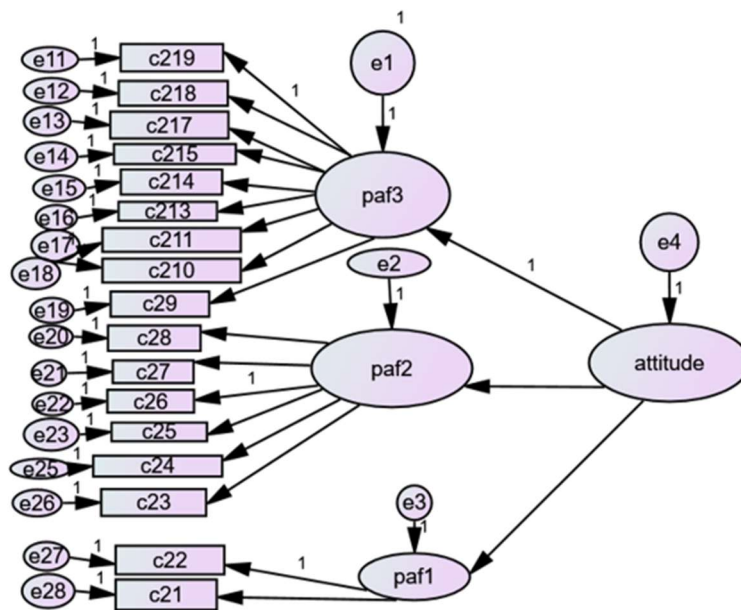| Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	25	240,824	41	,000	5,874
Saturated model	66	,000	0		
Independence model	11	2302,791	55	,000	41,869

TARGET COEFFICIENT = 1, THEREFORE GREATER THAN 0.9 (SEE HIGHLIGHT IN ARTICLE ATTACHED)

AGRI-ENVIRONMENTAL ATTITUDE
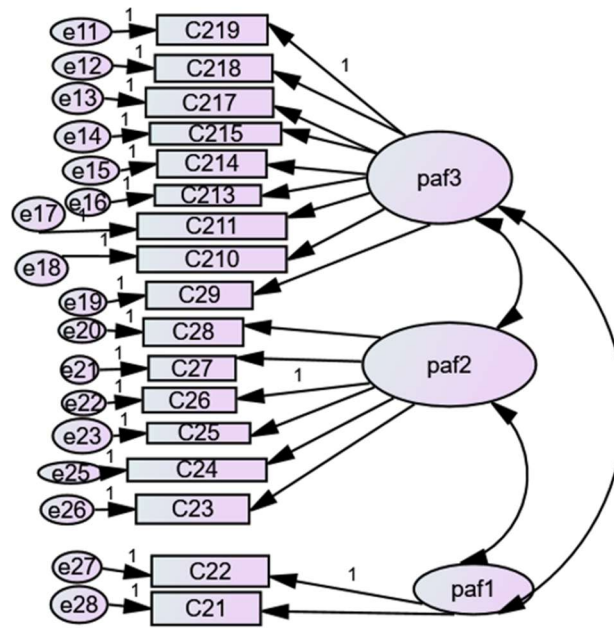
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	37	396,127	116	,000	3,415
Saturated model	153	,000	0		
Independence model	17	2929,933	136	,000	21,544

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	36	440,080	117	,000	3,761
Saturated model	153	,000	0		
Independence model	17	2929,933	136	,000	21,544

