THE CONSUMER BEHAVIOUR AND ENVIRONMENTAL CONSCIOUSNESS OF DOMESTIC AIR TRAVELLERS WITHIN A SOUTH AFRICAN CONTEXT

by

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The consumer behaviour and environmental consciousness of air travellers within a South African context

I declare that the above dissertation 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.

I further declare that I submitted the dissertation to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

17/02/2022

SIGNATURE DATE

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To my Heavenly Father, I owe it all to You!

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To my earthly dad, Raymond Michael Cohen, now in Heaven, I know you are proud!

ABSTRACT

In the wake of the Covid-19 pandemic, airlines are aggressively attempting to regain their positions in the skies in a highly volatile and competitive industry. However, the industry's damaging impact on the environment and its 'business-as-usual' status quo are incompatible with the forecast of increased air travel and the Intergovernmental Panel on Climate Change's 2050 goal of zero emissions. Consumer behaviour is argued to be a driver in mitigating the environmental impacts of air travel. A lack of research on the consumer behaviour and environmental consciousness of air travellers and the interrelationships between these factors has left important aspects regarding understanding the modern air traveller underexplored. This research study investigated the consumer behaviour and environmental consciousness of domestic air travellers within a South African context. Primary data was collected using a quantitative survey, employing non-probability sampling methods amongst domestic air travellers. The study analysed 394 responses using descriptive, multivariate and inferential statistics. The nine factors relating to consumer behaviour and five factors relating to environmental consciousness that were identified by the analyses, revealed significant relationships. Green attributes were identified as a factor for airline differentiation, and an enabler for consumers to drive the mitigation of the aviation industry's environmental impacts. The study will contribute to an improved understanding of air traveller consumer behaviour from an environmental perspective. This understanding will enable airline marketers to innovate towards sustainability in their post-Covid-19 recoveries, to establish a sustainable competitive advantage and to foster a licence to grow. A replica of the study is recommended for future research, to gain comparative insights of the post-Covid-19 air traveller.

Key words: Airline industry, airlines, air traveller, consumer behaviour, environmental consciousness, consumer decision-making, air travel service attributes, climate change, environmental impacts, green consumer.

DIE VERBRUIKERSGEDRAG EN OMGEWINGSBEWUSTHEID VAN BINNELANDSE LUGREISIGERS IN 'N SUID-AFRIKAANSE KONTEKS

OPSOMMING

In die lig van die Covid-19-pandemie poog lugrederye aggressief om hul posisie in die lug, in ’n hoogs onbestendige en mededingende bedryf, te herwin. Die industrie se skadelike invloed op die omgewing en sy 'sake-soos-gewoonlik'-status is egter nie onverenigbaar met die voorspelling van toenemende lugreis en die interregeringspaneel oor klimaatverandering se doel van geen uitlaatgasse teen 2050 nie. Verbruikersgedrag word beskou as die aandrywer om die omgewingsimpak van lugvervoer te verminder. ’n Gebrek aan navorsing oor die verbruikersgedrag en omgewingsbewustheid van lugreisigers en die verwantskap tussen hierdie faktore het belangrike aspekte oor die begrip van die moderne lugreisiger onverken gelaat. Hierdie studie ondersoek die verbruikersgedrag en omgewingsbewustheid van binnelandse lugreisigers in 'n Suid-Afrikaanse konteks. Primêre data is deur ’n kwantitatiewe opname versamel wat opnamemetodes van onwaarskynlikheid onder binnelandse lugreisigers gebruik het. Die studie het 394 response deur deskriptiewe, meerveranderlike en inferensiële statistiek ontleed. Die ontleding het nege faktore wat met verbruikersgedrag verband hou en die vyf faktore wat met omgewingsbewustheid verband hou geïdentifiseer en beduidende verhoudings is onthul. Groen eienskappe is geïdentifiseer as ’n faktor vir lugrederydifferensiasie en ’n instaatsteller vir verbruikers om die vermindering van die omgewingsimpakte van die lugdiensbedryf. Die studie dra tot ’n beter begrip van lugreisiger-verbruikersgedrag uit ’n omgewingsperspektief by. Die begrip kan lugrederybemarkers in staat stel om innoverings bekend te stel vir volhoubaarheid in hul post-Covid-19-herstel om ’n volhoubare mededingingsvoorsprong te vestig en ’n lisensie om te groei te kweek. ’n Herhaling van die studie word aanbeveel vir toekomstige navorsing om vergelykende insig oor post-Covid-19-lugreisigers te bekom.

Sleutelwoorde: Lugrederybedryf, lugrederye, lugreisigers, verbruikersgedrag, omgewingsbewustheid, verbruikerbesluitneming, lugreis-dienseienskappe, klimaatverandering, omgewingsimpakte, groen verbruiker.

UKUZIPHATHA KWABATHENGI KANYE NOKUQAPHELA IMVELO KWABAHAMBA NGAMABHANOYI PHAKATHI NEZWE LASENINGIZIMU AFRIKA

ISIFINQO

Ngemuva komqedazwe we-Covid-19, izindiza zizama ngamandla ngakho konke okusemandleni ukubuyela esimweni sokuba semoyeni ezabe zikuso embonini eguquguqukayo kakhulu futhi enokuncintisana. Kodwa-ke, umthelela olimazayo wale mboni endaweni ezungezile kanye nesimo sayo 'sokusebenza njengokujwayelekile' akuhambisani nesibikezelo sokukhuphuka kohambo lwendiza kanye nomgomo weThimba Lohulumeni Bezizwe Ezihlangene Lokushintsha Kwesimo Sezulu elingakhiqizi nhlobo ngonyaka wezi-2050. Ukuziphatha kwabathengi kuthiwa kuyimbangela yokunciphisa imithelela yezemvelo yokuhamba ngendiza. Ukuntuleka kocwaningo mayelana nokuziphatha kwabathengi kanye nokuqaphela imvelo yabahambi bezindiza kanye nokusebenzelana phakathi kwalezi zici kushiye izici ezibalulekile mayelana nokuqonda umsebenzisi wezindiza wesimanje ongahlolisiswanga kangako. Lolu cwaningo luphenye ukuziphatha kwabathengi kanye nokuqaphela imvelo kwabahambi bezindiza basekhaya ngaphakathi komongo waseNingizimu Afrika. Idatha eyisisekelo yaqoqwa kusetshenziswa inhlolovo yobuningi, kusetshenziswa izindlela zokusampula okwenzeka phakathi kwabahambi ngendiza basekhaya.

Ucwaningo luhlaziye izimpendulo ezingama-394 kusetshenziswa izibalo ezichazayo, ezihlukene nezingasho lutho. Izici eziyisishiyagalolunye eziphathelene nokuziphatha kwabathengi kanye nezici ezinhlanu ezihlobene nokuqaphela imvelo ezihlonzwe ukuhlaziya ivezwa ubudlelwano obubalulekile. Izimfanelo zokuluhlaza zihlonzwe njengesici sokuhlukaniswa kwezindiza kanye nensiza kubathengi ukushayela ukuncishiswa kwemithelela yemvelo yemboni yezokundiza. Ucwaningo lunomthelela ekuqondeni okuthuthukisiwe kokuziphatha kwabathengi abahamba ngendiza ngokombono wemvelo. Lokhu kuqonda kungase kuvumele abakhangisi bezindiza ukuthi bethule izinto ezintsha eziya ekusimameni nasekubuyeni kwabo ebhizinisini kwabo ngemuva kwe-Covid-19, ukuze bathole inzuzo esimeme yokuncintisana kanye nokugqugquzela ilayisense yokukhula. Okufanekisayo kocwaningo kunconyelwe

ucwaningo lwangomuso ngenhloso yokuthola imininingwane eqhathanisekayo kubahambi bezindiza bangemuva kwe-Covid-19.

Amagama abalulekile: Imboni yezindiza, izindiza, abahamba ngezindiza, ukuziphatha kwabathengi, ukuqaphela imvelo, izinqumo zomthengi, izimfanelo zesevisi yokuhamba ngendiza, ukuguquka kwesimo sezulu, imithelela yemvelo, umthengi wokuluhlaza.

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LIST OF ABBREVIATIONS AND ACRONYMS

The following abbreviations are used throughout the study.

A	
AASA	Airlines Association of South Africa
ACSA	Airports Company South Africa
AIO	Activity, interest and opinion
AMA	American Marketing Association
ASK	Available seat kilometres
ATAG	Air Transport Action Group
ATM	Air Traffic Management
ATSA	Air travel service attributes
B	
BA	British Airways
BRP	Business rescue process
C	
CEMS	College of Economic and Management Sciences
CEO	Chief Executive Officer
°C	Degrees Celsius
CO_2	Carbon dioxide
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
Covid-19	Coronavirus disease
CRERC	CEMS Research Ethics Review Committee
CSR	Corporate social responsibility
D	
DEA	Department of Environmental Affairs
DoT	Department of Transport
DPE	Department of Public Enterprises
E	
EC	Environmental consciousness
EFA	Exploratory factor analysis
EMS	Environmental Management Systems
F	
F&B	Food and beverages
FFP	Frequent flyer programme
FSC	Full-service carrier
G	
GDP	Gross domestic product
GDS	Geographic Distribution System
GHG	Greenhouse gas
I	
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
IEnvA	IATA Environmental Assessment Programme
L	
LCC	Low-cost carrier

LED	Light Emitting Diode
LIA	Lanseria International Airport
LOHAS	Lifestyle of Health and Sustainability
LSM	Living Standards Measurement
LTO	Landing and take-off
LUC	Land-use change
M	
MBM	Market-based measure
N	
NDC	Nationally determined contributions
NEP	New Environmental Paradigm
NO_x	Nitrogen oxide
nvPM	Non-volatile particulate matter
O	
ORTIA	OR Tambo International Airport
O_3	Global stratospheric ozone
P	
PEB	Pro-environmental behaviour
POPIA	Protection of Personal Information Act
R	
RF	Radiative forcing
RMS	Revenue management system
RPK	Revenue passenger kilometres
S	
SA	South Africa
SAA	South African Airways
SACAA	South African Civil Aviation Authority
SAF	Sustainable Aviation Fuel
SASAP	South Africa's State Action Plan
SCA	Sustainable competitive advantage
SD	Standard deviation
SEM	Socio Economic Measure Structural equation modelling
SPSS	Statistical Package for the Social Sciences
T	
Tg	1000 000 tonnes
U	
UN	United Nations
UNFCCC	United Nations Framework on Climate Change
V	
VAS	Value-added service
VCO	Voluntary Carbon Offsetting
W	
WEF	World Economic Forum
WNA	Wonderboom National Airport
WTP	Willingness to purchase/pay

CHAPTER 1:
INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) described the effects of global warming as widespread and intensifying (Vigeveno, 2021). At the 26th Conference of the Parties (COP) Climate Conference in 2021, the aviation industry affirmed its commitment to work towards the IPCC goal of net-zero emissions by 2050 (United Nations Climate Change, 2021). However, the industry advised that multi-stakeholder cooperation is needed if this goal is to be met.

According to Baumeister, Zeng and Hoffendahl (2020), behavioural change has been identified as a measure with the most potential to mitigate the carbon emissions and related environmental impacts of air travel. Environmental concern has been identified as an important antecedent to green consumer behaviour (Sharma, 2021). Therefore, consumer behaviour, as a driver in reducing the negative environmental impacts caused by air travel, warrants investigation.

The complex nature of studying consumer behaviour has been confirmed by Wells, Ponting and Peattie (2011) who indicated that sustainability concerns complicate the study of consumer behaviour even further. At the same time, with each passing decade, concerns about environmental issues have increased (Paço, Shiel & Alves, 2019). Therefore, environmental sustainability requires a societal shift to redefine the benefits and functions which consumers seek from product and service offerings (Zhang & Chang, 2021). Furthermore, changes in consumer behaviour are occurring faster than ever before due to rapidly evolving environments. With the current advances in technology and the effects of the Covid-19 pandemic, changes have occurred in a fraction of the time they would have taken in previous eras (Zhang & Chang, 2021). This calls for insight into the behaviour of modern consumers, in order to predict how this behaviour may continue to develop and change in the coming years (Malter, Holbrook, Kahn, Parker & Lehmann, 2020).

According to Bouwer, Saxon and Wittkamp (2021), Covid-19 has caused irrevocable changes to the airline industry. Despite the many challenges and volatility that Covid-19 has caused globally, the pandemic has presented an opportunity to embrace

change (Orîndaru, Popescu, Căescu, Botezatu, Florescu & Runceanu-Albu, 2021). Additionally, Cocolas, Walters, Ruhanen and Higham (2021) inferred that the post-Covid-19 recovery period will present a rare opportunity for the airline industry to rebuild towards a more sustainable, resilient and climate-safe 21st century. The current study will continue with its initial focus on the environmental imperative, based on the empirical data collected pre-Covid-19, with references to the Covid-19 pandemic, where necessary.

The current study investigated the consumer behaviour and environmental consciousness of air travellers, as well as the interrelationships between these themes. The study was conducted among domestic air travellers from Gauteng airports in South Africa (SA), and data was collected in 2018. The results of the study will contribute to understanding air traveller consumer behaviour from an environmental perspective, and interpreted in a post-Covid-19 context.

Chapter 1 provides the introduction and background to the current study. Firstly, a background to the airline industry is presented. This is followed by the problem statement, research objectives, and contribution of the current study. Thereafter, the research methodology is presented, followed by a summary of the limitations of the study. Finally, a chapter layout is presented, outlining the structure of this dissertation.

1.2 BACKGROUND: THE AIRLINE INDUSTRY

This section provides the background to the current study, by considering the role and importance of the airline industry, and the challenges it faces. The environmental impacts of air travel are presented, and air traveller consumer behaviour as a driver for environmental protection is examined. Lastly, the competitive landscape in the SA airline industry is discussed.

1.2.1 Role and importance

“Aviation is one of the most important global economic activities in the modern world” (Lee, Fahey, Skowron, Allen, Burkhardt, Chen, Doherty, Freeman, Forster, Fuglestvedt, Gettelman, de León, Lim, Lund, Millar, Owen, Penner, Pitari, Prather, Sausen & Wilcox, 2021:2). Globalisation and continued aviation efficiency have provided the opportunity for people to travel distances within a relatively short period (Nhamo, Dube & Chikodzi, 2020). The Air Transport Action Group (ATAG) reported

that the aviation industry has united the world and brought unparalleled connectivity (ATAG, 2017; 2020). This connectivity contributes to improved business operations, efficiency, and productivity, encouraging innovation and investment, as well as allowing companies to attract high-quality employees from anywhere in the world (ATAG, 2018; 2020).

The aviation industry:

- connects remote communities with global cities, and is responsible for making the modern globally connected quality of life possible (ATAG, 2017);
- has been a major engine of global economic growth and prosperity, by enabling countries to contribute to the global economy (ATAG, 2020);
- has helped close the gaps between developed and developing nations (ATAG, 2018); and
- facilitates the globalisation of production and increasing access to international markets (ATAG, 2020).

The aviation industry is credited with being vital to human development due to its ability to bring people together (Nhamo *et al.*, 2020). Furthermore, aviation is indispensable for domestic and international tourism, increasing social and economic integrations (ATAG, 2020).

Since 1994, the tourism industry in SA has developed to become a priority sector in every government policy related to sector strategies and economic growth (Henama, 2014). Henama (2014) attributed this dramatic rise of tourism to its association with aviation as a dominant transportation sector. According to Henama, Acha-Anyi and Sifolo (2016), tourism in SA attracts more foreign exchange than gold mining. Hence, tourism in SA has been called the ‘new gold’ (Henama *et al.*, 2016). Considering aviation is indispensable as the “new gold”, the sector’s relevance in SA cannot be underestimated.

However, the Covid-19 pandemic has had a devastating impact on the supply and demand for tourism and air transport (Graham, Kremarik & Kruse, 2020). Apart from the challenges already facing the airline industry, the repercussions due to Covid-19 are unpacked in the sections below.

1.2.2 Challenges facing the airline industry

The aviation industry constantly experiences turbulence in its business environment (Diggines, 2017), as a result of a variety of issues. The airline industry has experienced a plethora of challenges including, but not limited to, high fixed costs, rising fuel prices, fierce price competition, frivolous litigation and insolvency (Barnes, 2017), rising airport taxes, currency volatility, corruption, unfair competition due to state intervention, escalation in geopolitical tension across the globe, market deregulation, natural disasters and infectious disease and virus outbreaks (Diggines, 2017). Furthermore, according to the Airlines Association of South Africa (AASA), country-specific challenges in SA include underutilisation of assets, skills shortages, transformation imperatives, regulatory constraints, as well as climate change (AASA, 2019).

The global travel industry has been recognised as susceptible to disastrous events, which result in risks to personal safety, health or security (Estevão & Costa, 2020; Ivanova *et al.*, 2021). The major crises or disruptive events which the travel industry has been exposed to include: the September 11 terrorist attacks (9/11) in 2001; the Severe Acute Respiratory Syndrome (SARS) or 'Bird Flu' outbreak in 2003; the global economic crisis that unfolded in 2008; the Ebola outbreak in 2013/2014, as well as the Middle East Respiratory Syndrome (MERS) in 2015 (Gössling, Scott & Hall, 2021).

The abovementioned events, or crises, have heavily affected the airline industry in the last two decades (Linden, 2021), and for the most part, the industry has rebounded from the impacts. These crises, however, were more limited geographically and more limited in duration than the global Covid-19 pandemic (Garrow & Lurkin, 2021).

The announcement of the Coronavirus in December 2019 in China, followed by the World Health Organisation (WHO) declaring Covid-19 a global pandemic on 11 March 2020, had a devastating impact on the aviation industry (Dube *et al*., 2021). The Covid-19 pandemic has restricted people's movement, debilitating the aviation industry in numerous ways, and significantly impacting flight operations (Nhamo *et al.*, 2020). The United Nations has warned that the impacts of the Covid-19 pandemic would likely be greater than all previous pandemics, triggering a worse economic recession than that of 2008, perhaps even worse than that of the Second World War (Nhamo *et al.*, 2020).

Subsequently, the global aviation industry has seen a more dramatic and sustained decline in air traveller demand than ever experienced before (Garrow & Lurkin, 2021).

National and provincial border closures prohibited scheduled flights, while the quarantine measures imposed by governments have greatly restricted travel opportunities (Ivanova, Ivanov & Ivanov, 2021). In SA, the Covid-19 impacts have been catastrophic, primarily as a result of prolonged air travel bans and restrictions (Airline Business, 2020).

Travel bans and restrictions, including border closures, quarantine rules and national or provincial lockdowns, meant that aircraft were first grounded, and later severely constrained in their movement from the early months of 2020 (Graham *et al.*, 2020). These traffic movement disruptions had dire consequences for airlines' budgets and operating expenses (Nhamo *et al.*, 2020). Furthermore, when operations resumed, airlines had to incur additional expenses in adhering to the extra health and safety protocols (Dube, Nhamo & Chikodzi, 2021). Additionally, airlines needed to revise their cancellation and booking policies, offering customers flexibility for last-minute changes to travel itineraries (Dube *et al.*, 2021). The traditional revenue management and demand forecasting approaches struggled to adapt to the new and volatile Covid-19 operating environment (Garrow & Lurkin, 2021). Consequently, several airlines filed for liquidation or went into business rescue. This will be discussed further in Section 1.2.5.

Resulting from the Covid-19 pandemic, the demand for air travel collapsed due to a combination of factors, some behavioural and some economic. Health concerns led to fear of travelling and flying, and travellers were uneasy with new travel rules and restrictions. There were job losses, business closures or uncertainty, and declining income (Graham *et al.*, 2020). These behavioural and economic factors have persisted to affect the demand for air travel, even as the Covid-19 restrictions have eased. Leisure travel demand is uncertain, and the profit-generating pool of business travellers has shrunk (Bouwer *et al.*, 2021). Ivanova *et al.* (2021) foresee that this behaviour, and the low demand for business travel, will likely continue post-Covid-19 recovery, as technology and online business arrangements have proven that businesses can run smoothly without the need to travel.

According to Gössling *et al.* (2021), as soon as the pandemic is under control, there will likely be an urge for the airline industry to return to 'business-as-usual', perhaps to overcompensate for losses with aggressive growth strategies. However, the authors caution that the Covid-19 crisis holds important lessons regarding the resilience of the travel and tourism industry. The industry needs to give attention to ongoing crises or risks that may not be as immediate, but will be potentially even more devastating – such as climate change, in particular. Accordingly, the environmental impacts of the airline industry are discussed next.

1.2.3 The environmental impacts of the airline industry

Despite the abundance of social and economic benefits created by the aviation industry, the industry is also a significant contributor to anthropogenic (man-made) climate change (Higham, Reis & Cohen, 2016; Lee *et al.*, 2021). As such, the awareness of the potential imminent dangers that the airline industry has on climate change, has progressively increased (Ragbir, Rice, Winter & Choy, 2021). The IPCC set a global target of "zero emissions by 2050" (Torreilles, 2020) in the Climate Paris Agreement. The next decade will be crucial in ensuring that the aviation industry can live up to the Agreement to avoid the worst effects of climate change (ATAG, 2020).

Prior to the Covid-19 pandemic, the airline industry experienced growth at a rapid rate (Nhamo et al., 2020). There was a general expectation that the airline industry would experience another year of strong growth in 2020 (Dube *et al.*, 2021) and forecasts anticipated the industry to double by 2038 (ATAG, 2020). Evidently, the pre-Covid-19 status-quo regarding the rapid growth of air travel was not sustainable, due to its heavy reliance on oil-based non-renewable fuel, and the related increase in emissions (Lee *et al.*, 2021).

As an effect of Covid-19, people travelled less during 2020 and 2021, resulting in a significant drop in passenger demand, and consequently a period of decarbonising the world economy (Perkins, Velazquez & Mungiua, 2021). This period is considered temporary, as the International Air Transport Association (IATA) has forecasted that global travel demand will return to the 'normal' (pre-pandemic levels) in 2024 (ATAG, 2020; Cornwell, 2021).

Although there will be a slowing of growth compared to pre-pandemic levels, a compound growth rate of 3% annually is expected from 2019 until 2050. This growth

translates to a forecast of transporting over ten billion passengers per year, by 2050 (ATAG, 2020). Accordingly, ATAG (2020) has cautioned that without any additional improvements in fuels, technology or operations, the industry's environmental impact will only intensify. If the airline industry is to contribute to achieving the IPCC's target of zero emissions within the next three decades, it is necessary to innovate and implement additional measures to reduce and mitigate its environmental impacts.

Airlines have a role to play in decreasing (ideally neutralising) their environmental impacts. At the same, air travellers are becoming more concerned and aware of the effects of their air travel behaviour on the environment (Cohen & Higham, 2011; Cohen, Higham & Cavaliere, 2011; Árnadóttir, Czepkiewicz & Heinonen, 2021). Therefore, the next section focuses on consumer behaviour as a driver in mitigating the impacts of air travel.

1.2.4 Consumer behaviour as a driver for environmental protection

Consumer behaviour is a multidimensional and complex concept, further complicated by the inclusion of sustainability concerns (Wells *et al.*, 2011). According to the WWF (2018), the explosion of human consumption is the main reason for the unprecedented planetary changes. Consumption levels are too high and unsustainable (Cherian & Jacob, 2012; Garcia, Ambrose, Hawkins & Parkes, 2021). Consumption has become a growing challenge for the 21st century and is stirring research interest on several pathways essential to create a more environmentally sustainable future (Newton & Meyer, 2013; Garcia *et al.*, 2021). To create a more sustainable system, major changes to production, supply and consumption activities are required (WWF, 2018).

Marketers should be aware of the growing use and shortage of finite raw materials, increased air pollution, and the green movement towards environmental sustainability (Kotler, Bowen, Makens & Baloglu, 2021). The Covid-19 pandemic has revealed the importance of consistently managing and controlling risks, where possible. While there were no warning signs before the Covid-19 pandemic, there have been manifold signs regarding the impending climate crisis. Hence, green consumption and behaviour should be considered an important academic and practical topic in the marketing field (Hguyen, Hguyen & Hoang, 2019).

Environmental concerns have shaped consumers' buying behaviour (Merilä, 2015). Modern customers expect businesses to deliver value in environmentally responsible

ways, and as the environmentalism movement matures globally, marketers are increasingly being called upon to create sustainable marketing practices (Kotler *et al.*, 2021). Kotler *et al.* (2021) asserted that marketers should see their environmental responsibility as an opportunity to do well by doing good, and to pursue profits by developing sustainable marketing practices. However, the role of consumers in protecting the environment is equally crucial (Al Mamun, Mohamad, Yaacob & Mohiuddin, 2018). According to Wells *et al*. (2011) carbon emissions are strongly linked to the behaviours and choices of individuals. Therefore, encouraging consumers to take on more sustainable consumption behaviours can create new marketing opportunities (Wells *et al.*, 2011).

It has been confirmed that the environmental concerns raised by the growing demand for air travel, have become a key issue of air travel behaviour that warrants attention (Lassen, 2010; Mayer, 2013; Chen, Tu & Wang, 2016). This is due to the airline industry being one of the most energy intensive industries, with vast environmental impacts (Baumeister *et al.*, 2020). These impacts are of importance and concern to the general public (Chen *et al.*, 2016), and to air travellers who are increasingly expressing their interest in reducing their carbon footprints (Graver, Zhang & Rutherford, 2019). There has also been a movement of consumers who have started to use air travel with a “carbon” or environmental conscience (Cohen & Higham, 2011). However, despite the growing concern over emissions caused by air travel, there is also evident reluctance from individuals to alter their air travel behaviour on a substantial scale (Cohen *et al*., 2011; Árnadóttir *et al*., 2021). Nonetheless, the ‘business-as-usual’ status quo in the airline industry is not compatible with the forecast of increased air travel. Fundamental shifts in consumer and business behaviours, amongst others, are required (Higham *et al.*, 2016). New sustainable solutions are therefore vital and need to be embraced by all stakeholders in the airline industry, including travellers, if the industry is to sustainably match the growing air travel demand (Torreilles, 2020). Hence, in this context, behavioural change should be considered as a form of reducing and mitigating environmental impacts caused by air travel activities (Baumeister, 2017; 2020).

Baumeister (2017) claimed that air passengers can change behaviour by actively selecting airlines that engage in environmental initiatives. However, Araghi, Kroesen, Molin and van Wee (2016) asserted that the effectiveness of these initiatives requires

air travellers' acceptance and their collaboration with airlines to have a substantial impact on reducing airline emissions.

Air travellers, however, have different characteristics, attitudes and preferences (Araghi *et al.*, 2016). Additionally, air travellers currently receive little, if any, information regarding the potential impact that changes in air travel behaviour could have on carbon emission reductions (Lu & Wang, 2018).

Airlines need to identify the key factors that make them competitive and cause customers to choose their specific airline over another. The consumer environmental movement is an opportunity for airlines to strengthen their market positions (Dožić, 2019).

Therefore, understanding environmental consciousness from a consumer behaviour perspective is the focus of the current study. Table 1.1 presents the key terms considered at the onset of this dissertation.

Table 1.1: Key terms used in the current study

Term	Definition/description
Consumer behaviour	A complex and changing process that consumers follow when deciding on a product or service to purchase. The process involves a seller of a product or service, and a user seeking to satisfy a need or desire by purchasing a product or service. How consumers behave throughout this process is considered consumer behaviour (adapted from Wells *et al.*, 2011; Fotis, 2015; Ling, D'Alessandro & Winzar, 2015; Antonides, 2017).
Environmental consciousness	A multidimensional construct including environmental knowledge, environmental awareness and concern, environmental attitudes, and environmental behaviour. It is a level of a consumer's consciousness, with consideration of their consumer characteristics, from an environmental perspective (Mataracı & Kurtuluş, 2020). Environmental consciousness is considered an important antecedent to green consumer behaviour (Sharma, 2021).
Green (environmental) consumer behaviour	A form of ethical behaviour, pursued by consumers who believe it is their moral duty to make responsible purchase decisions that will contribute to the earth's natural resources (Van Tonder, 2020).

Source: Compiled by the researcher

Section 1.2.4 presented a brief background of consumer behaviour as a prerequisite for environmental protection. Reference was made to air travellers who are the

consumers of the airline service. The next section provides a brief background to the competitive environment in the SA airline industry.

1.2.5 Competitive landscape

The SA domestic airline industry has seen substantial market changes and evolution over the last 86 years. A historical overview of the scheduled passenger airlines in SA, including pre- and post- deregulation market entries and exits, can be found in Section 3.5 of Chapter 3. This section aims to briefly describe the SA airline industry's market environment in the recent decade, from 2011 to 2021.

Between 2011 and 2017, the SA airline market saw five market entries and five market exits. Eight airlines operated in the market between 2017 and 2019, namely, South African Airways (SAA), British Airways (BA), Mango, Kulula.com, FlySafair, SA Airlink, SA Express, and CemAir. During this time, the product differentiation lines between the full-service carrier (FSC) and low-cost carrier (LCC) airline models began to blur, as described in Sections 3.2 and 3.3 of Chapter 3.

In 2019, the Airlines Association of South Africa (AASA) described the competitive environment of airlines in SA as intense (AASA, 2019). Despite much volatility in the SA economy, the country presented a robust, well-functioning market for its various domestic airlines (Geldenhuys, 2019). This was especially true for the LCC market which enjoyed steady annual passenger growth of 4% up until 2019 (Geldenhuys, 2019). However, the FSC market experienced shrinkage (Charlier & Dobruszkus, 2020). These dynamics led to changes in the functioning and structure of the market (Mhlanga, 2017). An SA airline market review is presented in Section 3.5.

The Covid-19 pandemic had a dramatic impact on airlines and the aviation industry as a whole (Charlier & Dobruszkes, 2020). Subsequently, competitive landscapes have been completely shaken up by a new reality. Several unprecedented events were experienced in the SA airline industry in a short period of two years (2020-2021).

Shortly after the WHO announced Covid-19 as a global pandemic, the SA government declared an official State of Disaster to disrupt the chain of infections (SAnews, 2020). All domestic flights were grounded from 27 March 2020 until 31 May 2020 due to the hard 'lockdown' restrictions imposed by the SA government. From June 2020, as

lockdown restrictions eased, air travel was gradually permitted, commencing with business travel only (see Table 3.6).

During 2020, three airlines, SAA, BA and Kulula.com entered business rescue arrangements. Mango followed suit and entered business rescue in May 2021. In 2020, BA and Kulula.com had a staggered re-entrance into the market, while SAA remained grounded. In April 2020, SA Express ceased operations and filed for liquidation, while SA Airlink cut ties with SAA, and changed its operating name to Airlink. Despite the volatility of the SA airline market, a new airline managed to successfully enter the market. LIFT joined the market in December 2020, operated by the Takatso Consortium. In September 2021, SAA re-joined the skies after being grounded for 17 months, while Mango remained in business rescue with suspended flights.

With the new entrant and a promising domestic market recovery in sight from the end of 2020, Wilhelm (2021) expressed that this indicated that some confidence still exists in the market. Additionally, the SA Department of Transport (DoT) described the country's demand for domestic air travel as stronger than previously thought, suggesting that capacity may need to expand substantially in the future. However, despite promising domestic recovery, the repercussions of Covid-19 on the industry are expected to linger for some time. The manner in which airlines manage their recovery post-Covid-19 is critical (Lange 2020 in Garrow & Lurkin, 2021).

Airlines will need to identify innovative ways to compete if they are to survive in the new post-Covid-19 reality and avoid further business rescue processes and potential liquidations in the industry. The challenges posed call for the "reinvention of resilience" to sustain the aviation industry into the future (Airline Business, 2020). He and Harris (2020) argued that Covid-19 offers an opportunity for businesses to shift to more authentic and genuine corporate social responsibility (CSR) practices and help address the pressing environmental challenges. Orîndaru *et al.* (2021) asserted that the Covid-19 crisis presents a compelling window of opportunity for developing new behaviours in what products and services consumers use, and how. Within this environment, the changing consumer behaviour of air travellers in SA requires a modern understanding, specifically in relation to the increasingly relevant dimension that the environmental consciousness of consumers adds to determining behaviour.

This section provided a background to the current study. The problem statement for the current study will be presented in Section 1.3, which follows.

1.3 PROBLEM STATEMENT

The airline industry has significant, comprehensive and increasingly severe impact on the natural environment. A short period of decarbonisation was experienced in the early months of 2020, as airlines around the world were grounded due to the announcement of Covid-19 as a global pandemic. During this time, carbon emissions were temporarily suspended, as the airline industry came to a sudden halt. However, as airlines pursue recovery, many are pursuing the return to their 'normal' operating status quos.

However, the 'business-as-usual' status quo in the airline industry is neither sustainable nor compatible with the recent historical growth of the commercial airline industry and the forecast of increased air travel. If the IPCC goal of zero emissions by 2050 is to be achieved, airlines need to take precautionary measures, as well as adopt mitigating initiatives.

Air passengers can change their behaviour by actively selecting airlines that engage in pro-environmental initiatives (Baumeister, 2017; 2020). The current study argues that behavioural change is therefore a significant driver in mitigating or reducing the environmental impacts caused by air travel (Baumeister & Onkila, 2017). However, consumer behaviour is a multidimensional and complex concept, which is further complicated by including sustainability concerns (Wells *et al.*, 2011).

The research problem is situated in the limited knowledge of a green business model in the airline industry. Furthermore, air traveller attitudes relating to environmental concern and behaviour have not yet been sufficiently investigated, and little is known about the relationships between air traveller consumer behaviour and the various dimensions influencing their environmental consciousness. Additionally, there is a lack of knowledge on the modern air traveller, their consumer behaviour and their attitudes towards environmental issues. Therefore, there is a need to understand consumer decisions in a modern context, coupled with the need for insight into the reasons behind their actions in the marketplace and how they could possibly be influenced at various stages in their consumption process. The SA airline industry is a useful context

as, according to the Department of Environmental Affairs (DEA), 7.7% of SA's transport sector's greenhouse gas (GHG) emissions come from the country's domestic aviation (DEA, 2014), a figure which is likely to increase. Even when the Covid-19 pandemic dissipates, this problem will persist, as airlines aim to recover from the pandemic aftermath. Within this context, research on this topic is further necessitated, since developing countries, such as SA, are most vulnerable to the impacts caused by climate change (National Planning Commission, 2012; Duncan, 2019). The role of individuals as agents for change in tackling the environmental challenges, is thus open for exploration.

The lack of existing literature on the relationships between consumers' behaviour and the various dimensions that constitute their environmental consciousness (EC), has left important aspects for understanding the modern air passenger underexplored; consequently, highlighting the gap and purpose of the current study. It is therefore suggested that all dimensions within the concept of EC, and the factors influencing consumer behaviour are examined within the context of the domestic airline industry. Firstly, by focusing on the determinants generally affecting air traveller consumer behaviour. Secondly, by focusing on the importance air travellers place on the air travel service attributes (ATSAs) when deciding on an air travel ticket to purchase, the dimensions of their EC, and gaining an understanding of their pro-environmental behaviour (PEB). Finally, by investigating the interrelationships between the concepts and by gaining further insight into understanding the socio-demographic profile of the sample. By empirically studying the latter uncharted territory, the gap in the existing literature will be filled.

This section provided the identified research problem and justified the need for the current study. The next section outlines the research objectives pursued in the current study.

1.4 RESEARCH OBJECTIVES

The section above presented the research problem as the justification for the current study. Flowing from the problem statement, the following research question was formulated for the current study:

Does environmental consciousness influence the consumer behaviour of domestic air travellers within a South African context?

Guided by the problem statement and research question, one primary research objective was identified and six supporting secondary research objectives (SROs) were formulated for the current study.

The primary objective that was formulated for the current study is as follows:

To investigate the interrelationships between domestic air travellers' consumer behaviour and environmental consciousness, within a South African context.

To achieve the abovementioned primary objective, the following SROs were formulated (all SROs relate to domestic air travel within a South African context):

- SRO 1: To investigate the 2018 consumer behaviour of domestic air travellers
- SRO 2: To determine the importance domestic air travellers place on air travel service attributes when deciding on an air travel ticket to purchase
- SRO 3: To investigate the environmental consciousness of domestic air travellers
- SRO 4: To investigate whether domestic air travellers engage in pro-environmental behaviour, or not
- SRO 5: To investigate if domestic air travellers' environmental knowledge, environmental awareness/concern, and environmental attitudes are statistically and significantly aligned with air travel behaviour
- SRO 6: To present a socio-demographic profile of the domestic air traveller

This section presented the research objectives of the current study. The intended contribution of the current study will be discussed in the next section.

1.5 CONTRIBUTION OF THE STUDY

The current study aims to gain specific insights into the relationship between the consumer behaviour of domestic air travellers, and their environmental consciousness. Amongst the benefits of the insight gained, will be an improved understanding of consumer air travel decisions, the relevant motivations behind these decisions, and how airlines could ultimately influence these decisions towards pro-environmental behaviour (PEB). In addition, the factors identified in the current study can be used in future studies with similar research settings, and as such, are considered theoretical contributions.

As guided by the IPCC, airlines have the responsibility to ultimately reach “net-zero emissions by 2050”. The findings and insight gained from the current study aim to give rise to several recommendations which airlines could implement, as part of their operations and marketing mix. These recommendations consider how airlines can mitigate their environmental impacts, to drive and enable behaviour change, and to create a sustainable competitive advantage as they navigate their post-Covid-19 recovery.

This section addressed the intended contribution of the current study. The research methodology utilised in the current study will be reported on in the next section.

1.6 RESEARCH METHODOLOGY

The aim of this section is to present a summary of the research methodology chosen and employed in the current study. Therefore, this section addresses the research design (Section 1.6.1), target population and units of analysis (Section 1.6.2), survey strategy and data collection (Section 1.6.3), data processing and analysis (Section 1.6.4), and finally, the ethical considerations for the current study (Section 1.6.5). A comprehensive discussion and motivation for each of these elements of the research methodology employed for the current study, will be presented in Chapter 4.

1.6.1 Research design

It is necessary to plan or design how to collect and discover the new knowledge which is being sought. According to Schindler (2022), research design is the blueprint, or plan, for collecting data that fulfils objectives and answers the research question. This

stage of planning a research project, considers two sub-processes, namely, data-collection design and sampling design (Schindler, 2022).

The research design for the current study was structured according to a list of research design descriptors, covering both the design of data collection and sampling. Table 1.2 summarises the research design for the current study, according to eight research descriptors.

Table 1.2: Research design summary

Category	Descriptor for this research study
Degree of research crystallisation	Formal with a degree of exploration
Method of data collection	Primary data, communication approach, survey
Research control of variables	*Ex post facto*
The purpose of the study	Descriptive with elements of exploratory
The time dimension	Cross-sectional
The topical scope	Statistical
The research environment	Field setting
Respondents' perceptions (influence)	Subtle (if any) influence

Source: Adapted from Cooper and Schindler (2014); Schindler (2022)

Section 1.6.1 provided an overview of the research design followed for the current study. The next section discusses the target population and sample.

1.6.2 Target population and sample

The target population of the current study constitutes air travellers who have flown domestically from a Gauteng airport within SA during 2017/2018. The unit of analysis therefore is domestic air travellers who have departed from a Gauteng airport (in 2017/2018) to a destination in SA.

Due to the size of the target population, among other reasons, a non-probability sampling method was employed for the current study. Two non-probability sampling methods were selected, firstly purposive, followed by snowball sampling. A detailed discussion of, and motivation for, the selected target population and sampling methods is presented in Section 4.3.

1.6.3 Data-collection method

The current study adopted a survey design strategy, using a self-administered structured questionnaire. The structured questionnaire was administered using two different approaches, namely, an internet-administered approach and a respondent intercept approach (albeit using the same structured questionnaire presented in different formats). The primary data-collection process concluded in 2018, two years prior to the Covid-19 pandemic.

The internet-administered approach, also referred to as the internet-based approach in the current study (using a LimeSurvey), involved inviting prospective respondents via e-mail and social media channels (namely, Facebook and LinkedIn). The invitation included an electronic link directing the prospective respondents to the internet-based survey hosted on the LimeSurvey platform. With the respondent intercept approach, also referred to as the OR Tambo International Airport (ORTIA) intercept approach in the current study, the researcher intercepted air travellers departing from the ORTIA, inviting them to complete a paper-based questionnaire.

Using a cross-sectional time frame, the data collection occurred between 30 October 2017 and 31 March 2018, concluding with a total 394 valid responses. Figure 1.1 below illustrates where the data-collection process in 2017 and 2018 is positioned in the full research timeline of the current study, and in relation to the Covid-19 pandemic.

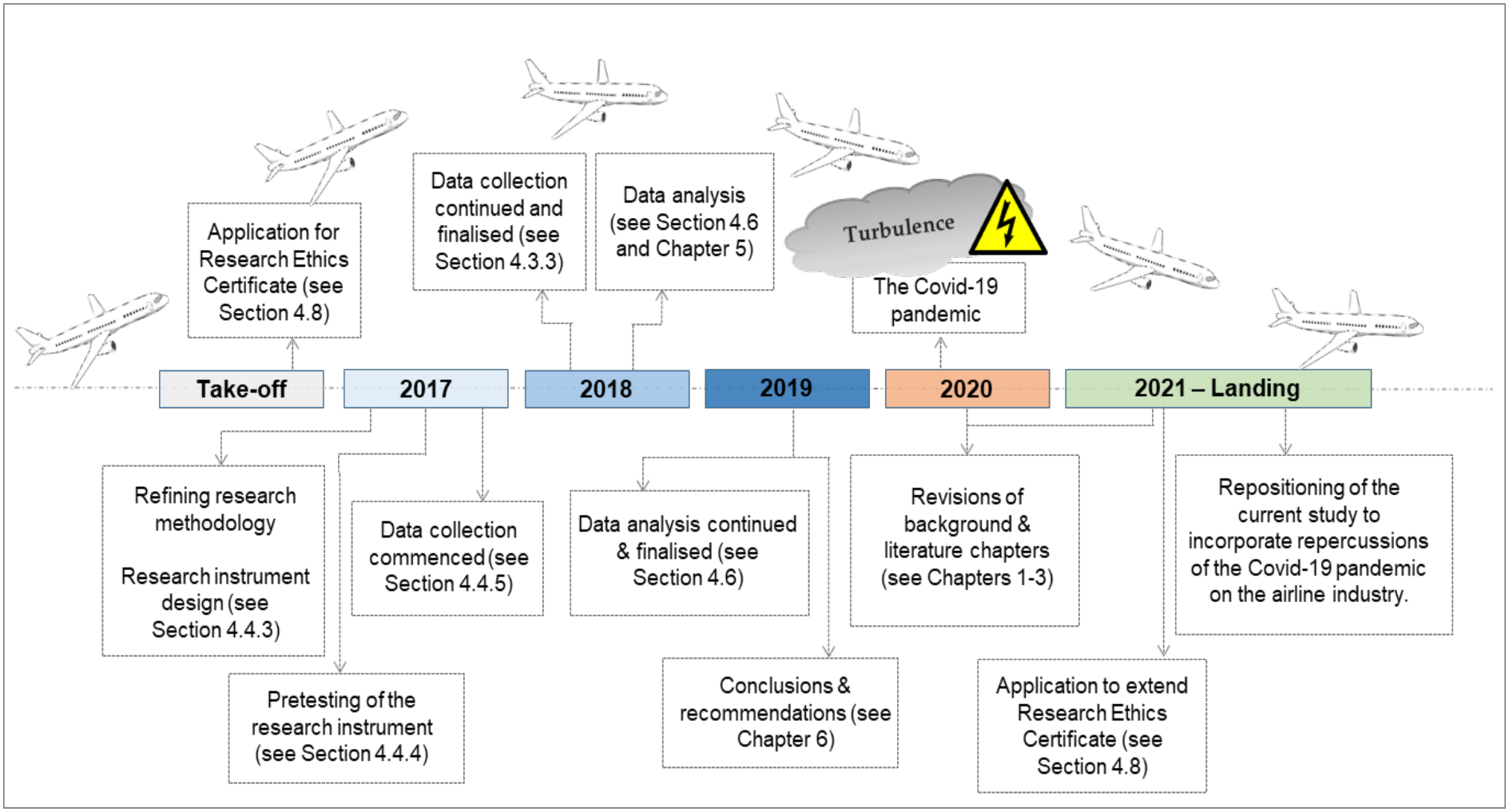


Figure 1.1: Timeline of the research process for the current study

Source: Researcher's own compilation

The activities referred to in the timeline presented in Figure 1.1 refer to the relevant sections in Chapter 4. Section 4.4 will provide detailed discussions of the data-collection methods utilised in the current study. The advantages and disadvantages of the methods will be discussed, as well as unanticipated developments in the approaches. Appendices B and C include both formats of the final questionnaire used for the current study.

1.6.4 Data processing and analysis

To answer the research question and address the research objectives, quantitative data analysis techniques were employed to analyse the data collected for the current study. IBM's Statistical Package for the Social Sciences (SPSS), version 25, was used to run the necessary analyses and a statistician was consulted. The data analysis process included exporting the data from the LimeSurvey electronic database (from the internet-based responses) and manually capturing the data from the paper-based research instrument (from the ORTIA intercept responses).

The responses were coded and merged to one Excel database, and then exported to SPSS for the analysis to commence. The analysis process involved data cleaning and screening, descriptive statistics (frequencies, percentages, and measures of central tendency), multivariate statistics (exploratory factor analysis), and inferential statistics (*t*-tests and correlation analysis). The researcher made use of content and construct validity as well as Cronbach's Alpha for reliability.

Before the data collection process could commence, the researcher had to apply for ethical clearance to be granted. The ethical considerations are presented below.

1.6.5 Ethical considerations

The principles for research ethics were followed throughout the research process, as guided by the UNISA College of Economic and Management Sciences Research Ethics Review Committee (CRERC) and ethical best practice according to Saunders, Lewis and Thornhill (2016), Salkind (2018), and Quinlan, Babin, Carr, Griffin & Zikmund (2019). All research procedures during the compilation of the current study were conducted ethically. The ethical considerations and the UNISA CRERC authorisation are discussed in Section 4.8. (The ethical clearance certificate obtained for the current study is available in Appendix A.)

This section presented a brief report of the research methodology employed for the current study. The next section indicates the limitations identified at the onset of the current study.

1.7 LIMITATIONS

At the onset of the current study, sampling and data-collection limitations were encountered. Additionally, as the researcher was finalising the dissertation for the current study, the Covid-19 outbreak was declared a global pandemic. These limitations are summarised below.

Access to a customer database in order to employ a probability sampling method was not possible, despite various efforts. Therefore, non-probability sampling methods were employed. In this context, generalisation of the domestic air travelling population in SA cannot be established in the current study. Additionally, the sample was restricted to air travellers departing from an airport based in the Gauteng province.

The data-collection limitations involved delays in obtaining gatekeeper permissions for the researcher to intercept air travellers at Gauteng airports. The researcher approached the three main commercial airports in Gauteng, and access was denied at two of the three airports. Gatekeeper approval was granted at the ORTIA, where access was subject to several conditions and time, data and area restrictions, which are outlined in Section 4.5.3.

As the researcher was finalising the dissertation for the current study, Covid-19 was announced a global pandemic. The repercussions of the Covid-19 pandemic significantly impacted the airline industry (Nhamo *et al*., 2020), domestically and globally. Considering the data-collection process for the current study was finalised in 2018, the researcher was required to find new meaning for the current study, within the new Covid-19 pandemic reality. This was a limitation, as it increased the time period required for the researcher to finalise and submit this dissertation.

The complete set of limitations, including other limitations encountered over the course of the current study, is presented in Section 6.5. The next section illustrates the chapter layout for the current study.

1.8 CHAPTER LAYOUT

The current study is organised into six chapters. Figure 1.2 below outlines the structure of the dissertation, from Chapter 1 to Chapter 6.

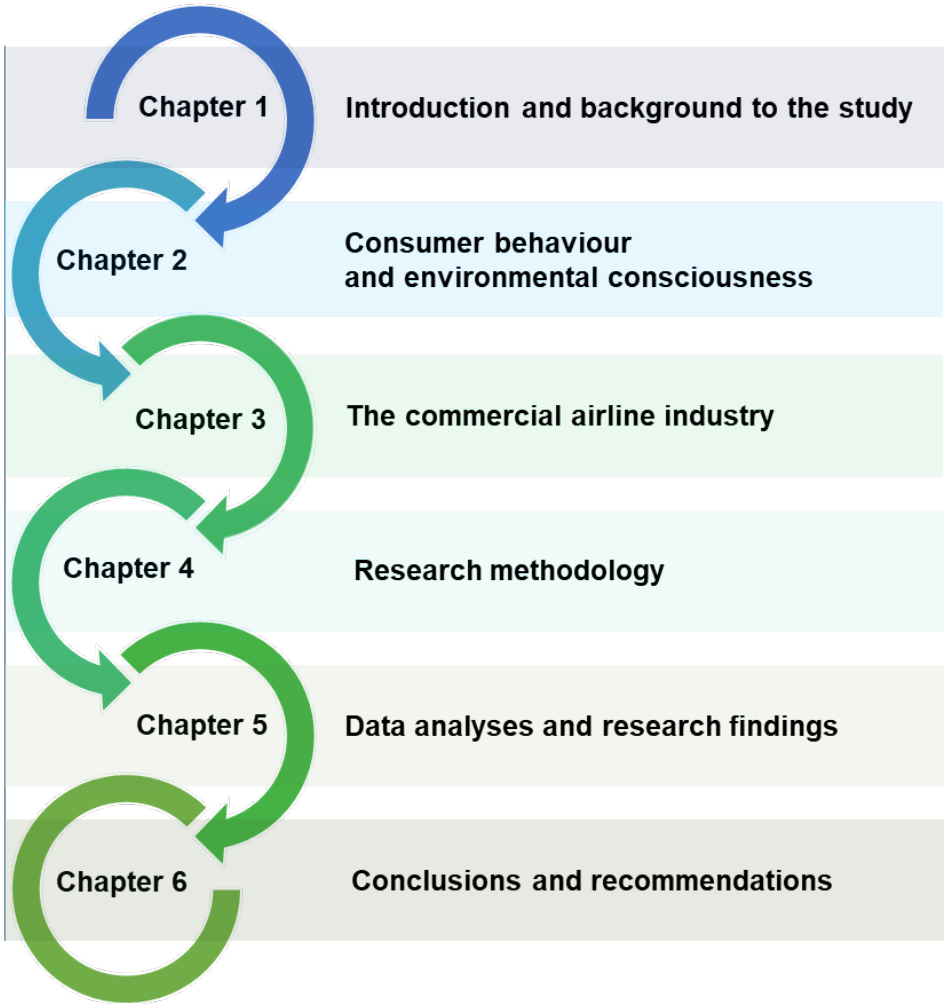


Figure 1.2: Structure of the dissertation

Source: Researcher's own compilation

Chapter 1: Introduction and background to the study

Chapter 1 provided the introduction and background to the current study. The problem statement, research question, and the primary and secondary research objectives were presented for the first time in the current study. The chapter put forward the intended contribution of the current study. Thereafter, the research methodology and data analysis procedures adopted for the current study were introduced, and the ethical considerations were highlighted. Finally, the limitations encountered were

briefly described. Finally, a road map of what the reader can expect in the forthcoming chapters was presented.

Chapter 2: Consumer behaviour and environmental consciousness

Chapter 2 presents a comprehensive literature review and the theoretical underpinning followed in the current study. The chapter provides a review of the relevant components of the consumer behaviour theory and the factors influencing consumer behaviour and decision-making. The environmental imperative in relation to consumer behaviour will be discussed, considering the developing trends of green marketing and environmental consciousness. Finally, the interplay between the consumer behaviour and environmental consciousness concepts, in context of the airline industry, will be synthesised.

Chapter 3: The commercial airline industry

Chapter 3 provides an overview of the literature relating to the airline industry. It commences by describing the two main traditional airline business models (FSC and LCC) and presents the key differences and similarities between these models. Then, the various developments affecting (the restructuring of) airline business models will be deliberated. This includes the impacts which the Covid-19 pandemic has had on the airline industry. The chapter progresses to explain the impacts of the aviation industry on the environment, followed by the environmental mitigation efforts untaken by the global aviation industry.

Thereafter, the focus shifts to the SA domestic airline industry – the context on which the current study was based. The air transport industry's structure will be outlined, followed by a historical overview of the scheduled passenger airlines that have operated in the SA market. An overview of the recent history (the last decade) of the domestic air travel market will also be covered. Additionally, the chapter will highlight the SA airline industry's environmental mitigation efforts, with reference to the response from the country's government and from the domestic airlines, specifically.

Chapter 4: Research methodology

The research methodology employed for the current study will be covered in Chapter 4. A description of the current study's research design is the starting point of this chapter. The research design will outline the carefully planned journey to collect the

study-specific data. The research universe of the current study is described, which includes the target population and the sample size, as well as the two different sampling plan approaches employed. Furthermore, the research strategy is explained, including the survey strategy and the survey methods adopted. Thereafter, the details of the measurement instrument will be discussed, including the levels of measurement and scaling techniques, the questionnaire design, as well as the pre-testing process. Furthermore, Chapter 4 includes the important elements of the data analysis which will be considered for the current study, as well the techniques used to determine the validity and reliability of the data. Finally, important research ethics considerations for the current study will be addressed.

Chapter 5: Data analyses and research findings

Chapter 5 presents the statistics, data analyses and empirical findings from the survey administered amongst the sample. Firstly, the chapter will describe the data cleaning process. Thereafter, the descriptive analysis of the statistics will be presented and discussed. This is followed by the EFA, and statistical tests used to determine the validity and reliability of the factors. Additionally, inferential statistical analyses will be conducted to determine key differences between variables, as well as the correlations between factors. Finally, the links between the SROs and the research findings will be highlighted.

Chapter 6: Conclusions and recommendations

Chapter 6 is the final chapter of the current study and will reflect on each research objective for the study and present conclusions and recommendations relating to each objective. Thereafter, the primary research objective will be addressed. Additionally, the limitations encountered during the research process will be discussed, followed by future research suggestions on similar topics. Overall, Chapter 6 serves as an overarching summary of, and conclusion to, the current study. A personal reflection by the researcher closes the dissertation.

CHAPTER 2:
CONSUMER BEHAVIOUR AND ENVIRONMENTAL CONSCIOUSNESS

2.1 INTRODUCTION

As introduced in Chapter 1, there is heightened focus on the concept of sustainability and an increasing awareness of the need to reduce society's environmental impact related to their carbon footprint. As the principles of sustainability have gained popularity, consumption has been under the microscope and is facing pressure from all stakeholders (Orîndaru *et al.*, 2021). According to Baumeister *et al.* (2020), behavioural change has been recognised as a driver with the most potential to mitigate the environmental impacts of air travel.

As such, research into the environmental imperative as a developing trend in consumer behaviour is necessary. There is a need to gain a deeper understanding of consumer decisions and behaviour in the airline industry in a modern context, whilst merging this understanding with environmental consciousness dimensions and the sustainability narrative. Therefore, the purpose of this chapter is to offer a review of literature to position the current study within the theoretical foundations of consumer behaviour, green marketing and environmental consciousness theory. This chapter will provide an overview of the relevant components of consumer behaviour, the factors influencing consumer behaviour and decision-making, as well as a consideration of environmental consciousness factors within the context of the airline industry. Figure 2.1 below graphically depicts the flow of Chapter 2 and illustrates the position of the chapter within the broad structure of the dissertation of the current study.

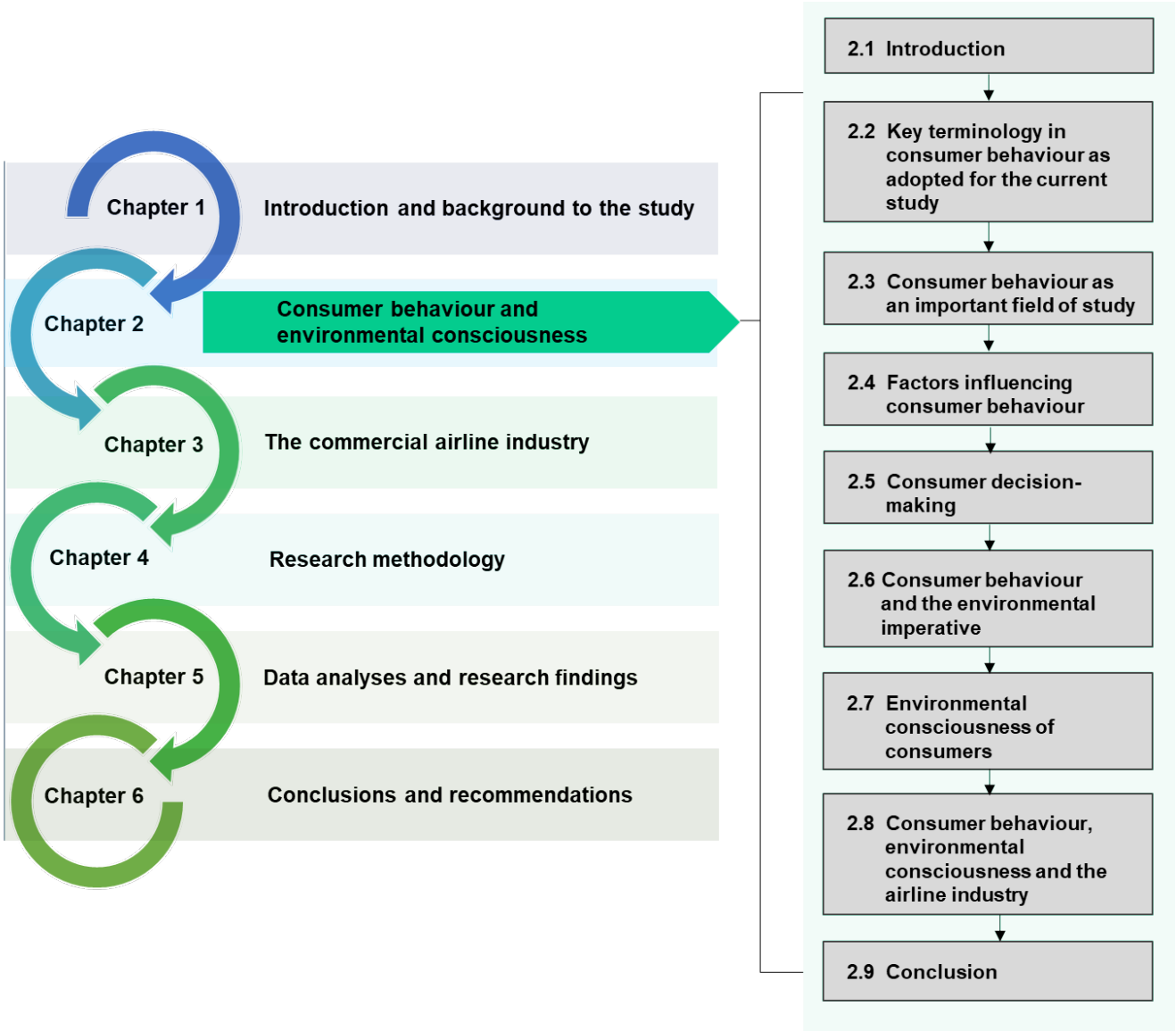


Figure 2.1: Structure of Chapter 2

Source: Researcher's own compilation

Firstly, the key terminology for consumer behaviour will be offered (Section 2.2). Following this, consumer behaviour as an important field of study will be presented and the considerations underpinning consumer behaviour theory in the current study will be highlighted (Section 2.3). The factors influencing consumer behaviour will be the focus of the next section (Section 2.4), followed by consumer decision-making (Section 2.5). Thereafter, the environmental imperative in relation to consumer behaviour will be addressed, considering the developing trends of green marketing and the green consumer (Section 2.6), followed by a discussion of consumer environmental consciousness (Section 2.7). Finally, the interplay of factors of the

consumer behaviour and environmental consciousness theory, in context of the airline industry will be synthesised (Section 2.8), before concluding the chapter (Section 2.9).

The current study is conducted with the focus on sustainability and environmental consciousness from the viewpoint of the consumer. Thus, this chapter focuses on behaviour, decision-making and environmental consciousness from the consumer's point of view, and not from a company's perspective.

2.2 KEY TERMINOLOGY IN CONSUMER BEHAVIOUR AS ADOPTED FOR THE CURRENT STUDY

Prior to providing the definitions of consumer behaviour, it is necessary to understand important foundational terminology. The researcher identified three key concepts requiring explanation before moving on to the definition of consumer behaviour. These three terms include the consumer, consumption and consumerism.

2.2.1 A consumer, consumption and consumerism

An individual, group of people, or an organisation, who are the end users of products or services, is the consumer (Hee & Yen, 2018). Subject to a variety of social and psychological needs, consumers are complex individuals whose needs and priorities differ dramatically in different consumer segments (Schiffman & Wisenblit, 2019). For example, air travellers are consumers of an air travel service.

Szmigin and Piacentini (2015) defined consumption as the process of production, acquisition, utilisation and destruction of places, experiences, services or goods. Consumption can be seen as a function intended to enhance the well-being of consumers by providing the goods and services necessary to meet their needs, wants and desires (Angelovska, Sotiroska & Angelovska, 2012). Overconsumption has led to consumerism. According to Wilkinson (2016 in Van Tonder, 2020) consumerism implies that consumption levels of consumers should not be restricted. It is therefore warranted that consumption has become a transcending challenge in the 21st century, inspiring research into the numerous avenues vital to achieve an environmentally sustainable future (Newton & Meyer, 2013). This challenge is highlighted by the term "destruction" in Szmigin and Piacentini's (2015) definition, pointing out that it is not unexpected that the term "consumption" has become synonymous with environmental destruction (Angelovska *et al.*, 2012). This destruction has called for heightened

environmental and social responsibility, which has led marketers to re-examine their relationship with the physical environment and to develop sustainable marketing practices (Kotler *et al.*, 2021).

2.2.2 Defining consumer behaviour

The academic study of consumer behaviour started in the mid to late 1960s (Orîndaru *et al.*, 2021). Since then, there have been several attempts at defining consumer behaviour from an academic standpoint (Fotis, 2015). Fotis (2015:91) synthesised several definitions presented between 1960 and 2010, defining consumer behaviour as "the physical and mental activities that individuals undertake either as part of processes, or as independent acts, when they dream, search, evaluate, obtain, consume, or dispose goods, services, ideas and experiences, within physical or virtual environments."

The above definition of consumer behaviour does not deviate far from Moutinho's (1987:5) definition in his seminal work, referring to consumer behaviour as "the process of acquiring and organising information in the direction of a purchase decision and of using and evaluating products and services". Accordingly, Moutinho (1987) noted that to understand purchasing behaviour, the complex interactions of many elements that are present at different stages, must be examined. Individual's perceptions of destinations, air travel, travel distances, travel advertisements, and how their personality and motivations influence their travel decisions, need to be understood.

Over the years, there have been significant changes in how consumer behaviour is defined, wherein consumer behaviour definitions incorporate products (services or goods), ideas, as well as experiences (Fotis, 2015). Ling, Alessandro and Winzar (2015) referred to consumer behaviour as a central part of life, a changing process which involves a seller, influencer, buyer and user (individual and/or groups) of goods, services, ideas and experiences. The authors indicated that the consumer behaviour process therefore covers different consumer situations and phases. How consumers behave throughout these situations or phases defines consumer behaviour (Ling *et al.*, 2015).

Schiffman and Wisenblit (2019:32) defined consumer behaviour as the "study of consumers' choices during searching, evaluating, purchasing, and using products and

services that they believe would satisfy their needs". The authors noted that consumer behaviour describes how individuals decide to spend their time, effort and money on goods or services. Furthermore, the authors state consumer behaviour describes which brands and products consumers select and why, where, and when they purchase them.

The above definitions involve a process that consumers follow when deciding on a product, service, or experience to buy. Thus, marketers recognise that consumer decision-making is more than what occurs at a precise moment the consumer exchanges currency for goods or services; rather, it is an ongoing process (Solomon, Marshall & Stuart, 2018). Accordingly, Khan, Saengon, Alganand, Chongcharoen and Farrukh (2020) posited that consumer behaviour involves a decision-making process when purchasing products and services to satisfy and meet their needs. However, Henderson (2016) highlighted that the traditional consumer decision-making process faces criticism; with many critics claiming it does not represent consumer decisions in a modern context. For example, developments in technology (such as social networks and mobile computing) have disrupted industries, redefined paradigms, as well as altered consumers' buying and behaviours. Furthermore, the level of consumer sophistication has risen over the years as social trends have been incorporated into their behaviour (Orîndaru *et al.*, 2021).

According to Malter *et al*. (2020), due to technological changes, the customer journey or decision-making process has transitioned and influenced the nature of consumption. The authors note that the effects of the recent trends in consumption behaviour will increase in scale as more consumers become digitally active. Behavioural changes are occurring rapidly, in rapidly evolving environments. The recent disruptions (including the effects from the Covid-19 pandemic) have occurred in a fraction of the time it would have normally taken in previous eras (Zhang & Chang, 2021). This calls for an improved understanding of current (modern) consumer behaviour, to provide insights and aid in predicting how consumer behaviour will evolve in the years to come (Malter *et al.*, 2020).

Despite the shifting trends in consumer behaviour, Malter *et al.* (2020) argued that the core of the field has stayed constant. That is, to understand the thought processes, motivations, and experiences of people as they consume information, goods, services, and other offerings (Malter *et al.*, 2020).

This chapter seeks to understand the consumer decision-making process as it has evolved, and the factors that influence the process. Consumer behaviour and decision-making will be looked at from the consumers' perspective within an evolving marketing environment. In particular, an environmental sustainability and consumer environmental consciousness point of view will be considered.

2.3 CONSUMER BEHAVIOUR AS AN IMPORTANT FIELD OF STUDY

As the dynamics of consumer behaviour have evolved, so has the academic study of consumer behaviour as a sub-discipline of marketing. The study of consumer behaviour incorporates methods and concepts from marketing at large, and from related social science disciplines, as well as from the continuously changing landscape of real-world consumption behaviour (Malter *et al.*, 2020). As such, consumer behaviour is a subject deserving scholarly enquiry (Orîndaru *et al.*, 2021).

Zhang and Chang (2021) posited that consumers are dynamic, and that ever-changing consumer behaviour is a fundamental principle in business and marketing. Consumer dynamics are due to an array of different factors, including learning and experiences, life stages, and shifts in the macro-environment. The environmental effects of consumption have become a particular focus for marketing researchers (Orîndaru *et al.*, 2021). Furthermore, with the resultant changes caused by the unprecedented global crisis brought about by the Covid-19 pandemic, academics have turned to research marketplace behaviour, consumption, how it has changed and how it will continue to change (Malter *et al.*, 2020).

In a competitive environment where the consumers' money, time and feedback are pursued (Ling *et al.*, 2015), Zhang and Chang (2021) indicated that understanding consumer dynamics, is crucial for justly understanding their behaviours, and for businesses to prepare suitable actions. By knowing how customers behave, organisations can increase their understanding of themselves and their environment (Roberts-Lombard & Brijball Parumasur, 2017) and design products and marketing strategies that fulfil consumers (Schiffman & Wisenblit, 2019).

As a sub-discipline of marketing management, understanding consumer behaviour enables marketers to gain insight to the reasons behind consumers' actions in the marketplace. Additionally, understanding how marketers could possibly influence

consumers throughout the various stages of the consumption process, will enable efficient and effective use of marketing resources (Fotis, 2015). Marketers can understand consumer behaviour and help predict what people will do, through marketing research. Marketers can subsequently use this market research to influence consumer choices through the marketing mix (George, 2019).

It is crucial for marketers to have an understanding of consumer behaviour, as it is the basis of formulating marketing strategies, and enables the organisation to respond appropriately to customer needs (Roberts-Lombard & Brijball Parumasur, 2017) and to remain relevant (Goldsmith, 2017). However, understanding consumer behaviour is not only important for marketing managers, it is also an important field of study for regulators and public policy makers, advocacy groups and ethicists, consumers, academics and society as a whole (Hoyer, MacInnis & Pieters, 2013). Table 2.1 below summarises the importance of the study of consumer behaviour for each of these respective groups.

Table 2.1: The importance of the study of consumer behaviour for various groups

Group	The benefits from the study of consumer behaviour
Marketing managers	Marketing managers need insight into consumer behaviour to understand what consumers' value before developing, communicating, and delivering appropriate goods and services. Marketers, therefore, are able to provide tools for more informed decision-making when they understand consumer behaviour, in turn, building or enhancing stronger customer relationships. More products of interest to consumers will be brought to the market and fewer new products may fail, as a result.
Ethicists and Advocacy groups	Consumer behaviour research can assist concerned consumers (individuals and the collective). Ethicists and advocacy groups are often formed to create public awareness of inappropriate practices. This in turn influences other consumers, as well as the targeted cause or companies, through strategies such as boycotts and media statements.
Public policy makers and regulators	Legislators, regulators and government agencies are better equipped to develop rules and policies to protect consumers from unsafe, unfair, or inappropriate marketing practices, when they understand consumer behaviour.
Academics	Consumer behaviour research is necessary for academics to generate and disseminate knowledge about specific elements of consumer behaviour, in respective contexts.
Consumers and society	Marketers, once consumer behaviour is understood, can provide tools for consumers to make more informed decisions. Consumption experiences and satisfaction can be improved, and the customer relationship strengthened and sustained in the long run. Finally, research into consumer behaviour can lay a foundation for the development of marketing programmes that can benefit society.

Source: Adapted from Hoyer *et al.* (2013:14-15, 40)

Table 2.1 summarises the importance of understanding consumer behaviour as an important field of study for a variety of stakeholder groups. The next section presents the theoretical considerations from which to study consumer behaviour.

2.3.1 Theoretical considerations to study consumer behaviour

There are several perspectives from which to approach the study of consumer behaviour (Fotis, 2015:80). According to Frederiks, Stenner and Hobman (2015), the study of consumer behaviour rarely follows traditional economic theories of decision-making due to its complexity. Therefore, as indicated by Antonides (2017), since consumer behaviour research is often too complex to be described by a single, all-encompassing theory, a combination of different methodologies and theories are often used. Accordingly, researchers studying consumer behaviour should establish a balance among the generality of theory and the set of behaviour that it seeks to explain (Antonides, 2017). The same applies with consumer decision-making theories. Due to the complexity of consumer decision-making and behaviour, it cannot be adequately described by a current theory, or rather, there is no common agreement among researchers regarding which theory is best, as each theory or model has its own advocates (Goldsmith, 2017).

Due to the variation in disciplinary backgrounds of consumer behaviour research, a range of different theories and insights, often difficult to align, has been the result. Fischer (2017) asserts that research into consumer behaviour and choice has drawn on the disciplines of economic and social psychology, behavioural economics and even human – computer interactions. The diversity of disciplines has resulted in a seemingly fragmented field that merges several models to predict consumer behaviour (Fischer, 2017).

A prevalent approach to the study of consumer behaviour is grounded in behavioural decision theory (Ajzen, 2015). To determine which consumer behaviour theory and decision-making model would be relevant to follow in the current study, it was necessary to look at the seminal work of Howard (1963), Nicosia (1966), Howard and Sheth (1969), Belk (1975), Fishbein (1975), Engel, Kollat and Blackwell (1978; 1982), Cox, Granbois and Summers (1983), Ajzen (1985), Engel, Blackwell and Miniard (1986), Rassuli and Harrell (1990), and Ajzen (1991) and Kotler (2002). The work of

these researchers laid the foundation for developing the theoretical overview presented on consumer behaviour in this chapter.

This literature review is grounded in accepted models, including the expectancy-value theory, the multi-attribute decision model, the theory of planned behaviour, the model of consumer behaviour and finally, the traditional consumer decision-making model. A combination of elements from these models shapes the theoretical framework of the current study. The latter model is predominantly used as it provides a clear structure on which to base this literature review. Additionally, it provides licence to incorporate a new theoretical element identified from the current study. Further considerations from the Theory of Planned Behaviour and the model of buyer behaviour are discussed in the following two sub-sections.

2.3.1.1 Considerations from the Theory of Planned Behaviour model

Since its development three decades ago, the Theory of Planned Behaviour (TPB) has been proven to be a strong approach to explain human behaviour, applied to a variety of behaviours (Sommer, 2011). The TPB has proven its value in research studies regarding consumer behaviour in the environmental field, including the research by Merilä (2015), Yadav and Pathak (2016), Al Mamun *et al.* (2018), Gunarathne, Kaluarachchilage and Rajasooriya (2020), Fu (2021), Shalender and Sharma (2021), and Alzubaidi, Slade and Dwivedi (2021). Therefore, Ajzen's (1991) TPB was a point of departure for the current study.

Among the most commonly used theories on product choice, the TPB can be adapted for specific research questions that may not be completely addressed by the basic version of the model (Fischer, 2017). Fu (2021) has also noted that additional elements can be incorporated to the TPB to improve the model's explanatory power.

The leading proposition on consumer behaviour before the 1970s, was that consumers choose the products or services with the greatest perceived value, known as the utilitarian model (Fischer, 2017). According to Fischer (2017), TPB is different to selection by choice based on the utilitarian model, as it includes the normative and social context, going beyond simply evaluating a product or service. It also includes insight of whether the intended behaviour is in fact under the control of the person who is a determinant of the behaviour, or not (Fischer, 2017).

Although not entirely, the TPB was largely considered as the framework on which to base the current study. It was chosen as the prominent framework as it allows the prediction of intentions and behaviour with respect to the use or purchase of a single brand or product and also to the choice between different products or brands (Ajzen, 2015). In addition, compared to the utilitarian model which relies on utility when evaluating a product or service, Ajzen (2015) noted that the TPB places emphasis on the specific consumer behaviour of interest. The aim of the TPB is to provide a complete framework for understanding the determinants of respective behaviours (Ajzen, 2015), such as air travel behaviour. The TPB is illustrated in Figure 2.2 below.

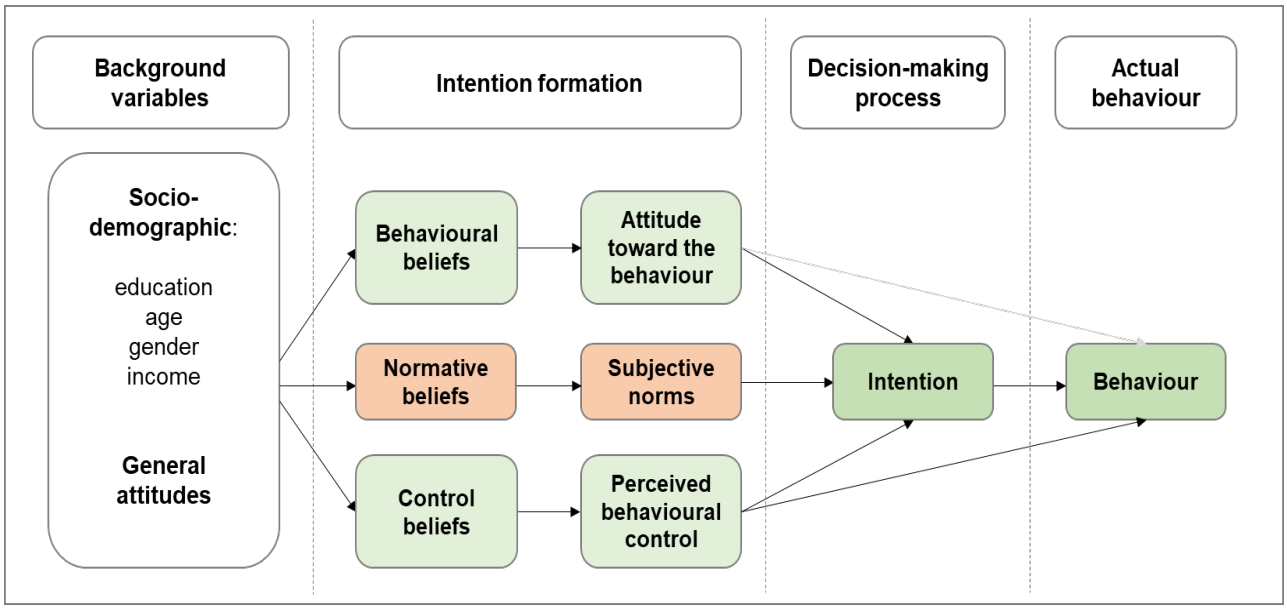


Figure 2.2: The Theory of Planned Behaviour

Source: Adapted from Ajzen (1991; 2015) using the contributions of De Leeuw, Valois, Ajzen and Schmidt (2015); Ling *et al.* (2015)

As presented in Figure 2.2 above, the premise of the TPB is that, together, the attitudes towards behaviour, perceived behavioural control and subjective norms, shape behavioural intentions and behaviours (Blok, Wesselink & Studynka, 2014). The impact of behavioural intention is therefore influenced by these constructs (Sommer, 2011). In addition to the abovementioned variables in the TPB, Ding, Jiang, Liu, Long, Xu and Cao (2018) have noted the introduction of new variables to the development of the TPB and its original theoretical basis. These variables include self-identity, self-efficacy, habit, and knowledge (Ding *et al.*, 2018).

Marketers and researchers rarely attempt to measure a complete TPB model, instead the model is used as a framework for thinking about the diverse features affecting an

individual's attitudes and subsequent behaviours that are prompted by those attitudes (Ling *et al.*, 2015). For instance, the current study follows the latter approach by selectively considering behavioural beliefs, attitudes towards behaviour, control beliefs, perceived behavioural control, behavioural intention and behaviour. Subjective norms were not considered.

2.3.1.2 Considerations from the model of buyer behaviour

Kotler *et al.* (2021) referred to a common point of departure in understanding consumer behaviour, namely, the model of buyer behaviour. This is where the environmental and marketing stimuli enter the consumer's consciousness, also referred to as the consumer's 'black box'. The black box includes a set of psychological processes and consumer characteristics. Marketers need to determine what is in the buyer's black box. The consumer decision-making process follows, resulting in a purchase decision (Kotler *et al.*, 2021). This model of buyer behaviour is illustrated in Figure 2.3 below.

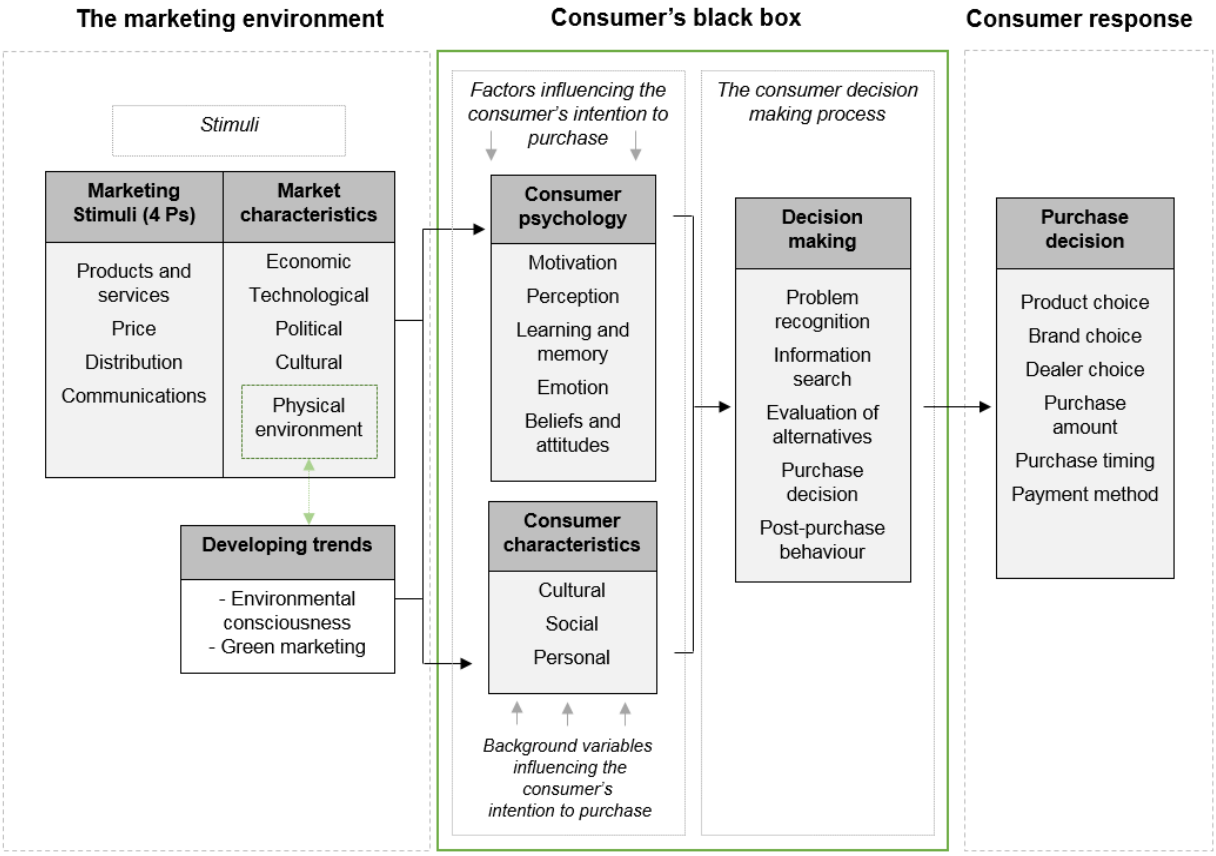


Figure 2.3: Model of buyer behaviour

Source: Adapted from Roberts-Lombard and Brijball Parumasur (2017:26); Kotler *et al.* (2021:180)

The TPB and the model for consumer behaviour highlight the elements to consider towards understanding consumer behaviour. While elements of the TPB are consulted

frequently during this literature review, the structure of the chapter follows the model of consumer behaviour, with a focus on the “consumer’s black box” as indicated in Figure 2.3 above.

2.4 FACTORS INFLUENCING CONSUMER BEHAVIOUR

Consumer decisions are not made in isolation; a complex array of influences affect consumer travel behaviour, including internal and external factors which result from micro and macro environmental forces (George, 2019). According to Fu (2021), the decision related to green travel is also a complex process, influenced by multiple factors.

Zhang and Chang (2021) pointed out that consumers live in an ever-changing macro environment consisting of institutional, technological, and social norms. The authors noted that as society shifts towards a state where there is the prevalence of mobile computing, widening inequality, changing perceptions and environmental sustainability, consumers gradually redefine the benefits and functions that they seek in product and service offerings. Zhang and Chang (2021) further noted that these changes in consumer behaviour, influenced by micro and macro factors, can range from specific to broad.

According to George (2019) and Kotler *et al.* (2021), the factors influencing consumer behaviour can be categorised into four broad types, namely, personal, psychological, cultural, and social. Although marketers, for the most part, cannot control these influencing factors, it is necessary to take them into account (Kotler *et al.*, 2021).

2.4.1 Psychological factors

Consumers go through psychological processes when finding ways to address a need, by collecting and interpreting information to make purchase decisions. By understanding consumer psychological processes, marketers are in a better position to begin to understand why consumers form attitudes and make decisions (Angelovska *et al.*, 2012).

The key psychological factors were presented in the model of buyer behaviour in Figure 2.3. As Figure 2.3 depicts, once the environmental and marketing stimuli enter a consumer’s consciousness, certain consumer characteristics are combined with a

set of psychological processes. Ultimately, this combination influences the decision-making process, and the final decision (Kotler *et al.*, 2021).

The discussions below highlight the key psychological processes that influence the consumer's response. These processes include motivation, perception, learning and memory, emotions, beliefs and attitudes.

2.4.1.1 Motivation

As the force impelling one to act, and triggered by psychological tension due to unfulfilled needs, motivation represents the reasons an individual behaves or acts in a specific way – ultimately affecting consumers' buying decisions. Motivational forces are directed needs that are the circumstances that are wanted or required (Schiffman & Wisenblit, 2019). According to Kotler *et al.* (2021) people have many different needs at different points in time, arising from either a physiological state such as thirst, hunger or discomfort (biogenic needs) or from the need for esteem, belonging or recognition (psychogenic needs). Once a need is aroused to an adequate level of intensity, it becomes a motive that drives consumers to act to seek satisfaction and address the need (Kotler *et al.*, 2021). For example, an air traveller identifies a need to travel to another city for a leisure-related reason. This need to travel would become a motivation, which would be one of the factors encouraging the air traveller to engage in the decision-making process and to make a purchase decision. In addition to this core motivation, another consideration could be the motivation to consume air travel 'responsibly', for instance, air travellers who want to travel with a 'carbon conscience' (Cohen & Higham, 2011).

This element of the psychological process ties in well with the need-recognition step of the consumer decision process. The need-recognition step will be discussed in Section 2.5.2.1.

2.4.1.2 Perception

Once the motive or need has been determined, the consumer is prepared to 'act', and how the consumer acts is driven by how the situation is perceived by the individual. Perception is the process through which consumers select, organise and interpret information (or stimuli), which are inputs from the outside world which assist them to make a decision to buy (Solomon *et al*., 2018; George, 2019).

People receive stimuli in the form of sensations, from instant responses of the sensory receptors namely, the ears, eyes, mouth, nose and skin, through colours, touch, sound, odours and light. Perception is making sense of the received sensations by interpreting them in the light of previous experiences (Solomon *et al.*, 2018). In marketing, Kotler *et al.* (2021) stated that consumers' individual perceptions are seen as reality to them. Therefore, if perceptions are as important as reality, they can ultimately affect the consumers' actual behaviour.

Due to the nature of the airline service, consumers cannot see or test the desired product beforehand. Therefore, consumers need to make decisions based on how they perceive the offering (George, 2019). Hence, in the airline industry, it is essential for the marketer to be aware of the air travellers' perceptions of the air travel service attributes (ATSAs) and the service offering in totality.

Additionally, addressing the climate change problem, and being part of the solution, can be considered a long-term abstract goal. In this regard, Bangsa and Schlegelmilch (2020) asserted that consumers' perceptions regarding the importance of the environmental attributes of a product are framed in a way that helps consumers achieve abstract or concrete goals, based on how they perceive these attributes.

Although people may be exposed to identical stimuli, each individual recognises, selects, organises, interprets and ultimately perceives the stimuli differently by way of a highly individual process, built on personal values, needs and expectations (Schiffman & Wisenblit, 2019). For example, from an environmental perspective, perceptions of the impacts of climate and climate change differ among different cultural and climate contexts, in addition to other socio-demographic factors, such as age and education (Gössling, Scott, Hall, Ceron & Dubois, 2012).

2.4.1.3 Learning

While the action to address a need takes place, the consumer engages in learning, which describes changes in the consumer's behaviour arising from information (Solomon *et al.*, 2018) or experience (Kotler *et al.*, 2021). When consumers experience a product or service, they learn about it (Kotler *et al.*, 2021). Learning is the process by which people consider past experiences, as well as obtain new consumption and purchasing knowledge, and subsequently apply this knowledge and experience to future behaviour. More specifically, consumer learning is a process that

changes and evolves as individuals gain knowledge from observations, experience, and interactions with others, and how it affects future behaviour (Schiffman & Wisenblit, 2019).

In the context of consumer behaviour, learning has the following four key elements: motives, cues (stimuli directing motivated behaviour), responses (an individual's reaction to a motive or cue) and reinforcement (the pleasure, reward or benefit the consumer receives after purchasing and using a product) (Schiffman & Wisenblit, 2019). In summary, it occurs through the interaction of motives, cues, responses, as well as reinforcement (Kotler *et al.*, 2021). For example, suppose a leisure traveller buys an airline ticket on a specific FSC. If the experience is pleasurable, the traveller will likely use the airline again, the response will be reinforced and stored in the traveller's memory, increasing the probability of using the airline more frequently in the future. Marketers can create demand for a product or service by linking it to strong motives by providing positive reinforcement and using motivational cues; substantiating the practical significance of learning theory (George, 2019).

2.4.1.4 Beliefs and attitudes

People obtain beliefs and attitudes by learning and acting, which influence their buying behaviour. A descriptive thought that an individual has about something is a belief (Kotler *et al.*, 2021).

A belief is built upon opinion, faith or real knowledge, it might also carry an emotional element. Consumers form beliefs about specific products and services which are of interest to marketers, because these beliefs reinforce brand and product images that influence buying behaviour (Kotler *et al.*, 2021). Beliefs may be positive, such as confidence in a particular airline, or negative, for example, a concerned feeling about safety or reliability of an airline (George, 2019).

Values may be concepts or beliefs, desirable behaviour or end states, guiding the evaluation or selection of behaviour (Schwartz & Bilsky, 1990 in Gatersleben, Murtagh & Abrahamse, 2014). Values are abstract, enduring beliefs about what is right or wrong, and the beliefs that guide what individuals consider important, good or bad. Thus, consumers are likely to be motivated to participate in behaviours that align with their values (Hoyer *et al.*, 2013). For instance, if a consumer sees protecting the

environment as important and good, he or she will be motivated to engage in environmentally friendly behaviours.

Beliefs influence attitudes. According to Kotler *et al.* (2021), a person's consistent evaluations, tendencies and feelings toward an idea or object describe an attitude. Khan *et al.* (2020:1170) defined attitude as "a choice of determining favourable and adverse beliefs about a specific individual, object, action or matter, which may transfer into the aim of acting."

A customer attitude, therefore, is the learned tendency to behave in a consistently favourable/positive or unfavourable/negative way towards a market-related object, event or situation (Roberts-Lombard & Brijball Parumasur, 2017; Khan *et al.*, 2020). Consumers have attitudes towards products, services, product and service categories, advertisements, promotional messages and brands. These attitudes may lead consumers toward a specific behaviour or deter them from such (Schiffman & Wisenblit, 2019). For example, an air traveller may have a negative attitude towards an airline that is always delayed, and that may deter them from repurchasing with that airline.

Marketers often measure consumer attitudes as it is believed that attitudes predict behaviour (Solomon *et al.*, 2018), a theory based and built upon the foundational work by Fishbein and Ajzen (1975). According to Ajzen (2015), the intention to act is the strongest predictor of intentions and actual behaviour.

Schiffman and Wisenblit (2019) noted that consumers may change existing attitudes (either frequently or rarely) and learn new behaviours. However, Kotler *et al.* (2021) noted that instead of trying to change attitudes, marketers should rather attempt to fit products or services into existing attitudes of consumers. In general, the more information an individual has about a product or service, the greater the likelihood that they will form attitudes about it, whether favourable or unfavourable (Schiffman & Wisenblit, 2019).

From a green consumer perspective, Bangsa and Schlegelmilch (2020) assert that consumers' preference, choice, intention and willingness to purchase (WTP) sustainable products may be positively affected by the interaction of a plethora of factors. The factors, as noted by the authors, include environmental beliefs and

consciousness, green consumption values, consumer perceptions, attitudes (product attitude, and environmental attitude), social behaviour, and individual traits.

While personal experience, personality traits, friends and family, media and the Internet, as well as social media, can strongly influence attitudes, certain situations can also result in consumers acting in ways inconsistent with their attitudes (Schiffman & Wisenblit, 2019). For example, a business class air travel ticket may make an air passenger, the consumer, experience positive feelings such as pride and excitement. While an air travel ticket bought from an airline that does not consider environmental implications may make an environmentally conscious air passenger feel disheartened, with an element of guilt.

This concludes the section of consumer psychological factors that can influence consumer behaviour. From the psychological perspective, consumers' motivations, perceptions, learning, as well as beliefs and attitudes were addressed in this section. The section below continues with the factors influencing a consumer's consciousness, namely, the cultural factors.

2.4.2 Cultural factors

Kotler *et al.* (2021) note that cultural factors include the consumer's culture, subcultures and social class. It is essential for marketers to understand the role played by these factors since they provide specific information about consumers, and are the deepest and broadest influence of consumer behaviour (Kotler *et al.,* 2021).

Solomon *et al.* (2018) considered culture as a society's personality. Kotler *et al.* (2021) viewed culture as the most basic cause of an individual's behaviour and wants, as human nature is largely learned. Basic behaviours, wants, perceptions and values are learned from an individual's family and other important institutions within a culture. A merging of these understandings, Schiffman and Wisenblit (2019) refer to culture as the collective customs, values, arts, norms, social institutions as well as intellectual accomplishments of a particular society.

Individuals from different cultures are inclined to have different ways of making decisions, due to the emphasis placed on the different stages of the decision-making process (Garg, 2012). In addition, cultures often evolve (Schiffman & Wisenblit, 2019). As these cultures evolve, Bangsa and Schlegelmilch (2020) noted that this social

change is determined mainly by attitudes, beliefs, and values, which subsequently drives choice and behaviour. It is therefore essential for marketers to identify cultural changes to discover new products or services that might be desired as a consumer's culture expresses and reflects their needs (Schiffman & Wisenblit, 2019; Kotler *et al.*, 2021). Ecological responsibility, along with freedom of choice, efficiency and practicality, humanitarianism and youthfulness are examples considered as core cultural values.

A society's cultural profile includes two elements, namely: 1) core customs and cultural values that are shared by most of the people within a culture and 2) unique beliefs, values and customs shared within subcultures (Schiffman & Wisenblit, 2019). A subculture refers to a group of people that coexist with other groups of people in a larger culture or society, and whose members share a distinct set of characteristics or beliefs (Solomon *et al.*, 2018), values and customs (Schiffman & Wisenblit, 2019). Kotler *et al.* (2021) stated that subcultures, including geographic regions, nationalities, religions and racial groups, share values systems based on common situations and life experiences. This is iterated by Zhang and Chang (2021) who state that diversity among consumers across different economic institutions and cultures can influence the drivers of consumer dynamics, and the rates of behaviour change. For instance, while sustainability is a global phenomenon, regional and cross-cultural factors may influence a consumer's choice of sustainable products – due to differences in cultural values and traditions, disparities in social and environmental priorities, stages of economic development of a country, and the role of government (Belz & Peattie, 2012; Bangsa & Schlegelmilch, 2020).

Furthermore, Bangsa and Schlegelmilch (2020) argued that consumers in different countries attach different scales of importance to different sustainability issues. The authors noted a lack of research on sustainable consumption behaviour and attitudes in emerging markets in Africa. However, they highlighted that environmental sustainability is more influential in developing economies than in developed ones, due to the substantial social and environmental impacts in these countries. This should be considered more pertinent in emerging markets, due to the rapid growth of middle-class consumers in these markets, who are boosting local consumption (Bangsa & Schlegelmilch, 2020). When marketers single out a subculture, products often need to be adapted to better meet the needs of the targeted consumers, and the marketing

message needs to be adapted to align with the subculture's tastes and values (Schiffman & Wisenblit, 2019). Therefore, subcultures constitute important market segments, receiving attention from marketers to design tailored products and marketing programmes (Kotler *et al.*, 2021).

An additional sub-factor within the cultural factor, is social class. Kotler *et al.* (2021) stated that almost every society has some form of a social class structure, maintaining that social classes are society's fairly permanent and ordered divisions of members who share similar interests, behaviours and values. Social classes often determine consumer attitudes towards adopting, or influencing, the purchases of certain product or service types and brands (Schiffman & Wisenblit, 2019). For instance, members of the same social class often share brand, product and service preferences in areas such as travel, leisure activities, clothing and motor vehicles (Kotler *et al.*, 2021). Due to these shared interests, values, attitudes and behaviours, social classes are of interest to marketers as they tend to exhibit similar consumption patterns and buying behaviour, and are therefore used to segment consumers (Schiffman & Wisenblit, 2019). However, social class is not determined only by the above-mentioned factors.

Social status is also often composed of other factors, such as power, wealth and the amount of esteem one receives from others (Schiffman & Wisenblit, 2019). It can also be measured as a combination of education, income, wealth, occupation and other variables. For instance, a person's education level is strongly associated with the individual's occupation, which in turn influences the level of income that an individual earns. Thus, an individual's level of income, education and occupation influences how they think and relate to others, as well as how they make decisions regarding purchases of products (Roberts-Lombard & Brijball Parumasur, 2017). An example is the Socio Economic Measurement (SEM) in SA. Building upon the Living Standards Measurement (LSM), the SEM is a segmentation approach for the SA population, depicting how they live, in terms of what resources they have access to in and near their households (Publisher Research Council, 2020).

2.4.3 Social factors

Several social factors influence consumer buying behaviour. Social factors include groups and social networks (small groups and reference groups), social roles, statuses and family (Kotler *et al.*, 2021). In terms of groups, membership groups are small

groups that directly influence behaviour, while reference groups (various sized groups) can directly or indirectly influence a person's behaviour.

Reference groups include aspirational groups (one a consumer hopes to join), dissociative groups (one a consumer rejects the values or behaviour of) and opinion leaders (a person offering informal advice or information regarding specific products or product categories). Due to their special skills, personality, knowledge and other characteristics, the latter group exerts social influence on others. Marketers aim to reach opinion leaders through direct marketing efforts towards them, as they can influence others through word-of-mouth and buzz marketing (serving as a brand ambassador) (Kotler *et al*., 2021).

Individuals are strongly influenced by how others behave and what they think and according to Schiffman and Wisenblit (2019) reference groups serve as the greatest sources of influence, comparison and norms for individual's behaviours, opinions and values. Kotler *et al*. (2021) included online social networks as the newest type of social interaction, which has gained significant traction in the last decade. The authors indicate that online social networks consist of online communities where individuals can exchange opinions, information, or simply socialise. These networks include social media sites (including Twitter, Instagram and Facebook) (Kotler *et al*., 2021) and online communities (including online travel communities such as TripAdvisor where travellers can share helpful reviews with one another). Zhang and Chang (2021) add that, as social networks become more widespread in the modern economy, the effects of social interaction will play a progressively greater role in shifting consumer preferences.

Overall, these groups influence attitudes and self-concept, creating pressures of conformity and exposing consumers to new behaviours and lifestyles (Kotler *et al*., 2021). Welte and Anastasio (2010 in Zabkar & Hosta, 2013), indicated that the social context of behaviour, and how other people perceive this specific behaviour, can therefore be a key driver of environmentally conscious behaviour. For example, if individuals who are part of a social group wherein the group members take environmental actions, those individuals are more likely to behave similarly (Paço *et al.*, 2019).

Individuals also belong to many groups (including clubs, family, sports teams, online communities and other organisations), and a person's position within each group can be defined in terms of status and role (Kotler *et al.,* 2021). Groups that consumers may belong to are important sources of information, enabling the norms of behaviour. Kotler *et al*. (2021) assert that products are often chosen based on an individual's role and status, whereby roles consist of the activities an individual is expected to perform and implies a status. Individuals often select products or services that reflect and communicate their role and their desired or actual level of status in society, and businesspeople typically behave according to the role they are in (Kotler *et al.*, 2021). For example, a Chief Executive Officer (CEO) of a large organisation may decide (according to his/her organisation's travel policy) to purchase a business class air travel ticket on an FSC. Finally, family members can also strongly influence ones' consumer behaviour (Kotler *et al.*, 2021). As with culture, family as a social factor is important for marketers to consider, since brand and taste preferences are formed early in life by one's family members. Therefore, as family members' preferences evolve, this social factor will continue to influence the consumer (Zhang & Chang, 2021).

Personal factors or characteristics of individuals are also social factors influencing buying decisions (George, 2019). Personal characteristics considered to influence buying decisions include age and lifecycle stage, economic circumstances, occupation, self-concept, personality, lifestyle and values (Kotler *et al*., 2021). These characteristics are discussed in the sub-sections below.

2.4.3.1 Age and lifecycle

Product and service needs often vary with a consumer's age, and therefore age is a key factor to consider when marketing many products and services (Schiffman & Wisenblit, 2019). Additionally, the products that people buy over their lifetime change from age group to age group, in accordance with their life cycle. Changes are experienced in clothes, furniture and recreation, and often appeal to a specific age group (Solomon *et al.*, 2018). Critical life events that occur throughout the life cycle may give rise to new needs and buying behaviours for an individual (Kotler *et al.*, 2021). Age or lifecycle events can also classify individuals into sub-cultures, as presented in Section 2.4.2. For instance, Schiffman and Wisenblit (2019) note that Generation Y (also referred to as Millennials, representing individuals born between

the years 1980 and 1996) can also be viewed as a subculture that grew up with technology and embraced it. Generation Y as a subculture, however, is not a uniform group in terms of priorities and values and can be segmented further. Clean and Green Millennials is one such segment, representing a subculture driven by philanthropy, ecological issues, social causes and a positive outlook on life (Schiffman & Wisenblit, 2019).

Before the Covid-19 pandemic, life expectancy among people (especially in the developed world) had improved due to advances in medical care, nutrition and living standards. This extended life expectancy enabled an increasing number of individuals to benefit from healthier and longer lives, and the aging air travel market became a key growth segment in air travel (Graham *et al*., 2020).

However, according to Graham *et al.* (2020), the 65 and older age group, and their behavioural influences, has become particularly vulnerable with regard to being affected by Covid-19. In their study conducted in the United Kingdom, Graham *et al.* (2020) found that air travel behaviour of this age group has changed in the short-term, to include more domestic trips, using different modes of transport. Their findings show that this age market segment may no longer be considered the potential growth segment that it was in the past. To travel by air, passengers need to view it as being safe, have the confidence to travel, and economic conditions need to be favourable (Graham *et al.*, 2020). This reveals that a number of factors, in this instance, age, lifestyle, perception of safety, and economic situation, can influence consumer behaviour, especially with regard to air travel behaviour.

2.4.3.2 Economic circumstances and occupation

From an economic perspective, an individual's economic situation greatly influences product and service choices and the decision to buy specific items (Kotler *et al.*, 2021). For instance, Orîndaru *et al.* (2021) noted that individuals who are within lower-income populations will more likely concentrate on what they can afford, rather than what they need. For example, as asserted by Van Tonder (2020), consumers with a lower income level may prefer to purchase non-green products that are generally cheaper.

Furthermore, in times of economic downturns such as recessions, for example, the global financial crisis in 2008, products and services, as well as brand choices are affected by the economic situation. During times such as these, businesses and

consumers are more conscious of their disposable incomes, debts, financial borrowing power and attitudes towards saving and spending (Kotler *et al.*, 2021). After the economic shock of the global financial crisis in 2008, companies drastically reduced corporate travel budgets. Similarly, as a repercussion of the Covid-19 pandemic and the related economic activity globally, work-related mobility and travel has been significantly affected due to travel budget cuts and geographical restrictions (Becken & Hughey, 2021). Not only has Covid-19 caused global economic uncertainty, but the travel restrictions that have resulted from it have affected consumer behaviour of the air travel service in unprecedented ways.

During times of economic uncertainty, marketers need to consider the redesign, repositioning and repricing of their products to offer more value to their target customers (Kotler *et al.,* 2021). Further discussions on the repercussions of the Covid-19 pandemic on air travel will be presented in Section 2.8 and in Chapter 3. A person's occupation can also influence consumption patterns and marketers can tailor products or services for specific occupational groups. In addition, an individual's occupation can also reflect their social status relative to other members of the same society (Schiffman & Wisenblit, 2019), as discussed in Section 2.5.2.1. For example, high profile businesspeople might prefer the more spacious business or premium class ticket offered by an FSC airline.

2.4.3.3 Personality and self-concept

Personality and self-concept characteristics are also useful variables in analysing consumer product choices. Consumers are likely to select products and services with brand personalities that match their own personality and align with their actual or ideal self-concept (Kotler *et al.*, 2021). Personality refers to the unique inner psychological characteristics, such as specific traits, qualities and mannerisms that distinguish an individual from another (Schiffman & Wisenblit, 2019; Kotler *et al.*, 2021). Furthermore, personality is seen to consistently influence the way an individual responds to situations in the environment, and makes product choices (Solomon *et al.*, 2018; Kotler *et al.*, 2021).

The self-concept, also known as self-image, represents the way a person views him or herself (Schiffman & Wisenblit, 2019) and refers to the idea that an individual's possessions contribute to, reflect and enhance their identities (Kotler *et al.*, 2021). The

self-concept is composed of a person's attitude and mixture of beliefs about him or herself. The extent of a consumer's self-concept (whether positive or negative) can influence the products bought or even the extent to which one fantasises about changing oneself (Solomon *et al.*, 2018).

Gatersleben *et al*. (2014) noted that the extent to which an individual sees themselves as an environmentally friendly individual is likely to be associated to a diverse range of pro-environmental behaviours, including buying behaviours. Self-identity or self-concept may guide behaviours and offer insights into the determinants of 'green' behaviour (Gatersleben *et al*., 2014). Ding *et al*. (2018) reiterated this notion, stating that self-identity refers to when an individual uses a specific role to define him/herself. For example, if one sees oneself as an environmentalist, the expectation of the associated role subsequently forms a series of standards associated with the role and guides one's behaviour, including one's consumer behaviour (Ding *et al*., 2018).

2.4.3.4 Lifestyle

Although people may belong to a certain social class, subculture or occupation, they may have very different lifestyles. Lifestyle therefore is also a factor studied for its influence on consumer behaviour (Kotler *et al.*, 2021). A person's lifestyle refers to their pattern of living as expressed by their psychographics and captures more than personality or social class. Lifestyle profiles an individual's whole pattern of living and interacting in the world, determining how they choose to spend their money, energy and time as well as reflecting their values, tastes and preferences (Kotler *et al.*, 2021). Lifestyle is measured through a consumer's major activity, interest and opinion (AIO) dimensions. Examples include work and shopping activities, food and recreation interests and consumer opinions regarding social issues and products (Solomon *et al.*, 2018; Kotler *et al.*, 2021). Zhang and Chang (2021) asserted that as an individual's lifestyle and interests change, so do changes in their activities, preferred product and brand categories. These changes are usually associated with changes in social status, income and experiences with new cultures (Zhang & Chang, 2021). By understanding the lifestyle factor of consumers, marketers will be in a better position to identify and understand changes in consumer values and how they affect buyer behaviour (Solomon *et al.*, 2018).

Marketers need to be aware of changing and emerging lifestyles of their target consumers. Solomon *et al.* (2018) added conscientious consumerism, as an emerging lifestyle trend, to the list of factors influencing consumer decision-making and behaviour. A powerful new social movement within society, conscientious consumerism, refers to consumers who are more aware of environmental issues when making a purchase. This social movement is aimed at protecting consumers from harmful business practices, where much of the focus is about business activities that can potentially damage the environment and planet (Solomon *et al.*, 2018). For example, the LOHAS lifestyle representing “Lifestyles of Health and Sustainability”, is an emerging lifestyle segment which fits within the conscientious consumerism category (Osti & Goffi, 2021).

The LOHAS lifestyle is defined by the priority this market segment places on their mental and physical health and well-being, with their value behaviours promoting and supporting the sustainable development of both society and the environment (Choi & Feinberg, 2021). Osti and Goffi (2021) indicated that these consumers reflect care about themselves, and the environment. Accordingly, they live ‘greener’ lifestyles by, for example, purchasing eco-certified, fair-trade or locally produced products; additionally, these consumers use renewable resources and eco-friendly transport (Osti & Goffi, 2021).

From the discussions above, it is clear that numerous background variables can potentially influence the beliefs individuals hold (De Leeuw *et al.,* 2015), as well as their intentions and behaviour (Ajzen, 2015) The plethora of factors influencing consumer buyer behaviour have been presented in Section 2.4 above. The next section presents a discussion of the literature relating to consumer decision-making.

2.5 CONSUMER DECISION-MAKING

In the previous section, factors influencing consumer behaviour were highlighted. This section will consider how consumer behaviour decisions are made. According to Roberts-Lombard and Brijball Parumasur (2017), it is not enough to just know what customers want and what they need, it is also essential for the marketer to understand how customers make their buying decisions. Furthermore, an organisation needs to know and understand its customers to anticipate and meet their needs. Information, for instance the way air passengers make travel decisions, their preferences, socio-

demographic similarities and differences regarding their choice, is therefore of immense value to an organisation (De Jager & Ezeuduji, 2015). By analysing and understanding complex activities in which consumers engage, marketing managers will be equipped to develop effective marketing strategies (Roberts-Lombard & Brijball Parumasur, 2017). Roberts-Lombard and Brijball Parumasur (2017) indicate that consumer behaviour is initiated by needs, while consumer decision-making guides these needs by evaluating and selecting the actions that will fulfil them. However, unlike consumer actions, the process of consumer decision-making cannot be observed. Consumer decision-making involves a cognitive process consisting of psychological activities that determine what actions the consumer will go through to remove the state of tension triggered by a need (Roberts-Lombard & Brijball Parumasur, 2017).

Behaviour, seen as a decision-making process, follows a form of problem-solving actions, involving a number of activities or steps, including identifying needs, evaluating choices, exploring the results of specific actions, and analysing the consequences of the behaviour once something has been bought (Roberts-Lombard & Brijball Parumasur, 2017). Bangsa and Schlegelmilch (2020) reiterated this, stating that the cognitive decision-making process follows a traditional approach, whereby consumers trace a series of steps including problem recognition, information search, evaluation of alternatives, and product choice. However, George (2019) pointed out that the process of buying travel offerings is more complex, for several reasons, including individual differences, type of trip and time of year. Furthermore, the purchase decision is becoming even more complicated, due to the information age of modern times, increased choice and readily available information. Therefore, consumers do not always follow a rational decision-making process (George, 2019). Consumers make decisions in a variety of ways and no one theory appears to describe all forms of consumer decisions (Goldsmith, 2017). Therefore, inspiration for this literature review was drawn from three key references, as will be discussed in more detail below.

The Engel, Kollat and Blackwell model

The Engel, Kollat and Blackwell model, a consumer decision process model, has undergone several revisions since it was originally developed in 1968 (Bray, 2008). Since its development, the consumer decision process model, also referred to as the

Blackwell-Miniard-Engel or the Engel-Blackwell-Miniard model of consumer behaviour, offers a comprehensive framework from which to understand consumer behaviour along with related variables and constructs (Fotis, 2015).

A reflective approach

Edwards (2011) describes Moutinho's (1987) approach to the decision-making process as a sound model and a reflective process of consumer behaviour, whereby it recognises pre-purchase influences, post-purchase evaluation as well as acknowledging future decision-making. Complementing the work by Moutinho (1987), the seminal work by Engel, Blackwell and Miniard (1995) suggested conceptualising consumer decision-making into five steps: recognition of a need; search for information; evaluation of alternatives; the purchase decision and post-purchase behaviour, as simply illustrated in Figure 2.4 below.

Figure 2.4: Stages in the consumer decision-making process

Source: Adapted from Moutinho (1987); Engel *et al.* (1995); Ling *et al.* (2015); Kotler *et al.* (2021)

Ling *et al.* (2015) state that the traditional cognitive decision-making process presented above, does not apply in each and every situation for all types of product categories. It usually applies when something important must be bought, therefore the personal, social and financial risks are considered. For simpler decisions, or repeat purchases, one or more of the above steps do not apply in the decision-making process (Ling *et al.*, 2015). Kotler *et al.* (2021) reiterate this, indicating that consumers do not always go through each of the five stages of the decision-making model or process, they may skip or even reverse some stages.

Schiffman and Wisenblit's consumer decision-making model

Schiffman and Wisenblit's (2019) model of consumer decision-making synthesises and coordinates relevant concepts of consumer decision-making and consumer behaviour into a significant whole. The authors unpack consumer decision-making into

three broad phases, namely, the input, process and output phases, as presented in Figure 2.5 below.

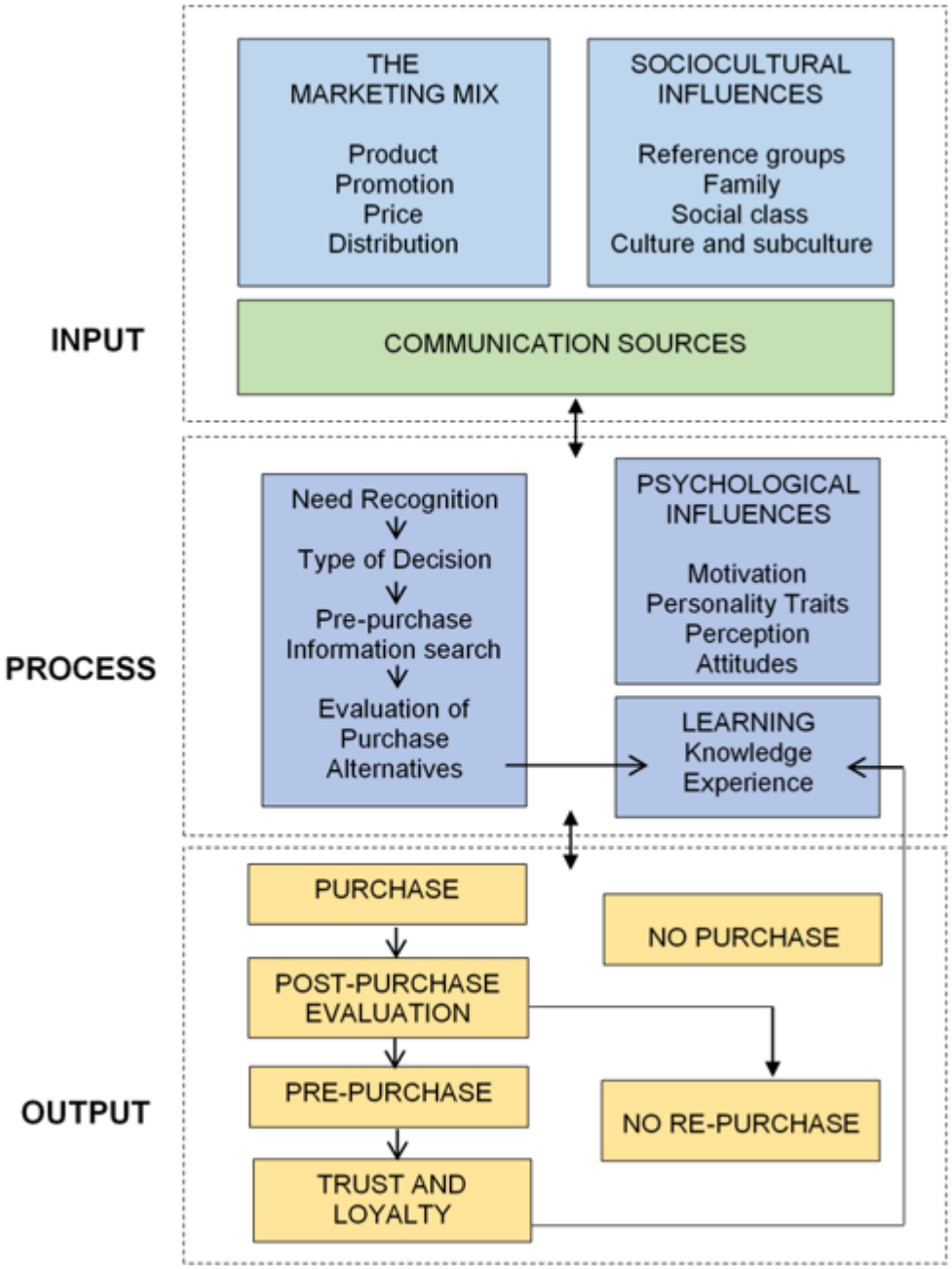


Figure 2.5: Consumer decision-making model

Source: Adapted from Schiffman and Wisenblit (2019)

As illustrated in Figure 2.5 above, the consumer commences the buying process long before the actual purchase, and may experience consequences for a period of time after the purchase has been made (Schiffman & Wisenblit, 2019; Kotler *et al*., 2021). A critique, however, of the above model, is that it does not incorporate considerations

of key elements, such the physical environment, from the macro environment into the picture. The next section of the literature review will therefore be structured by merging a combination of considerations from the abovementioned models, namely, the Engel, Kollat and Blackwell model (1968), Moutinho (1987), the Engel *et al.* (1995) model, and the Schiffman and Wisenblit's (2019) model. Section 2.5, a discussion of the consumer decision-making process, will be structured according to three broad components, namely, the input (Section 2.5.1), process (Section 2.5.2) and output (Section 2.5.3) components. These components are depicted in Figure 2.5 above.

2.5.1 Consumer decision-making: The input component

Consumer decision-making is an element of consumer behaviour, influenced by the same individual and environmental variables that influence consumer behaviour. Understanding consumer behaviour and the decision-making process are crucial in enabling marketers to know, influence and serve their target consumers (Roberts-Lombard & Brijball Parumasur, 2017).

Before a need is recognised, the decision-making process is influenced by several factors, as is the case with consumer behaviour. These influencing factors form part of the input component of the consumer decision-making process, as they are the inputs that determine what consumers buy and how they use what they purchase (Schiffman & Wisenblit, 2019). The input factors include the marketing mix stimuli and environmental influences, consumer psychological factors and characteristics, discussed in Section 2.4.

2.5.2 Consumer decision-making: The process component

The consumer decision-making process is a sequential and often repetitive set of physical and psychological activities (Roberts-Lombard & Brijball Parumasur, 2017). The *process* component considers how consumers make purchase decisions. Therefore, it is necessary to consider the influences of the psychological concepts of motivation, personality traits, perception and attitudes, that were discussed in Section 2.4.1.

These are internal influences affecting a consumer's decision-making process, in terms of what they need and/or want (need recognition), their awareness of the variety of products available (their pre-purchase information search), and their evaluation of

alternatives (Schiffman & Wisenblit, 2019). Need recognition, the first step of the process component, is discussed next.

2.5.2.1 Need recognition

The consumer decision-process commonly starts when the consumer identifies a consumption need or problem that must to be solved (Hoyer *et al.*, 2013). This is the first stage of the consumer decision-making process, wherein the consumer is faced with a 'problem' (Schiffman & Wisenblit, 2019), or becomes aware of an unsatisfied need, or the need to change the current state to conform to the ideal or desired state (Roberts-Lombard & Brijball Parumasur, 2017). Solomon *et al.* (2018) referred to this stage as a process occurring when a person sees a substantial difference between his/her current situation and the ideal state he/she desires, where the recognition triggers the decision-making process.

Needs, as indicated in Maslow's Hierarchy of Needs, range from the most basic needs or stimuli (for example, physiological needs for survival) to the higher order needs such as safety, social, esteem and self-actualisation. Problem recognition may be triggered by internal stimuli (when an individual's most basic needs such as hunger or thirst rises to a point of becoming a drive) and/or external stimuli (when noticing an advertisement prompts interest) (Kotler *et al.*, 2021). Thus, consumers do not only purchase objects, but also solutions to needs and problems (Roberts-Lombard & Brijball Parumasur, 2017). The need to travel might begin with the recognition of the desire for a holiday (George, 2019).

Roberts-Lombard and Brijball Parumasur (2017) noted several issues that result when a consumer's problem or need arises. Those issues relevant to the current study include:

- new information (an awareness is created when consumers are alerted to products and services which are viewed as solutions to their needs);
- expanded desires (consumers are continuously driven by their desire to improve their lifestyles or their standard of living. For example, the desire for an environmentally friendly or LOHAS lifestyle), and;
- expanded or reduced means (an increase in income often means an increase in consumer spending). The financial resources of consumers are a key factor when

considering what and how much goods and services to consume (Roberts-Lombard & Brijball Parumasur, 2017).

Momberg (2011) states that consumers become conscious of their needs in different ways, and they might not always be aware of the need, until they are exposed to new information or new products. This implies that a consumer might not necessarily want an environmentally friendly air travel service due to not being aware of such an option. This is important for the current study as information sources during the need recognition stage of the decision-making model, might alter air traveller awareness of such products (Momberg, 2011).

There are often degrees of differences between two broad product categories, namely, necessity and luxury items, as examined by Cheah and Phau (2011). Luxury items have a degree of exclusivity and usually have a higher monetary risk as they are more expensive than necessities. With more expensive products, purchase decisions tend to be more important, elaborate and time consuming; while with necessities, a lower monetary risk is identified and therefore involves less complexity during decision-making (Cheah & Phau, 2011).

Bangsa and Schlegelmilch (2020) suggest that in the case of ethical products, consumers may need to conduct more extensive searches for information, and thus get more involved in the decision-making process. This implies a time and effort expense for the consumer.

In context of the current study, the need recognition stage involves a consumer's travel motivation or purpose. For a consumer influenced by striving towards an environmentally friendly lifestyle, an expanded desire of the need to travel may be to incorporate green attributes to his/her flight ticket.

2.5.2.2 Pre-purchase information search

Once the need has been recognised, the pre-purchase information search of the decision-making process commences. In this step of the decision-making process, consumers review the environment and check their memory to identify the options available to solve the identified need/problem, before a decision is made (Solomon *et al.*, 2018; Kotler *et al.*, 2021).

This consumer search includes the behavioural and cognitive actions that consumers engage in to access information on the specific problem identified (Roberts-Lombard & Brijball Parumasur, 2017). Often consumers recall past purchases for suitable information to make a decision. However, when there has been no previous experience regarding the respective need satisfaction, the consumer may have to engage in a pursuit for suitable information on which to make a decision (Schiffman & Wisenblit, 2019).

To help with decision-making, consumers also obtain information from outside their experiences, by conducting an external search. According to Roberts-Lombard and Brijball Parumasur (2017) an external search is influenced by external (environmental) considerations, as well as personal differences. The authors refer to personal differences as aspects varying from consumer to consumer, for example, differences in consumer lifestyle, feelings, personality and demographic differences. External influences include information sources, marketing forces, such as flight promotions, as well as social and cultural dynamics (Roberts-Lombard & Brijball Parumasur, 2017).

According to Schiffman and Wisenblit (2019) the intensity of the consumers' search for information depends on the perceived benefits or costs of the search. The perceived benefits include getting the most desired brand, finding the best price and achieving the ultimate satisfaction with a purchase decision, while the perceived costs include the time and expense of searching for information. If the benefits of the information search outweigh the costs, buyers will spend more time and effort during this stage and may explore many sources to obtain the required information (Schiffman & Wisenblit, 2019).

Schiffman and Wisenblit (2019) noted three broad categories that may increase the pre-purchase information search, namely, product, situation, and consumer factors. Product factors include price, frequent price changes, alternative products or brands and variation in product and brand features. These factors are discussed in Section 2.8.1 regarding air travel service attributes. Situational factors include factors such as experience, social acceptability and value-related considerations. The latter includes considerations such as whether a purchase is necessary or discretionary, the desirable and undesirable consequences of all alternatives, and finally, whether there are ecological considerations to be made.

Sustainability and ecological considerations have added a new dimension to the information search (Reutlinger, 2012). Consumers need to be alerted to the respective environmental impacts of their behaviour before they will consider changing it. Hence, sensitising consumers to the negative effects of their behaviour is important in the initial part of the decision-making process, in order for them to consider changing their purchasing process (Mayer, 2013). Therefore, it is crucial that marketers provide consumers with relevant information regarding consumption choices that may have an effect on the environment (Momberg, 2011).

When consumers have greater awareness of the impacts their purchase decisions have on the environment, they will start to incorporate the respective aspects in their information search (Mayer, 2013). Heightened knowledge and awareness of environmental issues is necessary to lead consumers to making more environmentally sound choices (Khan *et al.*, 2020). Knowledge and awareness of environmental issues are discussed in more detail in Section 2.7.

The information search, or pre-purchase step, of the decision-making process includes determining what options or alternatives are available, and which of these will meet the consumer's personal needs. The set of alternatives that a consumer is already aware of is known as the evoked set, while the set of alternatives that the consumer decides to seriously consider are grouped into the consideration set (Solomon *et al.*, 2018). The evaluation of the identified alternatives, step three of the decision-making process, is discussed in the next section.

2.5.2.3 Evaluation of alternatives

Once the pre-purchase information search has been concluded, the next step is for the consumer to evaluate the alternatives and make an informed choice. During this stage the consumer assesses the advantages and disadvantages of each possible solution for the identified problem. Therefore, the consumer evaluates the various product or brand alternatives, using all the information available, along with his or her past experience(s), to move towards making a purchasing decision (Roberts-Lombard & Brijball Parumasur, 2017).

During this stage, consumers compare product characteristics against pre-determined product features or criteria, which are the minimum standards regarded as reasonable when determining the solution to a problem (Roberts-Lombard & Brijball Parumasur,

2017). During the evaluation of alternatives stage, Kotler *et al.* (2021) noted the assumption that consumers see a product or service as a bundle of product or service attributes. Consumers are different; therefore, they vary regarding the attributes which they consider to be important or relevant to them. Consumers will attach more attention to the attributes which most connect with their needs and wants. Then, consumers attach varying degrees of importance to each product attribute, whereby they are likely to develop beliefs about where each brand is positioned regarding each attribute and its utility function. Finally, based on the preceding efforts or actions, the consumer will form attitudes toward the different brands based on an evaluation process (Kotler *et al.*, 2021).

The cognitive consumer, on whom the current study is based, presents the ideal description of consumer behaviour, emphasising the activities of rational consumers who actively evaluate a range of products, services and respective attributes to arrive at a decision that ensures optimal value and satisfaction (Roberts-Lombard & Brijball Parumasur, 2017). Figure 2.6 below illustrates the order of the series of successive sets involved in the consumer decision-making process to select an airline.

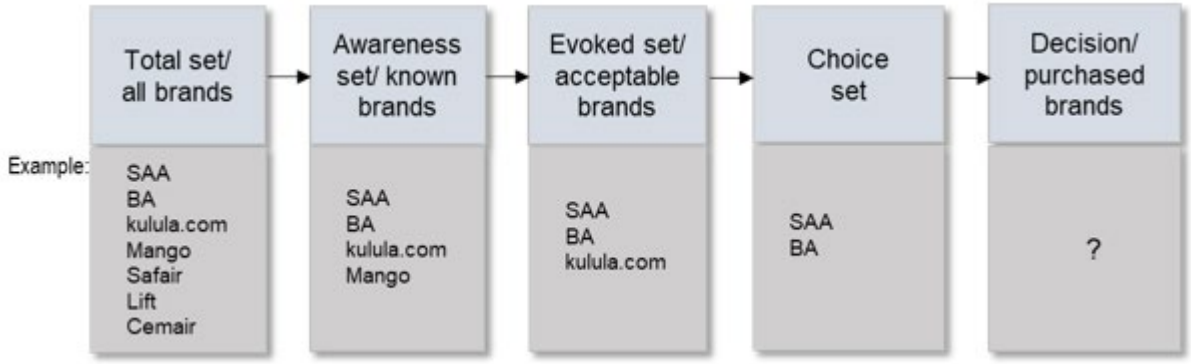


Figure 2.6: Example of successive sets involved in consumer decision-making process to select an airline

Source: Adapted from Schiffman and Wisenblit (2019)

As the context of the current study is to illustrate consumer behaviour and decision-making of air travellers, Figure 2.6 above presents an example of a *total set* of brands (airlines) which are available to the buyer (the air travel consumer or passenger) in the domestic airline industry in SA. For example, a businessperson (the consumer or buyer) looking for the best flight from Johannesburg to Cape Town may weigh up all the airlines which fly that route. The person will subsequently narrow down the list

slightly, to a subset of airlines, known as the *awareness set*. Only some of these airlines may meet the initial buying criteria and will be placed in the *consideration set*. The businessperson will subsequently gather more detailed information regarding each airline, which may result in only a few airlines, the *choice set*, remaining strong contenders. Ultimately, the businessperson will make the final *decision* from this set.

Schiffman and Wisenblit (2019) describe the evoked set as the few brands the consumer remembers, is familiar with and finds acceptable. Consumers then decide which brands will move to their choice sets. According to Kotler *et al.* (2021), the consumer ranks the brands in the choice set forming purchase intentions among the choice set brands. Airlines should identify the competing brands in a consumer's choice set to ensure appropriate competitive appeals and effective communications are planned to create a competitive advantage. Additionally, airlines should strategise to get their brands/products into the consumer's awareness-, evoked- and choice- sets if their products are to be considered at all (Schiffman & Wisenblit, 2019). If products are excluded from a consumers' consideration/evoked set, Schiffman and Wisenblit (2019) noted that a change in product features or attributes is required by the marketer to offer a more favourable and relevant product image to the target customer.

The criteria used to evaluate products and brands in the consumers' choice-sets are expressed in the form of important product attributes (Schiffman & Wisenblit, 2019). Examples of product or service attributes that air travellers use while evaluating the air travel service include ticket flexibility, checked-in luggage allowance, on-board food and beverages (F&B), airline brand image, on-time performance and price. According to Mayer (2013) and Bangsa and Schlegelmilch (2020), environmental or sustainability attributes are also a reason for a consumer to include certain brands into their evoked- or choice- set. The current study aims to add green attributes to the list of attributes for airlines. Sustainability considerations will be discussed more comprehensively in Section 2.7, while airline attributes will be discussed in Section 2.8.1.

The attributes of interest differ from consumer to consumer. For example, the attributes sought from an airline by a businessperson might be on-time performance, ticket flexibility and a premium class seating option, while the attributes sought by a leisure traveller might, more simply be check-in luggage allowance and price.

Once the consumer has evaluated the brands and the respective attributes, the next logical step is for the consumer to make a decision about the exact course of action (Roberts-Lombard & Brijball Parumasur, 2017). The purchase decision is the resulting course of action that is discussed in the next section.

2.5.3 Consumer decision-making: The output component

As illustrated in Figure 2.4, the purchase decision and the post-purchase evaluation stages comprise the output component of the consumer decision-making model (Schiffman & Wisenblit, 2019). The post-purchase evaluation stage is beyond the scope of the current study. Therefore, only the purchase decision (Section 2.5.3.1) will be discussed within this section.

2.5.3.1 Purchase decision

During the actual purchase decision, the consumer decides which product to purchase. The decision is the outcome of the evaluation stage, where the consumer has formed an intention to purchase the most preferred product (Kotler *et al.*, 2021). This stage reflects the consumer's buying decision that involves selecting the option which the consumer believes is the closest match to the pre-determined evaluative criteria, and which has the potential to provide the greatest satisfaction (Robert-Lombard & Brijball Parumasur, 2017).

Also to be considered, are two general factors that can intervene between the purchase intention and the final purchase decision, namely, the unanticipated situational factors and attitudes of others. Hence, purchase intentions and preferences are not completely reliable predictors of the final purchase decision (Kotler *et al.*, 2021). According to Solomon *et al.* (2018) perceived risk may also be present if a product or service is expensive, complex or difficult to understand. Perceived risk is determined by the belief that the choice of a product or service potentially has negative consequences, whether social, physical or financial (Solomon *et al.*, 2018). For example, consumers who have greater environmental concern, may perceive a social risk when travelling by air (Chen, 2013). Additionally, price-sensitive consumers may be less likely to engage in purchasing a green product (in context of the airline industry, refer to Section 2.8.3).

In addition, a green product may require more time to learn about product labels, in addition to being more expensive than non-green products. With perceived time and

cost risks associated with learning about green products, price- and time- sensitive consumers may be deterred from purchasing such products (Van Tonder, 2020).

Furthermore, purchase intentions can be influenced by unexpected situations (Kotler *et al.*, 2021). Additional risks have been introduced due to the Covid-19 pandemic, especially regarding sudden border closures (provincial and international) and subsequent travel restrictions and flight cancellations. Additionally, health and safety risks have also arisen from the Covid-19 pandemic. According to He and Harris (2020), it is likely that leisure tourists, before booking their next trip, ask whether that travel is essential, and consider what the local travel alternatives are. Therefore, perceived risks are crucial considerations during the consumers' evaluation, choices, and behaviours (Zhang & Chang, 2021).

The marketer's job does not end at this step, the purchase decision. The consumer may experience feelings or emotions after the purchase decision leading to post-purchase satisfaction/dissatisfaction, post-purchase actions, and post-purchase product use. The cognitive processes experienced after a purchase are experienced in the post-purchase evaluation stage of the decision-making process. However, the post-purchase stage is beyond the scope of the current study, thus, the intricacies of this stage will not be discussed.

Section 2.5 presented the literature on the consumer decision-making process. The next section discusses consumer behaviour and the environmental imperative.

2.6 CONSUMER BEHAVIOUR AND THE ENVIRONMENTAL IMPERATIVE

In addition to researching and studying the behaviour of its target consumers, companies also need to be cognisant of and adapt to the relevant ongoing developments and trends in the marketing environment, that in turn, are stimuli influencing consumer behaviour. It is therefore necessary for a company's marketers to scan and analyse the marketing environment to capitalise on available opportunities and deal with possible threats (Camilleri, 2018). Kotler *et al.* (2021) stated that successful organisations know the importance of constantly watching and adapting to the changing environment. Furthermore, the authors suggest that marketers should be environmental opportunity seekers and trend trackers.

By consistently monitoring the marketing environment that is continuously changing as a number of unpredictable forces are at play (Camilleri, 2018), marketers will be better equipped to adapt strategies to address new marketplace opportunities and challenges (Kotler *et al.*, 2021). However, Covid-19 has caused turbulence in the marketing environment, radically altering business operations through social distancing and forced lockdowns, and profoundly affecting the global economy (He & Harris, 2020).

Of course, it is necessary for marketers to scan all sub-environments of the marketing environment, such as the economic, technological, political, cultural and physical or natural environments. However, this literature review focuses specifically on the natural environment, as it is a key focus or influence on the direction the current study follows. Section 2.6.1 briefly describes the natural environment as an element of the marketing environment. Sections 2.6.2 and 2.6.3 will cover the concepts of green marketing and the green consumer, respectively. The implications of the Covid-19 pandemic will be highlighted where relevant, in the respective sections.

2.6.1 The natural environment as an element of the marketing environment

From a marketing perspective, the natural environment (also known as the physical environment) includes the natural resources required as inputs by marketers, or that are impacted by marketing activities (Kotler *et al.*, 2021). At a most basic level, unexpected events in the natural environment, for example natural disasters, can affect businesses and their marketing strategies. While companies and marketers cannot necessarily avert naturally occurring events, they can indeed prepare contingency plans to deal with them. On a broader level, concerns regarding environmental sustainability have steadily grown over the last 30 years. With water and air pollution having reached dangerous levels in many cities around the world, concern is mounting about the possibilities and fears of global warming (Kotler *et al.*, 2021).

The types of products and services used by society have an impact on the physical environment through pollution and use of natural resources (Roberts-Lombard & Brijball Parumasur, 2017). Therefore, there are a number of trends in the physical environment that marketers should be aware of and do have an indirect level of control over. This includes the growing use and shortage of finite raw materials, increased air

pollution, and the green movement towards environmental sustainability (Kotler *et al.*, 2021). He and Harris (2020) argue that more people are moving towards responsible and sustainable consumption. Accordingly, environmental, or green, consumption has become an important academic and practical topic (Hguyen *et al.*, 2019) in the marketing field.

2.6.2 Green marketing

Many scholars have noted that concerns regarding environmental degradation have led to the establishment of a new segment of consumers, namely, the green consumer (Paço & Raposo, 2010). Green marketing is not a new concept; however, in recent years it is finally receiving the attention it deserves. Environmental issues were already part of the marketing agenda in the 1970s, with the emergence of ecological marketing, focusing on the ecological impact of companies on the environment (Reutlinger, 2012). Research on green marketing as a concept dates back to the 1980s (Cherian & Jacob, 2012), after which a green marketing revolution occurred in the early 1990s (Kurtz, 2012) with some industries embracing the concept (Reutlinger, 2012). Since then, there has been a strong interest in understanding the negative consequences of environmental degradation and climate change, for society and the economy (Al Mamum *et al.*, 2018). Green marketing has evolved alongside an increase in consumers' concern regarding the environment (Chen *et al.*, 2016). However, according to Sharma (2021), the concept of green marketing has been criticised for exaggerating environmental claims, as well as neglecting consumer behaviour. As a result, a gap or disconnect between green purchase behaviour and environmental attitudes has been observed (Sharma, 2021).

According to the American Marketing Association (AMA), green marketing refers to "the development and marketing of products that are presumed to be environmentally safe", that is, designed to minimise the negative effects on the physical environment (AMA, 2017: para. 12). The term is also used to describe efforts to produce, package, promote, as well as reclaim products in a way that is responsive or sensitive to ecological concerns (AMA, 2017). Schiffman and Wisenblit (2019:319) define green marketing as "the process of producing and promoting reusable, recycled, and recyclable, eco-friendly products, as well as promoting the idea of reuse, reduce, and recycle for a sustainable future".

Concern regarding environmental degradation is rising globally, as such, green marketing has become an area for research based on its relevance to the environment (Sharma, 2021). However, research by Al Mamun *et al.* (2018) highlighted that many marketers have had difficulties promoting green consumerism to the mass market due to the hindrance of consumer ignorance regarding green matters. Many consumers have a misconception about the 'green' product due to insufficient information and understanding (Al Mamun *et al.*, 2018). The green consumer is the topic of the discussion below.

2.6.3 The green consumer

With each passing decade, concerns about environmental issues have increased, as has the rapidly increasing market segment (Paço *et al.*, 2019). As a result, a new type of consumer has arisen, the ethical consumer. Green consumption is a form of ethical behaviour, pursued by consumers believing it is their moral duty to make responsible purchase decisions that will contribute to the preservation of the earth's natural resources (Van Tonder, 2020). By understanding the attitudes and motivations for ethical consumption, an opportunity is offered to marketers to differentiate and position their brands successfully within the green consumer market (Cohen *et al.*, 2014).

Peattie (2010) is of the opinion that the notion of green consumption presents an oxymoron, where on one hand it implies the conservation of environmental resources; while on the other hand, consumption generally involves destruction. Therefore, green consumers are not easy to define and not easy to market to (Rosenkjear, 2012). According to Sharma (2021), the increase in green consumers has led to a diversity of green products, which have made the role of researchers and consumers even more complex and challenging. Furthermore, the author notes that earlier studies on consumer behaviour ignore the ongoing changes in green consumption, and the green consumer. For instance, Kumar, Manrai and Manrai (2017) found that although literature on green consumption is available, the field of the green consumer and green marketing is largely unexplored. Consequently, there is a call for research on the behaviour of consumers towards green products (Sharma, 2021).

However, before doing so, it is necessary to gain an understanding of how the green consumer has been defined. Table 2.2 presents several definitions that exist in current literature.

Table 2.2: Definitions of the green consumer

Synonymous term	Definition
Ecologically conscious consumers	"Ecologically conscious consumers are defined as individuals who seek to consume *only* products that cause the least – or do not exercise any – impact on the environment." (Roberts, 1996; Akehurst *et al.*, 2012:975).
Green consumer	"…one who adopts *environmentally friendly behaviours* and/or who purchase green products over the standard alternatives." (Boztepe, 2012:7)
Green consumer	"…can be identified to be one who *avoids any product which may harm* or damage any living organism, cause deterioration of the environment during process of manufacturing or during process of usage, consume a large amount of non-renewable energy, involves unethical testing on animals or human subjects." (Elkington, 1994 in Cherian & Jacob, 2012:118).
Green consumer	"…an individual who *adopts attitudes and behaviours* that are designed to minimise adverse effects on the environment (Banerjee *et al.*, 1995) and who practises sustainable consumption, minimising the use of natural resources, toxic materials, emissions of waste and pollution, so as not to harm the needs of future generations." (Kilbourne *et al.*, 1997 in Paço, Alves, Shiel & Filho, 2013:414).
Green consumer	"A person who prefers to purchase and consume products that will *contribute to the preservation* of the earth's natural resources and result in the least amount of harm to the environment." (Akehurst *et al.*, 2012:975; Van Tonder, 2020:298). "A person who uses their purchasing power to protect the environment." (Van Tonder, 2020).
Low-carbon consumer	A consumer "concerned about the carbon impact of buying, using and disposing of various products and services." (Gunarathne *et al.* 2020:1).

Source: Researcher's own compilation

The terms 'ecological', 'green', 'environmental', 'environmentally friendly' and 'low-carbon' are considered synonyms in the current study and may therefore be used interchangeably. The various definitions above show that green consumers vary from those who purchase and consume products that have the least harm on the environment, to those who ensure their consumer behaviour causes no harm to the environment. Therefore, green consumers do not reflect homogeneity, as they vary in terms of their level of concern, attitudes and behaviours.

Due to the under-explored diversity of green consumers, businesses need to identify factors influencing green purchases (Sharma, 2021). Therefore, the next section,

discusses consumer environmental consciousness in effort to develop an understanding of the determinants affecting green consumer behaviour.

2.7 ENVIRONMENTAL CONSCIOUSNESS OF CONSUMERS

Environmental consciousness (EC) relates to an individual's knowledge, values, beliefs and perceptions towards environmental issues, as well as towards the behaviour that one consequently conducts (Lin & Niu, 2018). The level of consciousness within society has increased, as individuals are no longer only satisfied with their immediate personal needs, they are also concerned with social and environmental issues. The notion of EC considers a consumer's level of consciousness, considering their consumer characteristics, from an environmental perspective (Mataracı & Kurtuluş, 2020).

EC has been recognised as an important precursor to green consumer behaviour, whereby it influences green attitudes and intentions (Sharma, 2021). Although consensus of a definition of EC from a consumer perspective is lacking, there is agreement that it is a multidimensional construct (Mataracı & Kurtuluş, 2020). The discussion of the concept of EC, in the context of the current study, will therefore be structured according to the following dimensions: environmental knowledge, environmental awareness and concern, environmental attitudes and environmental behaviour. Environmental behaviour will be the first point of discussion.

2.7.1 Environmental behaviour

Numerous terms have been used in environmental behaviour research, namely, green behaviour, environmentally friendly behaviour, sustainable behaviour, ecological behaviour, and pro-environmental behaviour (PEB) (Khan *et al.*, 2020). These terms will be used interchangeably in the current study.

Definitions of environmental behaviour are broad (Merilä, 2015) and understanding green behaviours can be complex (Paço *et al.*, 2019). Environmental behaviour refers to behaviours that consciously aim to minimise the negative impact of a person's actions on the physical environment (Kollmuss & Agyeman, 2002 in Chen *et al.*, 2016). According to Khan *et al.* (2020:1171), environmental behaviour is "a set of planned activities in response to the social and individual needs arising from environmental conservation".

Environmental behaviour from a consumer behaviour perspective is largely related to purchasing in an ethical, sustainable, responsible and environmentally friendly manner (Paço *et al.*, 2019). This behaviour reflects that of a green consumer, as described in Section 2.6.3.

There are many ways in which environmental behaviours may occur, for example, through recycling, saving energy, reducing pollution and through conservation activities. From a consumer behaviour perspective, environmental behaviour includes purchasing green and energy efficient products, exhibiting a preference for biodegradable and recycled goods, using locally sourced and fair-trade products and avoiding over packaged goods (Paço *et al.*, 2013; Paço *et al.*, 2019). Kumar and Ghodeswar (2015 in Paço *et al.*, 2019) added that this also includes buying decisions in the form of practicing sustainable consumption, supporting green companies, and the likelihood to spend more on environmentally friendly products.

According to Khan *et al.* (2020), consumer environmental behaviour can be categorised into two standard classifications, as follows: 1) reducing energy resource consumption (such as restricting behaviours), and 2) eco-friendly purchasing decisions (such as green purchase behaviour). The second classification can only be enhanced by increasing the availability of environmentally friendly attributes, products or services to consumers (Merilä, 2015).

As revealed in the findings by Wei, Ang and Jancenelle (2018), the right motivation, environmental attitudes, knowledge and information regarding green products are needed for the consumer to consider green products, and to be willing to pay more for them.

As individuals proactively try to reduce their environmental impact (Cherian & Jacob, 2012), this can be criticised for being less pleasurable and less profitable, requiring more effort and time than environmentally harmful actions (Steg, Bolderdijk, Keizer & Perlaviciute, 2014). Often consumers do not have the time or know-how to research products or services before using them. For this reason, among others, consumers put their trust in organisations, such as manufacturers and retailers, to ensure that they act in a responsible manner. This implies that organisations need to act ethically, have core principles and go beyond the minimum prescribed laws and regulations, all while producing high quality and safe products and services (Goldsmith, 2017).

PEB was discussed above. This type of behaviour, however, is usually preceded by environmental knowledge, awareness, concern and attitudes. Together, these environmental factors help conceptualise environmental consciousness as a whole. Environmental knowledge is the next point of discussion.

2.7.2 Environmental knowledge

Consumer environmental knowledge is an important factor that must be assessed due to its impact on green consumption behaviour (Kim, Yun, Lee & Ko, 2016; Van Tonder, 2020). According to Kim *et al.* (2016) knowledge performs two key functions within green consumption. Firstly, it increases awareness of relevant environmental issues and secondly, it empowers consumers in identifying and selecting the best green consumption action. Lin and Niu (2018) stated that this knowledge reveals how individuals perceive their own responsibility towards the environment, which leads to green behaviour.

Lin and Niu (2018:1680) defined environmental knowledge as “the information an individual has regarding the reciprocal relationship between people and the environment”. While Khan *et al.* (2020:1170) defined it as “a general understanding of the facts, concepts and linkages in the issue of the natural environment and biotic ecosystems”.

When green knowledge is lacking by consumers, the result is low awareness towards green products. This may be due to organisations not pushing towards the development of more ‘green’ products or corresponding attributes such as ‘green’ packaging and labelling (Cherian & Jacob, 2012). However, previous studies indicate that environmental knowledge does not necessarily generate positive environmental attitudes and behaviour (Wang & Yu, 2018). In contrast, Khan *et al.* (2020) state that when individuals have knowledge and understanding of the environment, and recognise the mutual responsibilities necessary for sustained development, this will lead to increased PEB. Additionally, Sharma (2021) asserted that consumers with environmental knowledge are more likely inclined to adopt green behaviour, as it assists consumers in making rational and informed decisions.

Coskun and Özbük (2019) claimed that there is no consensus among researchers whether or not an increase in environmental knowledge leads to environmental behaviour. Khan *et al.* (2020) acknowledged that the research on the importance of

knowledge leading to PEB is inconsistent. However, the scholars claimed that when individuals do not have the appropriate knowledge related to environmental issues, they are unable to act responsibly towards the environment. The study by Lin and Niu (2018) found that consumers with environmental knowledge are more inclined to use green products. Some other studies also support the view that behaviour and knowledge are positively associated (Kaufmann, Panni & Orphanidou, 2012; Harun, 2012; Cherian & Jacob, 2012; Paço *et al.*, 2019; Khan *et al.*, 2020).

Environmental knowledge can be enhanced by communicating the environmental performance of the brand, product or service (Merilä, 2015). The eco-label, for example, is a tool that producers can use as a means of sharing a product's environmental information with consumers. According to Baumeister and Onkila (2017), the eco-label aims to inform consumers about more environmentally friendly consumption options, without compromising their freedom of choice. Additionally, the eco-label acts as a reminder to consider environmental issues as a component of consumer choice (Baumeister & Onkila, 2017). To summarise the function of eco-labels, the environmental performance of a product needs to be defined, compiled, tested, summarised and presented to the consumer in the easiest possible way (Buckley, 2002; Gallestegui, 2002 in Baumeister & Onkila, 2017). According to Bangsa and Schlegelmilch (2020), prior awareness of the meaning of sustainable or eco labels, rather than general knowledge, serves a central role in predicting consumers' WTP.

Once a consumer has been alerted to respective knowledge, they are given a sense of consciousness and direction to making better purchase decisions (Makanyeza & du Toit, 2015). Thus, environmental knowledge can strengthen the consumers' decision-making process regarding green products. With knowledge, comes enlightened awareness and concern, which is the next point of discussion.

2.7.3 Environmental awareness and concern

Environmental awareness and concern have been identified as essential dimensions in conceptualising EC for the current study. The discussions below address these two dimensions of EC.

2.7.3.1 Environmental awareness

An awareness of the consequences of purchasing behaviour on the ecological environment, has led to moral obligation for some consumers and personal responsibility for others (Gatersleben *et al.*, 2014). This increasing awareness of environmental issues is followed by demonstrating high levels of environmental concern (Krause, 1993 in Kim *et al.*, 2016).

An increase in environmental knowledge and awareness has led to a shift in how consumers go about their lives (Cherian & Jacob, 2012). As consumers become more mindful of the impacts that their purchases have on the environment, they can start considering these aspects in the information gathering (Mayer, 2013) and evaluation of alternative stages of the decision-making process. Pawaskar, Raut and Gardas (2018) noted that an awareness of environmental problems and the knowledge of remedial alternatives will support consumers in making informed decisions and increase a sincere desire to act towards determining the measures required for mitigation of environmental challenges.

Many measures have been adopted to assess consumers' environmental knowledge (Chen *et al.,* 2016) and its association with environmental attitude and behaviour. The study by Cherian and Jacob (2012) on consumers' attitudes towards green products, revealed that green knowledge is lacking by consumers, as many organisations are not pushing towards the development of more 'green' products or respective attributes such as 'green' packaging and labelling. The authors found that a lack of knowledge resulted in low awareness towards green products. Environmental concern is addressed in the next section.

2.7.3.2 Environmental concern

According to Chen, Hsu and Lin (2011), as consumers have become better informed about environmental issues (including ozone depletion, climate change and environmental conservation), so has their level of EC increased. Steg *et al.* (2011:351) define environmental concern as "the evaluation of the seriousness of environmental problems." While Aman, Harun and Hussein (2012) define this EC dimension as the level of emotion and commitment an individual has towards environmental issues. The study by Paço and Raposo (2010) indicated that environmental concern results in environmentally friendly behaviour; however, not without considering various other

conditions such as the performance of the product, social norms, price and knowledge about the environment. Therefore, environmental concern is influenced by communication produced by the media, experiences of other individuals, as well as by direct personal experiences (Paço & Raposo, 2010). According to Suki (2017), environmental concern is related to the consciousness of an individual regarding environmental problems. Sharma (2021) highlights that the concern for the environment has been recognised as an influencer of green consumer behaviour.

As consumers have become more conscious of the environmental impacts of their consumption, they have started to show concern for the damage consumption is having on the environment through their purchase decisions (Mayer, Ryley & Gillingwater, 2012; Mayer, 2013). Therefore, environmental concern can be seen as an influencing factor for environmental behaviour (Mayer, 2013; Merilä, 2015). However, previous studies over the last decade have pointed out that in most cases where consumers expressed a genuine concern for the environment, their attitudes did not always translate into their buying behaviour (Paço *et al.*, 2013). Although environmental concern has not always been reflected by the consumers' actions (Bonini & Oppenheim 2008 in Mayer 2013), consumers have placed pressure on organisations to lead the way and be proactive in focusing on green marketing efforts that consumers will find attractive (Mayer, 2013).

Furthermore, concern for the environment appears to be highly contextual. For instance, the studies by Barr, Shaw and Coles (2011) and Alcock, White, Taylor, Coldwell, Gribble, Evans, Corner, Vardoulakis and Fleming (2017) revealed that environmental concern and behaviour that is 'practiced' at home, does not extend to a holiday or travel context. A recent study by Cocolas *et al.* (2021) acknowledged that global environmental events in recent years have created growth regarding consumers' concern for the environment when travelling. However, in their study among Australian air travellers, the latter authors found that air travellers often prioritise their own desires over concern about their environmental impact.

Finally, a look into other environmental attitudes will be discussed. The environmental attitudes dimension is the final factor to be considered in conceptualising EC for the current study.

2.7.4 Environmental attitudes

While environmental concern can be considered an attitude, environmental attitude refers to a person's degree of interest or concern with regard to environmental issues and other aspects of energy-saving and ecological phenomena (Shrum *et al.*, 1995 in Chen *et al.*, 2011). Environmental attitude has been identified as the judgement an individual has towards the promotion and protection of the environment (Cherian & Jacob, 2012), a reflection of a person's perspective regarding humans' relationship with nature (Chen *et al.*, 2016), as well as a demonstration of their predisposition to respond in a consistent (favourable or unfavourable) way with respect to the environment (Heyl *et al.*, 2013 in Coskun & Özbük, 2019). According to Khan *et al.* (2020), an environmental attitude is a psychological tendency expressed by evaluating beliefs about the physical environment, or perceptions towards it, with a degree of favour or disfavour.

Consumer attitudes have been changing towards greener lifestyles (Cherian & Jacob, 2012) and are considered as important factors to evaluate in terms of the benefit of purchasing green products (Al Mamun *et al.*, 2018). Attitudes and attitude change are often studied to help understand and promote PEB among individual consumers (Gatersleben *et al.*, 2014). When consumers hold positive attitudes toward eco-friendly products, they will be more willing to learn about them (Paul, Modi & Patel, 2016 & Sharma & Dayal, 2016 in Al Mamun *et al.*, 2018). Furthermore, according to Nguyen, Nguyen and Hoang (2019), these green attitudes and intentions can, in turn, influence the actual green consumption behaviour. Khan *et al.* (2020) highlighted that PEB is not likely to achieve direct satisfaction or personal gain for an individual. The authors note that consumers evaluate their PEB with consideration of a future-oriented outcome that will benefit the whole community.

PEB is to be expected in individuals with eco-centric attitudes towards the environment, and therefore, the identification of individuals holding these views is a reasonable means of foreseeing who is likely to behave in an environmentally friendly way (Mair, 2011). However, research has also found that a positive environmental attitude does not always result in PEB (Chen *et al.*, 2016). Despite this, attitudes are still considered antecedents of the behaviour. Attitudes towards green consumption echo an individual's beliefs concerning the outcome of PEB, therefore decisions on PEB depend on their environmental attitudes (Khan *et al.*, 2020).

However, the interplay of EC dimensions is highly contextual. For instance, a study by Wang, Pham and Dang (2020), found that environmental attitudes have a positive influence on organic food purchase intentions. Additionally, their findings suggest that consumers care about environmental issues and consider them in their purchase decision-making process. However, in the study by Cocolas *et al.* (2021), it was found that although air travellers, as consumers, had expressed environmental concern, they perceived the outcome of engaging in PEB to come at a personal cost. Subsequently, they psychologically distanced themselves from the personal 'cost' of their air travel emissions.

In general, evidence has suggested that individuals do attempt to change their attitudes and behaviours for the benefit of future generations (Paço *et al.*, 2019). Although, this shift in attitudes towards environmental behaviours has proven to be somewhat challenging (Khan *et al.*, 2020). Marketers and researchers should therefore strive to understand environmental attitudes in an attempt to form favourable attitudes (and change unfavourable ones) in the minds of their consumers (Coskun & Özbük, 2019).

Several researchers (Steg & Vlek, 2009; Sánchez & Lafuente, 2010; Chen *et al.*, 2011) note that environmental attitudes and concern has mostly been measured by the New Environmental Paradigm (NEP) scale. First developed by Dunlap and Van Liere (1978), the NEP scale was later revised by Dunlap *et al*. (2000) (Dunlap, 2008). The NEP is the most widely disseminated and longest standing line of research on environmental attitudes. The NEP scale is based on the premise that the level of environmentalism amongst individuals (including the general public and consumers) is a question of general beliefs or values regarding the relationship between the environment and human beings (in the case of the current study, stakeholders of the airline industry). The original and updated NEP scale obtained high internal consistency between the different scale items and their validity for discriminating between the general public and 'environmentalists' (Sánchez & Lafuente, 2010).

It is important to note that different consumers may have different emotional attachments and concerns towards the environment, as well as varying environmental knowledge and environmentally friendly behaviours (Paço & Raposo, 2010). It is therefore necessary to consider consumer EC from the perspective of the industry

being studied. For instance, in the current study, it is important to contextualise environmental consciousness within the airline industry.

2.8 CONSUMER BEHAVIOUR, ENVIRONMENTAL CONSCIOUSNESS AND THE AIRLINE INDUSTRY

Air transportation, in its current form, causes destruction to the environment. Hence, behavioural change should be considered as a form of reducing and mitigating environmental impacts caused by airline activities (Baumeister, 2017; 2020). There are many factors that can influence consumer behaviour and it is no different for the consumer behaviour of air passengers. As indicated in Chapter 1 (Section 1.3) and elaborated upon in Chapter 3 (Section 3.3), airlines have had to adapt the way in which they have competed. This is particularly relevant considering post-Covid-19 recovery, which will offer a rare opportunity for airlines to rebuild for a more sustainable, resilient and climate-safe era (Cocolas *et al.*, 2020). This section synthesises the relevant literature in the context of the airline industry. Firstly, air travel service attributes will be discussed in Section 2.8.1, followed by a discussion of air travellers as consumers in Section 2.8.2, and finally, air traveller environmental consciousness in Section 2.8.3.

2.8.1 Air travel service attributes

The current study focuses on the air travel behaviour of domestic air travellers, who are the final consumers of the air travel service offering. Air travel service attributes (ATSAs) are critical decision-making factors for air travellers when selecting an airline (Kim & Park, 2017). The ATSAs considered by air travellers when deciding on an airline to select, are crucial for airlines to understand, as this information can be utilised in marketing segmentation and marketing strategies (Chen & Chao, 2015). Furthermore, it is imperative for airlines to have a clear understanding of the variables that influence the passenger's decision. These include interactions between demographic variables such as age, income and gender; the purpose of travel, for instance, business or leisure; as well as the attributes of the decision-making process. In addition, the extent to which specific attributes influence the passengers' decisions could be vital to airlines in employing and allocating limited resources (Carstens & Heyns, 2012).

Numerous studies have explored the factors that air travellers consider when deciding on an airline to travel with or air travel service to choose (Mason, 2001 & 2000; O'Connell & Williams, 2005; Fourie & Lubbe, 2006; Surovitskikh & Lubbe, 2008; Campbell & Vigar-Ellis, 2012; De Jager, Van Zyl & Toriola, 2012; Vlachos & Lin, 2014, De Jager, Lin & Huang, 2015; Chen & Chao, 2015; Warnock-Smith, O'Connell & Maleki, 2017; Park, Lee & Nicolau, 2020). These studies focus on the traditional ATSAs, which will be presented in Section 2.8.1.1 below, while Section 2.8.1.2 will follow with an exploration of the literature on the environmental and the airline industry to discover potential green air travel attributes.

2.8.1.1 Traditional air travel service attributes

ATSAs have been identified and classified differently by researchers (Park *et al*., 2020). According to Vlachos and Lin (2014), operational factors such as safety, punctuality and aircraft comfort are the basic requirements necessary for an airline to operate in the market. They are 'must-be' attributes, 'core services', non-excludable or baseline services. Kökény, Kenesie and Nesveda (2021) argued that security and safety are among the most important factors influencing traveller decisions. Attributes such as flight frequency, schedule, frequent flyer programmes (FFP), airline reputation and ticket price are categorised as 'competitive factors'; while 'attractive factors' include additional attributes such as in-flight F&B and in-flight staff service. According Vlachos and Lin (2014), the absence of the latter factors does not dissatisfy the passenger, but the passenger is satisfied if they are provided. The way air travellers select airlines may vary between contexts (Vlachos & Lin, 2014) and other variables.

Similarly, O'Connell (2011 in O'Connell & Warnock-Smit, 2013), classify ATSAs into core products and ancillary products, where the latter are further classified as unbundled products and commission-based ancillaries. These categories and respective items are:

- core products (reliability, safety and schedule);
- unbundled products (reservation changes, express check-in, F&B, priority boarding, excess baggage, internet WiFi and seat assignment); and
- commission-based ancillaries (car rental, hotels, lounge access, travel insurance, airport transfers, foreign currency, airport car parking, spa treatments and more).

Warnock-Smith *et al.* (2017) classify the ancillary products even further into a-la-carte (unbundled items and punitive charges) and third-party categories. These items are listed in Figure 2.7 below.

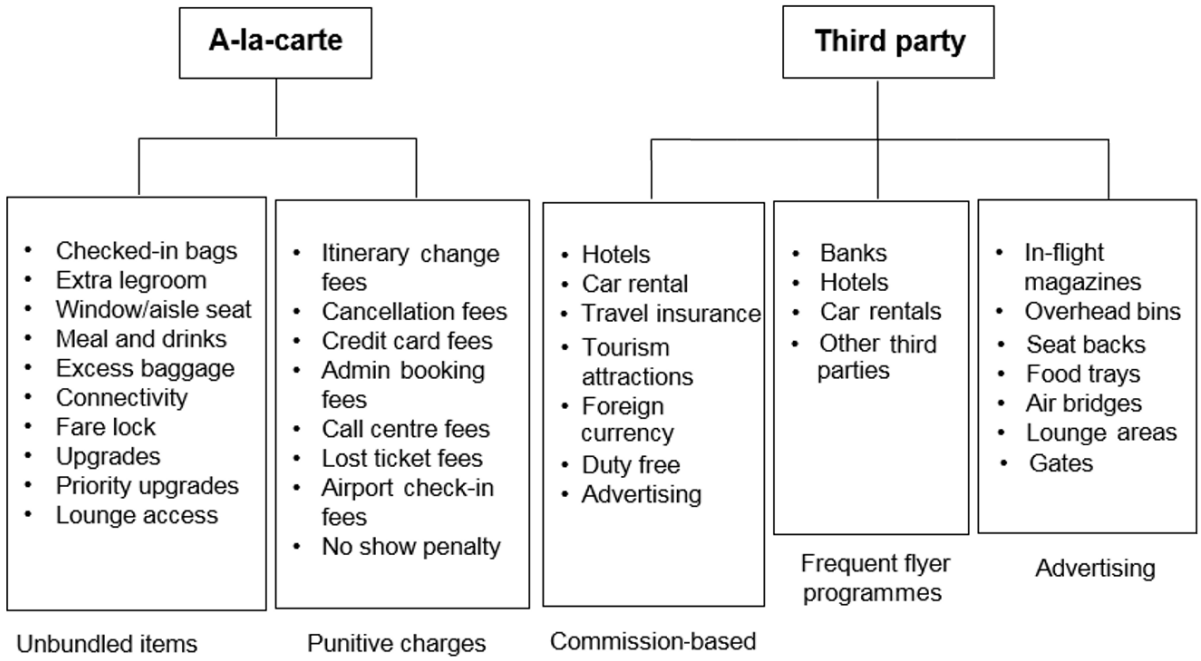


Figure 2.7: A-la-carte and third-party ancillary products

Source: Warnock-Smith *et al*. (2017:3)

The study by Campbell and Vigar-Ellis (2012) reflected that air travellers consider low price, safety, and reliable, punctual flights to be important ATSAs. Chen and Chao (2015) compiled a list of choice factors that passengers consider when selecting airlines, these include, among others: price, flight scheduling, punctuality of flights, reliability and safety of the airline, seating comfort, in-flight F&B, sanitation and cabin cleanliness, speed of baggage transport, safety and reliability in baggage handling, service attitude of flight attendants, efficiency in problem solving of passengers, convenience in making reservations, FFP, reputation and image of the airline, efficiency of ground service staff and promotional strategies.

According to Diggines (2017), one of the biggest changes accompanying the introduction of the LCC model, has been changes in consumer behaviour. Previously, air travellers were accustomed to a standardised product with limited options and set prices. Air travel passengers expect flexible pricing options, they place a high value on the power to choose, and they value personalised experiences (Diggines, 2017).

Further changes in consumer air traveller behaviour, in the light of the Covid-19 pandemic, have added further complexity to the already complex study of consumer behaviour and decision-making (see Chapter 3). The findings by Ivanova *et al.* (2021) revealed that changes in travel behaviour of Bulgarians during Covid-19 include the importance of disinfection and hygiene, a reliable health system and the overall perception of personal security and safety. Furthermore, as observed by Graham *et al.* (2020) (See Section 2.4.4.), the Covid-19 pandemic has influenced the air travel behaviour of the 65 and older age category.

Several service quality attributes in the airline industry were identified by Surovitskikh and Lubbe (2008). The list of attributes, expanded upon using Barnes (2017) and Park *et al*. (2020), are listed below according to broad categories:

- Tangibility: seat comfort and cleanliness of aircraft, on-board services, inflight F&B, magazines, seat pocket and design, electronic amenities and appearance of the airline crew
- Intangibility: courtesy of the airline crew (the latter is also in the responsiveness category), noise level, on-board temperature and air quality
- Responsiveness: professionalism of airline service staff, courtesy and helpful attitudes of check-in personnel, and attention of cabin and ground crews
- Reliability and assurance: airline flight safety and security measures; on-time performance, service frequency and convenience of schedule; professional skills of crew; service efficiency of airline personnel; security-related accidents; convenience of departure and arrival times
- Empathy: convenience of pre- and post- flight services; convenient ticketing processes and travel services, handling of passenger complaints and underperformance liability; handling of complaints regarding flight delays/problems; handling of lost, or damaged luggage.

As can be seen from the above review, green ATSAs have not been incorporated into the relevant literature. The green ATSAs are the focus of the next section.

2.8.1.2 Green air travel service attributes

Absent from the above discussion (consequentially as most research regarding the passenger airline choice-factors excludes such criteria) are those ATSAs that can be

seen as “green” or environmentally responsible. The current study intends to incorporate green ATSAs into the choice-criteria literature in the airline industry. After all, the aviation industry has committed to carbon neutral growth (IATA, 2018).

Mayer *et al*. (2012) identified the perceptions of passengers regarding airlines’ green image and the different measures used by airlines can introduce to mitigate their environmental impact. The environmental measures that Mayer *et al.* (2012:184) proposed airlines should consider, include: “using newer aircraft” (identified as most effective), “testing bio fuels”, “having a positive attitude towards the environment”, “reducing the waste on board by not offering free food”, “promoting public transport to reach the airport”, “increasing the number of seats per aircraft”, “using propeller aircraft instead of jet aircraft”, “serving ‘fair-trade’ and ‘organic’ products”. Cowper-Smith and De Grosbois (2011) studied the environmental (or CSR) reports of 14 airlines and identified specific environmental initiatives implemented, as well as their level of adoption in the airline industry. (These are presented in Section 3.4.3.)

Based on the findings of their study, Mayer *et al.* (2012) stated that airlines could differentiate themselves from their competitors by focusing more on their green image in their marketing communications. The above authors further noted that the green images developed by airlines should be used to attract passengers and to convince them to pay a premium for an airline product that is more environmentally friendly. According to Mayer *et al.* (2012), these will be the next necessary steps for airlines that aim to benefit by addressing environmental issues. The study by Baumeister *et al.* (2020) found that this indeed could be possible if airlines successfully implement eco-labelling initiatives. Voluntary carbon offsetting (VCO) programmes and eco-labels, as market-based measures (MBMs) are discussed in detail in Section 3.4.2.4.

According to Kim and Park (2017) an airline’s ATSAs represent an impression that is created by various factors and perform a critical role in the motivation and decision-making of air travellers when selecting an airline or air travel service. In addition, the ATSAs are important differentiation factors between airlines attempting to overcome similarities with other airlines and enjoy a competitive advantage (Kim & Park, 2017).

The next section presents a discussion of the air traveller as the consumer, and how the type of air traveller may influence air travel consumer behaviour.

2.8.2 Air travellers as consumers

The current study seeks to understand the changing nature of the domestic air traveller in the SA airline industry, with particular reference to consumption and behavioural issues. Edwards (2011) notes that it is no longer sufficient for the phrase 'air traveller' to encompass the diverse requirements and needs of those travelling by air.

There are four broad types of air traveller in the short-haul domestic market in SA. These include the business air traveller, leisure air traveller, LCC air traveller and the FSC air traveller. With many options to choose from, consumers are faced with a complex decision-making process when deciding which air travel service to purchase and which airline to fly with (Edwards, 2011).

2.8.2.1 The LCC and FSC markets

FSC and LCC air travellers can be differentiated from one another, based on the preferred ATSA choice-criteria offered by each of the models. The ATSAs of airlines have been discussed in Section 2.8.1.1 of this chapter. The differences in ATSAs between the FSC and LCC models will be discussed in the next chapter on the airline industry (Chapter 3, Section 3.2).

2.8.2.2 The business and leisure markets

Air travel is often reasoned as 'unavoidable', such that trips have value and purpose for the traveller (Gössling, Hanna, Higham, Cohen & Hopkins, 2019). There are a variety of reasons why people travel, these motives range from travelling for leisure or business, to visiting friends and relatives (VFR) (Gössling *et al.*, 2019).

While there are a variety of reasons why people travel, there are two broad categories of air travellers, namely, the business and leisure air traveller. These categories are identified based on need recognition. Leisure air travellers and business air travellers have a number of distinct differences, especially with regard to trip frequency, price-elasticity and demographics (Shaw, 2011 in Mayer, 2013). In addition, it has been found that business and leisure air travellers differ in the way that they are influenced by the ATSA choice-criteria (Milioti, Karlaftis & Akkogiounoglou, 2015). These differences are understandable considering leisure and business air passengers travel for different reasons. Leisure travel includes travelling for holidays, weekend breaks, shopping, studying, sports, VFR, and cultural or religious reasons (Diggines, 2017);

while business travel includes a diverse range of motivations, including travelling to attend meetings, conferences and conventions, exhibitions, trade fairs, training courses and to seek employment opportunities (Becken & Hughey, 2021).

When LCCs came into existence, the capture of the short-haul business travel market was unexpected. However, the business travel market came to represent a major market for LCCs and to date, these airlines have been successful in attracting the business travel market (Mason, 2001). Despite capturing the business market to a great extent, research by Diggines (2017) showed that less business travellers use LCCs than FSCs. The results of the study by Diggines (2017) revealed that the business travel segment was still an important segment for FSCs, and that there could be potential for LCCs to penetrate this market segment, especially in the SA business travel market. However, as a result of Covid-19, a plethora of unanticipated changes have changed this market landscape. As such, the post-Covid-19 marketplace is irrecoverably different (He & Harris, 2020) (refer to Chapter 3).

Becken and Hughey (2021) referred to research by Amadeus (2014), which revealed that after the 2008 global economic crisis, there was a significant drop in corporate travel demand, particularly for premium class fares and short-haul flights. Bouwer *et al.* (2021) also noted the decrease in travel that occurred after the attacks on the World Trade Center (9/11) in 2001. According to the authors, the changed demand for air travel after both crises did not ever totally recover to their pre-crisis levels before the Covid-19 crisis hit. Considering the recovery after the previous crises, the authors expect leisure trips and visits to friends and relatives to rebound in recovery, before business travel does.

Bouwer *et al.* (2021) predicted that during post-Covid-19 recovery of the air travel market, people will take fewer corporate trips. As such, the authors suggest that the business travel market will take longer to recover and may only recover to 80% of the pre-pandemic levels by the year 2024. Ivanova *et al.* (2021) conducted research on air travel after the pandemic in Bulgaria. Their findings revealed that the main purpose for air travel post-Covid-19, was for leisure travel reasons. The authors found that home-office flexibility and online business meetings during the pandemic has proven that business operations can run smoothly from home, without the need to travel. As a result, business travel declined significantly, and most business arrangements during the Covid-19 pandemic went online (Ivanova *et al.*, 2021).

He and Harris (2020) asserted that changes in the marketing landscape and environment have forced organisations to develop a strategic agility during-, and post-pandemic; agility that is needed to create new markets, customers and consumers. The authors argue that Covid-19 offers an opportunity for businesses to shift to more authentic and genuine CSR and to contribute to addressing urgent environmental challenges. Considering that the tourism sectors contribute 10% of the world's GDP, the impact of ethical consumer behaviour must not be ignored (Weforum.org, 2020 in He & Harris, 2020).

Considering that air travel forms a substantial part of an organisations carbon profile, business travel is a pertinent issue (Becken & Hughey, 2021). If, as predicted, air travel returns to pre-pandemic levels by 2024, the business travel segment should remain on the forefront and should not be overlooked.

This section discussed the two broad air travel motives, the business and leisure air travel segments. Additionally, it highlighted the impact the Covid-19 pandemic has had on these segments. Taking the stance of He and Harris (2020), the current study argues that Covid-19 offers an opportunity for air travellers and airlines to shift to more environmentally responsible behaviours. Air traveller EC is the next theme of discussion.

2.8.3 Air traveller environmental consciousness

Limited research exists on the relationship between air travel behaviour and EC. Although generic environmental scales such as the NEP are available to measure environmental concerns and other attitudes among the general public, there are no specific scales available to measure air travellers' EC, as a concept in totality, to include environmental- knowledge, awareness, concern and PEB (Araghi *et al.*, 2016).

Most of the research on air travellers from an environmental perspective has been based on environmental concern and attitudes (Lassen, 2010; Barr *et al.*, 2011; Alcock *et al.*, 2017); eco-labels, air traveller awareness of and WTP VCO programmes (including research by Mair, 2011; Rosenkjear, 2012; Choi & Ritchie, 2014; Cheung, Kragt & Burton, 2015; Kim *et al.*, 2016; Lu & Wang, 2018; Zheng, Ge, Fu & Jiang, 2019; Cocolas *et al.*, 2020); or, the interplay between EC dimensions (Chen *et al.*, 2011; Chen, Tu, Wang, 2016; Lu & Wang, 2018). Furthermore, the interplay between environmental attitudes and behaviour of air travellers, with regard to air traveller

intention to purchase other eco-friendly air travel options has not evoked sufficient interest. However, the few studies (including research by Hares, Dickinson & Wilkes, 2010; Mayer, 2013; Merilä, 2015; Baumeister, Zeng & Hoffendahl, 2020) that have been conducted in the field, do provide valuable insights towards air traveller environmental behaviour, decision-making and EC.

The strong growth in air travel (pre-Covid-19 and post-Covid-19 recovery) and environmental concerns represent a key issue in air travel behaviour (Mayer, 2013; Lu & Wang, 2018; Cocolas *et al.*, 2021). Despite this, air travellers receive insufficient information on aviation's environmental impacts, the concept of carbon offsetting, and the potential impact that travel behaviour change can have on reductions in carbon emissions (Lu & Wang, 2018).

Sharing knowledge and creating environmental awareness among air travellers has therefore been identified as a possible mechanism that can potentially affect PEB in air travel (Lassen, 2010). Lu and Wang (2018) note that there is an information gap between air travellers and the airline industry regarding the environmental impacts of air travel, and the initiatives available to mitigate these impacts. Therefore, numerous studies have suggested that environmental information should be provided to air travellers and that it should efficiently improve air passengers' environmental awareness (Lu & Wang, 2018).

Two relatively effortless tools that airlines can use to inform air travellers of the environmental impact of air travel include incorporating a VCO programme and air travel eco-labels. VCO programmes and air travel eco-labels are a means of generating environmental knowledge and awareness amongst air travellers regarding their contribution to generating harmful emissions (Kim *et al.*, 2016). These tools are market-based measures used by the commercial airline industry, discussed in Chapter 3 (Section 3.4.2.4).

Airlines need to communicate what the impacts of aviation on the climate are (Merilä, 2015), as it has been found that those air travellers who see the airline industry's environmental impact as being significant, are more willing to compensate for them (Van Birgelen, Semeijn & Behrens, 2011). However, research (Lu & Shon, 2012; Cheung *et al.*, 2015) has found that the majority of air travellers are not aware of the concept of carbon offsetting, despite it being the most popular market-based

environmental initiative offered by airlines. The research findings by Mayer (2013) revealed that while there may be awareness of environmental consequences of air travel, awareness does not necessarily relate to green attitudes or PEB. In the study by Hagmann, Semeijn and Vellenga (2015), it was found that while a third of passengers had heard of carbon offsetting, less than 10% of those travellers had ever used such schemes. This shows that, while PEB can be enhanced by educating air travellers on environmental issues and green practices offered by an airline (Lu & Wang, 2018), it does not always lead to environmental concern or PEB.

In the study by van Birgelen *et al.* (2011) it was found that the willingness of airline passengers to compensate their CO_2 emissions (through VCOs) increased with the associated knowledge of the contribution air travel has on climate change. Kim *et al.* (2014) and Lu and Wang (2018) found that air passengers' environmental knowledge positively and significantly influences their attitudes towards participating in VCO programmes. This emphasises the importance of communication from the airline, as without the knowledge regarding the impacts from aviation on the climate, very few air travellers would know what these environmental aspects are (Merilä, 2015). Lu and Wang (2018) indicate that it is unrealistic to expect air travellers to participate in VCO programmes if they do not know, or even vaguely know, about the programme or the environmental impacts of aviation. Therefore, it is necessary to increase the environmental knowledge of air travellers. Enhanced knowledge of climate change is alleged to inevitably generate change in air travel behaviour (Lassen, 2010).

The research by Mair (2011) found that air travellers who have purchased VCOs in the past, as well as those who would consider offsetting in the future, hold eco-centric attitudes. Mair's finding highlights the importance of understanding air traveller environmental attitudes as it has been demonstrated to be an influence towards PEB. In the study by Lu and Wang (2018:106) it was found that passenger attitudes towards VCO programmes play an essential "role in their willingness to offset flights" and "willingness to change their travel behaviour".

On the contrary however, some studies show that even when air travellers are aware of the environmental impacts and are aware of the tools to reduce their impacts, they cast aside their green concerns when they enter the airplane; even those with high levels of education do this (Mayer, 2013). For example, the research by Hares *et al.* (2010) and Cohen *et al.* (2011) revealed that, despite being aware of ecological

consequences, air travellers ignore environmental issues when they book holidays. Additionally, the study by Hagmann *et al.* (2015) found that, if the choice was presented, some air travellers would choose to pay an additional fee for further comfort for themselves, instead of an additional fee to compensate their carbon emissions.

Thus, while there is an increasing concern over air travel emissions, there appears to be a reluctance from passengers to adjust their air travel behaviours on a substantial scale (Cohen *et al.*, 2011). However, Cohen *et al.* (2011) argued that despite the unwillingness to change their flying frequency, air travellers may be more willing to change the way in which they consume it, for instance, by supporting airlines that practice environmental responsibility.

Araghi *et al.* (2016) argued that while a considerable portion of air travellers would find value in passenger-oriented environmental policies (such as VCOs and eco-labels), most of these travellers are highly sensitive to the price of the air fare. Ottman (2011 in Mayer *et al.*, 2012) identified three essential cases whereby consumers are prepared to “pay a premium for green”. These cases include: if the product or service is better for their health, if the product or service will save them money, and if consumers perceive that brands are genuinely endeavouring to become sustainable. Mayer *et al.* (2012) pointed out that the latter case (genuine attempts to be more sustainable) is of particular significance for airlines that aim to develop a green image.

This literature review has shown that many air travellers are not aware of the environmental impacts of air travel. It also shows that even when passengers are aware of the consequences and want to address these to some degree, they still desire to fly, and on the most part, may not be willing to give up on the air travel element of their lifestyle. Therefore, an opportunity presents itself for airlines to focus their marketing communication on environmental credentials and to create a green image that could be attractive to passengers (Mayer *et al.*, 2012). Mayer (2013) proposed therefore that airlines consider both the tangible and intangible elements of their marketing mix to position their products/services and brand as a more environmentally friendly option than others. The study by Baumeister *et al.* (2020) found that when air travellers were provided with information that was easy to understand, for example an eco-label, there was an increase in WTP for the less polluting flight, when given the option.

Section 2.8 synthesised the relevant literature in the context of the airline industry. Section 2.9, which follows, will conclude this chapter.

2.9 CONCLUSION

This chapter presented the theoretical underpinning and relevant literature on consumer behaviour, extending the decision-making and environmental consciousness factors to consumer behaviour in the airline industry. Section 2.2 provided key terminology for consumer behaviour, including definitions of consumer behaviour. Section 2.3 highlighted consumer behaviour as an important field of study. It also highlighted the consumer behaviour theory used in the current study. The factors influencing a consumers' behaviour were covered in Section 2.4, followed by a structured flow of the consumer decision-making process in Section 2.5. Thereafter, the consumer behaviour and the environmental imperative were discussed in Section 2.6, followed by consumer environmental consciousness in Section 2.7. Finally, Section 2.8 provided a synthesis of the literature in context of the airline industry.

The review of the literature in Chapter 2 led the researcher to identify knowledge gaps which justified the need for the current study. The chapter revealed a persistent research gap, concerning green product attributes and their link with consumer decision-making (Bangsa & Schlegelmilch, 2020). With the plethora of ever-changing factors influencing consumer behaviour, Sharma (2021) asserts that research on consumer decision-making remain pertinent and desirable, especially from the green consumer behaviour perspective. The under-explored diversity of green consumers calls for research on consumer behaviour towards green products, and to identify the factors influencing green purchases (Sharma, 2021).

There is a body of knowledge focusing on the decision-making process and its influence on, or relation to, consumer behaviour in the airline industry. There is also existing literature regarding air travellers' WTP VCOs that shows that tourists desire, in general, to visit more environmentally friendly destinations and hospitality establishments. However, there is insufficient research on the dimensions of air travellers' EC and the interrelationships with their air travel consumer behaviour from a decision-making perspective. In particular, green choice criteria as decision-making determinants when selecting an air travel service, in relation to the traditional choice criteria, has not been previously explored.

Moreover, considering that different countries place different degrees of importance on the diverse sustainability issues, there is a lack of research on sustainable consumption attitudes and behaviour in emerging markets in Africa (Bangsa & Schlegelmilch, 2020). In particular, there is insufficient empirical research on green behaviour conducted in SA, calling on the need to investigate the modern consumers' attitudes in this regard.

Within the SA context, to the researcher's knowledge, no research exists on the green airline choice criteria for air travellers. A knowledge gap has therefore been identified as worth exploring. More specifically, a knowledge gap concerning the relationships between the dimensions of air traveller EC and air traveller consumer behaviour has been identified. Therefore, to overcome the gaps identified in the literature, the current study intends to investigate air traveller EC and consumer behaviour, and the relationships between these themes, within SA as an emerging market context.

The next chapter provides an overview of the commercial airline industry and provides the industry and market context for the current study.

CHAPTER 3:
THE COMMERCIAL AIRLINE INDUSTRY

3.1 INTRODUCTION

Covid-19 has irrevocably changed consumer behaviour in the airline industry (Bouwer *et al.*, 2021). Along with the Covid-19 pandemic outbreak, natural catastrophes and climate change have been ranked among the top ten biggest business risks around the world in 2021 (Ghosh, 2021). The relevance of understanding the global impact of the aviation industry on the natural environment had become increasingly evident, even before the pandemic (Becken & Hughey, 2020).

Since the 2000s, the airline industry has been characterised by airline entries and exits. Airlines have had to pursue fierce survival strategies to overcome the realities of a harsh business environment with rising operating costs, falling profits, intensifying competition, and financial and health crises (Kim & Son, 2021). However, never before has the global aviation industry experienced such a dramatic and sustained decline in air traveller demand as that caused by the Covid-19 pandemic (Garrow & Lurkin, 2021).

The Covid-19 pandemic has resulted in the aviation industry looking different from years, even months before (Linden, 2021).Therefore, the commercial airline industry needs effective strategies to secure competitiveness and it needs to seek ways to recover after this crisis, and to do so faster and better after the pandemic dissipates (Nhamo *et al*., 2020). Facing challenges never previously encountered, the aviation industry will need to ‘reinvent resilience’ to sustain the industry into the future (Airline Business, 2020). It is unclear how aviation business models will transform in the future, with the current focus being on surviving the Covid-19 era. How airlines manage the recovery post-Covid-19 is critical (Lange 2020 in Garrow & Lurkin, 2021). Despite this, the environmental impact of air travel remains the focus of the current study.

Awareness has progressively increased in terms of the potential environmental hazards and imminent threats of the airline industry to climate change (Ragbir *et al.*, 2021). Without delving too deeply into the geographical, scientific and technical reasons behind the contribution of the aviation industry to climate change (as it falls outside the scope of the current study), this chapter will provide an overview of the

operating and competitive environments within the airline industry, as well as its environmental impacts and mitigation initiatives.

Chapter 2 presented a review of the relevant consumer behaviour and EC literature, providing the theoretical foundation for the current study. The purpose of Chapter 3 is to highlight and discuss areas in the aviation industry context which are of relevance to the current study. Figure 3.1 below illustrates the structure of Chapter 3, and its position within the current study.

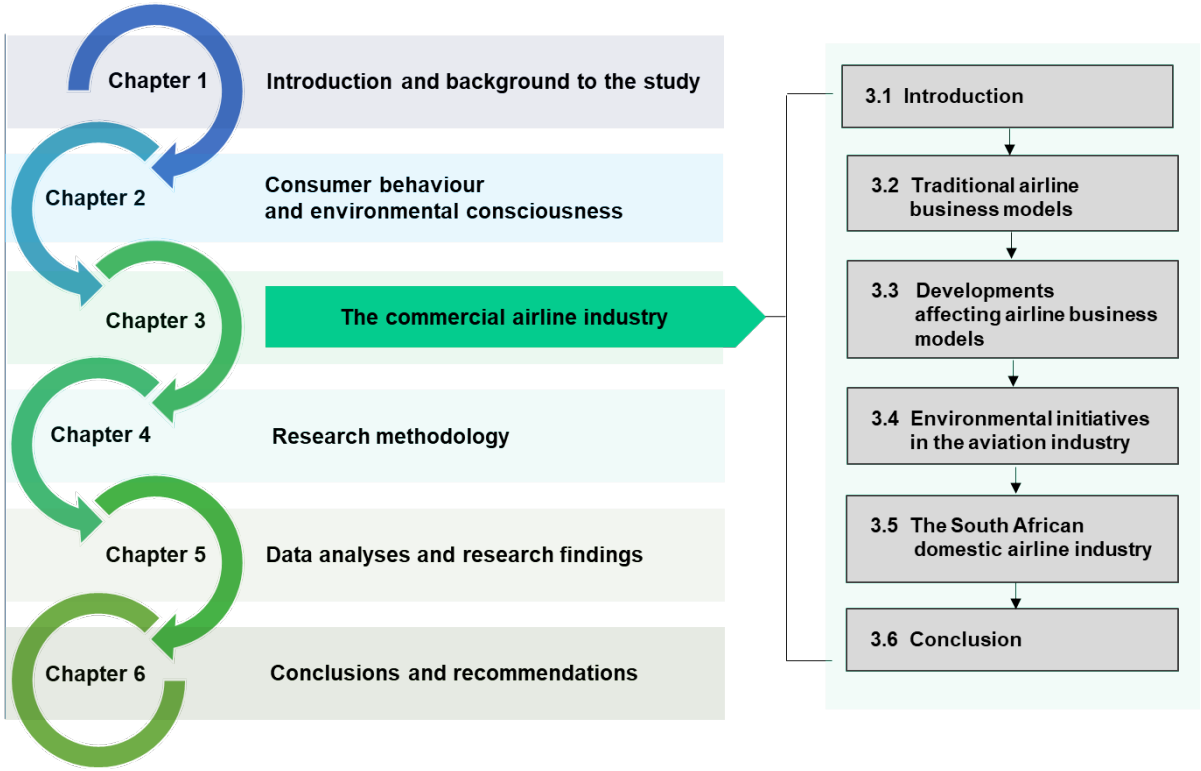


Figure 3.1 Structure of Chapter 3

Source: Researcher's own compilation

As illustrated in Figure 3.1, after the introduction in Section 3.1, Chapter 3 continues with a discussion of the traditional airline business models (Section 3.2), followed by the developments which have influenced change and adaptations of these models, including the significant impact that the Covid-19 pandemic has had on disrupting these models and changing consumer behaviour (Section 3.3). Thereafter, initiatives taken by the airline industry to mitigate its impacts on the natural environment will be highlighted in Section 3.4. An overview of the SA airline industry, as the industry context for the current study, will be presented in Section 3.5, before concluding the chapter with Section 3.6.

Note: At the time of writing, Covid-19 still had global pandemic status. Accordingly, the airline industry continued to be directly impacted by lockdowns, travel bans and restrictions. As such, the content of this chapter is not exhaustive of all the impacts and challenges resulting from the pandemic.

3.2 TRADITIONAL AIRLINE BUSINESS MODELS

As defined in Chapter 1, the air traveller/passenger is the consumer of the air transport service, provided by the airline. The air transport industry delivers a service to the consumer, to facilitate the transport need of the consumer (Diggines, 2017). Globally and in SA, air transport services (see Section 3.5.1) generally include scheduled air transport services for passengers; non-scheduled air services for passengers; sightseeing services by helicopter or aircraft, and aircraft rental services (StatsSA, 2018).

The scheduled air carrier industry, also referred to as the 'airline' industry in the current study, can be classified into two general categories: full-service carriers (FSCs) and low-cost carriers (LCCs) (Barnes, 2017; Kökény *et al.*, 2021; Magdalina & Bouzaima, 2021). Therefore, the characteristics of the FSC and LCC models of these scheduled carriers are the centre of discussion in this section.

3.2.1 The full-service carrier model

FSCs, also referred to as traditional carriers, have dominated the domestic market since the early days of aviation (Barnes, 2017). Consider South African Airways (SAA), for example. For many years, until liberalisation within a specific market, traditional carriers, such as SAA, operated under the protection of their governments, which ultimately played a role in protecting them from many market forces that challenged them (Barnes, 2017). Keynes (2009) described an FSC as an airline company that was developed from a former state-owned or flag carrier, resulting from the market deregulation process. Some airlines that follow the FSC approach are also referred to as legacy carriers and national carriers, based on their development prior to deregulation and liberalisation (Diggines, 2017; Magdalina & Bouzaima, 2021).

By operating in traditionally protected environments, legacy carriers were in a position to charge high fares and did not have cost control as their main focus (Diggines, 2017). However, these airlines now confront the challenges of an unregulated market and

maintaining profitability (Barnes, 2017). The discussion below presents an overview of the traditional FSC network model, infrastructure, information systems, fares and core product/service offerings, with specific reference to SA.

3.2.1.1 Network model, infrastructure and information systems

FSCs mainly adopt a 'hub and spoke' network model, where the structure of the airline route resembles a wheel with a central hub, with a number of spokes that radiate outward to the various destinations (Barnes, 2017). This model connects passengers between two cities (referred to as the spoke), and/or between two distant cities (also a spoke), through the airline's 'hub' airport (Denga, 2017). The hub is an airline's central base of operations, typically a very large airport that is surrounded by a busy airspace (Barnes, 2017). Through this network model, FSCs are often cost-penalised by the synchronisation of hub operations that require additional time for passengers and their baggage to make connecting flights (Abdelhady, Fayed & Fawzy, 2018). For FSCs in SA, the main hub is OR Tambo International Airport (ORTIA).

3.2.1.2 Fares and product/service offering

The FSC offers a core air travel service with a number of inclusive or complimentary ancillary services, including choice of class or seats, lounge services at airports, in-flight F&B and check-in luggage. They aim to attract high yielding passengers that are less price sensitive, while offering the full air travel service. FSCs generally aim to obtain high yielding passengers by classifying their inventory, with each category or class possessing unique service levels (Denga, 2017). For instance, the ancillary services are differentiated using different class or cabin options, such as business class, economy class (Wu & So, 2018), and premium economy class cabins. FSCs tend to have a mixed fleet of aircraft that they operate to serve their wide route network and have a large focus on FFPs.

Therefore, FSCs are faced with high production and labour costs that are required to serve the various routes that they operate and to provide the services that this differentiated strategy demands (Diggines, 2017). To support the differentiated product offering, support is required from sophisticated pricing and revenue management systems (RMS), information systems and infrastructure to optimise operations (Keynes, 2009; Denga, 2017). Understandably, FSC passengers show a greater degree of loyalty and are less fare sensitive (Diggines, 2017). FSCs make use

of multi-channel sales through direct offline sales (by telephone and airline ticketing offices at airports), indirect offline sales (using travel agents), direct online sales (where tickets are purchased from an airline's website directly), and indirect online sales (through online agencies). Likewise, to support the complexity of the FSC network distribution system, a Global Distribution System (GDS) is used, for example, Amadeus and Sabre (Keynes, 2009; Altexsoft, 2019).

However, the FSC business model is no longer as homogenous as it was in the past. With recent developments in the airline industry, including the explosive growth of the LCC (Kökény *et al.*, 2021), over time the FSC has evolved in terms of its operations, service offerings and marketing. (The developing trends of the airline business models are presented in Section 3.3). The traditional LCC business model is discussed in the next section.

3.2.2 The low-cost carrier business model

Post-deregulation, a new airline business model emerged in the open market, the LCC (Barnes, 2017). The original meaning of the term 'low-cost carrier' refers to a provider of only basic air transportation products and services, in other words, a 'no-frills' airline (Bjelicic, 2007 in Han, 2013).

Although radically changing the airline market (Nilsson, 2009), the LCC business model makes several departures from that of traditional FSC airlines (Barnes, 2017). Keynes (2009:19) defined the LCC "as an airline company designed to have a competitive advantage in terms of costs over an FSC." To achieve the latter advantage, an LCC (also known as a budget, discount or no-frills airline) bases its operations on a simple or lean business model. The discussions below present an overview of the traditional LCC network model, infrastructure, information systems, fares and core product/service offerings.

3.2.2.1 Network model, infrastructure and information systems

Mason (2001), a pioneer researcher and author on the topic of LCCs, indicated that LCCs can offer low fares by adopting a low-cost strategy. LCCs are characterised by innovative business models that employ the principles of a lean production process, enabling the airline to provide cheaper ticket prices (Franke, 2004 in Coles, Fenclova & Dinan, 2011; ICAO Secretariat, 2016).

LCCs adopt a ‘point-to-point’ network model, focusing mainly on providing a travel service on short-haul routes, serving mostly secondary and less congested airports (Moreira, O’Connell & Williams, 2011; ICAO Secretariat, 2016). This network model assists in ensuring short turnaround times, high frequencies, and high punctuality, hence saving on airport related costs (Chang & Hung, 2013; ICAO Secretariat, 2016). Additionally, this model allows LCCs to schedule their services at the best time of the day, without being subject to the imperatives of a connecting flight system (Fageda, Suau-Sanchez & Mason, 2015).

Further features of the LCC model include staffing flexibility, minimal overhead costs, possessing a common or standardised aircraft fleet (with single class configuration), and thorough use of electronic commerce for distribution and marketing (Moreria *et al.*, 2011; ICAO Secretariat, 2016; Denga, 2017). Evidently, this simple operation and management model allows for lowering the LCC model cost structure.

3.2.2.2 Fares and core product/service offering

By adopting a high-density single class product offering, with no assignment of seats and simple in-flight services, cheaper fares are possible for the LCC model (Barnes, 2017). With maximised cabin usage and reduced seating space, LCCs are able to increase the number of seats supplied. This, in turn, increases the total revenue per seat per kilometre per flight; ultimately lowering operating costs (Keynes, 2009; Barnes, 2017). With low operating costs, LCCs are able to assign a large portion of their seats at a low fare (ICAO Secretariat, 2016).

Additionally, LCCs reduce costs by charging a base fare price, by offering the bare minimum service to passengers (Denga, 2017). LCCs have reduced or eliminated the inclusive in-flight services traditionally offered by legacy carriers (Chang & Hung, 2013). The base price of an LCC ticket pays for a seat on the flight, from point A to point B, and nothing more (Barnes, 2017). The true LCC product/service is therefore not differentiated and does not offer the additional inclusive services or ‘frills’ offered by FSCs. For this reason, “no frills” has become a common word associated with LCCs, making the “no frills airline” term synonymous with the LCC. By not offering inclusive frills, LCCs can manage costs better and increase revenues (Keynes, 2009; Barnes, 2017).

If LCC passengers do desire extras such as check-in baggage or F&B, an extra fee is charged over and above the initial base fare (Denga, 2017). Check-in baggage, for instance, adds to the operational costs of airlines, as each kilogram of weight carried by the aircraft increases fuel consumption, which reduces revenue per flight (Keynes, 2009; Barnes, 2017). The traditional LCC model, however, has evolved towards fare bundling of selected optional services as extras required by air passengers, referred to as a fare unbundling strategy (Fageda *et al.*, 2015). The importance of these optional extras has increased for LCCs, and for many airlines they account for a large portion of their total revenues (ICAO Secretariat, 2016). The unbundling strategy is a development in the LCC market sector and is discussed in Section 3.3.4.

With the cost minimisation strategy, low pricing and a standardised service, LCCs are favoured by the mass tourism market, in search of bargain prices (Kökény *et al.*, 2021). While not all LCC airlines operate under an exact uniform set of characteristics, there are some consistent features that typically belong to the LCC model. Most of these are associated with efficient operating strategies and increased productivity (Barnes, 2017), reduced operating costs and lower prices than the traditional FSC model. The LCC revolution opened new markets, changing the face of both travel and aviation patterns in general (Nilsson, 2009). The key characteristics of the traditional LCC and FSC models are summarised in the next section.

3.2.3 Differentiating characteristics between the traditional FSC and LCC models

Evident from the discussions above, the two main types of airline business models used in the current study have differing characteristics that can be used to distinguish the two models from one another. The differences between the product features of an LCC and an FSC are summarised in Table 3.1 below.

Table 3.1: Comparisons between the LCC and FSC model characteristics

Product features	LCC	FSC
Brand	One brand: low fare.	Brand extensions: service and fare.
Fares	Simplified fare structure.	Complex yield management and fare.
Distribution	Direct distribution system: direct and online telephone sales/booking. Minimised sales/reservation costs.	Multi-channel distribution system and sales: Online, direct, indirect, travel agents and use of GDSs.
Airports	Serves mostly secondary airports and some primary.	Serves primary or hub airports.
Network/ Connections	Point-to-point network model. Mostly short-haul flight routes (covering domestic and in some cases, regional routes).	Wide route network and full connectivity coverage. Hub-and-spoke network model. Short-haul, medium-haul, long-haul and ultra-long-haul flight routes. Part of an enlarged global network: Interlining, code sharing and global alliances, covering domestic, international and intercontinental markets.
Class segmentation	Dense, single class configurations (single cabin service/no differentiated cabins).	Differentiated segmentation.
Inflight service	Pay for extra amenities.	Complimentary extras.
Aircraft utilisation	Very high aircraft utilisation.	Medium to high aircraft utilisation.
Turnaround time	Quick turnarounds.	Low turnaround: airport congestion/labour requirements.
Product	The passenger air service is core, where the product is unbundled to offer low fares. Additional ancillary services available at additional cost (a-la-carte fees).	Multiple integrated/inclusive/bundled products.

Product features	LCC	FSC
Aircraft	Common and homogenous fleets (fleet commonality).	Multiple fleet types due scheduling complexities.
Seating	Small pitch, single class seating, no assigned seating.	Generous seating pitch, seat assignment offered, multiple class configurations.
Customer service	Basic service, with no 'frills'.	Differentiated, with full/inclusive service. Loyalty programmes, such as FFPs.
Operational activities & revenue	The core business focuses on passengers. Lean business practices, increased efficiencies, reduced seating space lower crew and overhead costs. Outsourced handling.	The core business incorporates passengers, cargo and maintenance. Use of sophisticated RMSs. High crew and production costs.
Ancillary revenue	Advertising, on-board/in-flight sales. Third-party supplier commission.	Focus on the primary air travel product.

Source: Adapted from O'Connell and Williams (2005); Groß & Schröder (2007); Nilsson (2009); Keynes (2009); Belobaba *et al.* (2015 in Barnes, 2017); Denga (2017)

The product features presented in Table 3.1 above, are the 'traditional' differences between the two types of carrier. As can be seen, there are numerous differentiating characteristics between the two models, from which FSCs and LCCs are able to compete with one another for market share. Kökény *et al.* (2021) suggested that LCCs are more recession-proof than FSCs, due to their top advantages including their pricing strategies, lean business practices, operational efficiencies and standardised fleets.

Deregulation and liberalisation, however, have changed the competitive landscape of the airline industry (Diggines, 2017). The low fares offered by LCCs persuaded passengers to switch from FSCs, while simultaneously stimulating new passengers who otherwise might not have travelled (Moreira *et al.*, 2011). The increase of, and competition among LCCs, have made passengers more sophisticated seekers of better alternatives, providing higher service standards and lower fares (Han, 2013). Subsequently, many variations of the LCC business model have emerged, often making the categorisation of the business model difficult (Moreira *et al.*, 2011). According to Wu and So (2018), the emergence of LCCs has ultimately resulted in blurring the lines of the traditional passenger segments. What were once clear differentiation factors between models, are now less apparent (Magdalina & Bouzaima, 2021).

From the above discussions, it is apparent that LCCs have flourished on short-haul routes, as their low operating costs and fares have given them a significant competitive advantage over the FSCs (Moreira *et al.*, 2011). While Diggines (2017) pointed out that FSCs are 'stuck' with bloated infrastructure, excessive networks and huge cost disadvantages. Therefore, FSCs have struggled to remain competitive in the short haul operating environments, requiring significant efforts to gain a competitive advantage (Han, 2013). The next section, Section 3.3, provides a summary of the main developments in both the LCC and FSC models, as the airlines race to remain relevant in an increasingly saturated market.

3.3 DEVELOPMENTS AFFECTING AIRLINE BUSINESS MODELS

Pioneers in the airline industry have been in search of a sustainable competitive advantage (SCA) across different models, covering the range of aircraft size, geography and routes, frequency, service level and price (Thomas & Catlin, 2014).

This section discusses some of the developments that have arisen within the air travel market since deregulation and the introduction of LCCs, namely, the 'airline within an airline' approach, hybridisation, ancillary revenue management and green models. Firstly, the developments resulting from the Covid-19 pandemic and how this health crisis has impacted airline business models will be presented.

3.3.1 The impact of Covid-19 on airline business models

The aviation industry is sensitive to both internal and external shocks (Senbeto & Hon in Nhamo *et al.*, 2020), whether natural or human-induced (Nhamo *et al.*, 2020). The developments that have transformed the airline industry in recent years have been further disrupted by the natural shock of the global Covid-19 pandemic (Linden, 2021). The impact of the Covid-19 pandemic on the aviation industry has been huge (Rooley, 2020), devastating the aviation industry and crippling it in several ways (Nhamo *et al.*, 2020). As governments around the world have battled to contain the virus within their countries, border closures and restrictions of travel were implemented during 2020 and 2021 affecting international and domestic routes (Nhamo *et al.*, 2020).

To reduce the spread of Covid-19, measures included large-scale physical distancing efforts (Calderon-Tellez & Herrera, 2021) and hard lockdowns forcing the grounding of most aircraft (Dube *et al.*, 2021). Flight operations were significantly impacted as a result of the pandemic (Nhamo *et al.*, 2020), while prolonged travel restrictions and uncertainty have resulted in severe financial losses for airlines (Dube *et al.*, 2021). Considering the impacts of the pandemic on aviation, the need has arisen to rethink how the aviation industry operates (Nhamo *et al.*, 2020).

There are dire consequences for an airline's budget with any traffic movement disruptions. Airlines are capital-intensive entities, and those with higher costs, for example, FSCs, are less flexible in how they can react to a crisis (Kökény *et al.*, 2021). Even when aircraft are grounded, the airline industry incurs expenses, including leases, insurance, depreciation, airport expenses, administrative costs, crew costs and human resources, aircraft maintenance, overhaul and repair (Nhamo *et al.*, 2020). Therefore, to reduce cash burn, airlines have had to adopt a number of cost management measures, including rescheduling debt, repurposing passenger aircraft into cargo aircraft, suspending capital projects, reducing staff and crew numbers, renegotiating fees with airports, and deferring or cancelling purchases of new aircraft

(Dube *et al.*, 2021). Additionally, the industry has had to incur further expenses to adopt extra health and safety protocols, for example the disinfection of aircraft to destroy on-board vectors (Dube *et al.*, 2021). The stringent hygiene and safety standards implemented during this era will likely be expected by passengers in the longer-term (Bouwer *et al.*, 2021).

Airline development priorities have shifted as they are faced with multiple challenges regarding revenue management. Forecasting demand has become a fundamental challenge faced by airlines. With an operating environment that is characterised by ever-changing travel restrictions and high schedule volatility, the traditional forecasting approaches have struggled to adapt (Garrow & Lurkin, 2021). Many airlines have been highly dependent on business travellers, including those travelling in business class or premium economy class, and those who book the expensive economy class seats just before they need to fly. Then, leisure travellers would have helped to fill the remaining seats, therefore covering a portion of the costs. However, during the Covid-19 pandemic this has changed, and the profit-generating business traveller pool has shrunk (Bouwer *et al.*, 2021) and leisure travel is more uncertain than ever.

According to Garrow and Lurkin (2021), the sophisticated forecasting and RMSs that were developed over the many years pre-Covid-19 have become largely irrelevant during the pandemic. These techniques have become manual and micro-managed day-by-day processes. Within revenue management, opportunities to incorporate continuous or dynamic pricing and improve demand forecasting are receiving increased attention. In the post-Covid-19 period, booking horizons may lengthen, while the overall mix of passenger travel may change (Garrow & Lurkin, 2021).

Offering flight flexibility and complimentary cancellations in the past, have been key for airlines to earn ancillary revenues (see Section 3.3.4). However, during the pandemic, airlines have been obliged to waive cancellation fees and allow complimentary flight changes (excluding the cost difference when re-booking). As such, airlines have needed to revise their booking and cancellation policies, offering customer flexibility for last-minute changes to travel itineraries (Dube *et al.*, 2021). For example, when Covid-19 Alert Level 4 in SA was announced on 27 June 2021, the LCCs FlySafair and LIFT accommodated their customers by dropping all change and refund fees (no penalties) during that time (Moodley, 2021). Post-Covid-19, air travellers may demand that refundable and flexible ticketing policies continue (Garrow

& Lurkin, 2021). Understandably, it has been argued that Covid-19 has irrevocably changed consumer behaviour in the airline industry (Bouwer *et al.*, 2021).

For instance, offering the complimentary F&B in-flight service was a traditional differentiating factor for FSCs, and an ancillary service offered by LCCs at an extra fee. However, in many cases during the pandemic, airlines have had to prohibit the F&B service to adhere to Covid-19 related health and safety protocols. For example, during Alert Level 3 in SA, F&B were prohibited from being served, sold or consumed in-flight (apart from water). Even when restrictions are eased and consuming F&B on-board is allowed, customers may be hesitant to do so, potentially resulting in this ancillary service becoming irrelevant, especially on short-haul routes. Thus, during the Covid-19 pandemic, the gap between FSCs and LCCs has become even smaller, where certain ancillaries have become non-negotiables, while others will no longer be relevant for customers, no matter what type of airline is being used.

Director General of IATA, Willie Walsh, believes that the airline industry will return as a smaller, more cautious industry, and that it will not recover all its pre-pandemic capacity. Yet, Walsh does not believe that this crisis has undermined airline business models and that nothing has changed the competitive nature of the industry (Cornwell, 2021). However, Bouwer *et al.* (2021) stated that air travel will become greener and more efficient, and that airlines should take steps now to thrive in a transformed sector. Furthermore, the authors indicate that those airlines that emerge from the pandemic leaner, will be fierce competitors going forward. A notion of a green model is presented in Section 3.3.5. In the next section, the ‘airline within an airline’ model is discussed.

3.3.2 Airline within an airline model

According to Diggines (2017), due to high cost structures, FSCs have faced a difficult situation as they attempt to reduce their costs and points of differentiation. According to the author, FSCs, are finding it particularly difficult to compete with LCCs on domestic routes. This is since many services that were traditionally provided in the inclusive fare, are no longer expected by many short-haul passengers who are happy to forego these on cheaper airlines.

Therefore, to compete with LCCs, and to circumvent the probable threat of new entrants, some FSCs have chosen to set up separate subsidiaries or low-cost organisations to handle operations on short-haul routes to help gain market share in

that segment of the market. This low-cost “airline within an airline” model, combines key ingredients of the LCC model with the quality and reputation of the already existing FSC brand (ICAO Secretariat, 2016). For example, Kulula.com and Mango are the LCC brands of their network (parent) airlines, BA Comair and SAA respectively.

The SAA Group’s 2017 Integrated Report indicated that Mango supported SAA’s strategic objectives by defending SAA’s share of the domestic market in SA (SAA, 2018). Further discussions on the market share dynamics in SA are presented in Section 3.5. The hybrid business model is discussed in the next section.

3.3.3 Hybrid business model

As LCCs matured in the market, the dynamics of the competitiveness between traditional FSCs and LCCs evolved (Thomas & Catlin, 2014). According to Magdalina and Bouzaima (2021), there is a convergence of the models, where LCCs and FSCs are merging into new hybrid carriers. According to the authors, the literature on what constitutes a hybrid model is unclear, most likely since this convergence of models is accomplished in different ways by various airlines. This convergence results in airlines traditionally at opposite sides of the business model spectrum becoming progressively similar (Magdalina & Bouzaima, 2021).

By combining attributes from the different business models, airlines are able to broaden their target demands and survive the increasing competition (Lohmann & Koo, 2012). For instance, in recent years LCCs have challenged the FSC model, by adding services uncharacteristic of the typical ‘no-frills’ model. These additions include LCCs flying to major hub airports, offering both reserved and premium seating options, as well as offering inclusive or premium services (Barnes, 2017). Accordingly, LCCs have targeted business travellers, and have subscribed to GDSs. Similarly, FSCs have pursued strategies including fleet standardisation and cabin densification, traditionally characteristic of LCC models (Magdalina & Bouzaima, 2021).

For example, when booking a flight with Kulula.com (classified an LCC) passengers are requested to select their preferred class, with “economy” and “business” fare options being offered. If the “business” option is selected, the fare includes “checked baggage” (two bags weighing 32 kilograms each), “food, beverage and other” (a meal, lounge access and priority boarding), free and unlimited “flight changes” and refundable “flight cancellations” (Kulula.com, 2020). Similarly, when selecting an

“economy class” fare on BA Comair (an FSC), a passenger can choose the option to reserve a seat at the time of booking, for an additional fee. As such, these changes are blurring the differences between the FSC and the LCC models (IATA, 2018).

Evidently, as competition between the models has increased, the gap between LCCs and FSCs has become smaller and less clear. According to Barnes (2017), there is currently no single true LCC business model, but rather a collection of operating strategies that airlines use to adapt to their markets. However, Diggines (2017) noted that those airlines that started as LCCs and evolved towards the emerging hybrid strategy, still have their roots in the LCC strategy. With the Covid-19 pandemic, even more hybridisation has been observed, with further changes to be expected over time.

This section presented the hybridisation of airlines, as a development challenging the traditional airline models. The next section discusses the ancillary revenues and unbundled fare strategies. With FSCs capitalising on these strategies, these methods further facilitate the movement towards a hybridised model.

3.3.4 Ancillary revenues and the (un)bundled fare strategy

Despite efforts to reduce operating costs, airline yields have continued to deteriorate. Yield deterioration results from a combination of variables, including air transport deregulation, increased competition, rising fuel costs and the volatile operating environments (O’Connell & Warnock-Smith, 2013; Warnock-Smith *et al.*, 2017). With more entrants joining the competitive environment and e-commerce making fares more transparent, the result has been passengers increasingly seeking and moving towards lower fare options (Warnock-Smith *et al.*, 2017). Furthermore, political and economic turbulence in many markets have made this shift more pronounced, with increased levels of price sensitivity felt across all segments (Diggines, 2017).

Consequently, Warnock-Smith *et al.* (2017) highlight that the lower demand for higher fares has made them less available, leading to higher load factors and lower yields for airlines. Furthermore, the authors stated that traditional RMSs can no longer maximise revenues, resulting in the archaic fare rules to be dismantled. Thus, the ancillary revenue strategy was established. Shao and Kauermann (2020) indicate that an ancillary revenue strategy is a tactic for airlines to successfully compete with LCCs, using the ticket base fare, whilst aiming to prevent the potential negative impacts on

customer perceptions and brand image. It is a price driven strategy for competitiveness (Barnes, 2017).

As highlighted in Section 2.8.1 in Chapter 2, air passengers have access to several ATSAs when deciding on an air travel service to choose. To summarise, ATSAs can be classified into core products (for example, safety, schedule and reliability) and ancillary products. Ancillary products are classified further into unbundled products (for example, F&B, reservation changes/flexibility, express check-in, priority boarding, baggage, internet WiFi, seat assignment) and commission-based ancillaries such as car rentals, hotels, VIP lounge access, travel insurance and airport transfers (O'Connell 2011 in O'Connell & Warnock-Smith, 2013; Warnock-Smith *et al.*, 2017). Therefore, ancillary services are available for passengers to bundle into their fare, over and above the base or core ticket sale (Fageda *et al.*, 2015); whilst airlines can build in secondary sources of revenue (Barnes, 2017) and achieve a cost advantage (Denga, 2017). As such, the ancillary revenue strategy has become an embedded instrument and a core competency within many airlines' marketing mixes (Warnock-Smith *et al.*, 2017). Therefore, ancillary service strategy has become relevant in driving revenue in the airline industry (Shao & Kauermann, 2020), for LCCs and FSCs alike.

Furthermore, ancillary services can be offered as bundled packages, also known as the unbundled fare strategy, which helps airlines to standardise their offerings and have better control of the service levels provided to the passenger. Additionally, it is seen as important for attracting a wider range of air travellers and targeting new upmarket segments of the market (Fageda *et al.*, 2015). Consider the Mango fare bundles, for example. In 2020 (pre-Covid-19), Mango (an LCC), offered the following fare bundles for passengers to choose from: "MangoLowest", "MangoLowest+", "MangoFlex" and "MangoPlus" (FlyMango.com, 2020). Each fare bundle offered a set of ancillaries unique to the respective bundle. These differences are presented in Figure 3.2 below.

MANGO Compare fare	MANGO Lowest	MANGO Lowest+	MANGO Flex	MANGO Plus
Carry-on bag	1 Carry-on bag (7 kg)	1 bag, 7kg	1 bag, 7kg	1 bag, 7kg
Checked bag	Checked baggage (20kg)	20kg	20kg	30kg
Name change	Name change: R270 on Flymango.com	R270.00 on FlyMango.com	✓	✓
Change booking	Rebooking: Date or Route R290 + price difference per segment on Flymango.com. If you choose a cheaper fare, we're not able to give a refund.	First date change free then after R290 + fare difference.	✓	✓
Free seat reservation	✗	✓	✓	✓
Lounge access	✗	✗	✗	✓
Priority check-in	✗	✗	✗	✓
Priority boarding	✗	✗	✗	✓
Free date change	✗	1 free, excluding fare difference	Unlimited free, excluding fare difference	Unlimited free, excluding fare difference
Refundable	✗	✗	✗	✗

Figure 3.2: Mango fare bundles

Source: Mango (2020)

Figure 3.2 offers an example of an airline's set, or bundles, of pre-set ancillary services offered at a reduced price (Shao & Kauermann, 2020), compared to adding the ancillaries individually. In the case of Mango, the fare labelled as "Mango lowest" is a bundled rate since it includes checked-in baggage. Traditionally, the LCC base fare excludes check-in baggage.

Without the income from ancillary revenues, the industry would make a loss from its core seat and cargo products (Warnock-Smith *et al.*, 2017). This has become evident as a result of the Covid-19 pandemic, where there was a drastic decline in passenger demand for an extended period.

However, there are some ancillary services offered by airlines, which do not always return a revenue to the airlines. Incorporating these services into the offering, could help achieve a SCA through differentiation. For instance, air travellers could purchase VCO programmes to mitigate the carbon emissions associated with their flight. The VCO is discussed in Section 3.4.2.4. The next section presents a discussion of the notion of a green business model.

3.3.5 Green business models

Although green business models in the airline industry have not yet emerged as an established and practiced development, they certainly are emerging, nonetheless. Consequently, very little research and information is available on the green business model in the airline industry. Research by Nair and Paulose (2014) provide a good starting point and proposed framework for the emerging green business model in the airline industry, which will be the focus of this section.

Nair and Paulose (2014) observed evolving market dynamics, such as increasing jet fuel prices, growing recognition of the environmental impacts of global warming, technological innovations in the environmental and energy fields, and altered consumer attitudes towards green products and services, which are encouraging businesses to change their existing business models. According to Nair and Paulose (2014), to be competitive in the ever-changing environment, businesses need to be flexible enough to effectively respond to changes. Furthermore, they describe green business models as “those that exploit new market mechanisms and markets to create and capture value by innovatively sustaining their external environment” (Nair & Paulose, 2014:176).

In this way, strategic decisions for business model designs, regarding customers, markets and value propositions, are therefore made in such a way as to maximise environmental benefits, beyond the level that can be achieved through traditional business models (Nair & Paulose, 2014). Although it may appear easier to adhere to the lowest environmental standards, Nair and Paulose (2014) argue that it is smarter to comply with the most stringent standards before they are widely enforced. They argue that only once businesses embrace sustainability as a goal, will they achieve an SCA in the future. This requires rethinking products, technologies, processes and business models. Ultimately, becoming environmentally friendly will lower costs, generate revenues from better products and create new business (Nair & Paulose, 2014).

The measures that airlines can adopt in moving towards a green business model are a result of a response to the environmental impacts caused by aviation, and to mitigate aviation’s contribution to the climate change crisis. Aviation’s environmental impacts are discussed in the next section.

3.3.5.1 The airline industry's environmental impacts

The Covid-19 pandemic as a crisis, can be referred to as a natural shock; compared to the financial crisis of 2008, which can be referred to as an economic shock (Linden, 2021). While these shocks have been different, they have had something in common, namely, they have increased the level of risk and uncertainty posed by the external environment of organisations (Linden, 2021). Natural shocks, or environmental risks related to climate change, not only create physical threats to societies and organisations, but they also have the significant potential to result in economic hazards (Scott, 2019).

The surrounding imminent dangers of the aviation industry because of climate change have become more progressive (Ragbir *et al.*, 2021). In recognising this, the United Nations Framework Convention on Climate Change (UNFCCC) reported the necessity for the aviation industry to prepare for severe weather disruptions that will result from climate change (UNFCCC, 2016). Such weather conditions will disrupt airline operations, through extreme turbulence, safety issues and causing delays in flight schedules, as well as flight cancellations (Barnes, 2017). The widespread impacts that the airline industry can expect from more extreme weather include: the airplane's ability to fly (for example, higher winds will impede take off and an increase in flight turbulence), engine-threatening dust storms, icing up incidents, and rising sea levels which will affect low lying coastal airports (ICAO, 2016; UNFCCC, 2016).

These unfavourable weather conditions, affecting all stakeholders in the aviation industry, are external forces that are, in most part, uncontrollable by management. However, industry stakeholders can build resilience measures to lessen the negative impacts these conditions may cause. Furthermore, management do have control over the environmental impacts their airlines cause through their operations. The acceleration of global warming and the climate change crisis is linked to considerable amounts of anthropogenic GHG emissions, to which aviation is a major contributor (MacKerron *et al.*, 2009 in Torreilles, 2020).

Without taking proactive action, these risks have the potential to become natural shocks that could catapult into economic shocks, which arguably could have been prevented. With the extreme weather and natural disasters brought about by climate change, businesses therefore need to get serious about calculating climate risk by

factoring it into their strategic decision-making (Demrovsky, 2020). The airline industry produces both CO_2 and non-CO_2 emissions, as highlighted in the following discussions.

- ***CO_2 emissions from aviation***

In 2019, the global civil aviation industry emitted around 915 million tonnes of CO_2 into the Earth's atmosphere, which is just over 2% of the global anthropogenic carbon emissions (IATA, 2020; ATAG, 2020). The burning of jet fuel (kerosene) for aviation operations accounts for around 2% of global CO_2 emissions, where approximately 65% is generated from international aviation and the remaining 35% stems from domestic flights (ATAG, 2017).

Recent analysis, however, shows that the full impact of aviation may be around 3.5% of all human-induced climate impact (ATAG, 2020a). The research publication by Lee *et al.* (2021) presented a striking illustration of the sustained growth in CO_2 emissions from 1940 to 2020, as shown in Figure 3.3 below. This multi-decade growth chart shows that the annual average rate of CO_2 for the period 1960 to 2018, is 15Tg, while the growth rate from 2013 to 2018 is significantly greater, averaging a rate of 44Tg of CO_2 per year. That is 44 million tonnes of CO_2 annually! The annual growth rate between 1970 to 2012 averaged 2.2% per year over the period, jumping to an average of 5% per year over the period 2013 to 2018. For the first time, CO_2 emissions from global aviation exceeded 1000 million tonnes in 2018. While global aviation's cumulative emissions between 1940 and 2018 equal 32.6 billion tonnes of CO_2, approximately 50% of these were emitted in the recent two decades (Lee *et al.*, 2021). The latter data reveals the striking contribution of air passenger growth to climate change, despite operational efficiencies.

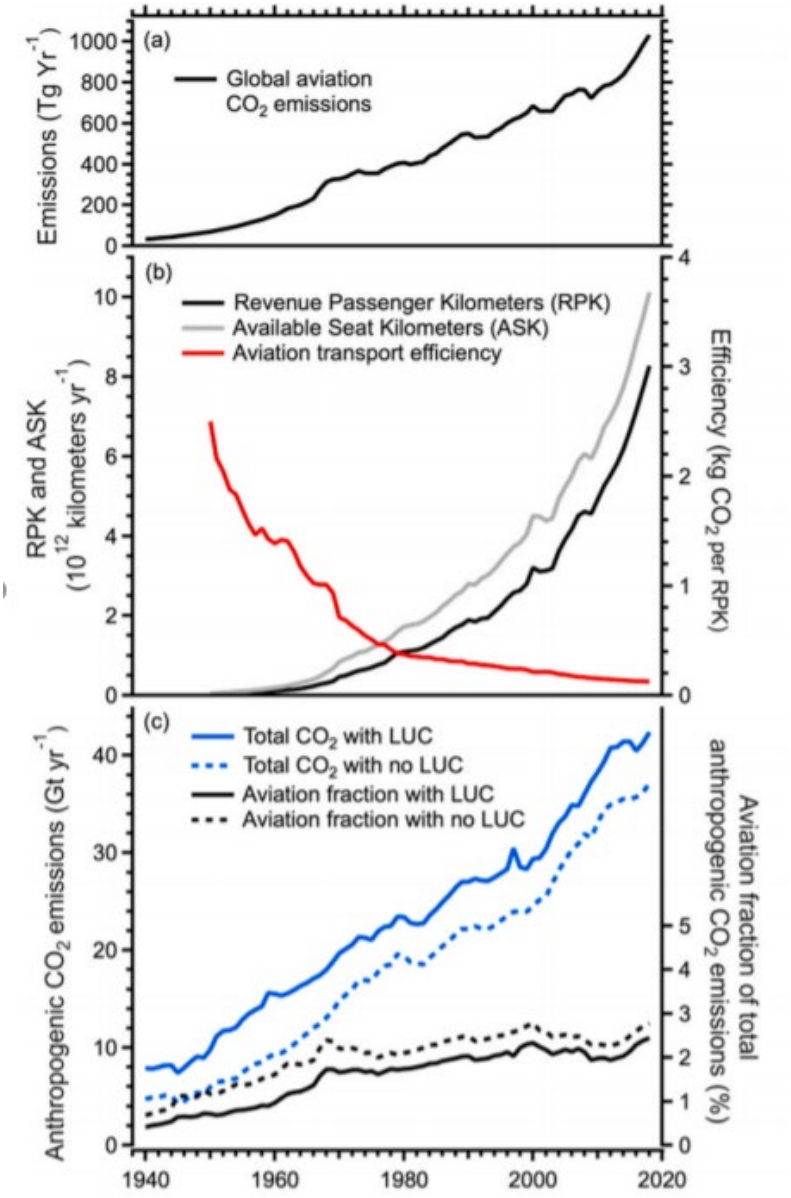


Figure 3.3: Growth in CO_2 emissions from 1940 to 2020

Source: Lee *et al.* (2021:4)

Figure 3.3 above shows that over time aviation has grown strongly in terms of available seat kilometres (ASKs) and revenue passenger kilometres (RPKs). Additionally, it shows that CO_2 emissions from fuel usage have grown at a lesser rate than RPK. The latter is due to increases in aircraft efficiency derived from increased passenger load factors, larger aircraft and changes in technology over the years. Since the 1960s, efficiency in aviation transport has improved eightfold (Lee *et al.*, 2021).

Prior to the impacts brought upon by the Covid-19 pandemic, this pattern of growth was expected to be maintained into the future. However, due to the pandemic, there

is uncertainty about the annual aviation growth and emissions (during 2020 and 2021), which subsequently are expected to be below the recent projections based on historical growth (Lee *et al.*, 2021). During 2020 and 2021 people travelled less, resulting in a significant drop in passenger demand, and consequently a period of decarbonising the world economy (Perkins *et al.*, 2021). The findings from the simulation study by Calderon-Tellez and Herrera (2021) show that passenger restrictions and low demand during 2020 and 2021 have contributed to the mitigation of CO_2 emissions. Despite this, the authors posit that although passenger demand has reduced considerably due to Covid-19, the pre-existing impacts of gases generated by the airline industry are still substantial.

CO_2 is not the only way the aviation industry affects the climate. There are also other non-CO_2 GHGs that affect the natural environment and are the topic of the next sub-section.

- ***Non-CO_2 environmental impacts from aviation***

Non-CO_2 gases and aerosol emissions also contribute to changes in the atmosphere's composition (Pidcock & Yeo, 2016). It is the sum contributions of both CO_2 and non-CO_2 impacts that lead to a total contribution of 3.5% to aviation related anthropogenic global warming (Lee *et al.*, 2021). However, resulting from the Covid-19 pandemic, the planet has seen a fall in total anthropogenic pollution (Khan *et al.*, 2020).

The contribution of the airline industry to the climate crisis involves a range of atmospheric physical processes, including microphysics, chemical transformations, plume dynamics, and radiation (Lee *et al.*, 2021). The accumulation of these processes calculating to changes in a GHG component or a cloud radiative effect is a complex challenge (Lee *et al.*, 2021). Although these scientific and technical terminologies are not the focus of the current study, it is necessary to have a basic foundational knowledge for a deeper understanding of the problem.

The commonly used metric to measure the climate impact of some phenomena is 'radiative forcing of climate', referred to as the 'radiative forcing' (RF) metric (Lee, 2009). RF is the measure associated with the heating or cooling effect (Cumpsty, Mavris & Kirby, 2019). Lee *et al.* (2021) highlight the importance of understanding the scale of aviation's impact on climate RF. The RF concept is useful as it can be applied to many 'forcing' agents, including changes in GHG concentrations, a change in the

Earth's surface albedo (radiation reflected) from land-use change (LUC), and change from cloud cover. In other words, the RF metric can be used to quantify any property of the Earth-atmosphere system that is agitated (changing the energy budget of long- and short- wave fluxes) (Lee, 2009).

It is essential to understand the scale of aviation's impact on present day RF and subsequent climate change, especially due to aviation's dependence on the burning of fossil fuel, the significant CO_2 and non-CO_2 effects, as well as the projected growth of aircraft/fleet in the industry (Lee *et al.*, 2021). The extent to which the non-CO_2 'extra factors' amplify the CO_2 effect, however, is still uncertain and poorly understood, and therefore requires further investigation (Pidcock & Yeo, 2016). ATAG (2020a) reiterated this in a recent "aviation and climate change" fact sheet. The 'little' that is known, however, will be briefly summarised and described next.

According to Lee *et al.* (2021), becoming familiar with the non-CO_2 emissions will help to better understand how flying contributes to warming the planet. The authors note that the main non-CO_2 emissions include nitrogen oxides (NO_x), water vapour, sulfate aerosols, soot, and increased cloudiness due to contrail formation. Cumpsty *et al.* (2019) noted in Chapter One of the ICAO 2019 report, that in a climate change context, the primary concerns are emissions of CO_2, NO_x and non-volatile particulate matter (nvPM) or particle emissions.

As CO_2 emissions have already been described, NO_x and nvPM will now be described, with reference to CO_2 when necessary. The photochemical changes of NO_x emissions increase the global stratospheric ozone (O_3) formation, thereby having a net warmer effect (a positive RF contribution) (Lee *et al.*, 2021), as do contrails which trap radiation from escaping the Earth (Bannon, 2018). The impacts of NO_x and contrails, however, have a powerful short-term (from minutes to hours to days), that accumulate, despite their initial short lifespan (Bannon, 2018). NO_x also has a greater climate impact when emitted at higher altitudes, as the emissions react to the gases in the upper atmosphere (ATAG, 2020a). According to Lu (2009), damage from aircraft emissions and pollutants into the lower stratosphere and upper troposphere result in higher levels of global warming than similar ground-level emissions. However, CO_2, contrary to assumptions, has the same climate impact, no matter the altitude it is released at (ATAG, 2020a).

Contrails, visible signs of aircraft movements, are the white trails left behind the aircraft as it flies through some areas of the sky (ATAG, 2020a). The impact of the contrails on climate change is described as complex and despite research advancement, there are still many uncertainties about their impact (ATAG, 2020a). While nvPM has been implicated in cloud formation, Cumpsty *et al.* (2019) indicated that significant complications arise due to the emissions (or subsequent transformations) having somewhat different residence times in the atmosphere, as well as different values of RF.

According to Forsyth (2011), the climate change problem is a function of an accumulation of all emissions, no matter the source. CO_2 is of specific concern as it has an exceptionally long residence time (thousands of years) in the atmosphere (Cumpsty *et al.*, 2019).

Due to the aviation industry's dynamic characteristics, the environment is not only impacted by the above-mentioned emissions. It is also impacted through noise, waste disposal (Chen *et al.*, 2011), LUC (Lee *et al*., 2021), and other ground-based activities resulting from aircraft operations and respective support services, such as those found at airports. Concerns have been raised regarding the environmental impacts associated with building and running airports, as well as the development of infrastructure required around airports (Diggines, 2017).

During ground level stages at airports, aircraft exhaust pollutants are also emitted while they are parked at airports, as well as during landing and take-off (LTO) (Lu, 2009; Jakubiak, 2015). The main risks associated with the use of airports include air pollution, particularly GHG emissions, excessive noise from aircrafts at airports and their surroundings, incidental water and soil pollution or contamination and waste generation (including hazardous wastes) (Jakubiak, 2015).

Airlines use the infrastructure of airports for their operations, while airports cover a large area of land mass and require a large number of resources. Therefore, in addition to the environmental impacts already mentioned, the environment is also threatened by pollution resulting from airport-based operational activities. These include all the other activities resulting from servicing air carriers, such as the ground support vehicles and the cleaning and maintenance of aircraft, aviation fuel loading and

storage, construction and maintenance of airport objects, as well as the handling of passengers (Jakubiak, 2015).

- ***Summary of the environmental impacts of the aviation industry***

A succinct summary of the environmental impacts and their main causes is presented in Table 3.2 below. Figure 3.4 by Lee *et al.* (2021) which follows, provides an illustration of the climate forcings from global aviation emissions, some of which are presented in the discussions in this section.

Table 3.2: A summary of the impacts of the aviation industry on the natural environment

Environmental impact	Main causes
Air pollution	Aircraft emissions Emissions from airport access traffic Emissions from airport surface vehicles
Climate change	Aircraft emissions Contrails Aircraft-induced cirrus clouds Emissions from airport access traffic Emissions from airport surface vehicles Airport construction
Ecological change and habitat degradation	Airport construction Coastal modification Drainage modification Watercourse modification
Land contamination	Airport construction Airport waste disposal Aircraft servicing and maintenance Fuel, oil and hydraulic fluid spillage De-icing fluid run-off
Waste generation	Aircraft operations Airport operations
Water consumption	Aircraft operation Aircraft servicing and maintenance Airport operations
Water pollution	Aircraft servicing and maintenance Airport construction Airport waste disposal Fuel, oil and hydraulic fluid spillage De-icing fluid run-off
Aircraft noise	Aircraft operations Aircraft maintenance and engine testing Aircraft access traffic Airport surface vehicles

Source: Adapted from Daley (2010 in Mayer, 2013)

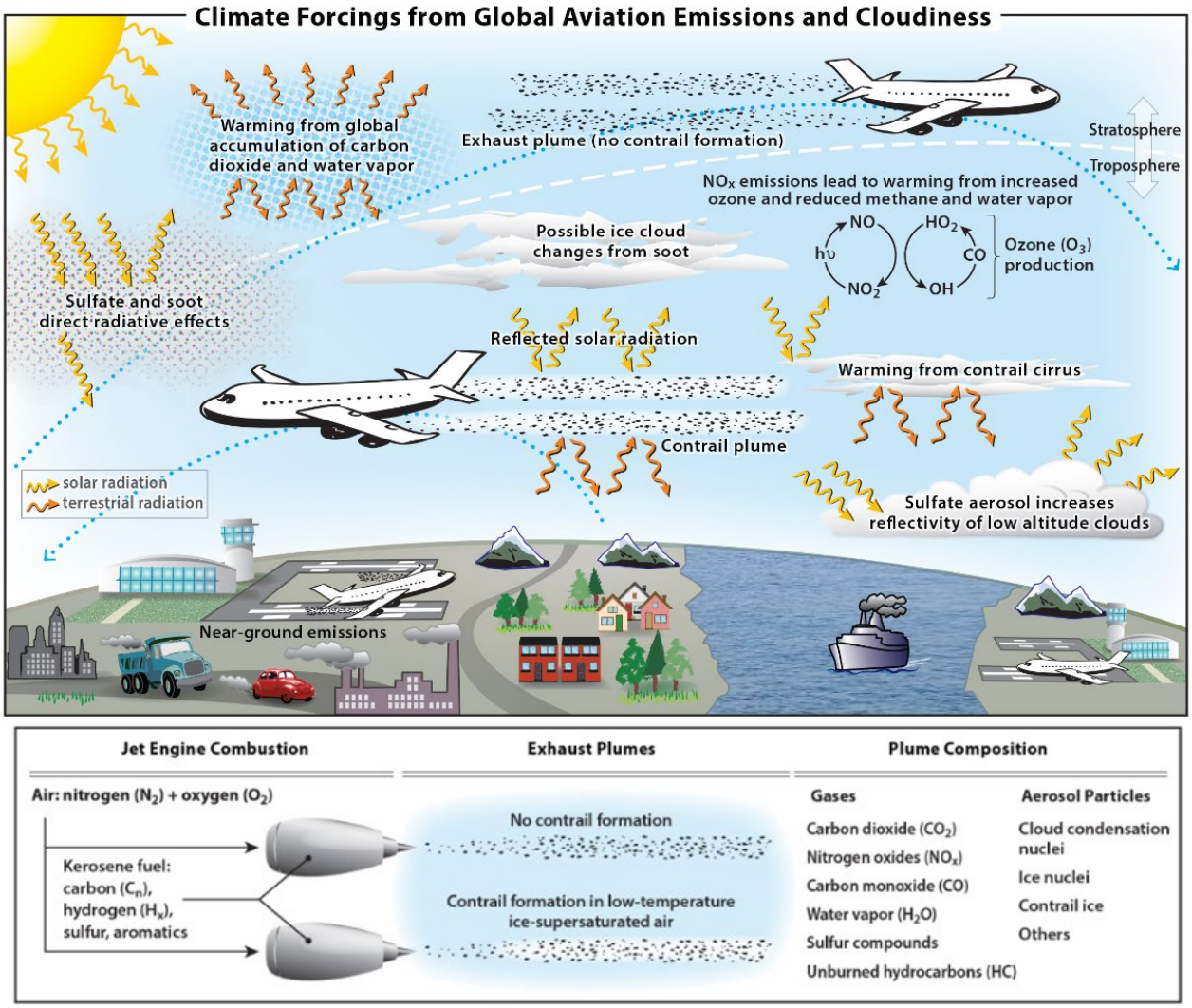


Figure 3.4: Climate forcings from global aviation emissions

Source: Lee *et al.* (2021:3)

The discussions above show that aviation is significant in terms of its contribution to anthropogenic climate change. The result of the historical rapid growth of air travel, its heavy reliance on oil-based non-renewable fuel, and the related increase in emissions (Lee *et al.*, 2021), supported the argument that the status-quo of the air transport industry, prior to Covid-19, is not environmentally sustainable (Mayer, 2013). The pandemic may have provided the natural environment with some relief from GHG emissions, but this relief is temporary. IATA has forecast that global travel demand will return to the “normal” 2019 pre-pandemic levels in 2024 (Cornwell, 2021). The next section discusses initiatives to improve environmental performance in the aviation industry.

3.4 ENVIRONMENTAL INITIATIVES IN THE AVIATION INDUSTRY

More than a decade ago, an understanding of the problematic interference of aviation with the climate system emerged (Gössling & Upham, 2009). As the growth in air travel has an increased environmental impact, there have also been increasing concerns about climate change (Cumpsty *et al.*, 2019). The environmental impacts and contributing causes mentioned in Section 3.3.5.1 above, have resulted in pressure being placed on the airline industry and governments to take mitigating actions (Araghi *et al*., 2016).

As the environmental impacts of air travel have become increasingly prominent, environmental groups and governments have focussed more on the effect that air transport has on the environment, and some airlines have started to respond to the growing awareness of these impacts (Mayer, 2013). In context of global efforts to reduce CO_2 emissions, the aviation industry is expected to mitigate its environmental impact (IATA, 2018) and contain the growth of its carbon footprint (Cumpsty *et al.*, 2019).

IATA (2018) believes that a successful sustainability strategy will give the airline industry a license to grow and enable the increasing numbers of people to enjoy the economic and social benefits of air connectivity. Section 3.4.1 below presents the response from the main global regulatory and industry bodies, followed by what airlines and respective support services around the world are doing in response to the climate change crisis in Section 3.4.2.

3.4.1 The global aviation industry's response to the climate crisis

The global aviation sector has taken a proactive approach to reduce its negative impact on climate change. In 2009, the industry launched three broad climate change goals and developed an ambitious agenda of coordinated global action which are driven and promoted by the three main global aviation bodies, namely, IATA, ICAO, and ATAG (ATAG, 2020; IATA, 2020). Figure 3.5 below highlights and synthesises the coordinated global action as the aviation industry's response to the climate change crisis.

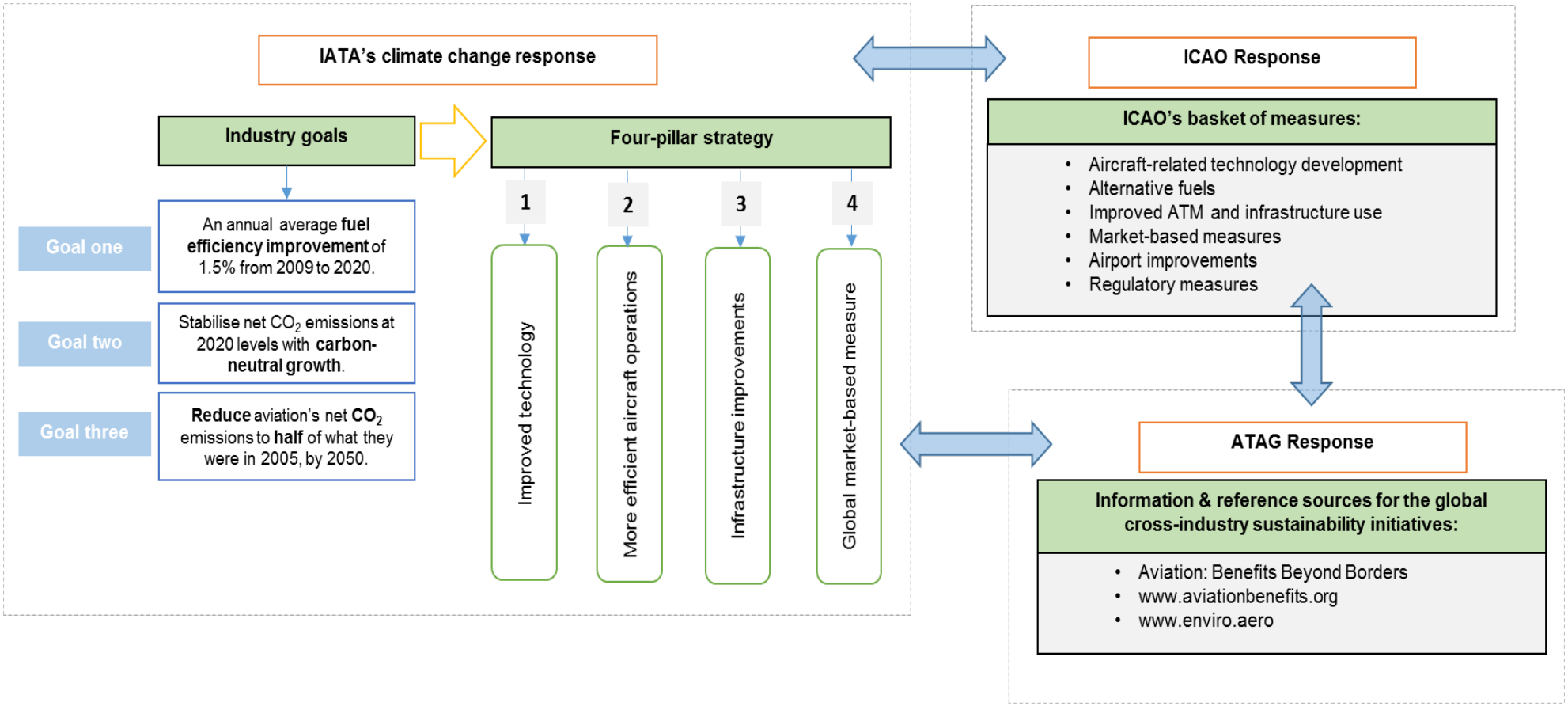


Figure 3.5: The aviation industry's global response to the climate crisis

Source: Own composition using ICAO (2019), ATAG (2020) and IATA (2020)

The three broad climate change goals are illustrated in Figure 3.5. Goals one, two and three present the industry's short-, medium-, and long-term goals respectively. To meet these goals, the industry has been implementing new technology, operational and infrastructure improvements, sustainable aviation fuels (SAFs) and the new Global Market-Based Measure (MBM) (ICAO, 2019). The industry's long-term goal, to halve net CO_2 emissions by 2050, aligns with the Paris Climate Agreement's global goal of combatting climate change. To achieve this ambitious goal continued investment in new technologies is required, as well as robust support mechanisms that will enable successful deployment of SAFs (IATA, 2020). Fulfilling goal three will be difficult and requires all industry stakeholders to explore all environmental mitigation possibilities (IATA, 2019).

To achieve the goals, IATA (2020) is responding with its "Four-pillar" strategy and the ICAO is responding with their "basket of measures" to mitigate emissions (Hupe, 2020), as depicted in Figure 3.5. A core element of the IATA sustainability strategy is the push for progress on technical, operational and infrastructure improvements, as well as the promotion of the global MBM as (IATA, 2019). Pillar One includes improved technology measures through the development of new, more efficient aircraft and engines (including hydrogen- and electric- powered engines). Pillar Two encourages airlines to identify and implement operational infrastructure improvements, including new satellite navigation technology and identifying weight savings in their current fleets to result in less fuel burned by, for example, replacing heavy equipment with lightweight cabin equipment and seats, and replacing heavy aircraft manuals with computer tablets.

Pillar Three mainly relates to navigational infrastructure improvements such as making better use of airspace and cutting down on flight time and fuel burn, and ground-based improvements which are mainly airport-based improvements such as airport layout optimising and greening airport infrastructure. A global MBM, as pillar four, has been called for to complement the first three pillars and to fill any remaining emissions gaps as soon as possible, until the above three pillars have taken full effect. To this effect, in 2016 the aviation industry adopted the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), to contribute to stabilising CO_2 emissions in the interim. CORSIA will play a role in meeting the mid-term goal, goal two of carbon-neutral growth from 2021 (IATA, 2020; ATAG, 2020).

The ICAO aims to complement the IATA's climate change response. With respect to responding to the climate crisis, the ICAO has formulated policies and tools and developed and updated Standards and Recommended Practices on aircraft emissions. These contributions are communicated to the ICAO Member States, their airlines and aviation stakeholders through the ICAO's basket of measures (ICAO, 2019; Hupe, 2020), depicted in Figure 3.5. The ICAO's "State Action Plan initiative on CO_2 Emissions Reduction" provides countries (ICAO Member States) with direction and the tools to take climate action, and to develop their own action plans to achieve sustainable and resilient aviation in the short, medium and long term (Hupe, 2020).

The industry-driven initiatives require backed-up actions from all the stakeholders across the entire sector (ATAG, 2020) including airports, air traffic management providers and manufactures of aircraft, engines and components, as well as airlines. With the latter being the focus in the current study, the next section will focus on the response from the airline industry specifically.

3.4.2 Environmental (mitigation) initiatives by airlines

The previous section highlighted how the main global aviation bodies have come to the forefront to drive the industry on a sustainable path. These aviation bodies are proposing policies and regulations to reduce aircraft GHG emissions, showing that efforts to manage environmental efficiency are needed (Kim & Son, 2021). Airlines are major stakeholders, if not the most important stakeholders, in the aviation industry. Therefore, major efforts are required from airlines to cut CO_2 emissions and their overall negative environmental impacts to ensure that the benefits of air transport can be retained in the long-term (ATAG, 2020).

According to Ragbir *et al*. (2021) there have been strides to reduce carbon footprints in various professional domains, and companies are marketing their green practices by promoting sustainability in business development initiatives. Green practices have also grown steadily in the airline industry (Ragbir *et al.*, 2021). Prior to 2011, airlines demonstrated only modest efforts to become greener (Hagmann *et al*., 2015). With the substantial environmental harm caused by the air transport industry, there has been increasing pressure to maintain or increase the positive (social and economic) impacts of aviation (Cowper-Smith & De Grosbois, 2011), whilst simultaneously

undertaking initiatives to reduce or mitigate the negative impacts (Chen, Chang & Lin, 2012).

Many airlines globally have launched attempts to mitigate their emissions. These efforts include renovating fleets to be more fuel-efficient, reducing aircraft weight, optimising route planning, improving operating procedures, and introducing market-based measures such as VCOs (Lu & Wang, 2018). These efforts align well with the efforts of the aviation industry's four pillars and the ICAO's basket of measures. The sub-sections which follow focus on how airlines are responding, can respond or should be responding to mitigate their impacts on the natural environmental.

3.4.2.1 Improved aircraft technology

This mitigation initiative relates to IATA's Pillars One and Two. According to the ICAO (2016 in UNFCCC 2016), the development of new, more efficient engines and aircraft, will significantly minimise CO_2 emissions. New, innovative technology presents the potential of reducing an airplane's carbon footprint by an average of 15-20%, compared to the models they replace (ICAO 2016 in UNFCCC 2016). To this end, a regulatory CO_2 standard was recently introduced by the ICAO, for all newly developed aircraft entering the market from 2023. However, this standard only applies to aircraft used for international flights (ATAG, 2017), meaning the current airline technology for domestic airlines may be "locked in" for several decades. This is because the lifetime of airline fleets are quite long, making them slow to replace with the modern aircraft or retrofit options that are costly to procure (Forsyth, 2011).

3.4.2.2 Sustainable aviation fuels

Prior to 2011, no certified alternative to traditional fossil fuel for air transport was available (ATAG, 2020). This has since changed and airlines are now able to incorporate sustainable and newly certified sources of energy, also known as sustainable aviation fuels (SAF), into their operations (ATAG, 2020). 'Biofuels', a term often used interchangeably with SAFs, are a core means to reduce the large amount of CO_2 from commercial aircrafts (Ragbir *et al.*, 2021). SAFs, when compared to kerosene, have the potential to reduce CO_2 by up to 80% throughout the lifecycle of the fuel (ATAG, 2017; IATA, 2018, IATA; 2020). However, SAFs cost significantly more (double to triple) than kerosene (ATAG, 2020), deferring airlines from fully subsiding SAFs (Torreilles, 2020). It is anticipated, however, that as production and

supply increases, SAFs will become more cost-competitive (ATAG, 2020). Certified SAFs are considered ‘drop-in’ fuels, meaning they do not require modification to the aircraft engine for their use (IATA, 2020). Accordingly, more than 300 000 commercial flights have already incorporated SAFs into their operations (IATA, 2020).

Calderon-Tellez and Herrera (2021) indicated the release of biofuel or electricity powered aircraft engines are only anticipated from 2030. Therefore, for some time into the future, aviation will likely stay largely dependent on the use of the burning of kerosene, with the consequential emissions of CO_2 (Lee *et al.*, 2021). Moreover, Lee *et al.* (2021) indicate there are uncertainties that still exist concerning the life-cycle emissions of biofuels, which would determine the accurate reductions in net CO_2 emissions.

Based on the current status-quo of SAF implementation, it appears that the ambitious goal of carbon neutral growth for the aviation industry from 2020 (global climate change goal two), is unlikely to be met. However, in dealing with the uncertainty after the Covid-19 pandemic, Calderon-Tellez and Herrera (2021) observed that some airlines are considering implementing SAFs. From a marketing perspective, a promising element is that SAFs may give rise to new marketing opportunities for airlines (Torreilles, 2020), aiming to target the carbon conscious customer. The findings from a study by Rains *et al.* (2017 in Ragbir *et al.*, 2021) reveal that consumers acknowledge that the use of biofuels is more sustainable than kerosene, thus indicating a WTP up to 13% more for a flight operating on biofuels. However, the findings showed that consumers’ WTP depended on a variety of factors during their decision-making process, where the consumer weighs the value of potential gains and losses (Ragbir *et al.*, 2021).

3.4.2.3 More efficient aircraft operations and infrastructure improvements

The operational efficiency of air transport can play a role in the evaluation of the airline with respect to environmental performance (Mayer, 2013). Mayer (2013) noted that some environmental impacts brought about by the growth in air transport have already been mitigated by improvements in airlines’ efficiency. LCCs have achieved a cost base that is up to 60% lower than those of traditional FSC airlines by reducing load factors (Doganis 2010 in Mayer, 2013). This is an example of implementing efficiency measures in the airline industry that has had positive financial and environmental

implications. For instance, FSCs that offer premium products (for example, economy class, premium economy class and business class) require more cabin space and therefore have lower load factors. Whilst the more affordable, “no frills” LCC offers high seat density, thus generating higher load factors (Baumeister, 2020). Subsequently, since LCC operations are more efficient than the FSC, air travellers regard LCCs as the environmentally friendlier option (Baumeister, 2020).

As mentioned in Section 3.3.5.1, aircraft efficiency has continuously improved. Improvement has been such that a flight taken in 2020 would produce half of the CO_2 that the same flight would have in the 1990s (ATAG, 2020). Thus, the aviation industry argues the case for technical solutions and operational gains to reduce its environmental impact. However, a continued growth in demand for air travel (as seen prior to the pandemic) exposes the inadequacy of these measures (Cohen & Kantenbacher, 2020). This is because air travel growth has been faster than the technical and efficiency improvements, ultimately leading to a rise in overall emissions (ATAG, 2020).

Even with current efforts already made by airlines to reduce emissions, total GHG emissions increased by 5.2% during the one-year period 2018 to 2019 (Becken & Pant 2019 in Torreilles, 2020). Before the Covid-19 pandemic, absolute CO_2 emissions were not likely to be reduced as hoped, with a predicted annual growth of 4% in air travel demand (Noh, Benito & Alonso, 2016; Torreilles, 2020). Pidcock and Yeo (2016) critiqued the above-mentioned figures, stating that even the most optimistic scenario could not have hoped to reverse the growth in CO_2 from the aviation industry. According to the Pidcock and Yeo (2016: para. 14), the technological improvements to aircraft, air traffic management and infrastructure, will succeed only in making the “steep upwards curve of aviation emissions slightly less steep.” The pandemic may have flattened the curve slightly, but air passenger demand is forecast to return to pre-pandemic levels by 2024. Airlines, therefore, must take additional measures if they are to contribute to reaching the IPCC “zero emissions by 2050” target (Torreilles, 2020).

In their study, Kim and Son (2021) list additional measures that can support the sustainability of the aviation industry through operational efficiencies (including elimination of waste, reduction of energy consumption and the elimination of single-use plastic). The authors found that airlines that are showing results in their attempts to use SAFs and lighter aircraft are those who have heavily invested in decisions

relating to the natural environment. Other attempts to address environmental issues by airlines include implementing Environmental Management Systems (EMS) and the International EMS ISO 14001 certification (Chen *et al.*, 2011; Mayer *et al.*, 2012).

The abovementioned measures described in Sections 3.4.2.1 to 3.4.2.3 can be classified as operational changes (Baumeister, 2017) or supply-based measures. The next section provides an overview of MBMs to fill the emissions reduction gap.

3.4.2.4 Market-based measures

Operational or supply-based measures initiated and implemented by the supplier, in this case the airline, were discussed in the preceding sections. MBMs, however, refer to measures that impact or are driven by the consumer. This section briefly addresses the industry-wide global MBM and other market-based initiatives.

- ***Global MBM***

In 2016 the aviation industry signed an agreement to implement a world first sector-wide MBM to offset aviation CO_2 growth from the year 2020 (ATAG, 2017; 2018). This MBM, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) was identified as the most appropriate measure to deal with aviation emissions growth. CORSIA will apply offset requirements to international flights between participating ICAO States (countries) starting from 2021. The implementation of CORSIA will be in phases, starting with ICAO States participating on a voluntary basis during the pilot phase from 2021 to 2023 (ATAG, 2017; 2018; Zheng *et al.*, 2019). However, due to the distortions in air traffic due to the Covid-19 pandemic, a proposal was made to postpone the CORSIA pilot phase.

For every ton of CO_2 emitted above the 2020 baseline, participating airlines will invest in UN approved carbon offsets (Rivers, 2017). CORSIA, however, it is an international scheme, therefore it only focuses on international flights. Emissions from domestic aviation activities do not fall under CORSIA. Domestic aviation emissions fall under the scope of the UNFCCC and the Paris Agreement's Nationally Determined Contributions (NDC) structure (ATAG, 2017). Accordingly, domestic flights are not included in the CORSIA scheme and NDCs are left to their 'own devices'. This provides more reason for domestic airlines to take the lead in passenger-oriented and passenger driven environmental initiatives (Araghi *et al.*, 2016).

In the domestic market, the responsibility for reducing personal air travel emissions has been largely left to individuals, through behaviour change (Barr *et al.*, 2011). Measures to assist consumers' in changing or adjusting their air travel behaviour are presented next.

- ***Airline specific MBMs***

There has been a steady shift in the last couple of decades towards an emphasis on individuals as change agents in tackling the environmental challenges (Barr *et al.*, 2011). A means for moving discretionary air travel consumption towards a more sustainable pathway, has been encouraged through voluntary behaviour change (Cohen, Higham & Reis, 2013). In the research by Gössling, Broderick, Upham, Ceron, Dubois, Peeters and Strasdas (2007), conducted over a decade ago, air traveller behaviour changes had already been identified as the key to decreasing the environmental impacts of air travel (Baumeister & Onkila, 2017).

However, a unique set of challenges and issues are raised by relying on a voluntary behaviour change from the public in their use of air travel (Lassen, 2010). Even though research (Higham & Cohen, 2011; Cohen & Higham, 2011) has shown increasing public concern regarding the impacts of air travel on the climate, there is also evidence showing dissonance between awareness, attitudes and actual positive behaviour change (Higham *et al.*, 2016). As discussed in Chapter 2, air passengers as consumers are not homogenous, they have different attitudes, preferences and characteristics (Araghi *et al.*, 2016). Therefore, it is essential to consider air travellers' knowledge of sustainability, as well as their perceptions toward sustainable practices in aviation (Ragbir *et al.*, 2021).

Voluntary air traveller behaviour changes can be supported by airline MBMs, to encourage the consumer to make more environmentally conscious purchase and consumption decisions. The main MBMs in the airline industry include VCO programmes and eco-labelling initiatives. These initiatives are in product infancy, making design and implementation slow on the uptake. Nonetheless, behaviours driven by VCO and eco-labels are necessary for domestic airlines to "fill the emissions gap", especially those in markets which currently do not have any mandatory sustainability initiatives. These initiatives, introduced in Section 2.8.1.2, are briefly discussed below.

- **VCO programmes**

Although studies on carbon offsetting in the aviation industry are rare, VCO programmes or schemes in the industry are not a new phenomenon (Zheng *et al.*, 2019). Since 2010, some airlines have launched VCO programmes offering passengers the option to voluntarily pay for their carbon offsets (Chen *et al.*, 2011). VCO programmes offer consumers the possibility of reducing or neutralising the CO_2 GHGs emitted during their flight (Rosenkjear, 2012). This is done by enabling passengers to calculate the CO_2 emissions generated by their flight, and to use methods such as cash payments, FFP miles, or equivalent, to purchase credits to economically compensate for, or 'offset', the equivalent amount of GHG emissions elsewhere (Jou & Chen, 2015; Ambrose, 2019).

VCO programmes take many forms and include contributing to environmental projects implemented by relevant agencies (Jou & Chen, 2015), that should fulfil certain requirements to be legitimate (Qiu, 2020). Many VCO programmes involve tree-planting projects to absorb CO_2 from the atmosphere, while others invest in renewable energy projects which save CO_2 emissions by replacing finite fossil fuel with alternatives (Ambrose, 2019). Air New Zealand and Air Canada are examples of airlines which have introduced VCO programmes, through the "FlyNeutral" and "Less" VCO programmes, respectively (Air New Zealand, 2021; Less Emissions, 2021).

According to Mair (2011), VCO programmes became popular amongst concerned travellers and have been increasingly publicised by airlines as a means of mitigating the environmental impact of an individuals' air travel. However, according to the author, VCO programmes have received criticism for many reasons, including lack of transparency, complexity and confusion for the air traveller, the variability of the schemes, and for placing the onus for offsetting on the consumer, instead of the airline (Mair, 2011). For instance, the findings by Gössling *et al.* (2010) revealed that air travellers do not believe that they are firstly responsible to offset GHG emissions. Air travellers believe that their responsibility should be last, after aircraft manufacturers, airlines, and government and intergovernmental organisations that should be calling for progressive political action to curb aviation emissions (Higham *et al.*, 2016). Furthermore, VCO programmes are viewed with widespread scepticism due to the claim that there is

an inappropriate transfer of responsibility to the consumer, as well as a lack of transparency regarding the programmes. These consumer-based programmes have also been critiqued as a way of absolving the airline industry and government of any such responsibility in the 'environmentally-flawed' industry (Higham *et al.*, 2016).

Despite the arguments against purchasing VCOs, there is a committed segment of air travellers who do buy these to offset their emissions from flying. These air travellers may be more aware of the environmental impacts of aviation and therefore more prepared to make behavioural changes to mitigate these impacts (Mayer, 2013). Therefore, learning about these air travellers' environmental awareness and attitudes may determine the likelihood of this potentially important segment's willingness to make changes to their flying behaviour (Mair, 2011). The aviation market needs strategies to secure competitiveness going forward (Kim & Son, 2021), VCOs could be one way for airlines to do so.

- **Eco-labels**

Chapter 2 (Section 2.7) highlighted that environmental concern is a key issue in air travel behaviour, and that there is an increase in knowledge and awareness on environmental issues and the need for environmental conservation. Despite this, air travellers receive little to no information on the environmental impacts that their air travel behaviour creates (Lu & Wang, 2018). Furthermore, most consumers do not have the resources, such as time or know-how, to do detailed environmental searches about the product they would like to or need to consume.

In a study by Gössling *et al.* (2009 in Baumeister, 2017), it was found that some air passengers would like to choose their airline ticket based on an airline's environmental performance. However, these passengers were unable to, due to lack of information. Without the information readily available to consumers, they would be required to have expert knowledge to compare the environmental performance of each airline or flight (Gössling *et al.*, 2009 in Baumeister, 2017). Unfortunately, pro-environmental initiatives of airlines are less visible and therefore need to be clearly communicated in order to receive a proper response from air travellers (Mayer *et al.*, 2012 in Baumeister, 2017). Passengers need access to information regarding the environmental performance of airlines to enable them to

make informed decisions (Miyoshi & Mason, 2009; Baumeister, 2017). However, the environmental actions by airlines (if any) are unknown, thereby limiting the extent to which air travellers will consider such actions when making a choice of airline to travel with (Cowper-Smith & De Grosbois, 2011).

An information gap was therefore identified between air travellers and the airline industry regarding the impacts of their air travel (Lu & Wang, 2018). Despite advances being made towards environmentally responsible air travel, consumers may not have all the information regarding this, due to a lack of information provided by airlines. Having such knowledge would enable air travellers to form attitudinal views or opinions to make a choice that aligns with their intentions (Cheah & Phau, 2011).

There are air passengers who actively seek and select greener flight options, however, is it difficult for air passengers to identify these options (Baumeister, 2017); this is where eco-labels come into play. Eco-labels provide transparency (Hagmann *et al.*, 2015) and make flights comparable (Baumeister & Onkila, 2018) from an environmental impact perspective. Consequently, Baumeister and Onkila (2018) suggested that FSCs use eco-labels as a tool to position themselves "better", in the battle with LCCs, and to gain an SCA through environmental product differentiation. The threat of climate change can therefore also be an opportunity for airlines, to communicate with passengers who care about climate issues and to show them what measures the airline is taking to be proactive from a sustainability perspective (Demrovsky, 2020).

Baumeister (2017) posited that an eco-label would help promote air traveller behavioural change, as consumers would be able to easily identify the greenest or least polluting, least environmentally harmful flight option. The results from Baumeister's (2017) study suggest an airline's eco-label influenced the booking decision of air travellers, leading to behaviour change. Additionally, Baumeister (2017) concluded that changing behaviour would demand of the airline industry to improve its environmental performance which could create more environmental competition within the industry.

In summary, eco-labels serve several purposes: they give consumers the opportunity to select products that meet their environmental expectations; they

remind consumers to take environmental issues into account, giving them the opportunity to instantly take environmental actions; and, they promote PEB without limiting consumers in their freedom of choice to accept or reject the product (Baumeister, 2017). Furthermore, eco-labels help increase carbon (or environmental) literacy among consumers, thereby ultimately facilitating behavioural change among air travellers (Gössling & Buckley, 2016).

The study by Araghi *et al.* (2014) showed that airlines who demonstrate their eco-efficiency index had strongly influenced passengers' airline choice. However, if the choice that best aligns with a consumer's attitudinal views and intentions is not made available by a supplier, a consumer cannot purchase it and oftentimes, would not even be aware of it (Momberg, 2011). MBMs by airlines, such as VCO programmes and eco-labels, have the potential to increase awareness and enable air travellers to engage in PEB.

- **Other environmentally friendly MBMs**

Providing passengers with a choice of environmentally friendly product/service attribute options (green ATSAs) to consider purchasing, can be considered MBMs, as drivers of behavioural change. Studies have shown that passengers are willing to purchase green services at a premium (Ragbir *et al.*, 2021). However, as mentioned in Section 2.8.1, there is a lack of literature on green ATSAs. As such, there is little known about the demand for green products or services in the airline industry (Van Birgelen *et al.*, 2011; Hinnen, Hille & Wittmer, 2017). Thus, for the purpose of the current study, the green ATSAs that were identified by the researcher in Section 2.8.1.2 will be considered additional MBMs. There may be some overlap between MBMs and the supply-based measures, which air passengers might identify as a green ATSA that influences their purchase intention.

3.4.3 Summary of environmental mitigation and reduction initiatives for airlines

Cowper-Smith and De Grosbois (2011) identified several environmental initiatives that have been implemented by airline industry leaders. A summary of these initiatives, with contributions from Mayer *et al.* (2012), is presented in Table 3.3 below.

Table 3.3: A summary of environmental mitigation and reduction initiatives for airlines

Environmental impact (theme and goals)	Environmental mitigation and reduction initiatives for airlines
Emissions	
Reduce CO_2 emissions	▪ Reduce fuel consumption; ▪ Introduce new fuel-efficient aircraft; ▪ Optimise operational procedures; ▪ Weight reduction measures; ▪ Sponsorship of scientific research projects related to CO_2 emissions; ▪ Carbon-offsetting programme (third-party); ▪ Engine washing; ▪ Install winglets; ▪ Conduct/support testing of alternative fuels; ▪ Take atmospheric measurements with the aircraft; ▪ Reduce emissions at technical facilities; ▪ Replace employees' company cars; ▪ Partnerships with NGOs; ▪ Use of simulators for flight training.
Reduce air pollution	▪ Introduce latest technology engines (that reduce NO_x); ▪ Introduce environmentally friendly ground vehicles; ▪ Reduce consumption of chemical substances; ▪ Replace ground equipment with electrically powered equipment; ▪ Consult with local businesses on local air pollution.
Waste	
Reduce waste	▪ Recycle on-board waste; ▪ Reduce number of paper boarding passes/tickets; ▪ Recycle paper in offices; ▪ Recycle aircraft/ aluminium parts; ▪ Convert on-board documentation to electronic documentation; ▪ Green purchases;

Environmental impact (theme and goals)	Environmental mitigation and reduction initiatives for airlines
	▪ Evaluate biodegradable materials for use on-board; ▪ Implement waste management process map of all facilities; ▪ Operate a waste classification facility; ▪ In-flight customer education above on-board waste management; ▪ Implement opportunities for passengers to recycle their own waste; ▪ Reduce waste generated on-board.
Energy	
Reduce energy consumption	▪ Reduce energy use in offices/facilities; ▪ Use green/renewable energy; ▪ Install new energy-efficient simulator equipment; ▪ Install new energy-efficient air-conditioning; ▪ Departmental energy-saving training programmes; ▪ Programme equipment to automatically turn off; ▪ Raise room temperature to 25°C in all offices; ▪ Use LED bulbs in aircraft and offices; ▪ Use sea water for air-conditioning.
Water	
Reduce water use	▪ Use rainwater/greywater; ▪ Wash trucks/equipment with rainwater; ▪ on-board water usage analysis program; ▪ Use flow restrictors and self-closing taps, among others.
Reduce water pollution	Reduce discharge from maintenance facilities.
Biodiversity	
Ensure ecological integrity	▪ Use environmentally friendly refrigerants in air-conditioning; ▪ Use paper certified by the Forest Stewardship Council in all divisions; ▪ Test alternative de-icing; ▪ Conduct soil pollution prevention inspections at all facilities.
Involvement in environmental conservation projects	▪ Sponsor avoidance of deforestation; ▪ Support oil spill relief activities; ▪ Reporting of wildfires programme; ▪ Sponsor returning urban land/landfills to parkland; ▪ Funding of Ph.D. research scholarships for endangered species; ▪ Employee tree-planting initiative.

Environmental impact (theme and goals)	Environmental mitigation and reduction initiatives for airlines
Noise	
Reduce noise	▪ Test new operational procedures (continuous descent and so on); ▪ Introduce quieter aircraft; ▪ Conform with ICAO noise level; ▪ Use continuous-descent/optimised procedures as established procedure on all flights; ▪ Conduct engine testing during daytime; ▪ Reduce nigh landings/take-offs.
Other	▪ Obtain ISO 14001 or forthcoming certification for EMS; ▪ Sponsor environmental organisations; ▪ Contribute to scientific research projects; ▪ Develop environmental indices; ▪ Offer 'fair-trade' and organic products.

Source: Adapted from Cowper-Smith and De Gosbois (2011:65), using Mayer *et al.* (2012:185)

As can be seen from Table 3.3 above, and in the discussions presented in Section 3.4, there are various initiatives, from supply-based measures to MBMs, which an airline can implement to decrease its negative environmental impacts (Chen *et al.*, 2016).

The Covid-19 pandemic has revealed the importance of consistently managing and controlling risks, where possible. There were no warning signs before the Covid-19 pandemic, but there have been plentiful warning signs regarding the climate crisis. There are even tools and mechanisms in place to mitigate the impacts created by air travel. The pandemic has illuminated the need for all stakeholders in the risk transfer value chain to adapt to the changing needs of their customers (Rooley, 2020). Perhaps, the shock of the Covid-19 pandemic has exposed institutional gaps, divides and unsolved problems in the aviation industry (Linden, 2021). This may be a massive opportunity, through a search for new standards in the industry, where new technologies emerge faster, and sustainable solutions are more critical than ever before, not only for customers' interests, but for all the aviation actors (Linden, 2021).

Dube *et al.* (2021) stated that as the recovery process of the airline industry occurs post-Covid-19, the industry must use the most efficient and cleanest aircraft on the market to ensure maximum financial returns, as the recovery process is expected to

be slow. This is an opportunity for airlines to retire old and fuel-inefficient aircraft that are costly, environmentally and financially. Going forward, this could be a way to address the airline industry's poor record in tackling the climate change crisis (Dube *et al.*, 2021).

Section 3.4 discussed the many environmental mitigation efforts available in the airline industry. The next section provides an overview of the SA airline industry context, considering elements of significance from Chapters 1 and 2, as well as the above sections in Chapter 3.

3.5 THE SOUTH AFRICAN DOMESTIC AIRLINE INDUSTRY

This section will present an overview of the SA domestic airline industry. This section will start with an overview of the SA air transport industry's broad structure (Section 3.5.1). Thereafter, a brief historical overview of SA's scheduled passenger airline industry will be covered (Section 3.5.2), followed by an overview of the domestic air travel market between 2011 and 2021, considering the impacts of Covid-19 (Section 3.5.3). Finally, the climate change response by the SA airline industry will be highlighted in Section 3.5.4.

3.5.1 Broad structure of the South African air transport industry

Depicted in Figure 3.6 below, the aviation industry in SA is divided into military and civil aviation. Civil aviation is sub-divided into general aviation and scheduled air transport. Scheduled air transport is further sub-divided into cargo and passenger services, and the latter is further sub-divided into FSCs and LCCs (Diggines, 2017).

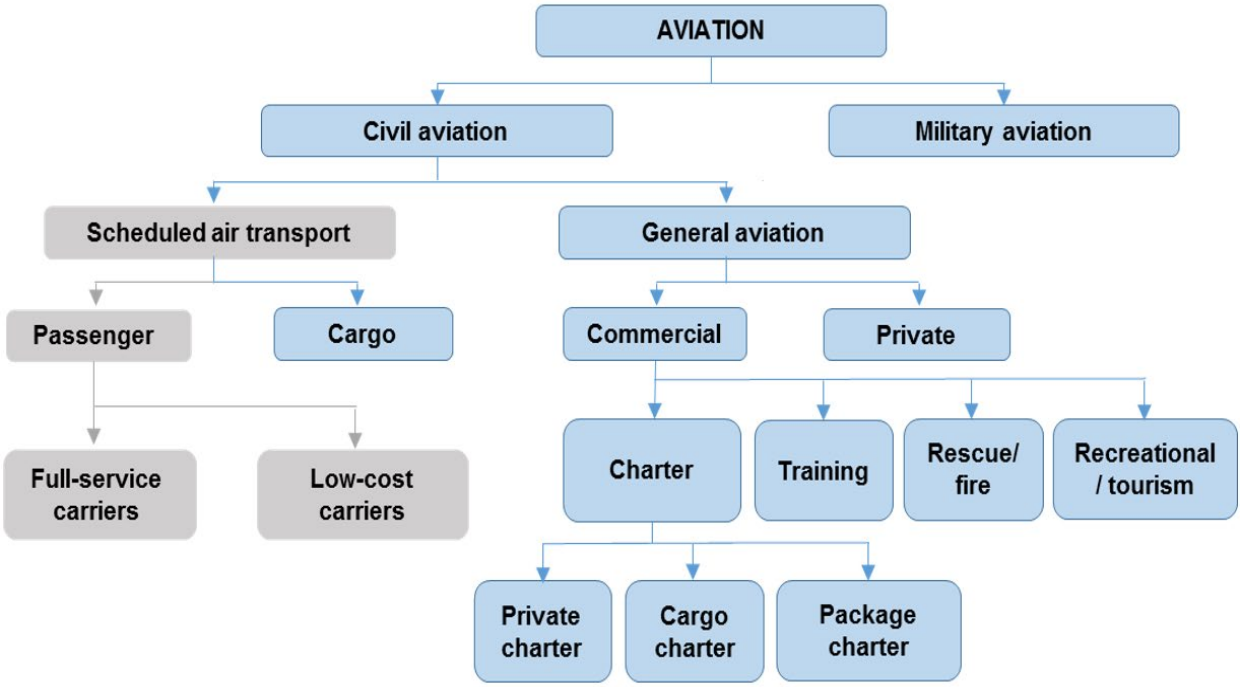


Figure 3.6: Broad structure of the South African aviation sector

Source: Stern (2012 in Diggines, 2017:228)

This section positioned the passenger scheduled/commercial air transport industry, within the broader sector. The discussions presented in Section 3.5.2 concentrate on the scheduled passenger services in the SA air transport industry, and the competition between the airlines during various stages in the market's history.

3.5.2 A brief historical overview of the scheduled passenger airlines in South Africa

The SA domestic airline industry has seen significant market changes and evolution over the last 86 years. More so, the changes were most significant after deregulation of the airline market in 1991. Section 3.5.2 is structured according to the following three periods: one pre-deregulation from 1934 to 1990, and two post-deregulation periods 1991 to 2000, and 2001 to 2010. An overview of the domestic air travel market between 2011 and 2021 will be presented in Section 3.5.3.

Before commencing with an overview of the abovementioned periods, Table 3.4 below presents a summarised timeline of the operating history of the domestic airlines in SA, to December 2021. The table is structured according to the abovementioned periods, indicating the date of airline entry, current operational status and/or date and reason for the airlines' exit from the market. A brief description of each period will follow.

Table 3.4: An operating history of the domestic airlines in South Africa (1934–2021)

Airline and time period	Year of market entry	Operational status	Reason for market exit/re-entry (if applicable)
Pre-deregulation (1934 – 1990)			
SAA	1934	Operating (however, SAA was grounded whilst in business rescue in 2020 – 2021).	Ceased operations during the BRP (17 months). Re-entered the market in September 2021.
BA (Comair)	1945	Operating (however, BA ceased operations for periods in 2020 and 2021 due to BRP and Covid-19).	Ceased operations on 17 March 2020 (due to Covid-19 restrictions and its BRP starting in May 2020). Commenced operations in December 2020. Ceased operations again in June to August 2021 due to the third wave of infections and Lockdown Level 4 travel restrictions. Commenced operations in September 2021.
Link Airways	1979	Market exit: 1992	Re-emerged as SA Airlink.
Bop Air (later known as Sun Air)	1979	Market exit: 1994	Re-emerged as Sun Air (see post-deregulation below).
Post-deregulation (1991 – 2000)			
Flitestar	1991	Market exit: 1994	Bankruptcy (resulting from unfair competition in combination with a weakened ZAR/US Dollar exchange rate).
SA Airlink	1992	Operating (now simply operating as “Airlink”).	
SA Express	1994	Ceased operations	Ceased operations: 28 April 2020. Applied for liquidation (decision extended until 2022).

Airline and time period	Year of market entry	Operational status	Reason for market exit/re-entry (if applicable)
Sun Air	1994	Market exit: 1999	Liquidation (a result of the wrong business model and anti-competitive behaviour) (Khuzwayo, 2004).
Phoenix Airways	1994	Market exit: 1995	Fuel cost increases, weakening of the ZAR against the USD and competition. Taken over by Atlantic airways.
Atlantic Airways	1995	Market exit: 1995	Financial uncertainties.
Nationwide Airways	1995	Market exit: 2008	Liquidation (resulting from rising input costs, an aging fleet and the global economic downturn of 2008).
(2001 – 2010)			
Kulula.com	2001	Operating (however, ceased operations for periods in 2020 and 2021 due to BRP and Covid-19).	Ceased operations on 17 March 2020, commenced operations in December 2020. Ceased operations again in June to August 2021 due to the second wave of infections and Lockdown Level 4 travel restrictions. Commenced operations in September 2021.
1Time	2004	Market exit: 2012	Liquidation (resulting from rising fuel costs and other high input costs relating to the operating the McDonnell Douglas (MD-80)).
CemAir	2006	Operating	
Mango	2006	Temporarily ceased operations from 1 May 2021.	Grounded from 1 May 2021 due to failure to pay creditors. Suspended all flights from 27 July 2021 and entered a BRP on 28 July 2021.

Airline and time period	Year of market entry	Operational status	Reason for market exit/re-entry (if applicable)
(2011 – 2021)			
Velvet Sky	2011	Market exit: 2012	The SACAA suspended Velvet Sky's operating licence for suspected safety and compliance oversight (Naidoo, 2012). Thereafter, the airline liquidated.
Fly Go Air	2012 & 2015	Market exit: 2012 & 2015	
FlySafair	2014	Operating	
Skywise	2015	Market exit: 2015	Suspended due to unpaid airport taxes and never recovered from the suspension (South Africa Travel Online, 2017).
Fly Blue Crane	2015	Market exit: 2017	Entered business rescue then ceased operations (resulting from saturation of the market and alleged unfair competition from the SAA regional affiliates) (South Africa Travel Online, 2017; CAPA – Centre for Aviation, 2020).
Lift	2020	Operating	

Source: Researcher's own compilation (contributions by Flight Global, 1995; Smith, 1998; Luke & Walters, 2013; Paelo & Vilakazi, 2016, Mhlanga & Steyn, 2016, Mhlanga & Steyn, 2017; Diggines, 2017; Charlier & Dobruszkes, 2020)

An overview of the domestic air travel market pre-deregulation: 1934 – 1990

As illustrated by Table 3.4, before market deregulation, only four airlines operated in SA's domestic market. These airlines included SAA, Comair, Link Airways (re-emerged as SA Airlink in 1992) and Bop Air (later operating as Sun Air), operating from years 1934, 1945, 1978 and 1979 respectively (Smith, 1998; Luke & Walters, 2013). SAA and Comair, however, were the only major contenders in the market during that time.

An overview of the domestic air travel market post-deregulation: 1991 – 2000

Liberalisation of the SA airline market commenced in July 1991 when deregulation was officially declared (Luke & Walters, 2013; Charlier & Dobruszkes, 2020). The Domestic Air Transport Policy of 1990 provided the foundation for the deregulation of the domestic air transport services in SA (DoT, 1990 in Luke & Walters, 2013; Mhlanga, 2017; Charlier & Dobruszkes, 2020).

Deregulating the domestic airline industry in SA meant that any company could now fly on any route in SA (Wasserman, 2020). After liberation in 1991 and the birth of SA's democracy in 1994, the domestic air transport market experienced increased and fairer competition. Within the first ten years after deregulation, the SA domestic airline market was rife with a flurry of airline entries, albeit the industry saw almost as many exits during this period (Luke & Walters, 2013; Henama *et al.*, 2016). The five airlines that did not survive include Flitestar, Sun Air, Phoenix Airways, Atlantic Airways and Nationwide Airways. The latter airline, however, had a long run, only exiting the market in 2008. Furthermore, SA Airlink and SA Express were the only two airlines that joined the market during this period (1991 – 2000) which were still operational by 2020. While, of these two airlines, only SA Airlink (now named Airlink) was operational in 2021 (see Section 3.5.3).

An overview of the domestic air travel market post-deregulation: 2001 – 2010

During the period from 2001 to 2010, the SA market saw the introduction of the true LCC model. After the entry of LCC Kulula.com in 2001, the SA domestic market saw three new entries, namely, 1time in 2004, CemAir and Mango in 2006, stimulating competition in the market. This period also saw the resounding bankruptcy and subsequent exit of Nationwide in 2008.

The introduction of effective competition from 1991, as an outcome of the liberalisation of the domestic air travel market, was to the detriment of SAA. Not only did the legacy carrier have increased competition from Comair, LCCs had developed to a point where they controlled more than 60% of the domestic air travel market (Charlier & Dobruszkes, 2020). Due to the challenges of growing costs and competitive pressures, FSCs were compelled to redesign their business concepts and adjust their business models. As discussed in Section 3.3.2, many major airlines set up subsidiaries to handle short-haul route operations, compete with LCCs and to counteract the potential threat of new entrants (ICAO Secretariat, 2016). For example, in the SA airline market, Comair Ltd. launched Kulula.com, and SAA launched Mango.

3.5.3 An overview of the domestic air travel market: 2011 – 2021

Many LCCs that entered the market since 2004, were quickly overcome and did not survive in the long run (Diggines, 2017). During the last decade (2011–2021) the domestic airline market saw several entrants and exits. An overview of the air travel market from 2011 until 2019 (prior to the reality of the Covid-19 pandemic) is presented in the sub-section below. The sub-section thereafter provides an overview of the last two years of the market (2020 and 2021), amidst the Covid-19 pandemic.

3.5.3.1 A pre-COVID-19 overview: 2011 to 2019

In March 2011 **Velvet Sky** entered the market, adding further capacity to a domestic market that was increasingly becoming saturated. Velvet Sky's operations were short-lived, ceasing operations in 2012, along with 1time (Diggines, 2017). With 1time and Velvet Sky leaving the market in 2012, the immediate reduction in industry capacity allowed the remaining carriers to consolidate their positions in the market, particularly with regards to price competition (Diggines, 2017). Charlier and Dobruszkes (2020) described the period that followed (2012 to 2015), as a duopoly of LCCs (namely, Mango and Kulula.com) competing in the domestic market. **FlySafair**, however, joined the market in 2014 as a true LCC, helping stimulate the declining passenger market by attracting new passengers (Henama *et al*., 2016).

Shortly thereafter, **Skywise** and **Fly Blue Crane** were launched as LCCs in 2015. Concerns were subsequently expressed that the SA domestic air travel market was too small to accommodate four LCCs which could, again, result in over-capacity and irrational competition (Diggines, 2017). The operations of these two airlines were,

however, short-lived, exiting the market in 2015 and 2017 respectively. Between 2016 and 2019, no new airline entrants were recorded, and the following eight scheduled airlines operated in the market: BA Comair, SAA, Kulula.com, Mango, FlySafair, SA Airlink, SA Express and CemAir.

The two decades until 2019, saw a significant 83% growth in the volume of domestic passenger seats provided (Charlier & Dobruszkes, 2020). Charlier and Dobruszkes (2020) prepared a graph illustrating the growth of airline seats in the SA domestic market between 1999 and 2019. Figure 3.7 below presents the illustration of the authors' findings and the market share between the major players in the domestic market.

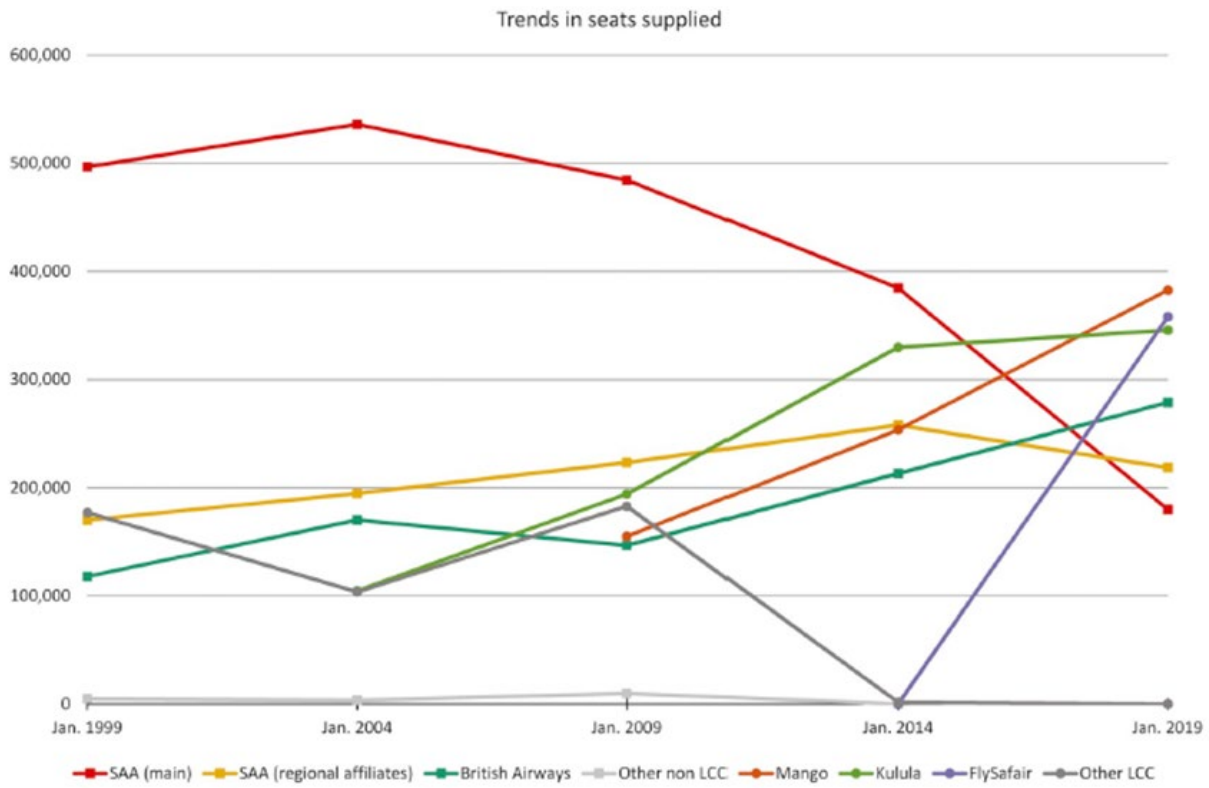


Figure 3.7: Airline seats in the South African domestic market (1991 – 2019)

Source: Charlier and Dobruszkes (2020:5-6)

Figure 3.7 shows changes in the SA domestic airline market according to the number of seats that were supplied between 1991 and 2019. The volume of seats supplied saw a dramatic increase by almost double, as they multiplied by 1.83 over the last two decades (Charlier & Dobruszkes, 2020). However, evidently not all airlines benefitted in the same manner. Seats supplied by SAA decreased significantly, although its regional affiliates at the time, SA Airlink and SA Express, as well as Mango balanced

the decrease with their growth. Conversely, BA experienced dramatic growth, with its volume of seats supplied multiplying by 2.4. By 2019, the overall market share of the FSCs decreased from 81.7% to 38.4%, while the share of LCCs jumped to 61.6% (Charlier & Dobruszkes, 2020). Table 3.5 below illustrates these changes in the market share.

Table 3.5: Market share of South African domestic airlines according to seats supplied (1999-2019)

	Jan. 1999	Jan. 2004	Jan. 2009	Jan. 2014	Jan. 2019
SAA (main)	51.4%	48.2%	34.7%	26.7%	10.2%
SAA (regional affiliates)	17.6%	17.5%	16.0%	17.9%	12.4%
BA	12.2%	15.3%	10.5%	14.8%	15.8%
Other traditional airlines	0.5%	0.3%	0.7%	0.0%	0.0%
Mango	0.0%	0.0%	11.1%	17.6%	21.7%
Kulula.com	0.0%	9.4%	13.9%	22.9%	19.6%
FlySafair	0.0%	0.0%	0.0%	0.0%	20.3%
Other low-cost airlines	18.3%	9.3%	13.1%	0.1%	0.0%
Traditional airlines	*81.7%*	*81.3%*	*61.9%*	*59.4%*	*38.4%*
Low-cost airlines	*18.3%*	*18.7%*	*38.1%*	*40.6%*	*61.6%*
Seats	965,930	1111,861	1395,614	1440,144	1763,323

Source: Charlier and Dobruszkes (2020:6)

Table 3.5 above shows an evident shrinkage of SAA's market share, the most dramatic change in the market (where the domestic market share of SAA was divided by a factor of five). However, the growth of BA's market share suggests there is still rationale for FSCs in the SA domestic market (Charlier & Dobruszkes, 2020).

However, as reported by Charlier and Dobruszkes (2020), together with SAA's ownership and market agreements with Mango (owned by SAA), SA Express (the publicly owned-sister company to SAA) and SA Airlink (where SAA had, in 2019, a 3% share in the airline), the airline performed better. With the coordinated marketing strategy and commercial agreements formed between these four airlines (known as the SAA galaxy), they covered all segments of the SA market route network. From this perspective, the aggregated number of seats was relatively stable (being multiplied by

only 1.17), dropping its market share from 69% to 44.3% (Charlier & Dobruszkes, 2020). In contrast, the two Comair brands, BA and Kulula.com, achieved significant growth in the market, whereby the aggregated seat volume multiplied by 5.3 and market share multiplied by 2.9 between 1991 and 2019. Accordingly, the Comair brands held 35.4% of the 2019 market (Charlier & Dobruszkes, 2020). Furthermore, since joining the market in 2015, FlySafair became a fierce competitor and gained significant market share. By January 2019, FlySafair operated more routes than the two other LCCs, holding 20.3% of the domestic market share according to seats supplied (Charlier & Dobruszkes, 2020), contributing substantially to the 61.6% share of the market for LCCs.

The above discussions show that the SA airline industry has experienced a process of significant change and competition. Growth of the LCC market significantly increased competition and impacted domestic operations for the FSCs. Coupled with this, the propensity to travel was supported by the growth of the new middle-class that emerged following the end of apartheid in 1994 (Charlier & Dobruszkes, 2020). Permanent change was created in the consumers' flying behaviour, and according to Diggines (2017), this affected the way in which airlines should approach their strategy development. Furthermore, the author indicates that airlines need to understand the consumer behaviour changes and refocus their segmentation approaches.

The competitive landscape described above was completely shaken up by the reality of Covid-19 becoming a global pandemic, affecting airlines globally. SA was, and is, no exception. The repercussions of the pandemic have resulted in another set of significant changes, uncertainty and competition within the market. The next sub-section presents an overview of the SA domestic airline market amidst the Covid-19 era.

3.5.3.2 A COVID-19 era overview: 2020 and 2021

Section 3.3.1 provided context regarding the affect that the Covid-19 pandemic has had on airline business models and on the airline industry globally. It also highlighted the response of the airline industry as airlines strive to adapt and survive to the 'new normal'. FlightGlobal data of global air passenger movements, analysed by Dube *et al.* (2021), showed that the pandemic has had a significant negative impact on flight volumes for an extended period, resulting in massive knock-on effects on business,

travel and tourism globally. The number of flights declined drastically, mostly as a result of the measures put in place by governments in response to containing the infection numbers (Dube *et al.*, 2021). Measures included closures of provincial and national borders, restricting the travel, tourism and other economic sectors.

After the SA government declared an official State of Disaster to disrupt the chain of Covid-19 infections transmitted across society, a nation-wide 'hard' lockdown for the country was announced. The 'hard' lockdown commenced on 27 March 2020, for an initial period of 21 days (SAnews, 2020). 'Hard' lockdown, later referred to as Alert Level 5, was extended until 30 April 2020. Restrictions were slowly eased from 1 May 2020 onwards, fluctuating between levels, aligning with the state of the Covid-19 infections experienced (Turner, Le Grange & Nkgadima, 2021).

During the period 27 March until 30 May 2020, no domestic scheduled flights were permitted, completely grounding all SA domestic flights for just over two months in 2020. Domestic airlines were permitted to resume operations from 1 June 2020, with restrictions being adjusted as the respective alert levels of lockdown were announced throughout 2020 and 2021. A summary of the progression of easing of restrictions respective to each alert level, as applied to the SA domestic airline industry, is presented in Table 3.6 below.

Table 3.6: Timeline summary of South Africa's Covid-19 regulations on air travel

Year	Month	Covid-19 alert levels and respective regulations affecting the airline industry
2020	February	No regulations
2020	March	Hard lockdown from 27 March (no travel)
2020	April	Hard lockdown (no travel)
2020	May	Level 4 (no travel)
2020	June	Level 3 (business travel only)
2020	July	Level 3 (business travel only)
2020	August	Level 3 until 17 August; Level 2 from 18 August (interprovincial travel allowed)
2020	September	Level 2 until 20 September; Level 1 from 21 September (interprovincial travel allowed)
2020	October	Level 1 (international travel allowed – limited)
2020	November	Level 1 (international travel allowed – some external bans)
2020	December	Level 1 until 29 December; Level 3 from 30 December (international travel allowed – increasing external bans)
2021	January	Level 3 (international travel allowed – increasing external bans)
2021	February	Level 3 (international travel allowed – external bans)
2021	March	Level 1 (international travel allowed – external bans)
2021	April	Level 1
2021	May	Level 1
2021	June	Level 2 (1–15 June); Level 3 (16–27 June); Level 4 (28 June for an initial 2 weeks) (only business travel from 28 June permitted; restricted international travel allowed)
2021	July	Level 4 (continued with restrictions from 28 June until 25 July); Adjusted Level 3 (26 July to 12 September, leisure travel permitted)
2021	August	Adjusted Level 3 (leisure and business travel permitted)
2021	September	Adjusted Level 3 (until 12 September); Level 2 (13 to 30 September)
2021	October	Adjusted Level 1 (international travel allowed)
2021	November	Adjusted Level 1 continued
2021	December	Adjusted Level 1 continued (the new Omicron variant caused international travel bans for SA, resulting in uncertainty regarding international arrivals and departures)

Source: Adapted from DoT (2021) (with contributions from South African Government, 2021; Nkgadima & Turner, 2021)

Table 3.6 shows that domestic business travel was permitted during June and July of 2020. From 21 September 2020 domestic leisure travel was allowed, as well as restricted international travel. From this time until 29 December 2020, the domestic airline industry started making a decent recovery, as presented below in the graph prepared by the DoT (DoT, 2021). As can be seen in Figure 3.8 below, a decline was evident from the end of December 2020 when the country was again placed onto an adjusted Level 3 lockdown, to curb the second wave of Covid-19 infections.

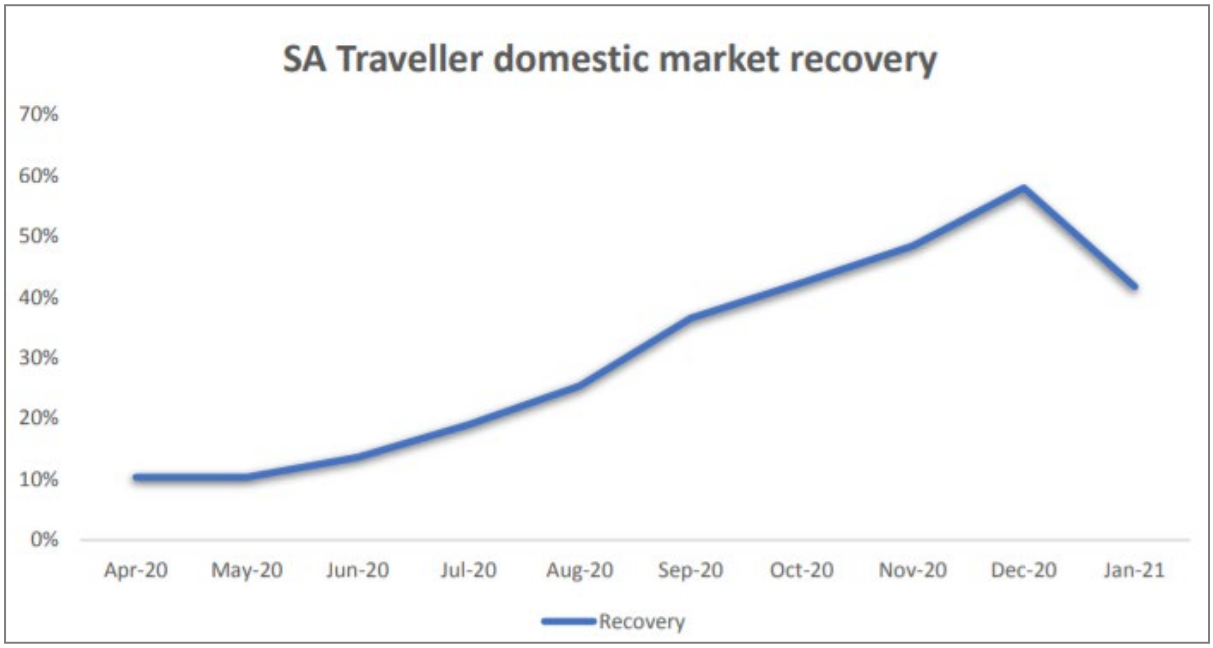


Figure 3.8: SA traveller domestic market recovery

Source: DoT (2021)

Table 3.7 below presents the total number of domestic air passenger arrivals and departures within SA, per financial year (FY). The table reflects fluctuations in demand, based on passenger statistics, with the tightening and easing of restrictions until November 2021.

Table 3.7: Total consolidated domestic passenger traffic for the last five financial years

Month	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22
April	2 456 143	2 420 737	2 516 801	0	1 587 340
May	2 268 806	2 262 473	2 231 935	0	1 385 949
June	2 110 405	2 205 297	2 395 682	78 472	1 075 847
July	2 427 326	2 380 049	2 432 773	210 914	539 692
August	2 327 292	2 402 131	2 478 374	372 813	949 873
September	2 383 495	2 400 725	2 602 616	681 546	1 406 616
October	2 553 530	2 530 833	2 589 440	935 062	1 650 532
November	2 394 685	2 463 000	2 511 439	1 079 138	1 604 570
December	2 563 010	2 619 585	2 818 636	1 514 920	(NA)
January	2 225 256	2 258 694	2 450 558	894 409	(NA)
February	2 207 623	2 266 616	2 418 998	869 585	-
March	2 505 430	2 712 969	1 580 370	1 400 078	-
Total	**28 423 001**	**28 923 109**	**29 027 622**	**8 036 937**	

Source: Adapted from ACSA (2021)

The effects of Covid-19 on the domestic airline industry are clear, compared to the 2019/2020 FY, airlines in SA carried only 28% of its usual traffic in the 2020/2021 FY. As illustrated in Table 3.7, the periods from March to May 2020, July and August 2021, show how the industry was heavily affected by lockdown restrictions and government regulations. Overall, when compared to the 2020/21 FY, passenger traffic increased substantially in the 2021/2022 FY, showing promising recovery. However, the recovery is slow and far from the pre-Covid-19 statistics.

The Covid-19 pandemic and respective restrictions placed an industry already showing signs of struggle into a seemingly debilitating situation. In 2019 before Covid-19 hit SA's shores, **SAA**, who had relied on government bailouts for decades, filed for business rescue to avoid bankruptcy (Wasserman, 2020). Along with cancelling several domestic and international routes, SAA's business rescue process (BRP) officially commenced on 5 December 2019 (de Villiers, 2020).

The airline industry fundamentally changed as Covid-19 reduced demand for air travel, resulting in airlines dramatically dropping airfares (Mahlaka, 2021a). During 2020, the domestic airline market saw more airlines enter BRPs, some go into liquidation or negotiate airline sales, while others restructured or terminated decade-long agreements. The main events which occurred in the market in 2020/2021 are highlighted in the overview below.

In February 2020, **Comair** reported a loss of R564million for the 2019 FY (Dludla, 2020), despite the Comair brands holding 35.4% of the 2019 market (Charlier & Dobruszkes, 2020). During the nationwide lockdown in May 2020, Comair entered a voluntary BRP to ensure the long-term survival of the airline (Smith, 2020a). During the BRP, **BA** and **Kulula.com** (Comair airlines) had secured backing from investors and lenders, allowing them to resume flights in December 2020 once they had come out of administration (Prinsloo, 2020). By April 2021, according to the Business Rescue Practitioners appointed to Comair, Comair's domestic leisure market was at similar levels to before the lockdown (Smith, 2021). However, with the second wave of Covid-19 infections during June and July 2021, the airlines made the decision to halt operations again, until September 2021.

After the compulsory grounding in April and May 2020, both airlines resumed operations in June 2020 and have managed to operate in the turbulent Covid-19 environment relatively unscathed. From resumption of operations in June 2020, **FlySafair** continuously added seats as the demand for flights increased. By end November 2020, the airline was operating at almost 100% again. **CemAir** extended operations as it noticed an opportunity to launch new regional routes outside of SA (DoT, 2021).

SA Airlink terminated its 23-year-old franchise agreement with SAA during 2020. This was a result of SAA defaulting on its agreement with SAA Airlink and ceasing operations as the national carrier entered the BRP. SA Airlink changed its corporate name and respective branding to **Airlink**, to align with its trade name. The name change is a key element of the airline's repositioning, recovery and growth strategy (Business Insider, 2020). Airlink restarted its operations in June 2020 when lockdown restrictions eased (DoT, 2021) and has remained operational.

While other airlines got off the ground as soon as possible once restrictions were eased in June 2020, **SAA** remained grounded until September 2021. SAA re-joined the skies in September 2021 with an aircraft fleet of less than ten, a few months after exiting the BRP in April 2021 (Reuters, 2021). While **SA Express**, the other state-owned airline, on the verge of being sold to a private buyer (DoT, 2021) was placed under provisional liquidation early in 2020 (Dludla, 2020). This was after a failed BRP, and after receiving R1.2 billion in urgent funds from government in the 2019/2020 FY (Smith, 2021c). SA Express' operations remained ceased into 2021, whilst the liquidation hearing was extended until 2022.

Mango resumed flights in June 2020. However, as a subsidiary of SAA the airline also experienced similar turmoil to the national carrier, which was further exacerbated by Covid-19. Accordingly, the SA government was seeking equity partners for this state-owned SAA subsidiary (DoT, 2021). As the airline awaited delayed emergency funds to pay outstanding debts to creditors, Mango had no choice but to temporarily cease operations on 1 May 2021 (Mahlaka, 2021b). On 27 July 2021, Mango announced the suspension of flights until further notice (Business Tech, 2021). Thereafter, on 28 July 2021, the request for Mango to enter a voluntary BRP (due to operational and financial challenges), was approved (flymango.com, 2021). At the time of finalising this dissertation, the BPR continued, and flights remained suspended.

Amongst the turbulence experienced by the SA airline industry in 2020, it still managed to see the entry of a new airline. Just before SA's second Covid-19 wave in December 2020, **LIFT**, the new LCC was launched (Wilhelm, 2021). LIFT is operated by Takatso Consortium, the joint venture which recently acquired the 51% majority stake in SAA (Smith, 2021b). Entering the market at a time that was arguably the worst crisis in aviation history, LIFT saw an opportunity from the thinned-out competition and low start-up costs (a result of an oversupply of idle aircraft and low oil prices), resulting in cost structures about 40% lower than starting an airline before the pandemic (Prinsloo, 2020).

Global air travel was greatly impacted due to the ever-changing country specific lockdown regulations, entry and exit restrictions to and from other countries, and subsequent quarantine periods. Recovery has occurred more quickly in domestic markets (Garrow & Lurkin, 2021), understandably so, since the regulatory environments are more manageable operating on domestic terrain. The DoT (2021)

has indicated that the underlying demand of the SA domestic traveller is not as flimsy as previously thought; rather, it has shown strengthening. Therefore, the DoT expressed that capacity in the domestic air travel market may need to expand significantly in the future. The entry of Lift into the market shows that, despite the pandemic and resultant economic impact, there is still confidence among some investors (Wilhelm, 2021). However, the risk remains with the erratic nature of Covid-19 infections (DoT, 2021).

The future success of airlines in SA will be determined by how fast they identify the impacts of macro-environmental factors (Mhlanga & Steyn, 2017). The physical environment is a sub-environment of the macro environment, one which has not received much attention in context of the SA airline industry practice or research. The next section (Section 3.5.4) reviews the SA domestic airline industry, in terms of its response to the climate change problem (which remains the focus of the current study, despite the major changes caused by Covid-19).

3.5.4 The climate change response from the South African domestic airline industry

This section highlights the climate change response in the SA domestic airline industry. This section commences with a brief overview of the government initiatives, followed by an overview of mitigation initiatives by domestic airlines in SA.

As an ICAO Member State (see Section 3.4.1), SA has committed to focus on improving infrastructure use and air traffic management (ATM), as a means of mitigating CO_2 emissions. Additionally, SA has embarked on two complementary measures (although still in the infancy stage), namely, sustainable aviation fuels (SAFs) and airport improvements (DoT, 2016). Furthermore, two main government driven initiatives are worth noting. Firstly, the Department of Environmental Affairs (DEA) GHG Emission Reporting Regulations were introduced in 2017 through the National Environmental Management: Air Quality Act (No. 39 of 2004), requiring aviation operators to report on their GHG emissions annually. Secondly, the Carbon Tax Act was introduced into law on 1 June 2019. Although the Act applies to all sectors of the SA domestic economy, it is a significant regulatory factor for SA airlines to comply (AASA, 2020).

With regards to initiatives by the airlines in SA to mitigate their environmental impacts, information was sourced by reviewing the airline websites and publicly available annual reports (if any). Only the SAA Group and the Comair Group had publicly available information regarding their environmental initiatives, published in their Group Annual Reports in 2018 and 2019 respectively. As of 2020, Airlink published a dedicated webpage to display the airline's environmental initiatives. To the researcher's knowledge (between 2017 and 2021), SA Express, CemAir, FlySafair and new entry, Lift, did not have a dedicated space to communicate their environmental initiatives on their websites. Nor did they present publicly available reports with the respective information, for their consumers to peruse should they wish to do so. A summary of the key initiatives identified at the SAA Group (including SAA and Mango), the Comair Group (including BA Comair and Kulula.com), and Airlink are presented in Table 3.8 below.

Table 3.8: Environmental initiatives by domestic airlines in South Africa

Airline	Environmental initiative
The SAA Group (SAA and Mango)	▪ Supports and participates in the IATA led environmental goals and initiatives. ▪ Participates in the IATA Environmental Assessment Programme (IEnvA). ▪ Implemented an Environmental Management System (EMS). ▪ Launched the "Project Solaris" biofuels project. ▪ Become the first airline in Africa to undertake a sustainable biofuel flight (using a mix of 70% conventional jet fuel and 30% biofuel) in 2016, between Johannesburg and Cape Town. ▪ Efforts to reduce energy consumption and utilise energy-efficient technologies. ▪ Waste reduction and recycling programmes. ▪ Collaboration with WWF-SA and the Forest Stewardship Council. ▪ Incorporated environmental sustainability into their Supply Chain Management Policy. ▪ Provides the option for consumers to pay a voluntary IATA green fee (VCO) upon booking a flight. (SAA, 2018)
The Comair Group (BA Comair and Kulula.com)	▪ Supports and participates in the IATA led environmental goals and initiatives. ▪ Lists climate and environmental responsibility as key priorities to the Group. ▪ Reports in accordance with the DEA's National GHG Emissions Reporting Regulations. ▪ Complies with the Carbon Tax Act. ▪ Has an Environmental Management Risk Assessment in place. ▪ Reports on compulsory requirements on its GHG emissions by the GHG Protocol Corporate Accounting and Reporting Standard.

Airline	Environmental initiative
	▪ Has set a number of environmental objectives focused on minimising its environmental impact. ▪ Invested in new fleet of Boeing (B) 737-800 Next Generation (NG) aircraft (better performance and fuel efficiency). ▪ Retrofitted "Scimitar" split winglets on all its B737-800 NG aircraft (reduces fuel consumption). ▪ Reduced weight on board the aircraft (weight of galleys and implemented a paperless cockpit). ▪ Implemented a comprehensive fuel savings programme, by its Pilots, according to best practice. (Comair, 2019)
Airlink	▪ Recognises the need to address climate change and launched the 'Airlink Environment Program'. ▪ Created an Environmental Policy Statement. ▪ Participates in the IEnvA. ▪ Completed a 3-year Carbon Footprint Report and has committed to annually measuring, monitoring and reducing carbon emissions. ▪ Strives to ensure that environmental regulations are met. ▪ Identified opportunities to reduce electricity consumption. ▪ Assessing and planning to change inefficient technologies with modern alternatives. ▪ Introducing environmental sustainability principles into the procurement department. ▪ Supports the Mabula Ground Hornbill Project and the Wattled Crane Recovery Programme (conservation support). (Airlink, 2020)

Source: Own composition using SAA (2018), Comair (2019) and Airlink (2020)

This section provided a brief overview of what airlines in SA are doing to address the environmental imperative. The section showed that the SA Government is taking a stance on climate change mitigation initiatives in the airline industry. Additionally, it highlighted the environmental initiatives by airlines in SA. This section reveals that the domestic airline industry is not sufficiently tackling the pressing environmental imperative.

3.6 CONCLUSION

Although post-Covid-19 recovery is in sight, airlines will need to reconsider their operations, financing, and in some cases, their overall business model to prevent further bankruptcies (Magdalina & Bouzaima, 2021). How airlines handle the post-Covid-19 recovery period is crucial (Garrow & Lurkin, 2021) for their "re-entry" or long-term survival in the market. There is a lot that remains unknown, particularly since

there are no previous crises of the same scale from which to model the recovery of the industry. The Covid-19 pandemic heeds a strong call for long-term thinking (Linden, 2021), although it has also demonstrated that society has developed in a way that the impacts of past events may no longer be indicative benchmarks for the future (Rooley, 2020). Dube *et al.* (2021) emphasise the general view that Covid-19 has made various economies reset, and has promoted a fresh start on a new pathway that is sustainable and more resilient. The airline market needs strategies to secure competitiveness (Kim & Son, 2021); while new and innovative means of resuscitating the industry need to arise (Nhamo *et al.*, 2020).

Chapter 3 provided an overview of the traditional airline business models, developments affecting these models, and the impact that the Covid-19 pandemic has had on these models. Thereafter, the impacts of the aviation industry on the natural environment were discussed, followed by the initiatives taken by the aviation industry to contain and mitigate these impacts. Lastly, an overview of the SA commercial air transport industry was presented. This final section outlined the aviation industry's structure in SA, presented a brief history of the industry, and the impact that the Covid-19 pandemic has had on it. Finally, an overview of the SA airline industry's environmental mitigation efforts was highlighted. Overall, this chapter provided the industry context on which the current study is based.

Chapter 3 revealed various aviation industry-driven initiatives to address the climate crisis. However, empirical studies on environmental sustainability in the airline industry have primarily focused on regions in China, Europe and the United States (Kim & Son, 2021). There is little information about what domestic airlines in Africa, and SA specifically, are doing to address the climate crisis, and no scholarly information on what the air travellers as consumers are doing to drive the change towards environmental sustainability. Thus, the gap was identified in Chapter 3 – to gain an in-depth scholarly understanding from the consumers' viewpoint, especially in the SA context.

With heightened focus on the impact of the aviation industry on the environment and the increased consumer concern and awareness of the importance of environmental protection, it does not seem far-fetched to believe that pro-environmental ATSAs or green airline models could be the differentiating factor and competitive advantage that will evoke the attention of the emerging air traveller.

The literature and industry review presented in Chapter 3 highlights the need to understand the modern consumer of the airline service. Additionally, the need to understand an air travellers' environmental consciousness (EC), in relation to their consumer behaviour, is further intensified. The next chapter, Chapter 4, presents the research methodology employed in the current study, as the road map to address the gaps that have been identified in the literature.

CHAPTER 4:
RESEARCH METHODOLOGY

4.1 INTRODUCTION

Chapter 1 introduced the current study, presenting the research purpose and research objectives of the study for the first time. Chapters 2 and 3 served as the theoretical foundation and research context on which the primary research for the current study are based. While acknowledging the impact of Covid-19, the aim of the current study remained grounded in the environmental impact of air travel and air traveller consumer behaviour.

The previous chapters illustrated the dynamics of air traveller consumer behaviour, the ever-changing marketing environment in which airlines operate, as well as the environmental impacts of the fuel-intensive aviation industry. The current study argues that behavioural change is a key driver in mitigating the negative environmental impacts of air travel. However, little is known about the modern air travellers' consumer behaviour and their environmental consciousness, and how these two concepts relate to one another. Hence, in Chapter 1, the following research question was posed:

> *Does environmental consciousness influence the consumer behaviour of domestic air travellers within a South African context?*

The Covid-19 pandemic has added a new dimension to the increasingly competitive and ever-changing airline marketing environment. If airlines are to navigate through and out of the turbulence brought about by the Covid-19 pandemic successfully, it is essential that they gain an understanding of the modern air travellers' consumer behaviour, which will help to (re)position themselves firmly in the SA commercial air transport market.

Before commencing with the purpose of this chapter, a recap of the primary and secondary research objectives is necessary. These research objectives are presented in Table 4.1 below, showing the specific aims of the current study based on the research question.

Table 4.1: Research objectives of the current study

Primary research objective:	
To investigate the interrelationships between domestic air travellers' consumer behaviour and environmental consciousness, within a South African context.	
Secondary research objectives (SRO): *(All SROs relate to domestic air travel within an SA context.)*	
SRO 1:	*To investigate the 2018 consumer behaviour of domestic air travellers.*
This SRO was addressed by asking questions to determine the purpose of travel; the frequency of air travel; airlines used versus airlines preferred; the type of air ticket usually purchased.	
SRO 2:	*To determine the importance domestic air travellers place on the air travel service attributes when deciding on an air travel ticket to purchase*.
This SRO was addressed by grouping a list of respective items according to the following constructs: tangibility, reliability and operational efficiency, price and loyalty, customer service, value-added services and VIP value-added services, and finally the "green" attributes.	
SRO 3:	*To investigate the environmental consciousness of domestic air travellers.*
This SRO was addressed by using a list of respective items grouped according to the following constructs: environmental knowledge, environmental concern, environmental attitudes and pro-environmental behaviour.	
SRO 4:	*To investigate whether domestic air travellers engage in pro-environmental behaviour, or not.*
This SRO was addressed by asking questions relating to PEB.	
SRO 5:	*To investigate if domestic air travellers' environmental knowledge, environmental awareness/concern, and environmental attitudes are statistically and significantly aligned with air travel behaviour.*
This SRO was addressed by using the constructs presented in SROs 1, 2 and 3.	
SRO 6:	*To present a socio-demographic profile of the domestic air traveller.*
This SRO was addressed by asking socio-demographic questions.	

Source: Researcher's own compilation

The focus of Chapter 4 is on the research methodology required to address the research question and to achieve the SROs presented in Table 4.1 above. Therefore, Chapter 4 aims to provide a road map and description of the research methods that were used to collect the data required to answer the research question presented in the current study. Figure 4.1 below graphically depicts the position of Chapter 4 within

the broad structure of the dissertation of the current study, alongside the flow of the structure and content of Chapter 4.

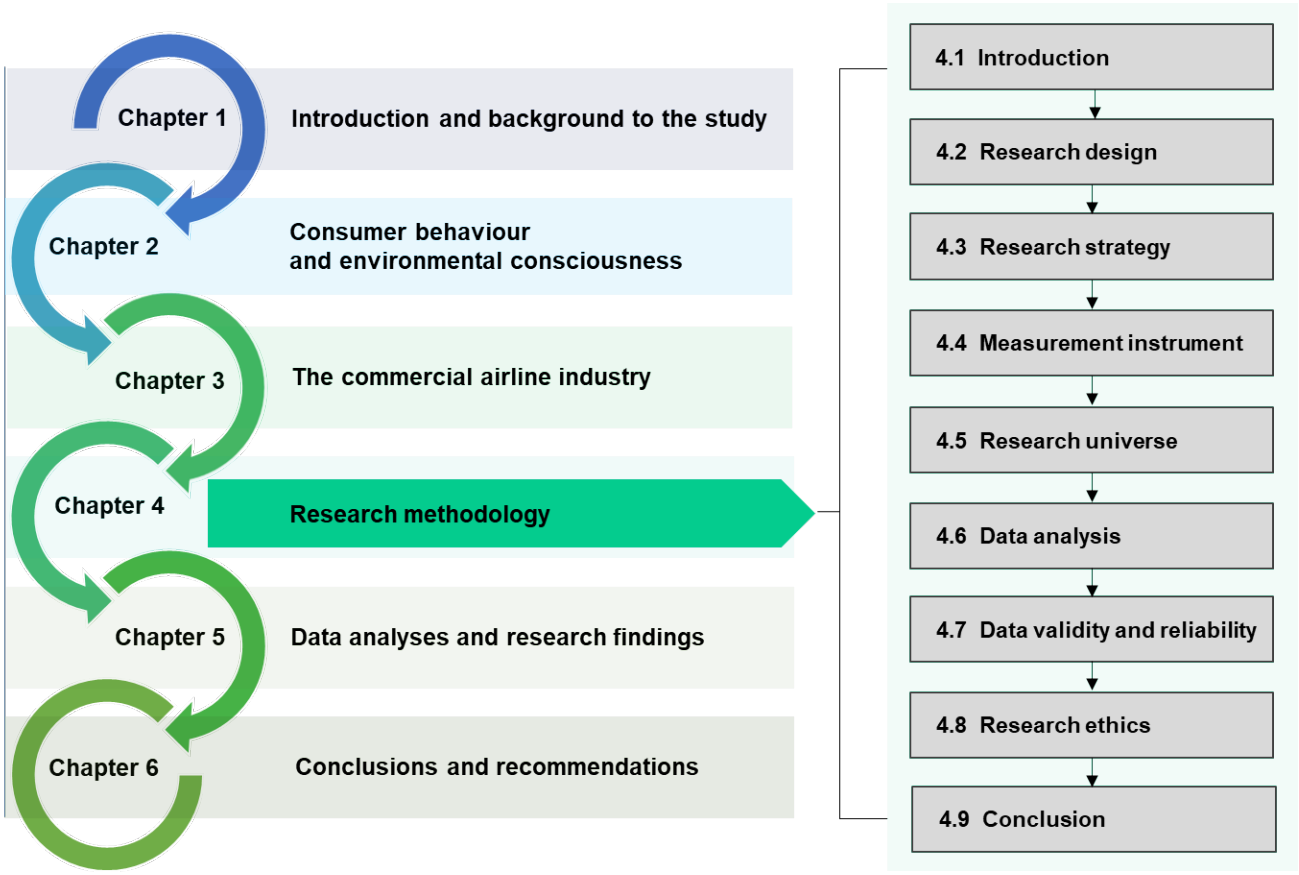


Figure 4.1: Structure of Chapter 4

Source: Researcher's own compilation

As illustrated by Figure 4.1 above, Chapter 4 starts with a detailed description of the research design employed for the current study (Section 4.2), followed by the research strategy (Section 4.3). The design of the measurement instrument receives a detailed explanation (Section 4.4), as does the research universe (Section 4.5) which follows. Thereafter, the important elements of the data analysis will be discussed (Section 4.6), followed by data validity and reliability (Section 4.7). Finally, the importance of research ethics and the guidelines followed in the current study are presented (Section 4.8), before concluding the chapter (Section 4.9).

4.2 RESEARCH DESIGN

Research is an organised process through which new knowledge is collected and discovered (Salkind, 2018). To conduct this process, it is necessary to plan or design how to collect and discover the new knowledge sought. Data collection design, also referred to as research design, involves numerous decisions that relate to how, how often, when and where data will be collected (Schindler, 2022). Research design is a general plan of how the researcher will answer a research question; and an overall structure for the procedures the research follows, the data the researcher collects, as well as the data analyses methods the researcher employed (Leedy & Ormrod, 2015; Saunders *et al*., 2016).

The research design is the starting point or road map outlining a carefully planned journey to make sure study-specific data will be collected and analysed. It is also a means to ensure that ethical issues and the constraints that could be encountered along the way, are considered. To structure the research design for the current study, a list of descriptors of research design by Cooper and Schindler (2014) was followed. These descriptors include the:

- degree to which the research question has been crystallised;
- method of data collection;
- power of the researcher to produce effects in the variables under study;
- purpose of the study;
- time dimension;
- topical scope;
- research environment; and
- participants' perceptions of research activity.

The above descriptors were used to guide the researcher on the fundamentals of research design, relating to the current study, incorporating relevant inputs from other research design and methodology experts. Each of the above-mentioned descriptors will now be discussed, with particular reference to the fundamentals of research design as relevant to the current study.

4.2.1 Degree of research crystallisation

According to Cooper and Schindler (2014), the degree to which the research question has been crystallised, can be viewed in two different ways, expressed as either an exploratory study or a formal study. What makes these two options different, are the immediate objective and the degree of structure of a study (Cooper & Schindler, 2014; Schindler, 2022).

An exploratory study is a valuable way to discover what is happening and to gain insights about a topic of interest (Saunders *et al.*, 2016). Whereas formal studies begin with a research question in mind and involve precise data source specifications and procedures, with the goal to answer the questions posed (Cooper & Schindler, 2014; Schindler, 2022).

The current study commenced with a research question in mind, guided by the research objectives and involving precise procedures from which to collect the data, therefore fitting the criteria of a formal study. However, the research question extended and added the intention to gain insights about the environmental consciousness of air travellers within a SA context. Within this context, there was no current information in SA on this topic, therefore fitting the criteria of an exploratory study to a degree. Cooper and Schindler (2014) state that few studies are completely uncharted and therefore may have elements of exploration in them. The current study was therefore a formal study with a degree of exploration.

4.2.2 Method of data collection

Data is evidence or information that is gathered for a research study and a data-collection method is a way in which the data is gathered for such a study (Quinlan *et al.*, 2019). Data collection methods differ mainly on three dimensions, namely the nature of the question asked, the method used to answer the question, and the degree of precision the method brings to answer the question (Salkind, 2018).

The current study involved communicating with air travellers as subjects, with the intention of eliciting a response, impersonally, by means of a questionnaire as the research instrument. Therefore, the current study followed a communication process as the method of collecting the primary data.

4.2.3 Control of variables

Many studies involve measuring one or more variables in some way. Often, these include complex variables, such as people's behaviours, opinions and/or attitudes about a specific topic, some of which have no ready-made, existing measurement instrument (Leedy & Ormrod, 2015).

The current study followed an ex post facto design. The ex post facto design, an "after the fact" design (Leedy & Ormrod, 2015), is a nonexperimental design that includes a number of different methods to describe relationships between variables. There is no attention to cause-and-effect relationships of variables in the latter design (Salkind, 2018). In the current study, air travellers were investigated in terms of their decision-making and EC relating to their air travel product consumer behaviour, where the relationships between selected factors could be examined. The researcher had no control over the variables in terms of being able to manipulate them (Salkind, 2018), as reporting was based on an existing situation which had already occurred. An ex post facto design is a valid research method that seeks truth and pursues the solution to a problem through the analysis of the data (Leedy & Ormrod, 2015).

4.2.4 Purpose of the study

The purpose of the current study fits the criteria of a descriptive and correlational study. The objective of descriptive research is to obtain an accurate profile of persons, events or situations (phenomenon) (Saunders *et al.*, 2016) and to describe the characteristics of an existing phenomenon (Salkind, 2018). Descriptive research is needed when the knowledge of a marketing aspect or market is vague or where the nature of the competition in a specific industry is unclear (Saunders *et al.*, 2016). A descriptive study can also go a step further to discover relationships or associations among different variables, labelling it a correlational study (Cooper & Schindler, 2022), as was the case with the current study.

With the aim of addressing research objectives that investigate descriptions of characteristics related to a subject population (the who, when, what, where, how, and how much of a topic), as well as to evaluate the percentage of a population that have these characteristics; and, to discover associations among variables (Cooper & Schindler, 2014; Schindler, 2022), the current study fits the criteria of both a

descriptive and correlational study. In the current study, SROs 1 to 4 and 6 are descriptive in nature, while SRO 5 is correlational.

4.2.5 Time dimension

Research studies have a time frame in which the data will be collected, which is dependent on the intended outcomes of the research. Two primary research methods have evolved with different time dimensions, namely, cross-sectional and longitudinal studies (Salkind, 2018). Cross-sectional studies are conducted once, representing a snapshot of one point in time. In contrast, longitudinal studies assess changes in behaviour over an extended time period, involving a repetitive measurement of the same group of subjects (Cooper & Schindler, 2014; Salkind, 2018; Schindler, 2022).

The current study aimed to capture the characteristics of air travellers (a group of subjects) at one point in time (a short and current time span). The current study followed a cross-sectional method. The use of the cross-sectional method was motivated by the advantages of the method, namely: it is inexpensive, it can be conducted over a short time span, therefore requiring no long-term cooperation between respondents, and it has a low drop-out rate (Salkind, 2018).

4.2.6 Topical scope

In terms of the topical scope of a study, researchers must distinguish between a statistical study and a study based on a specific case (Cooper & Schindler, 2014; Schindler, 2022). The latter, case studies, are an in-depth inquiry into a topic or phenomenon within its real-life setting (Saunders *et al.*, 2016). However, statistical studies are designed for breadth rather than depth and aim to gain data of a population's characteristics by making inferences from the characteristics of a sample (Cooper & Schindler, 2014; Schindler, 2022).

For the purpose of the current study, a statistical study approach was adopted to address the six SROs. The statistical nature of the current study addresses the objectives quantitatively and makes inferences from the characteristics of the sample.

4.2.7 Research environment

Research designs differ depending on their field conditions (actual environmental conditions) or under laboratory conditions (manipulated or staged conditions) (Cooper & Schindler, 2014; Schindler, 2022). The conditions under which the respondents (air

travellers) partook in the current study, are classified as actual environmental conditions. In the current study, two different, but similar approaches were taken both which represent field conditions. These approaches will be presented and discussed in detail in Section 4.5.3.

4.2.8 Participants' perceptual awareness

Participants' perceptions can influence the outcomes of a research study, subtly or dramatically, potentially reducing the usefulness of a design. Thus, it is necessary for researchers to be vigilant to effects that could alter the conclusions of a study (Cooper & Schindler, 2014; Schindler, 2022). The current study is quantitative in nature; therefore, the participants are referred to as respondents throughout. For the current study, the only point of contact, was upon approaching the respondent to make him/her aware of the current study, which also served as the invitation to respond to the survey.

Respondent anonymity was assured, ensuring that each respondent and their respective responses were impossible to trace personally. No incentives were offered to respondents to partake in the current study, giving the researcher reason to believe that they would not feel obligated to respond to the questions in a certain way which would be pleasing to the researcher. Finally, respondents were encouraged to answer as authentically as possible. While it was difficult to identify the level of influence a respondent may have had on the outcomes of the current study, proactive steps were taken to limit this influence.

Figure 4.2 below summarises the research design employed for the current study, guided by the abovementioned research descriptors.

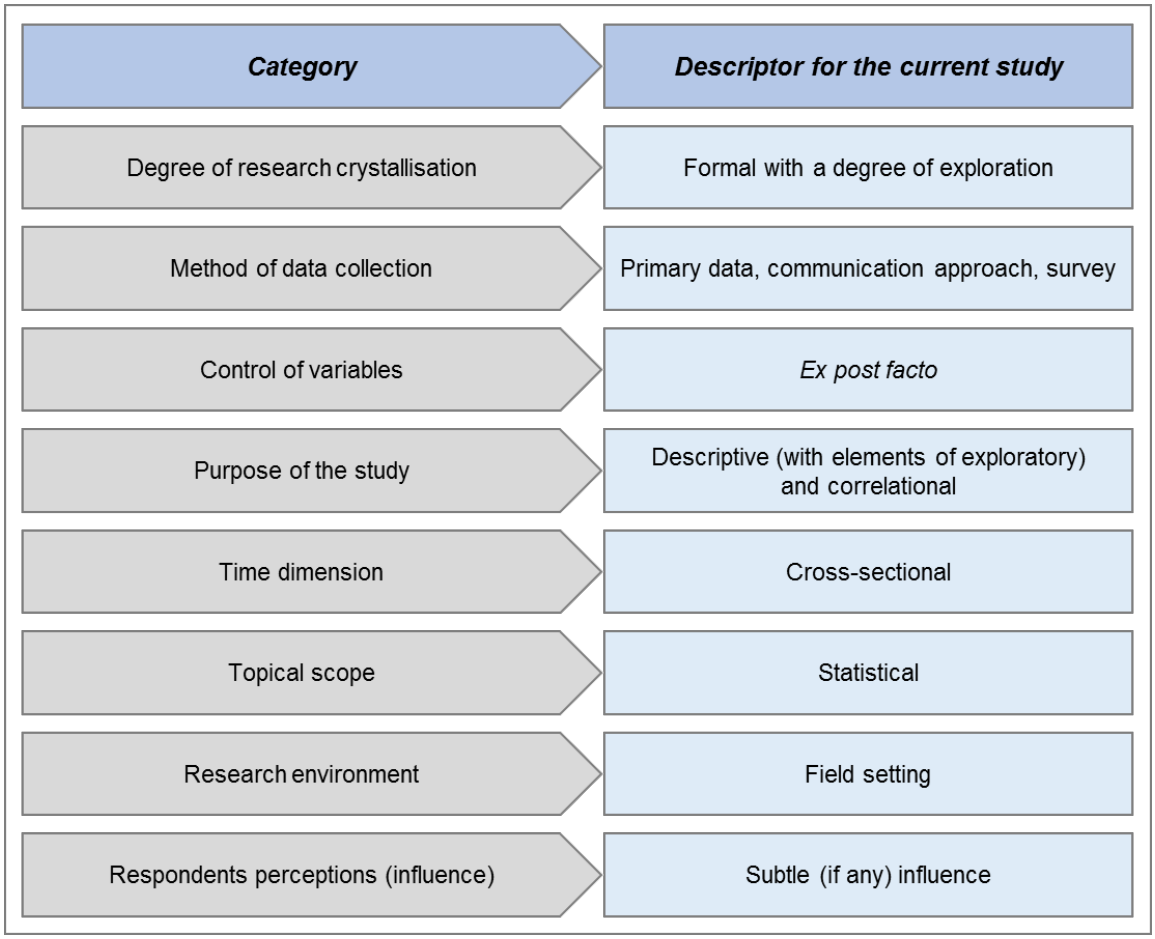


Figure 4.2: Research design summary

Source: Adapted from Cooper and Schindler (2014); Schindler (2022)

This section presented the research design of the current study. The next section discusses the research strategy.

4.3 RESEARCH STRATEGY

A research strategy, defined by Saunders *et al.* (2016), is the plan or approach of how a researcher will answer the identified research question. In quantitative research, a survey research strategy is typically conducted through the use of a questionnaire or structured interviews (Saunders *et al.*, 2016). The current study used a survey design, employing a self-reporting, structured questionnaire, administered in two different ways (using both a paper-based and an internet survey). The elements of the research strategy will be described in the sections which follow.

4.3.1 Survey strategy

A survey strategy was used as the primary method of data collection for the current study. A survey strategy is a popular strategy in business and management research, often used to answer 'who', 'what', 'where', 'how many' and 'how much' type questions (Saunders *et al.*, 2016). A survey strategy captures a moment in time (Leedy & Ormrod, 2015) and is well suited to large and geographically spread populations (Quinlan *et al.*, 2019). This strategy was identified as the best suited strategy for the current study's research design, which is characterised as being formal, descriptive, exploratory, quantitative, and cross-sectional.

A survey research strategy involves collecting information or data about one or more groups of people, in this case, about air travellers departing from an airport based in the Gauteng province of SA, travelling on a short-haul domestic route. To acquire the relevant data, air travellers were requested to answer questions regarding their socio-demographic status, their recent consumer flying behaviour, the importance placed on various ATSAs, as well as their EC, all of which are seen as factors influencing their decision-making. Thereafter, the respondents' answers (the data collected) were tabulated for analysis (Leedy & Ormrod, 2015). Refer to Section 5.2 and Chapter 5.

The survey research process is simplified by Leedy and Ormrod (2015), whereby the researchers present a series of questions to willing respondents; summarise their responses with frequency counts, percentages, or more sophisticated statistical indexes; and subsequently draw inferences about a particular population based on the responses of the sample. This strategy offers the opportunity for a researcher with a cross-sectional time frame to capture on-going activities at one point in time.

Therefore, the survey research process was a suitable strategy to gather the information required for the purpose of the current study. The next section focuses on the application of the survey strategy in the current study, by providing an overview of the structured questionnaire.

4.3.2 The questionnaire

Questionnaires, precisely structured information gathering instruments, are widely used in survey research (Quinlan *et al.*, 2019). A questionnaire is a universal term encompassing all data-collection techniques in which all respondents are asked to answer the same set of questions in a predetermined order (Saunders *et al.,* 2016).

Standardised questions, with the subsequent standardised questionnaire, allows data to be collected in a standardised way so that it is internally consistent and clear for analysis (Malhotra, 2011). A structured questionnaire was appropriate to achieve the research objectives for the current study, and in line with its descriptive nature. Therefore, this survey technique was used as the means to collect the primary data for the current study.

The questionnaire is discussed in detail in Section 4.4. The next section addresses the survey methods used in the current study.

4.3.3 Survey methods used in the current study

The questionnaire used in the current study was a structured and precise data-gathering instrument, with clear instructions for the prospective respondent. The questionnaire was self-explanatory and better suited to the respondent completing the questionnaire him/herself, without requiring the assistance of the researcher (Berndt & Petzer, 2013).

The questionnaire for the current study was administered in two different ways during the data-collection process: through the intercept- and computer-assisted self-administrated approaches. Thus, two survey methods were required. A paper-based self-administered survey was used for the intercept approach, while a computer-assisted self-administered survey (using an internet survey) was used for the internet-based approach (See Section 4.5.3). The latter survey method will hereafter be referred to as the internet-based survey.

With the internet-based approach, prospective respondents received an email or an inbox message via Facebook or LinkedIn social media platforms. The email or inbox message provided a brief background to, and the purpose of, the current study and requested the respondents to consider partaking in the current study. The invitation contained the hyperlink to direct the prospective respondent to the internet-based survey, which was hosted on the LimeSurvey web-based software for researchers.

The internet-based approach was considered for several reasons. The advantages of an internet-based approach include allowing the researcher to access a large sample rapidly, relatively easily, and at low cost (Quinlan *et al.*, 2019). Additionally, real-time viewing of incoming data and the rapid transmission of the data for analysis is highly

beneficial (Cooper & Schindler, 2014; Schindler, 2022). Disadvantages of this method, however, include the lack of access to computers and internet access for certain segments of the sample population (Quinlan *et al.*, 2019). This could be the case in SA where internet is expensive, and availability limited.

To counteract the abovementioned disadvantages, the intercept approach was employed. With the intercept-approach, a paper-based survey was self-administered by the researcher to air travellers at the ORTIA in Johannesburg. Thus, the latter approach is referred to as the *ORTIA intercept approach.* An advantage of the latter approach was that it allowed contact with respondents who would otherwise have been inaccessible, for example those who could not be reached by email or the internet, who were internet illiterate or had other technological limitations. Further advantages of this approach were rapid data collection; more complex instruments that could be used, and respondents time to think about the questions asked. The disadvantages, however, include a low response rate, especially when the instrument is long and if it is administered in a high-distraction environment (Cooper & Schindler, 2014; Schindler, 2022). The researcher for the current study experienced these disadvantages when executing the ORTIA intercept approach.

Further detail regarding how the abovementioned survey methods were employed among the sample population is presented in Section 4.5. The next section addresses the measurement instrument, including the design, pre-testing of the instrument and the data collection using the final survey.

4.4 MEASUREMENT INSTRUMENT

With a quantitative study, a method must be determined to measure the variables that need to be studied. An appropriate measurement procedure is therefore required to provide a solid basis on which a quantitative study will rest (Leedy & Ormrod, 2015). This section reflects the development of the measurement instruments for the questionnaire.

As already mentioned, the survey strategy for the current study was a self-administered questionnaire. The design of the measurement instruments to be included in the questionnaire for the current study was guided by the research purpose

and objectives. Furthermore, the literature set a foundation as the basis to develop the questions and from which to select the appropriate measurement levels and scales.

4.4.1 Levels of measurement

Researchers should aim to measure the variables of interest as precisely as possible to maximise the usefulness of the data gathered and to increase the general usefulness and power of conclusions (Salkind, 2018). Therefore, deciding on the appropriate level of measurement to meet the research purpose is necessary. There are four basic levels of measurement, namely, nominal, ordinal, ratio and interval scales (Leedy & Ormrod, 2015; Salkind, 2018).

Three of the four levels of measurement were used in the design of the questionnaire for the current study. Table 4.2 in Section 4.3.1, indicates the levels of measurement used in the current study, as linked to the respective questions in the research instrument.

4.4.2 Scaling techniques

Scaling techniques are broadly classified into two groups, namely, comparative scales and non-comparative scales (Wiid & Diggines, 2012). These scales and their respective techniques are presented in Figure 4.3 below.

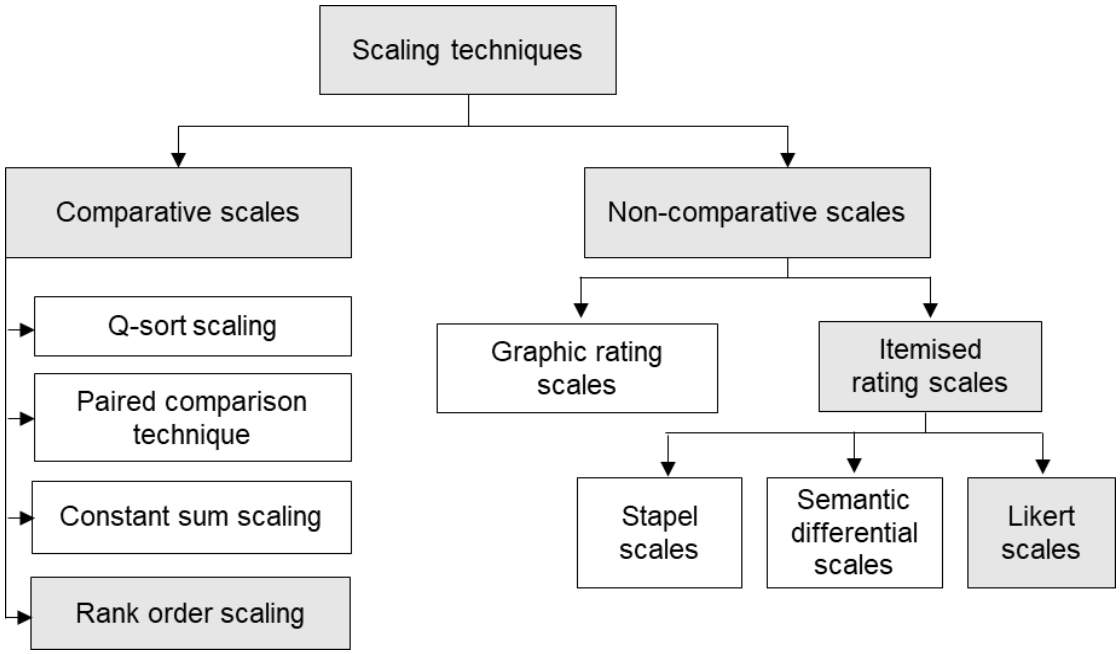


Figure 4.3: Classification of scaling techniques

Source: Adapted from Wiid and Diggines (2012:163)

The comparative and non-comparative scales shaded in grey in Figure 4.3 were used in the current study. Comparative scales include paired comparison scaling, Q-sort scaling, rank order scaling, and constant sum scaling, where the respondent is required to compare two or more objects with a comparative scaling technique. In the comparative scale category, only rank order scaling was used in the questionnaire for the current study. This method ranks objects in an order of preference, according to the attitude being tested. In doing so, the respondent needs to realistically discriminate between products or product attributes (Wiid & Diggines, 2012). For example, in the current study, respondents were asked to rank the airlines in SA they prefer to fly with.

Non-comparative scaling techniques consist of staple scales, semantic differential scales and Likert scales, as illustrated in Figure 4.3. The Likert scale is the most frequently used scale in marketing research and the only non-comparative scaling technique used in the current study. The Likert scale is an itemised rating scale where the respondent is given a carefully constructed statement, ranging from very negative to very positive attitudes towards a variable/object/construct. The respondent must select the description that best suits his/her rating of the object, indicating how strongly he/she agrees with a statement or series of statements. Respondents generally choose from the following five response alternatives: strongly disagree, disagree, uncertain/neither agree or disagree, agree and strongly agree (Wiid & Diggines, 2012; Saunders *et al.*, 2016; Quinlan *et al.*, 2019). While the number of alternatives may range to up to 10 or more, each Likert scale item in the current study's survey, were scaled between one and five.

4.4.3 Questionnaire design for the current study

The questionnaire for the current study was developed in 2017, well before the Covid-19 pandemic caused turbulence in the airline industry. The research timeline is depicted in Figure 1.1 in Chapter 1 as well as in Figure 4.5, Section 4.5.3. Of course, the Covid-19 pandemic has had undeniable, uncontrollable and unprecedented repercussions on air traveller consumer behaviour and the airline industry, as outlined in Chapters 2 and 3. Although the questionnaire for the current study was designed prior to the Covid-19 pandemic, its contribution is still of value to both industry and academia for reasons already expressed in Chapter 1 and to be further expounded on in Chapter 6. The questionnaire design for the current study follows.

According to Saunders *et al.* (2016), a questionnaire should have an order and flow that is logical to the respondent. To ensure smooth and logical flow of the questionnaire for the current study, questions were structured according to themed sections. All questions in the respective sections enquired about the respondents' domestic air travel activities within SA, departing from an airport based in the Gauteng province, within their last 12 months of domestic air travel only.

Structured according to four sections, the questionnaire included Section A: Air travel behaviour; Section B: Air travel product/service attributes; Section C: Air traveller environmental consciousness, and; Section D: Socio-demographic information. The questions were informed by relevant literature and relate to the research objectives of this study. Each of these sections will be elaborated upon, with reference to the respective questions asked in the questionnaire. The questions are numbered in accordance with the numbering used in the paper-based, self-administered ORTIA intercept approach questionnaire, as presented in Appendix B.

Section A: Air travel behaviour

Section A was designed to collect the relevant data pertaining to the respondent's current air travel behaviour, such as purpose and frequency of air travel, airport use, airline use and preference, mode of booking and means of funding the ticket. Firstly, to ensure that only respondents who fulfilled these criteria completed the questionnaire, Question 1 presented a screening question, also referred to as a filter question. This ensured that respondents who did not fulfil the criteria of the study, did not respond.

The options presented to the respondents included travel by air to another airport in SA for the purpose of leisure only (Question 1.1.1); for the purpose of business only (Question 1.1.2), or; for the purpose of both business and leisure (Question 1.1.3). The fourth option provided for this question was: "I have <u>not</u> travelled by air to another airport in SA in the last 12 months" (Question 1.1.4).

The purpose of the screening question was two-fold. Firstly, it served to determine what type of domestic air travel the respondents had undertaken during the twelve months prior to responding to the survey. Secondly, it was a screening question to ensure that only those travellers who fell within the scope and criteria of the current study progressed to answer the questions presented in the survey.

The period of twelve (12) months was selected to ensure that the air travel experience was fresh in the participants' mind and relevant to this cross-sectional period. If respondents selected the fourth option, "…not travelled by air to another airport in SA in the last 12 months", they were thanked for their time and willingness to participate in this study, but the interview was discontinued. Refer to questions 1 to 7 (Q1 to Q7) in Table 4.2.

Section B: Air travel product/service attributes

Section B questioned respondents on the level of importance they place on specific air travel products and service attributes, namely, tangibility, reliability and operational efficiency, price and loyalty, customer service, value-added services, VIP value-added services and green attributes. In addition, respondents were questioned on the type of air travel ticket and carrier type they usually make use of, and any additional services or 'frills' that are usually included in the total cost of their air ticket. Refer to Questions 8.1 to 16 (Q8.1 to Q16) in Table 4.2.

Section C: Air traveller environmental consciousness

Section C questioned respondents about their level of agreement regarding certain dimensions of their environmental consciousness, namely, their environmental knowledge, environmental awareness/concern, environmental attitudes and environmental behaviour – all relating to air travel. Refer to Questions 17.1 to 20.10 (Q17.1 to Q20.10) in Table 4.2.

Section D: Socio-demographic information

Finally, Section D consisted of socio-demographic questions, pertaining to the respondents' age, gender, level of education, salary scale and position in the workplace (if employed). This section was placed at the end of the questionnaire, based on the recommendation by Cooper and Schindler (2014). Refer to Questions 21 to 27 (Q21 to Q27) in Table 4.2.

4.4.3.1 Research objectives and survey questions matrix

An overview of the link between the SRO of the current study, the questions posed in the survey, the measurements used, and the sources of literature consulted, are presented in Table 4.2 below (refer to Table 4.1 in Section 4.1 for a recap of the SROs).

Table 4.2: Secondary research objectives and survey questions matrix

Survey section and SRO	Corresponding question number in the survey (according to the questionnaire presented in Appendix B)			Type of question	Source used to inform or adapt the question
	Qu. No.	The question addresses:	Classification		
Section A SRO1 and screening question	Q1.1	Whether the respondent has travelled in the last 12 months.	Nominal	Multiple-choice, single response.	Adapted from Suki (2014).
Section A SRO1	Q1.2	The main purpose (leisure or business) of air travel.	Nominal	Dichotomous.	Informed by Mayer (2013) and Chen and Chao (2015).
	Q2	Flight frequency in terms of departing flights from ORTIA in the last 12 months.	Nominal	Multiple-choice, single response.	Adapted from London Gatwick Airport Survey (2017).
	Q3	Gauteng airport most frequently departed from.	Nominal	Multiple-choice, single response.	Researcher's own.
	Q4	Flying frequency with specific airline(s).	Nominal/ Ordinal	5-point Likert-scale, using the scales "Never", "Almost never", "Occasionally", "Almost every time", "Always". Multiple-choice, with multiple responses, one response per airline.	Researcher's own. Scale anchors adapted from Vagias (2006).
	Q5	Airline preference by rank.	Ordinal	Multiple-choice question, requiring the respondent to select 3 options in rank order according to preference, with "1" being most preferred, "2" the second preferred, and "3", the third preferred.	Researcher's own.
	Q6	Channel/mode of flight booking.	Nominal	Multiple-choice, single response.	Adapted from Mayer (2013).
	Q7	Payment source	Nominal	Multiple-choice, single response.	Researcher's own.

Survey section and SRO	Corresponding question number in the survey (according to the questionnaire presented in Appendix B)			Type of question	Source used to inform or adapt the question
	Qu. No.	The question addresses:	Classification		
Section B SROs 2 and 5	Q8- Q14	The importance placed on a variety of factors influencing the decision-making of the air traveller, using 7 constructs and 41 items.	Ordinal	5-point Likert-scale, using a scale of 1 to 5, where 1 is "Not important" and 5 is "Very important".	Informed by Mason (2000, 2001), Tsaur, Chang and Yen (2002), Fourie and Lubbe (2006), Lubbe and Louw (2010), De Jager *et al. (*2012), Mayer *et al.* (2012); Mayer (2013), Chen (2013), Chen and Chao (2015).
	Q8.1 – 8.5	Importance placed of *tangibility* as a construct, using 5 items.			
	Q9.1 – 9.5	Importance placed on *reliability and operational efficiency* as a construct, using 5 items.			
	Q10.1 – 10.7	Importance placed on *price and loyalty* as a construct, using 7 items.			
	Q11.1-11.5	Importance placed on *customer service* as a construct, using 5 items.			
	Q12.1-12.5	Importance placed on *value-added services* as a construct, using 5 items.			
	Q13.1-13.7	Importance placed on *VIP value-added services*, using 7 items.			
	Q14.1-14.7	Importance placed on *green attributes* as a construct, using 7 items.			
Section B SRO 1	Q15	Type of air ticket usually bought/consumed.	Nominal	Multiple-choice, single response.	Researcher's own.
	Q16	Additional services/'frills' usually included in cost of air travel ticket	Nominal	Multiple-choice, requiring multiple responses.	Adapted from Edwards (2011).
Section C	Q17-	The level of agreement according to a number of constructs influencing the			

Survey section and SRO	Corresponding question number in the survey (according to the questionnaire presented in Appendix B)			Type of question	Source used to inform or adapt the question
	Qu. No.	**The question addresses:**	**Classification**		
SROs 3, 4 and 5	Q20	environmental consciousness of the air traveller, 4 constructs and 31 items.	Ordinal	5-point Likert-scale, using a scale of 1 to 5, where 1 is "Strongly agree" and 5 is "Strongly disagree".	The construct items were informed by various authors, as indicated below. Informed by Dunlap and Van Liere (1978), Gössling and Peeters (2007), Sanchez and Lafuente (2010), Lassen (2010), Cowper-Smith and De Grosbois (2011), Higham and Cohen (2011), Mair (2011), Chen (2012), Chen *et al.* (2011), Mayer (2012, 2013), Blok *et al.* (2015), Araghi *et al.*(2016), Higham *et al.* (2016), Viviers, Botha and Marumo (2017).
	Q17.1 – 17.5	Level of agreement placed on 5 items intended to measure the *environmental knowledge* of the air traveller.			
	Q18.1 – 18.7	Level of agreement placed on 7 items intended to measure the *environmental awareness/concern* of the air traveller.			
	Q19.1 – 19.9	Level of agreement placed on 9 items intended to measure the *environmental attitudes* of the air traveller.			
	Q20.1 – 20.5	Level of agreement placed on 10 items intended to measure the *pro-environmental behaviour* of the air traveller.			
Section D SRO 6	Q21	Understand the behaviour and environmental consciousness of an air traveller according to age.	Ordinal	Multiple-choice, single response.	
	Q22	Understand the behaviour and environmental consciousness of an air traveller according to *gender.*	Nominal	Dichotomous	
	Q23	Understand the behaviour and environmental consciousness of an air traveller according to the *education level* of air travellers.	Ordinal	Multiple-choice, single response.	
	Q24	Understand the behaviour and environmental consciousness of the air	Ratio	Multiple-choice, single response.	Adapted from BMR, SA (BusinessTech, 2016).

Survey section and SRO	Corresponding question number in the survey (according to the questionnaire presented in Appendix B)			Type of question	Source used to inform or adapt the question
	Qu. No.	The question addresses:	Classification		
		traveller according to different *salary scales* (classes in SA according to the BMR) of air travellers.			
	Q25	Understand the behaviour and environmental consciousness of the air traveller according to the air travellers' *employment status.*	Nominal	Multiple-choice, single response.	Researcher's own.
	Q26	Understand the behaviour and environmental consciousness of the air traveller according to the air travellers' *position* within the workplace.	Nominal	Multiple-choice, single response.	Researcher's own.
	Q27	Understand the behaviour and environmental consciousness of the air traveller according to the type of organisation the air traveller is employed by.	Nominal	Multiple-choice, single response.	Researcher's own.

Source: Researcher's own compilation

This section provided the structure for the questionnaire design for the current study. Before finalising the research instrument (presented in Appendices B and C), it needed to be pre-tested, the process of which is highlighted in the section below.

4.4.4 Pre-testing of the research instrument

Part of the data-gathering stage of the research process is to aid in improving the rigour and validity of a research instrument by pre-testing the questionnaire. Pre-testing the questionnaire, also known as pilot testing, is done to test and identify weaknesses in a study's design, data-collection instruments, and procedures (Quinlan *et al.*, 2019). To a large extent, the internal validity and reliability of the response rate achieved, and the data collected, depends on the design of the questions, the rigour of the pilot test and the structure of the final questionnaire (Saunders *et al.*, 2016).

The questionnaire used for the current study was therefore improved with the help of a pre-test. A pre-test was done as the first step of the data-gathering phase for the current study. This was an important process undertaken to identify and eliminate potential problems or weaknesses and ultimately improve the rigour and validity of the questionnaire.

When conducting the pre-test, between 15 and 30 respondents are recommended (Malhotra, 2011). The pre-test of the research instrument used in the current study involved testing the questionnaire over three phases, namely personal interviews (Phase 1), paper-based distribution of the questionnaire (Phase 2) and finally, the electronic compilation and distribution of the survey (Phase 3).

The initial pre-test phase (Phase 1) of the current study was done by conducting personal interviews. It is recommended that personal interviews are placed at the beginning of the questionnaire, so that the interviewer can observe the respondent's reactions and attitudes (Malhotra, 2011). The pilot study may rely on actual respondents, research colleagues or respondent surrogates, to refine the measuring instrument (Cooper & Schindler, 2014; Schindler, 2022). During the month of August 2017, Phase 1 of the pre-test for the current study was conducted amongst five colleagues who fulfilled the criteria to respond. Since the pre-test was done during the design stage of the questionnaire, it involved rephrasing some ambiguous questions and instructions to ensure that the questions could be decoded with ease and as intended.

Once the necessary changes had been made after Phase 1, Phase 2 of the pre-test was administered amongst 30 prospective respondents (colleagues and peers), using a paper-based self-administered survey. Phase 2 took place during September 2017, allowing any identified problems to be corrected before the creation and pre-testing of the internet-based version of the survey. Finally, Phase 3 involved creating and distributing the internet-based survey for a pre-test. During October 2017, this version was distributed to 21 colleagues and peers, inviting them to respond to internet-based survey pre-test, and to report on any issues they may have encountered.

In addition to the abovementioned phases, consultations with an expert in questionnaire design, a statistician, took place with the view to increasing the reliability and validity of the research instruments. This included analysing the data retrieved from the pre-test of the internet-based survey. Once issues on the survey instrument were addressed and corrected, the survey was ready for the official data-collection process to commence. The primary data collection using the final research instrument is discussed next.

4.4.5 Primary data collection using the final research instrument

All preceding sections in Chapter 4 were steps leading to the aim of this chapter, namely, the collection of the primary data from the sample frame selected for the current study. Once the pre-test phases were concluded, the primary data collection could commence.

The primary data collection for the current study occurred over a period of five months, from 30 October 2017 to 31 March 2018. Two different sampling plan approaches were employed for the current study (see Section 4.5.3); hence, the final research instrument was distributed in two different ways to collect the primary data, as mentioned in Section 4.3.3.

During April 2018, the researcher collated the final data from both research instruments (the paper- and internet-based surveys) and prepared the data for analysis. (Refer to Section 5.2 for a description of the data cleaning process followed for the current study.) The data-collection process used for each sampling plan approach will be discussed in detail in Section 4.5.3.

Section 4.4 discussed the measurement and scaling techniques and illustrated the types of questions and levels of measurement used to design the questionnaire for the current study. The structure of the research instrument was presented, and the pre-test phases of the survey were discussed. These were precursor steps necessary before the primary data-collection process could commence. The primary data-collection process was introduced in this final section of Section 4.4. The next section describes the research universe of the current study.

4.5 RESEARCH UNIVERSE

The previous section described the creation and fine-tuning of the measurement instrument. This section outlines how the survey questions for the current study were employed to collect the primary data required. The section commences with a discussion of the target population and the sampling methods chosen for the current study. A discussion follows of the sample size and the relevant aspects to specifically be taken into consideration in the current study, concluding the section with an outline of the sampling plan selected for the current study.

4.5.1 Target population

A population is the full set of cases from which a sample is chosen (Saunders *et al.*, 2016). Cooper and Schindler (2014) referred to a population as the total collection of 'elements' from which a researcher intends to make inferences; where a population 'element' is the subject, or rather, the individual respondent on which the measurement is being taken. For the purpose of the current study, the population element (unit of analysis) in the target population constitutes air travellers, more specifically, air travellers who have travelled by air in the domestic travel market in SA, having departed from an airport in Gauteng. The next section describes sampling and sampling methods as relevant to the current study.

4.5.2 Sampling and sampling methods

The goal of sampling is to acquire information regarding a large population by surveying a portion or sample of that particular population (Leedy & Ormrod, 2015). The members of a sample are selected on a probability basis (probability sampling) or by another means (non-probability sampling) (Cooper & Schindler, 2014; Schindler, 2022). A non-probability sampling method was employed for the current study.

Non-probability sampling refers to a sampling technique whereby units of the sample are selected based on personal judgement or convenience, and the probability of any member of the population being chosen is not known (Quinlan *et al.*, 2019). In other words, potential members of the sample do not have an independent and equal chance of being selected (Salkind, 2018). A downfall of this method is an increased possibility of bias entering the sample selection procedure, with distorted findings being a consequence.

While probability sampling presents technical advantages over non-probability sampling, there are practical reasons for using non-probability sampling as a more suitable method (Cooper & Schindler, 2014; Schindler, 2022). As was the case for the current study, the use of non-probability sampling procedures can be justified as more suitable as they satisfactorily met the sampling objectives of the current study and accommodated the time and cost factors.

Although a non-probability sampling method is not representative of the population, it is selected to represent the population studied (Quinlan *et al.*, 2019). For the current study, the emphasis was on the capacity of the sample to clearly and comprehensively illustrate the phenomenon under investigation, making it a suitable method.

From an access perspective, gaining access to airline databases, which include complete lists (sample frame) of air travellers, was not possible. Airlines, as with all organisations in SA, are required by law, through the Protection of Personal Information Act (POPIA), to safeguard their customers' personal details. From a time perspective, attempting to gain support and permission to access air travellers through airlines operating within SA, added a significant amount of time to the project timeline, leading to grave delays in the research process. From a finance perspective, a delayed timeline can be costly.

With the above considerations in mind, non-probability sampling was the most suited method and only the feasible option to employ in the current study. The non-probability sampling methods employed in the current study include purposive and snowball sampling. These methods are discussed in the section which follows.

4.5.3 Sampling plan

As previously mentioned in Section 4.5.1, the unit of analysis for the current study is the air traveller who has flown domestically within SA. Further criteria for eligibility to partake in the current study stated that the air traveller must have flown from an airport based in Gauteng during the twelve months preceding their survey participation and must be 18 years of age or older. The unit of analysis were approached in two different ways, making the sampling plan for the current study twofold.

As introduced in Section 4.3.3, approach one entailed the ORTIA intercept approach, while approach two entailed the internet-based approach. These two approaches are outlined in Figure 4.4 below and discussed in detail in the sub-sections which follow.

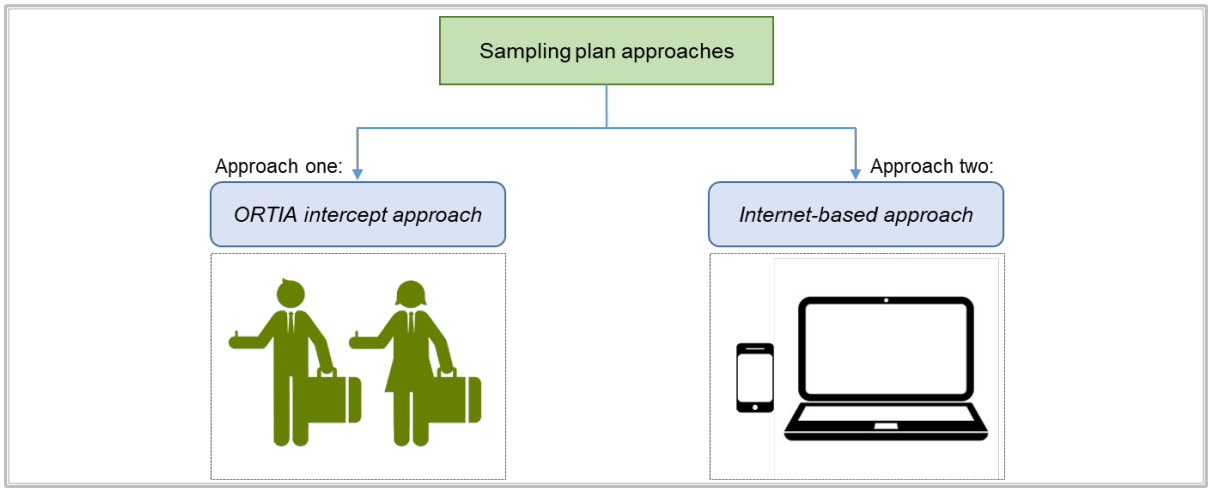


Figure 4.4: Sampling plan approaches for the current study

Source: Researcher's own compilation

Sampling plan approach one: The ORTIA intercept approach

Approach one, the *ORTIA intercept approach,* entailed intercepting the domestic air traveller (unit of analysis) at the ORTIA, as the origin of their departing flight on a domestic route within SA. This constitutes a purposive sampling method which occurred under field conditions at ORTIA (see Section 4.2.7), thus considering the passengers' actual air travel behaviour.

The *ORTIA intercept approach* was intended to commence in October 2017, however, was delayed until 24 January 2018. The delay was a result of difficulty obtaining access to the relevant gatekeepers and awaiting official permissions to intercept air travellers at Gauteng airports. Without permission, this sampling approach could not be executed. In November 2017, gatekeeper permission was granted by ACSA to conduct fieldwork at ORTIA, however, with respective date and area restrictions. The

area restrictions entailed receiving limited access to the public area of “Terminal B: Domestic Departures” at ORTIA (opposed to the requested “air side”/boarding gates) to conduct the fieldwork. The letter of permission from the ACSA gatekeeper is presented in Appendix A.

The ORTIA intercept approach was conducted by the researcher between 24 January and 30 January 2018. The approach entailed face-to-face interception of air travellers who were departing from Terminal B at ORTIA, inviting them to respond to the survey by completing the paper-based questionnaire.

The ORTIA intercept approach, was a suitable sampling plan for the current study, as ORTIA is the largest airport in SA (in terms of size and air passenger numbers) and all FSCs and all LCCs serving the domestic air travel market in SA during the cross-section of time, operated from this airport, increasing the chances to represent the sample of air travellers. However, with restricted access, prospective respondents were difficult to intercept by the researcher (only one fieldworker was permitted) and essential insights from potential air traveller segments could have been missed.

Due to time and financial constraints, as well as the anticipation of the abovementioned limitations involved with intercepting prospective respondents at Gauteng airports, it was necessary to employ an additional sampling technique, namely, *the internet-based approach.* The internet-based approach is discussed in the section which follows.

Sampling plan approach two: The internet-based approach

The second sampling plan approach entailed access to the unit of analysis via an internet-administered approach, called the *internet-based approach* in the current study. This approach was conducted as an extension of sampling approach one, the *ORTIA intercept approach.* Domestic air travellers were approached through the internet via email as well as social media platforms. The internet was a suitable field condition, as the consumers would most likely respond in this environment (for example, at work or at home) from where the decision to travel and, in many cases, the actual air travel booking often takes place.

The *internet-based approach* commenced on 30 October 2017 and remained in circulation for five months, until 31 March 2018. This sampling plan was employed by approaching prospective respondents (based on the researcher’s judgement) via

email and social media platforms (LinkedIn and Facebook platforms) on the internet. This approach therefore constituted a purposive sampling technique, as the researcher made a judgement call about who to include in the sample and the units of analysis were chosen for a particular purpose (Quinlan *et al.*, 2019). However, the sampling plan was not limited to only this method. The researcher requested respondents to refer her to other suitable candidates or to forward the invitation to candidates who also fit the inclusion criteria; who in turn, identified others, and so on. The idea was to create a "snowball" effect which gathered population elements as it rolled along (Cooper & Schindler, 2014; Schindler, 2022), until it had reached the suitable number of respondents (or saturation point), to complete the sample (Quinlan *et al.*, 2019).

In exercising caution when conducting research amongst the online audience to ensure as representative a sample as possible (Berndt & Petzer, 2013), the researcher also requested her social platform networks to invite people in their respective networks who were believed to fulfil the criteria of the current study, to respond. Additionally, a public link was posted on the researcher's LinkedIn and Facebook profiles, which was 'shared' by some connections via their own profiles to inform those in their network (initially beyond the researcher's reach). Furthermore, the invitation to the internet-based survey was also publicised in the National Business Initiative's (NBI) weekly electronic newsletter during November and December of 2017.

In summary, a combination of purposive and snowball sampling plans were used for the current study. Figure 4.5 graphically depicts the timeline of the data-collection process for the current study, executed through the abovementioned sampling methods.

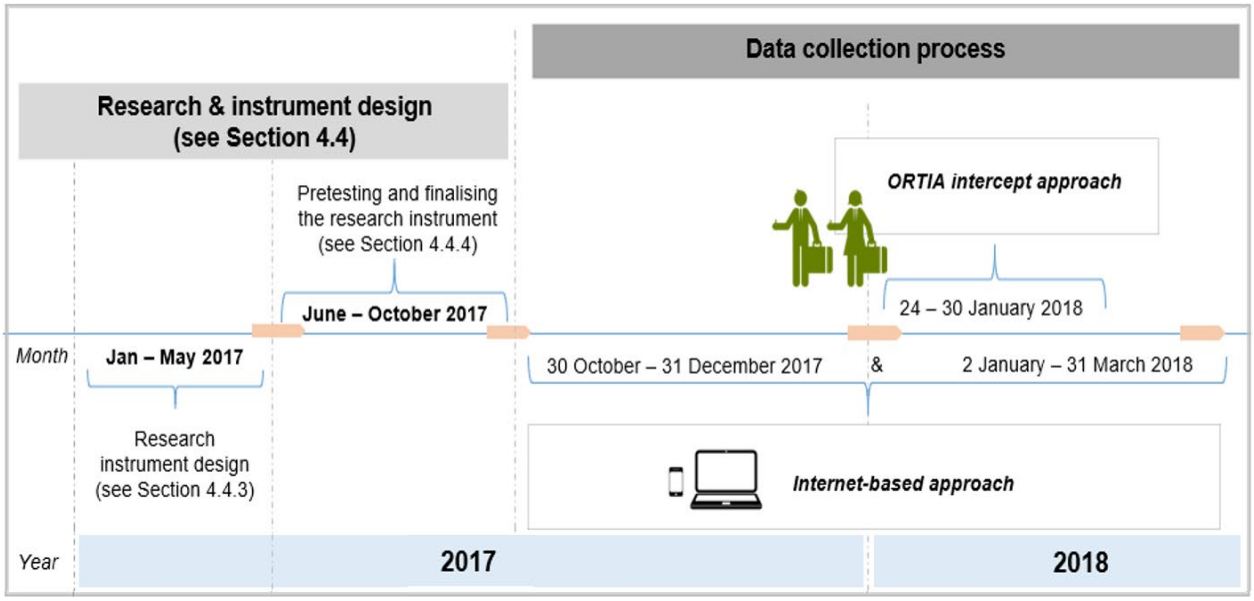


Figure 4.5: Timeline of the data-collection process using the two sampling approaches

Source: Researcher's own compilation

Figure 4.5 above illustrates the timeline of the data-collection process for the current study, executed through the two sampling methods. Figure 1.1 (Chapter 1) illustrated how the data-collection process in 2017 and 2018 is positioned in the full research timeline of the current study.

This section reflected upon the sampling plan. The sample size is discussed in the next section.

4.5.4 Sample size

There are numerous factors which have an influence in calculating sample size. Leedy and Ormrod (2015) shared what is called a basic rule in sampling, namely: *the larger the sample, the better.* While some believe that bigger is better, Salkind (2018) noted that this strategy does not always make scientific or economic sense, as a sample that is too big does not increase the precision of testing a question beyond the trouble and costs incurred in obtaining that sample size. However, a larger sample size is recommended to account for low response or non-response, and to reduce the sampling error (a value which researchers aim to reduce) (Salkind, 2018).

The less sampling error a researcher is willing to tolerate, the larger the sample will need to be. As sample size increases, the sampling error decreases (Bryman, 2016). If a 95% confidence level, with a 5% margin of error is sought by a researcher for a

population exceeding one million, a sample size of 384 units is considered the “magic number” and sufficient (Memom, Ting, Hwa, Ramayah, Chuah & Cham, 2020).

Considering the 2017/2018 FY ACSA (2017; 2021) passenger statistics, the domestic passenger traffic departing from ORTIA (domestically, departing to another airport in SA) totalled 5.96 million air travellers, or an average of 1.19 million per month (between November 2017 and March 2018, during the data-collection period). Considering the departing air traveller figures from the ORTIA, not everyone in this population could be reached for inclusion in the current study (and for reasons discussed in Section 4.5.2). Therefore, for the current study, a sample size of 400 air travellers was aimed for, which would translate to an acceptable 95% confidence level and 5% margin of error.

Considering the sampling limitations posed during the data-collection phase, as well as time constraints, the researcher was prepared to close the survey at 384 respondents (upon reaching the “magic number”) for a population size which is greater than one million. After five months of the survey being in circulation, the respondent numbers had climbed to a figure of 394 respondents (deemed adequate for the purposes of the current study).

A summary of the research universe for the current study is presented in Table 4.3 below.

Table 4.3: Research universe summary for the current study

Category	Sampling strategy
Target population	Domestic air travellers.
Unit of analysis	Domestic air travellers departing from an airport based in Gauteng.
Sampling method	Non-probability; purposive and snowball sampling.
Sampling plan	ORTIA intercept approach (purposive) and internet-based approach (purposive and snowball).
Sample size	394.

Source: Researcher’s own compilation

The research universe for the current study comprised the target population, sampling and sampling methods, the sampling plan and the sample size. The next section discusses the data analysis used in the current study.

4.6 DATA ANALYSIS

The above sections presented the procedures to enable the collection of quantitative data in a raw form. Once the data-collection process in the current study had been completed, the data analysis procedure was ready to commence. This section will briefly describe data analysis with a focus on the categories of data analysis techniques that were employed in the current study.

Raw data must be processed and analysed to make it useful and to create information, or convey meaning, through interpretation. Quantitative analysis techniques assist with this process, ranging from simple tables and graphs showing frequencies of occurrences, to more complicated techniques that establish statistical relationships between variables, to slightly more complex techniques as statistical modelling (Saunders *et al.*, 2016).

Using IBM's SPSS, version 25, the data collected in the current study was used to run descriptive, inferential statistics and multivariate statistics as well as the respective analyses. The sections which follow will broadly describe the data analysis techniques used in the current study.

4.6.1 Descriptive statistics

The first step of data analysis for the current study was the descriptive statistics which were used to describe the data gathered (Quinlan *et al.*, 2019). Descriptive statistics are the most efficient means to summarise characteristics of large datasets (McDaniel & Gates, 2013). Every variable in the gathered data, such as age, income, gender and level of education, can be described using descriptive statistics. This can be done in a variety of ways using measures of central tendency (mode, mean and median), measures of dispersion (range, standard deviation and interquartile range), and other measures, such as frequency distributions and percentages (Quinlan *et al.*, 2019).

Frequency distribution is used in the current study to condense information into a simple format to illustrate how variables are distributed so that clear deductions of the data can be made (Quinlan *et al.*, 2019). **Percentages** are used in the current study to reveal the relative importance of figures and tables more clearly than simply presenting the original data. Finally, **measures of central tendency** are used in the

current study to reduce a series of data to a single figure or an average using the mean, median and mode (Quinlan *et al.*, 2019).

Figures and tables were created by the researcher, following an interpretation of the descriptive data, and are presented in Chapter 5.

4.6.2 Inferential statistics

Inferential statistics were used in the current study to infer what the sample population might think, or do, and to draw conclusions which extend beyond the descriptive data. Inferential statistics include *t*-tests, the ANOVA, correlation tests, simple linear regression and multiple linear regression (Quinlan *et al.*, 2019). For the current study, correlation and *t*-tests were the inferential statistical analyses employed.

T-tests are used to discover whether statistically significant differences exist between the means of two groups (Cohen, Manion & Morrison, 2011; Quinlan *et al.*, 2019). T-tests were used in the current study as the researcher sought to discover whether statistically significant differences exist between business and leisure domestic air travellers (the purpose of air travel) and those who most frequently travel with FSCs versus those who most frequently travel with LCCs (consumer behaviour of air travellers). The *t*-test analyses are presented in Section 5.9 (Chapter 5).

Correlation tests are used to determine and measure statistical relationships between a set of variables, designed to provide information about the degree of association between the variables (Quinlan *et al.*, 2019). In the current study, correlations between several factors were done to answer three questions about two sets of variables, namely: 1) is there a relationship between the two sets of variables? 2) If yes, is the direction positive or negative? 3) What is the statistical value and strength of the relationship (determined using a correlation coefficient value ranging from -1.0 to +1.0)? (Cohen *et al.*, 2011; Quinlan *et al.*, 2019). The correlation analyses are presented in Section 5.10 (Chapter 5).

4.6.3 Multivariate analysis

Exploratory Factor Analysis (EFA), a multivariate statistical analysis technique, simultaneously analyses multiple measurements on the objects under investigation, in other words, any simultaneous analysis of more than two variables (Hair, Black, Babin

& Anderson, 2014). EFA was an additional statistical technique used to analyse the data collected in the current study.

The EFA was identified as the first step of the inferential statistical analysis in the current study, before the *t*-tests and correlations could be conducted. Hair *et al.* (2014) explain that the EFA explores the data to provide information about how many factors truly exist and which variables belong with which constructs. A distinctive characteristic of the EFA is that factors are derived from statistical results, rather than from theory (although they are usually informed by theory) (Hair *et al.*, 2014).

The EFA was the most suitable procedure to statistically test various Likert-type scales in the current study, as the research survey was not already in existence. Rather, the survey was compiled by the researcher by consulting relevant literature, adapting scales from existing research instruments and creating new scales. The EFA was therefore the statistically appropriate technique to group variables, identify sound constructs and determine whether they were appropriate for further statistical analyses such as correlations and *t*-tests. The results of the EFA were then checked for internal consistency using the Cronbach alpha statistic (Creswell, 2014). The results of the EFA and the construct validity and reliability for the ATSA and EC factors are presented in Sections 5.7 and 5.8 (Chapter 5), respectively. The next section, Section 4.7, discusses the data validity and reliability for the current study.

4.7 DATA VALIDITY AND RELIABILITY

While a valid questionnaire aids the collection of accurate data which measures the concepts a researcher is interested in, a reliable questionnaire will mean that these data can be collected consistently (Saunders *et al.*, 2016). This section addresses the concepts of validity and reliability, and more specifically refers to the validity and reliability of the measuring instruments used for the current study.

4.7.1 Validity

Validity refers to the degree to which a research instrument measures what it intended to or is supposed to measure (Leedy & Ormrod, 2015; Salkind, 2018). It relates to how robust, reasonable, meaningful, useful, truthful and logical the research is (Quinlan *et al.*, 2019). Validity can be measured using criterion, content and/or construct validity (Salkind, 2018).

The research instruments used in the survey created for the current study were adapted from various sources of relevant literature. Therefore, to establish the validity of the instruments for the current study, the research instrument was checked by peers, colleagues and a statistician during the pre-test phase. The colleagues checked the survey from a content- and respondent- perspective – ensuring that the measurements appeared logically in order to accurately reflect what the instrument intended to measure. The statistician checked the survey from a construct and data analysis perspective.

4.7.2 Reliability

Trustworthy, predictable, dependable, stable and consistent; these are some synonyms used to help explain the term reliability (Salkind, 2018). Reliability refers to the degree to which the data-collection techniques will produce consistent results in a different setting, when the unit being measured is unchanged (Leedy & Ormrod, 2015; Saunders *et al.*, 2016). It is an indicator of a research instrument's internal consistency and dependability of the research to the degree to which the research would obtain consistent results when repeated (Quinlan *et al.*, 2019).

There are several types of reliability, including test-retest and internal consistency (Salkind, 2018). Internal consistency, using Cronbach's alpha, was the reliability type used in the current study to measure how consistently each item measured the same underlying construct (Salkind, 2018). If a Cronbach Alpha coefficient of a construct is a value of 0.7 or higher, it indicates an acceptable level of internal consistency (Saunders *et al.*, 2016). However, if the Cronbach's Alpha value is below 0.7, but above 0.6, it is still considered acceptable (albeit poor), for exploratory research (Athanasiou & Mavrikaki in Taber, 2018).

For the current study, it was therefore essential to determine the reliability of the constructs before the inferential statistics could be prepared. This technique will be elaborated upon in the next chapter (Sections 5.7 and 5.8) dealing with the analysis of the data collected in the current study.

Section 4.7 discussed the data reliability and validity measures taken in the current study. The next section, the final section of this chapter, addresses the research ethics that required consideration for the current study.

4.8 RESEARCH ETHICS

Research ethics refer to the standards of behaviour that guide a researcher's conduct in relation to the rights of those who become the subject of the researcher's work, or are affected by it (Saunders *et al.*, 2016). All parties in the research process should exhibit ethical behaviour, with the goal of ensuring that no one suffers adverse consequences or is harmed from the research activities (Quinlan *et al.*, 2019). As already indicated, domestic air travellers were the unit of analysis for the current study, serving as respondents.

Prior to commencing with the data collection for the current study, it was necessary to apply for ethical clearance from the College of Economic and Management Sciences Research Ethics Review Committee (CRERC) at the University of South Africa (UNISA). The application involved an intense review of the research methodology of the current study to ensure that it will be carried out in accordance with the UNISA Policy on Research Ethics. Ethical clearance for the current study was initially granted by the CRERC in April 2016.

By obtaining ethics clearance from the CRERC at UNISA, several ethics objectives were fulfilled. The CRERC was responsible for examining aspects of research quality relating to ethics, including protecting the dignity, rights and welfare of those who were respondents in the current study, as well as others who might have been affected by it. However, obtaining the Ethics Clearance certificate was not the end of the researcher's consideration of ethical issues.

The research methodology of the current study underwent two minor changes. The unit of analysis changed from interviewing only business air travellers, to interviewing both business and leisure air travellers. The survey method changed from just an internet-based survey, to include intercepting air travellers at the ORTIA by using a self-administered paper-based survey. Permission to intercept air travellers at the ORTIA was granted by ACSA (see the Gatekeeper's Permission in Appendix A). Subsequently, an amendment of the ethics application was submitted to the CRERC to include the ORTIA intercept approach as part of the current study. Once the amendment was acknowledged and approved by the CRERC, the researcher proceeded with implementing the changes. Further to this, an extension of the original

Research Ethics Certificate was also applied for and granted in 2021. The initial and final Research Ethics Certificates are presented in Appendix A.

Furthermore, a list of principles to recognise and overcome or minimise ethical issues by Saunders *et al.* (2016) was consulted. This list, along with contributions from Cohen *et al.* (2011), Salkind (2018) and Quinlan *et al.* (2019) were used as a checklist in guiding the researcher in good ethical practice by avoiding poor performance, harm and malpractice and to promote ethical practice. Table 4.4 below presents the guidelines followed for ethical behaviour in the current study.

Table 4.4: Checklist and ethical rationale

Ethical principle	Checklist and ethical rationale, if necessary
Integrity and objectivity of the researcher	The researcher acted openly, promoting accuracy and being truthful, and avoiding deception, dishonesty and misrepresentation.
Respect for others	The researcher's stance was based on respect and trust. The rights of all parties were recognised, and their dignity respected.
Avoidance of harm (non-maleficence)	Any harm to respondents was avoided. For example, no violation of assurances about anonymity and confidentiality, or through harassment, took place.
Privacy of respondents	Confidentiality, maintaining anonymity, non-traceability, responsibility during the data analysis and reporting of the findings, and compliance in the management of data was assured for the privacy of respondents. In the current study, both the LimeSurvey Administrator and the Statistician consulted with, signed a declaration of confidentiality.
Informed consent of respondents	A letter of informed consent was attached inviting the potential respondent to partake in the survey. This letter explained the benefits of the current study, the respondents' rights and it obtained the respondents' informed consent. This involved providing sufficient assurances and information about partaking in the survey. This allowed prospective respondents to understand the implications of their involvement and to reach a fully considered, informed and freely given decision about whether to take part, or not without feeling any coercion or pressure.
Voluntary nature of participation and right to withdraw	Partaking in the survey as a respondent, was completely voluntary and given freely, as stated in the invitation to participate. Those who chose to respond to the survey had the right to withdraw from the survey at any point. A limitation of the internet-based survey was that the respondent could not move forward with the next set of questions without answering the first set of questions presented – this may have resulted in respondents withdrawing from the survey completely, as opposed to skipping questions that they did not wish to answer.

Ethical principle	Checklist and ethical rationale, if necessary
Degree of sensitivity of the questions and factors in the questionnaire itself	When designing the questions, the researcher aimed to avoid respondent bias by considering the potential reactions of the respondents. The researcher did not want the respondent to be forced into answering any question s/he did not feel comfortable with. For example, Questions 17 to 20 (Section C) regarding environmental consciousness, included the option "I do not know" and question 24 (Section D) regarding salary included the option "I do not want to say".
Ensuring confidentiality of data and maintenance of anonymity of respondents	The individuals invited to partake in the survey, and the actual respondents of the current study were anonymous and remain anonymous; and their data provided was processed to make it non-traceable. The reliability of the data was likely to be enhanced through this, where anonymity and confidentiality were assured.
Responsibility in the analysis of data and reporting of findings	Assurances about anonymity and confidentiality were upheld when analysing and reporting the data from the survey. Findings were reported fully and accurately. Analyses and the interpretations following the findings were carefully checked and corrections made to ensure the accuracy of the current study and any other outcome.
Compliance in the management of data	The survey entailed collecting some personal data, however, this data cannot be traced to the person who submitted it – guaranteeing complete anonymity and confidentiality.
Ensuring the safety of the researcher	The safety of the researcher was considered when planning the current study. There were no risks in the current study which may have put the researcher in a harmful position at any point throughout the current study.

Source: Adapted from Saunders *et al.* (2016:243-245) with contributions from Cohen *et al.* (2011:378); Salkind, 2018:43-47); Quinlan *et al.* (2019)

The guidelines for ethical research practices and principles presented in this section were followed by the researcher throughout the process of conducting the current study. The section which follows concludes Chapter 4.

4.9 CONCLUSION

Chapter 4 aimed to provide a clear road map and justification of the research methodology employed in the current study. The chapter commenced with a recap of the research question and objectives of the current study, before presenting the research framework and flow of the chapter. A detailed description of the research design followed for the current study was presented, after which the research universe was discussed, highlighting the unit of analysis, sample size and sampling methods used for the current study. The research strategy and the design of the measurement

instrument received a detailed explanation, followed by important elements of the data analysis, and a brief discussion of data validity and reliability. Finally, a section on the research ethics considered and principles followed in the current study were presented.

The research design, methods and tools that were described in this chapter, have created the foundation from which to base the next chapter, Chapter 5. Chapter 5 will present the quantitative analysis of the data collected for the current study, as well as the subsequent research findings.

CHAPTER 5:
DATA ANALYSIS AND RESEARCH FINDINGS

5.1 INTRODUCTION

The previous chapter, Chapter 4, presented the research design and methodology that was implemented to achieve the objectives of the current study. This chapter, Chapter 5, reports the empirical results of the primary data that was collected from the research instrument. In addition, this chapter presents the statistics, quantitative analyses and discussion of these results. Figure 5.1 below graphically depicts the position of Chapter 5 within the broad structure of the dissertation of the current study.

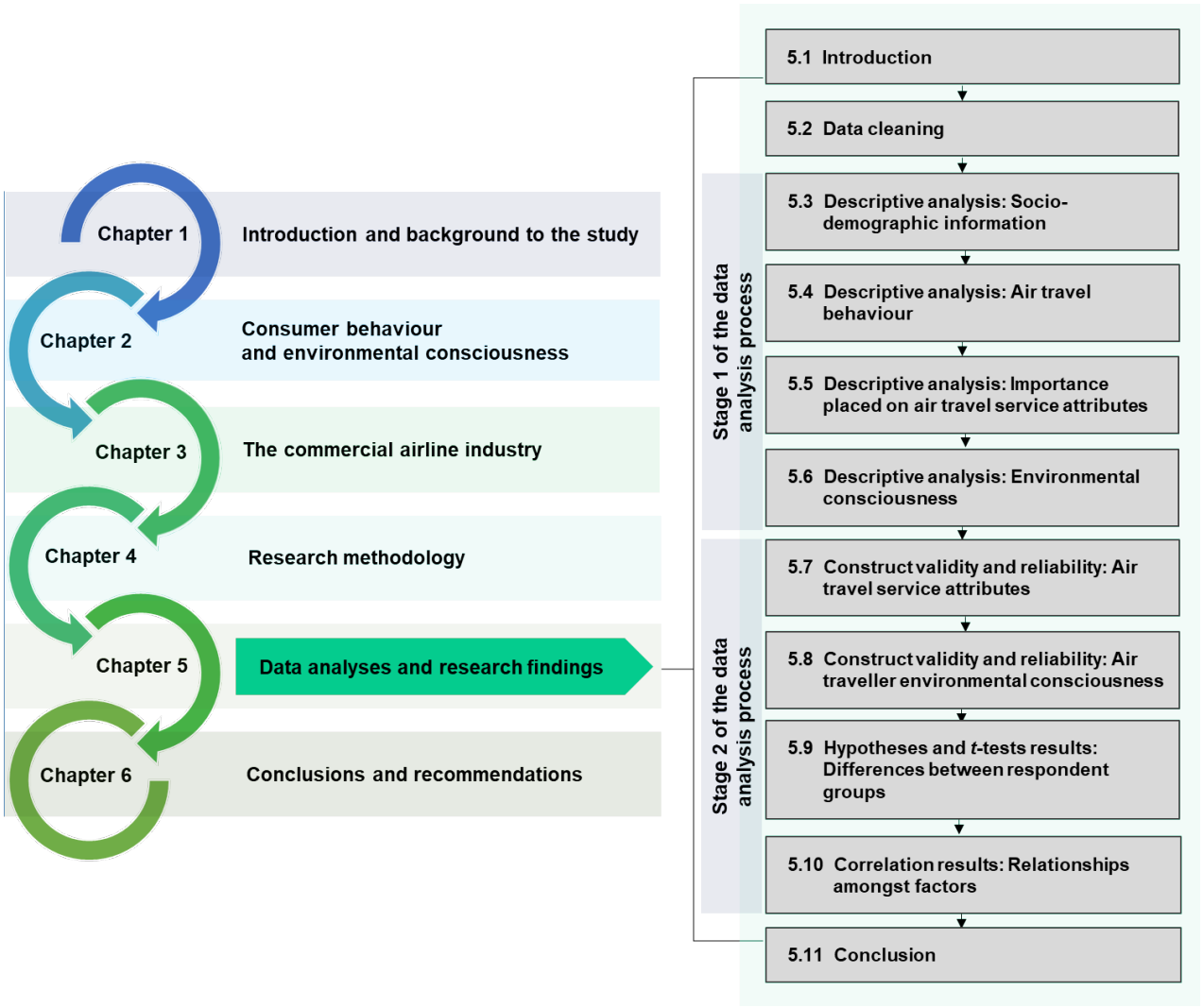


Figure 5.1: Structure of Chapter 5

Source: Researcher's own compilation

This chapter commences with an explanation of the data cleaning process (Section 5.2). Sections 5.3 to 5.6 (Stage 1) of this chapter will deal with the descriptive statistical analysis. This includes the socio-demographic information, air travel behaviour, the importance placed on air travel service attributes, and air traveller environmental consciousness. Thereafter, in Sections 5.6 to 5.10 (Stage 2), the multivariate and inferential statistical analysis are presented. These sections cover the validity and reliability of the constructs in the current study, the differences between variables, and relationships between factors. Finally, the chapter will be concluded in Section 5.11.

5.2 DATA CLEANING

As indicated in Chapter 4, the data for the current study was collected from a realised sample of 394 respondents, using a survey research instrument that was designed to meet the research objectives (see Section 4.3.3 in Chapter 4). Data analysis is only reliable if it is built upon the foundations of 'clean' data, in other words, data that have been entered into the computer correctly (Gray, 2018). This section describes how the dataset was screened and cleaned before the data analysis process commenced.

Since data collection occurred via both a paper- and an internet-based approach (see Section 4.5.3 in Chapter 4 as well as Appendices B and C respectively), the data was captured in two different ways. The Internet-based responses were automatically captured and exported from the LimeSurvey electronic database into an MS Excel spreadsheet, in which the responses were coded. Due to the nature of the Internet-based survey, in which respondents were required to answer all questions before moving forward to submit their responses, no missing values were recorded for the online submissions. However, due to the nature of the paper-based approach, in which this aspect could not be controlled, incomplete questionnaires were inevitable.

The paper-based responses were checked for authenticity. This was achieved by identifying instances in which a respondent was not engaged, or failed to answer many of the questions, or did not fulfil the requirements of the survey, that is, should not have proceeded past the screening question, but did so anyway. Gray (2018) suggested several ways to cope with missing data, such as to code missing data as 'missing' within the dataset, re-contacting the respondent to obtain the missing data, or flagging a complete questionnaire as unusable.

Due to the anonymity of the survey, the researcher could not re-contact specific respondents who handed in incomplete questionnaires. In instances where a notable number of responses were missing, the questionnaires were flagged as unusable, and excluded from the dataset. In cases where the level of the respective data loss is small, Gray (2018) notes that it is safe to ignore this loss within the dataset (Gray, 2018).

Accordingly, in instances in which there was one missing value in a respondent's questionnaire, a non-response strategy was employed for the missing data (Bergin, 2018). By not flagging these questionnaires as unusable, the potential for analysis of the respective questions/scales was maximised. Throughout the chapter, where relevant, notes have been prepared to explain the non-response strategy used.

The useable paper-based responses were captured by the researcher, on an MS Excel spreadsheet, applying the same coding structure used on the Internet-based responses. This exercise provided the researcher with an additional quality check on the coding of responses. All respondents were given a unique identity number, alongside which their respective responses were recorded. The data from both survey approaches were at that stage merged into one MS Excel spreadsheet. Thereafter, the merged dataset was 'cleaned' and 'screened' for possible miscoding and other obvious errors (Gray, 2018). On completion of the data cleaning and screening, the data could be statistically analysed using SPSS software for all the statistical tests required.

Section 5.2 reported on the data cleaning. Section 5.3 reports on the descriptive statistics relating to the socio-demographic composition of the sample.

5.3 DESCRIPTIVE STATISTICS: SOCIO-DEMOGRAPHIC INFORMATION

The first section of Stage 1 reports on the socio-demographic data, provided by Section D of the survey. Section D posed seven (7) questions (Questions 21 to 27), which enabled the researcher to understand the demographic composition of the respondents. The data obtained from the socio-demographic questions are reported on in Sections 5.3.1 and 5.3.2.

A comparison of the sample in the current study and the actual air travelling population was not possible, due to the unavailability of the latter information (refer to an

explanation in this regard in Section 4.5.2). Accordingly, this section draws comparisons between the current study's sample, and other samples and/or populations, as deemed relevant across the various categories of demographic information.

Note: In some cases, the percentages in the tables and figures add up to either 99.9% or 100.1%, instead of 100%. This is due to the automatic rounding applied by SPSS when reflecting figures at either a single or double decimal point.

5.3.1 Socio-demographic information: Age, gender, education and income

Section 5.2.1 reports on the age, gender, education and income composition of the respondents. Figure 5.2 presents the descriptive data relating to the age and gender composition of the respondents. Figures 5.3 and 5.4, respectively, present the highest level of formal education and gross monthly income. This is followed by a brief discussion relating to the figures.

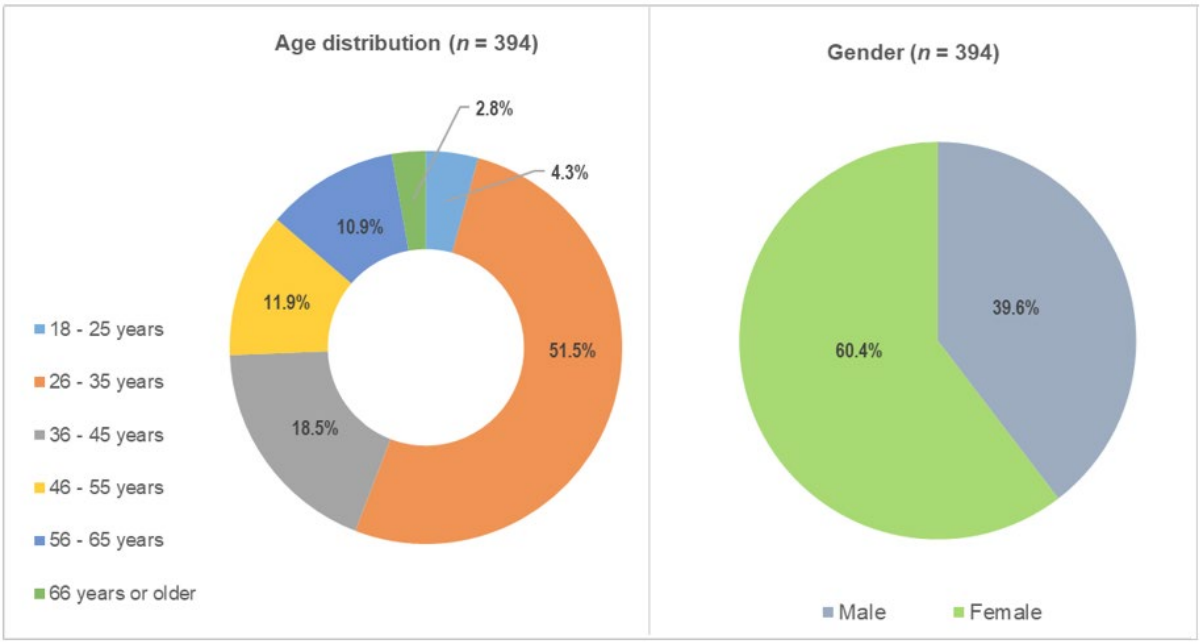


Figure 5.2: Age and gender composition of respondents

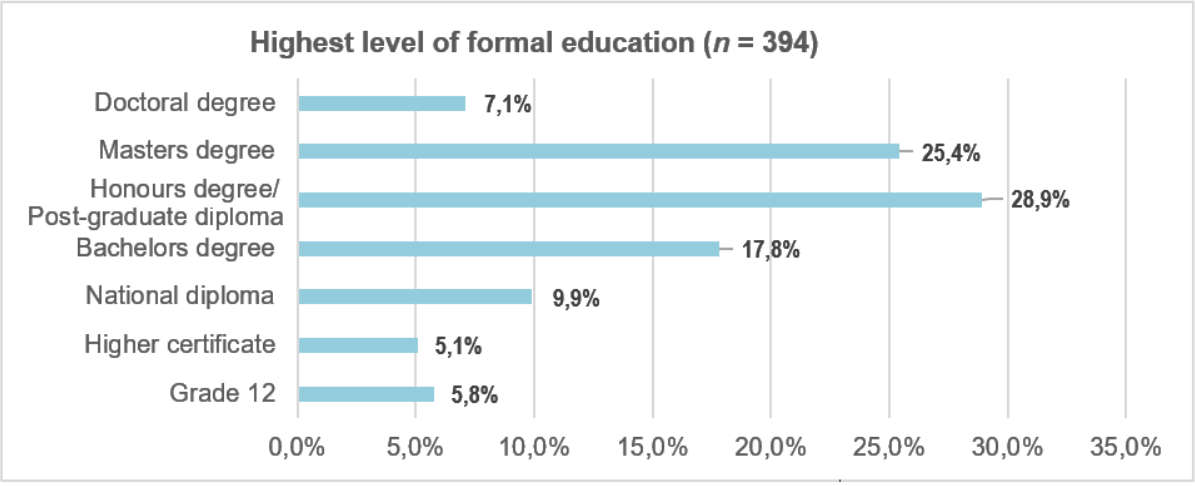


Figure 5.3: Formal education level of respondents

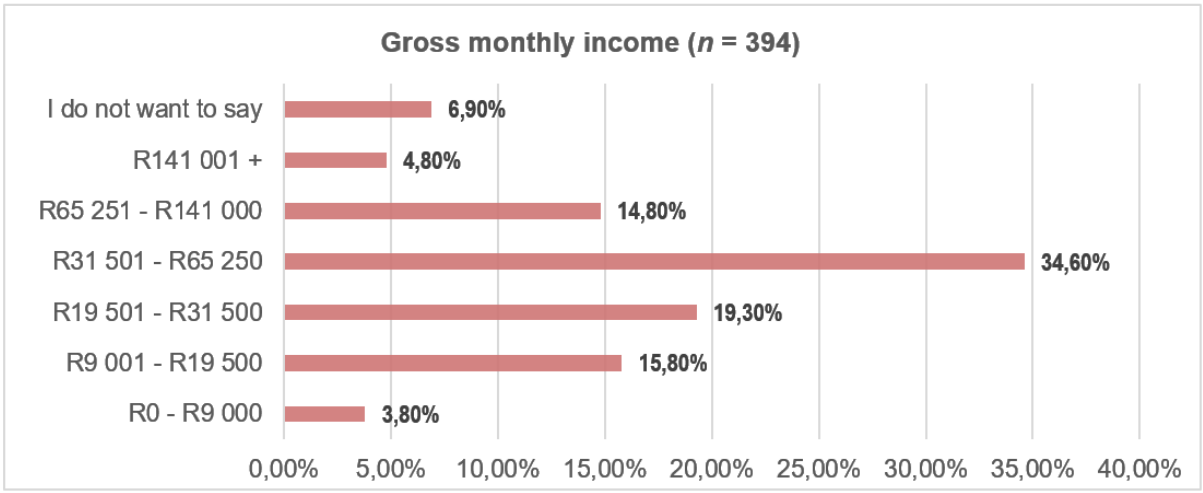


Figure 5.4: Gross monthly income of respondents

The majority of respondents fell between 26 and 35 years of age (51.5%). These respondents slot into the millennial generation[1]. In SA, millennials make up 27% of the population and are responsible for many of the mind-set shifts that have had an impact on which brands are supported (GFK, 2017). The findings of the Millennial and Gen Z Survey by Deloitte Touche Tohmatsu Limited (DTTL) revealed that a top concern for millennials is the environment. In addition, these findings reveal that this generation holds both themselves and organisations, accountable toward achieving a

[1] The Millennial generation refers to those individuals born between years 1981 and 1996 (Dimock, 2019). Considering the survey was conducted in 2017/2018, respondents aged 26 years were born in 1991/1992, and those aged 35 years were born in 1982/1983.

more sustainable world (DTTL, 2021). Respondents who fell between 36 to 45 years of age, made up the second largest group (18.5%). Accordingly, above two-thirds of the respondents (70%), fell between 26 and 45 years of age. The remaining 30% of respondents fell into the other age groups. While it cannot be stated whether these age demographics are representative of the demographics relating to the SA domestic flying population, they do overlap with a large percentage of the SA population. South Africans falling between 25 and 64 years of age represent almost half of the country's population (48.76%), with 42.05% of the population falling between 25 to 54 years of age group (Central Intelligence Agency, 2018).

The majority of respondents identified as female (60.4%), and all respondents were formally educated with at least Grade 12. The majority of respondents reflected high levels of education, with almost two-thirds (61.4%) possessing a post-graduate qualification or higher. Owing to a lack of information on the SA air traveller population, it cannot be stated whether these qualification levels are representative of the air traveller population in SA. When comparing education-related demographics with those of the general population of SA at the time, the difference is stark, in that only 43.6% of the general population had attained a Grade 12. In terms of higher levels of education such as Bachelors, Honours (post-graduate) and Doctoral degrees, the qualifications represented only 1.6%, 1.16% and 0.28% respectively, of the SA population (StatsSA, 2018).

With reference to income classification, which was informed by the BMR's classification scales for salary (see Table 4.2), the majority of respondents (34.6%) fell within the middle-income classification (R31 502 – R65 250). In totality, more than half of the respondents (54.2%) earned a gross monthly income of R31 501 or more. The income distribution of the sample of the current study is not in line with the income levels of the SA population, which at the time reflected an average salary of R20,193 in 2017 and R22,154 in 2018 (Statista, 2021). However, the characteristics of this sample pertaining to middle to high earners, do correspond highly to the high levels of education across the sample. Not only are graduates more employable (Universities UK, 2018), data from Statistics South Africa and Analytico show that the more educated someone is, the more there is an increase in monthly salary (BusinessTech, 2017).

5.3.2 Socio-demographic information: Employment status, organisation employed by and position in the workplace

Section 5.3.2 reports on the composition of the respondents in terms of employment status, position/level in the workplace, and types of organisations at which respondents are employed. Figures 5.5 to 5.7 below present the descriptive data relating to these three categories respectively, followed by a brief discussion.

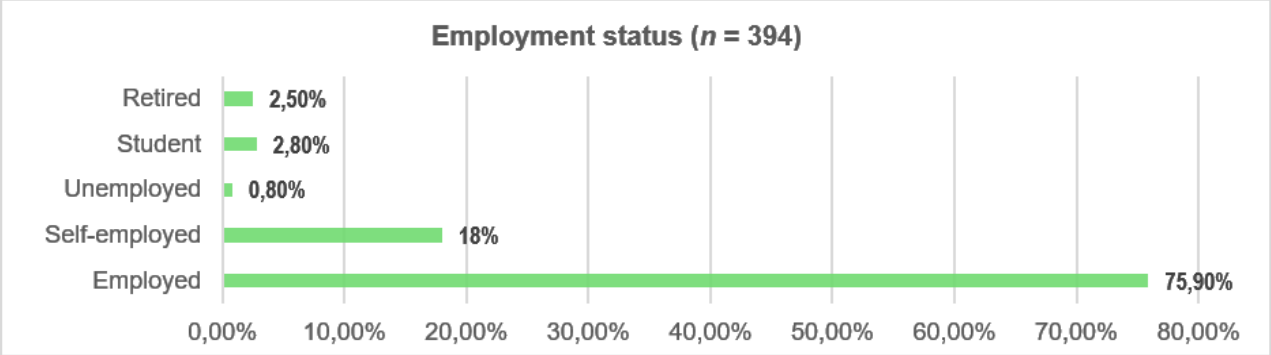


Figure 5.5: Employment status of respondents

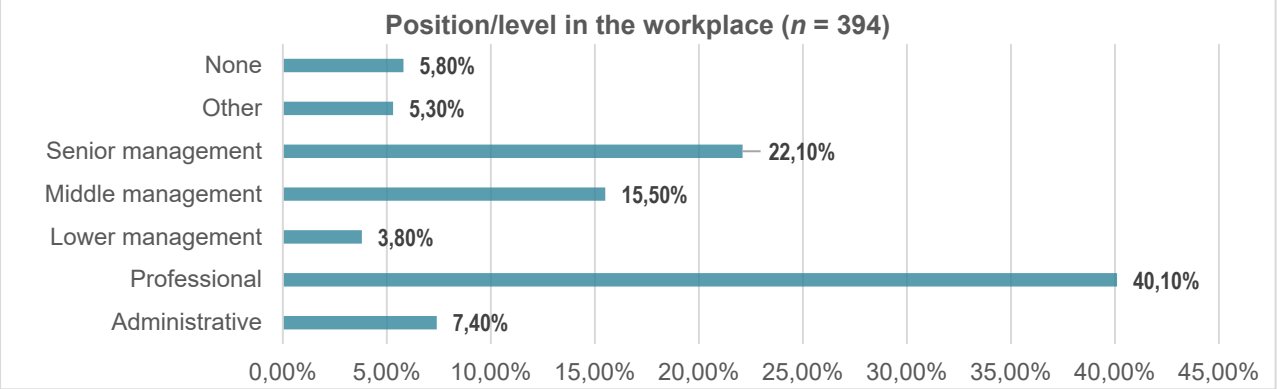


Figure 5.6: Position/level in the workplace of respondents

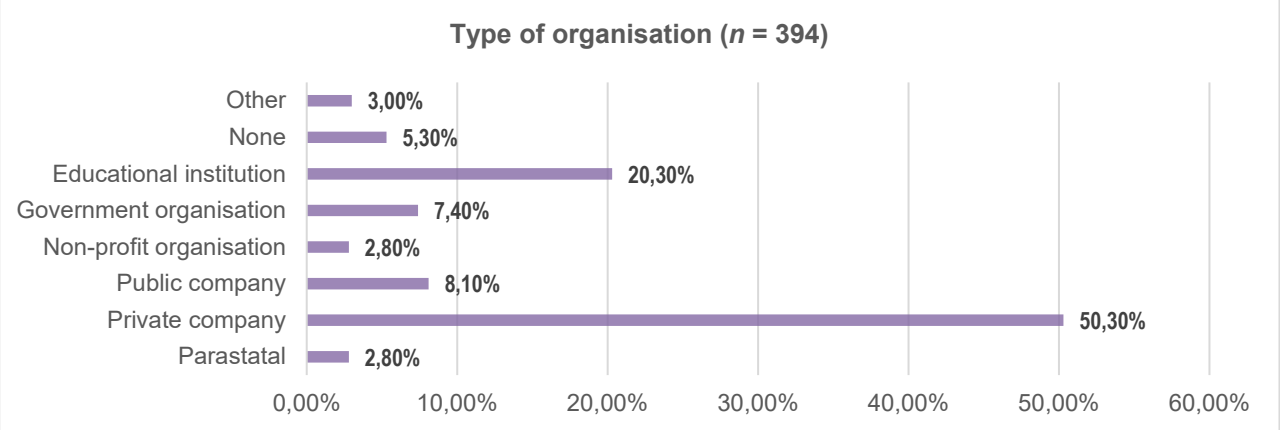


Figure 5.7: Types of organisations at which respondents are employed

With reference to employment status, most of the respondents (93.9%) were either employed or self-employed. In 2017 and 2018, the unemployment figures in SA, were 27.04% and 26.91% respectively (TradingEconomics.com, 2018; Statista, 2021). Accordingly, the data characteristics from the current study are not congruent with those of the general population during the same period. StatsSA (2018) reported that the unemployment rate of graduates in SA was only 7.3%. While this rate is still high when compared to the 0.80% rate of unemployment across all respondents, it is more indicative of the profile of this sample, in which at least 79.2% of respondents are bachelor graduates.

In terms of position/level in the workplace, the highest proportion of the sample held professional positions (40.1%). This was followed by senior management positions, held by 22.1% of the respondents. In terms of the types of organisations at which respondents are employed, the majority of respondents worked for a private company (50.3%), while the remaining respondents worked for educational institutions (20.3%), public companies (8.1%), government organisations (7.4%), and lastly, non-profit organisations and parastatals (each at 2.7%). On first impression of the descriptive data presented in Figures 5.5 to 5.7, one might easily presume that the majority of respondents were business travellers.

However, in the light of the strong alignment across the sample between high positions/levels of employment and salaries earned (more than half reporting a gross monthly income of R31 502 or higher), it is understandable that the majority of the sample could possess the buying power to also engage in leisure travel. This is expanded in Section 5.4.

5.3.3 Summary of the descriptive statistics: Socio-demographic information

Section 5.3 presented the descriptive statistics and findings from Section D of the survey. Figure 5.8 below presents a summary of the findings from this section.

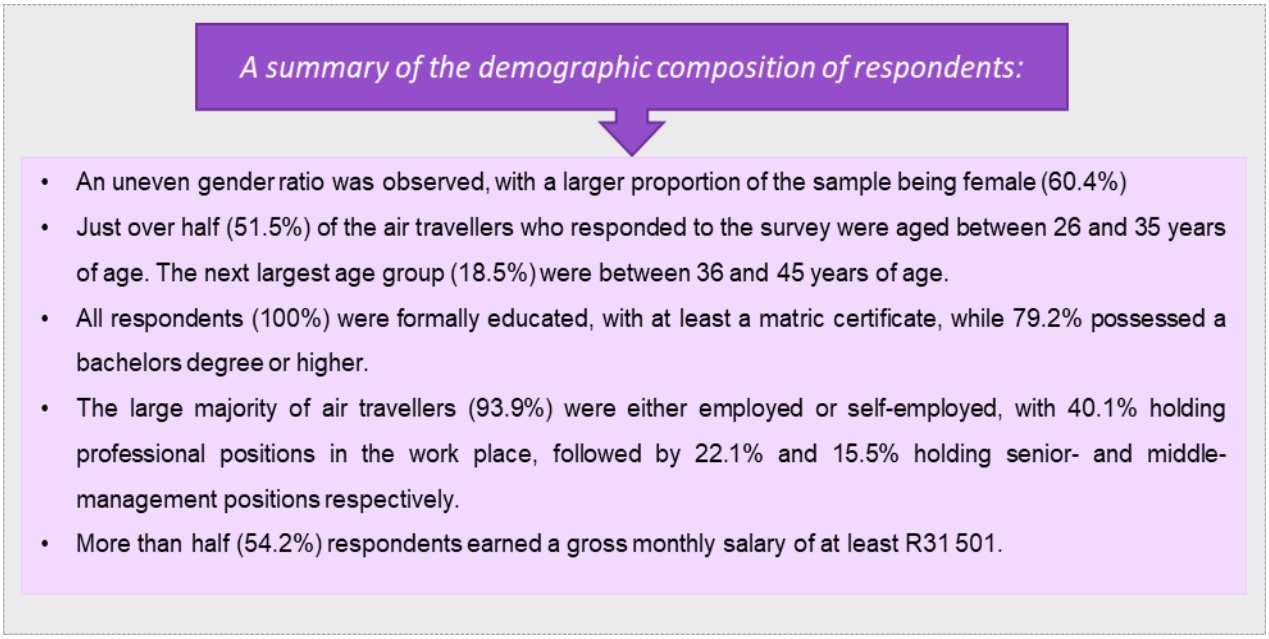


Figure 5.8: Summary of the demographic composition of respondents

This section (Section 5.3) provided an overview of the air traveller sample in the current study, in terms of socio-demographic information. The next section presents the descriptive results pertaining to the respondents' air travel behaviour.

5.4 DESCRIPTIVE STATISTICS: AIR TRAVEL BEHAVIOUR

As mentioned in Chapter 2, it is not enough to just know what customers want and need, it is also necessary for the marketer to understand how customers make their buying decisions (Roberts-Lombard & Brijball Parumasur, 2017). Section A, the first section of the survey, presented questions relating to the respondents' domestic air travel behaviour (Questions 1 to 7), and is covered within this section. In addition, because the findings from Section B, Questions 15 and 16, relate closely to the findings from Section A, these findings are also included within this section. This section will be structured into two sub-sections, Sections 5.4.1 and 5.4.2.

5.4.1 Descriptive findings: Air travel behaviour (purpose, frequency, airport, funding, type of air ticket)

Section 5.4.1 reports on the respondents' domestic air travel behaviour in terms of purpose, frequency of domestic air travel, airport from which they frequently depart, sources of funding for tickets, and types of tickets most frequently used. Table 5.1 presents the descriptive data for each of these five categories of air travel behaviour.

Table 5.1: Descriptive statistics: Air travel behaviour (purpose, frequency, airport, funding and ticket type)

Reference to question	Air travel behaviour	Categories	Number of respondents	Percentage of respondents
1.1	Domestic air travel purpose (*n* = 394)	Leisure only	167	42.4%
		Business only	66	16.8%
		Both business and leisure	161	40.9%
2	Frequency of domestic air travel (departing flights) (*n* = 393)	1 to 5	293	74.6%
		6 to 10	57	14.5%
		11 to 15	26	6.6%
		16 to 20	10	2.5%
		21 or more	7	1.8%
3	Gauteng airport most frequently departing from (*n* = 393)	Lanseria International Airport	68	17.3%
		Wonderboom National Airport	5	1.3%
		O.R. Tambo International Airport	320	81.4%
7	Source of funding for domestic air travel (*n* = 394)	Personally	232	58.9%
		Business	141	35.8%
		Friends/family	21	5.3%
16	Type of air ticket most frequently used (*n* = 394)	An FSC business class ticket	9	2.3%
		An FSC economy class ticket	116	29.4%
		An LCC ticket with no added frills	97	24.6%
		An LCC ticket with a few added frills	162	41.1%
		An LCC ticket with all the frills	10	2.5%

Note: One respondent did not answer Questions 2 and 3. Therefore, there is one missing value that could not be included in the analysis. Accordingly, for these questions, the percentages presented are calculated from 393 respondents, instead of 394.

The descriptive statistics relating to the five categories for air travel behaviour are presented in Table 5.1 above. A discussion of the findings is presented below.

Air travel purpose:

Section 2.7.2.2 (Chapter 2) highlighted that people use air travel for a variety of purposes. Because the elaborate list of purposes for travel was beyond the scope of the current study, two broad categories were selected, namely, business travel and leisure travel.

During the twelve months preceding the survey, 42.4% of the respondents had travelled for leisure purposes only, 16.8% for business purposes only, while 40.9% had travelled for both business and leisure. Of the 161 respondents who had travelled for both business and leisure, almost half (48.4%) opted to respond to the survey from the perspective of a leisure traveller, while just over half (51.6%) chose to respond from the perspective of a business traveller. Based on these selections, Figure 5.9 below presents the finalised statistics relating to 'air travel purpose'.

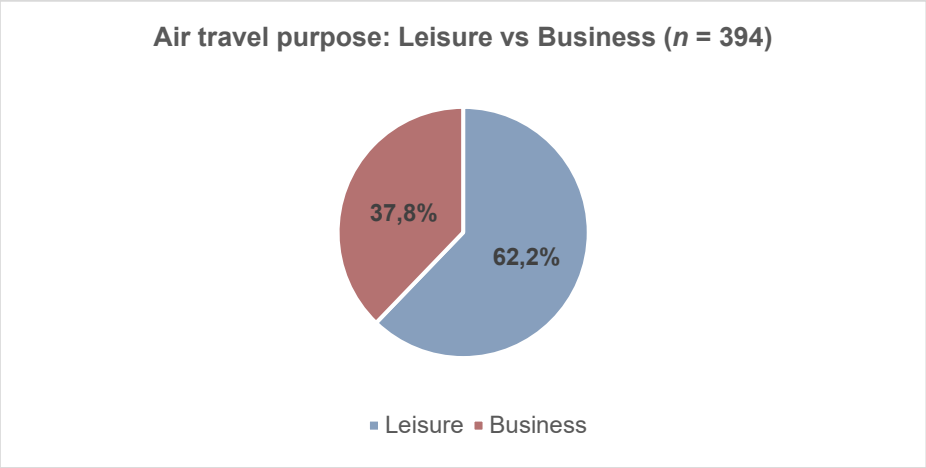


Figure 5.9: Air travel purpose: Leisure vs Business

In summary, 37.8% of respondents answered the survey from the perspective of a business air traveller, while 62.2% responded from the perspective of a leisure air traveller. These two figures will be used for the respective statistical analyses later in this chapter.

Domestic air travel frequency and airport of departure:

In terms of frequency, the majority of respondents (74.6%) took between one and five departing flights during the twelve months preceding the survey. Respondents who

took between six and ten departing flights constituted the second largest respondent group (14.5%). In terms of airports from which respondents departed, the majority (81.4%) departed most frequently from ORTIA. Amongst other reasons, this high percentage may be attributed to the fact that ORTIA acts as an operational base for all scheduled passenger airlines, offers more frequent route schedules, offers ease of access in terms of public transport due to the Gautrain and is the most established airport in Gauteng in terms of its extensive retail service offering.

Only 17.3% departed most frequently from Lanseria International Airport (LIA). This could be because only LCCs and smaller charter airlines depart from this airport. In addition, LIA operates with much lower volumes of domestic passengers when compared to ORTIA, the largest and busiest airport in Gauteng and SA. During 2017, LIA handled approximately 1.9 million passengers (LIA, 2018), while ORTIA handled approximately 11 million domestic passengers (ACSA, 2018). Less than 2% of the respondents (1.3%) departed most frequently from Wonderboom National Airport (WNA). This could be because only one scheduled commercial airline departed from WNA during the time of data collection, namely, SA Airlink. Subsequent to the survey for the current study, SA Airlink suspended its services from the airport due to profitability issues.

Source of payment for air ticket and type of air ticket most frequently used:

More than half of the respondents (58.9%) fund their domestic air travel from personal funds while for 35.8% of the respondents, domestic air travel is business funded. This is well-aligned to the 'purpose of travel' results comprising 62.2% leisure air travellers and 37.8% business air travellers (see Section 5.4.1). Only 5.3% of respondents indicated that their friends/family were the source of funding for their domestic air travel.

The most frequently used air travel ticket was an LCC ticket with a few added 'frills' (41.1%), also referred to as value-added services (VAS). The next most frequently used air ticket was the FSC economy class ticket (29.4%), followed by the LCC ticket with no added VASs (24.6%). The minority of respondents used an LCC ticket with all the VASs (2.5%). Similarly, only 2.3% of respondents used an FSC business class ticket. In summary, 31.7% of respondents made use of FSCs, while 68.3% of respondents made use of LCCs, as presented in Figure 5.10 below.

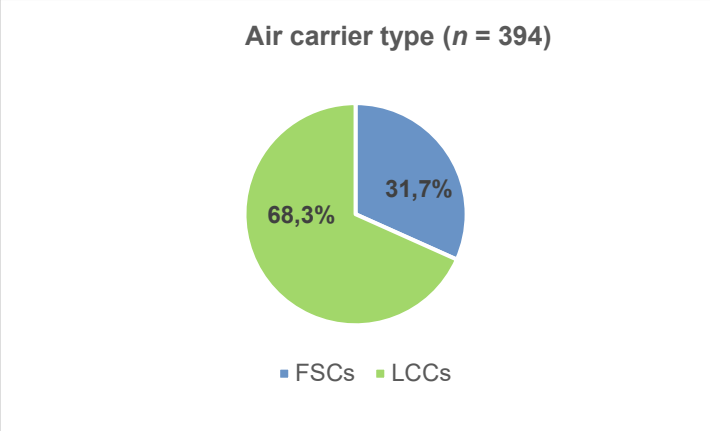


Figure 5.10: Air travel service most frequently used: FSC vs LCC carrier

5.4.2 Descriptive findings: Air travel behaviour (airline flight frequency, airline preference, airline ranking)

This section reports on the descriptive statistics related to the airlines that respondents most frequently use, rankings related there to, and airline rankings by respondent preference. This section focuses on these categories of air travel behaviour.

Respondent flying frequency with specific airlines:

Question four (4) determined how often respondents flew on each of the domestic airlines in SA, during the twelve months prior to the survey. The results obtained from this question are illustrated in Figure 5.11 below.