Is 0.9 but should be 1 – still investigating this one

PsyCap
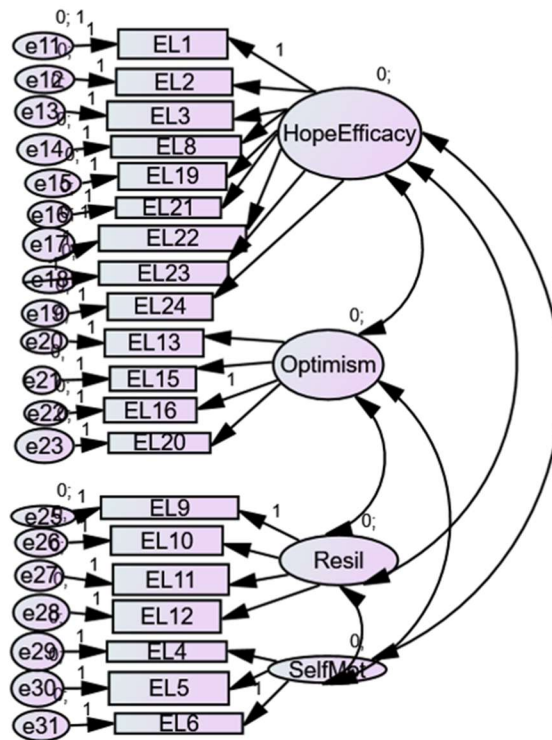
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	64	1875,981	166	,000	11,301
Saturated model	230	,000	0		
Independence model	40	5888,129	190	,000	30,990
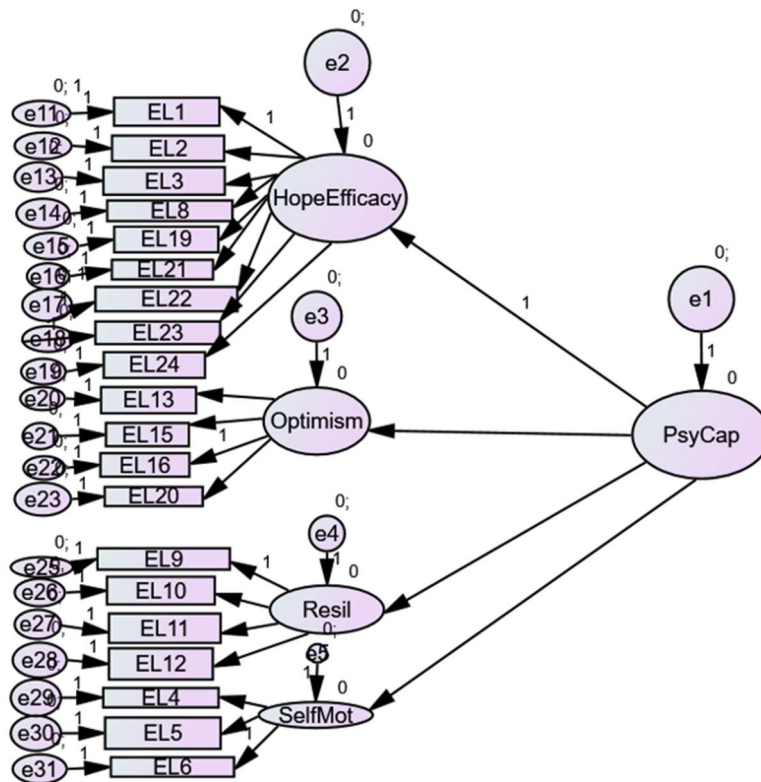
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	62	1877,087	168	,000	11,173
Saturated model	230	,000	0		
Independence model	40	5888,129	190	,000	30,990

TARGET COEFFICIENT = 0.999 (1875,981/1877,087), THEREFORE GREATER THAN 0.9 (SEE HIGHLIGHT IN ARTICLE ATTACHED)

APPENDIX C:
ETHICAL CLEARANCE CERTIFICATE

UNISA | university of south africa

UNISA COLLEGE ETHICS REVIEW COMMITTEE

Date: 29 October 2018

2018_CRERC_014(FA)

Dear Mrs Lesedi Nduna

NHREC Registration # : (if applicable)
ERC Reference # :
Name :
Student # :
Staff

Decision: Ethics Approval from 19 October 2018 to 30 September 2022

Researcher(s): Mrs Lesedi Nduna
ndunalt@unisa.ac.za
0712836013

Supervisor (s): Prof Cina van Zyl
vzylc@unisa.ac.za

Working title of research:

A segmentation framework for agritourism in the Western Cape.

Qualification: PhD

Thank you for the application for research ethics clearance by the Unisa College Ethics Review Committee for the above-mentioned research. Ethics approval is granted for 5 years.

The low-risk application was reviewed by the CEMS College Ethics Review Committee on 29 October 2018 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the X XX Committee.

3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following

   South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.

7. No field work activities may continue after the expiry date. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number 2018_CRERC_015(FA) should be clearly indicated on al/ forms of communication with the intended research participants, as we// as with the Committee.

Yours sincerely,

Signature   29/10/2018

Signature

Chair of CRERC

Signature
Executive Dean

APPENDIX D:
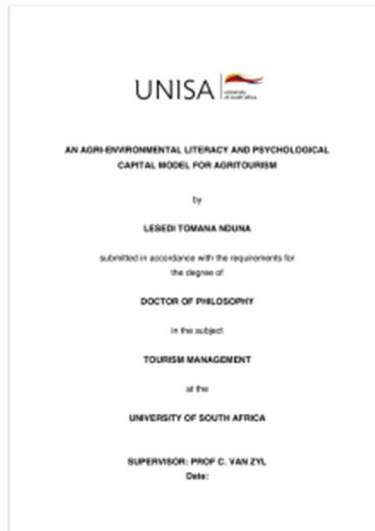# TURN IT IN DIGITAL RECEIPT

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File size:	9.51M
Page count:	538
Word count:	142,215
Character count:	847,573
Submission date:	12-Feb-2024 12:52PM (UTC+0200)
Submission ID:	2292746451

UNISA

AN AGRI-ENVIRONMENTAL LITERACY AND PSYCHOLOGICAL
CAPITAL MODEL FOR AGRITOURISM

by

LESEDI TOMANA NDUNA

submitted in accordance with the requirements for
the degree of

DOCTOR OF PHILOSOPHY

in the subject

TOURISM MANAGEMENT

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF C. VAN ZYL
Date: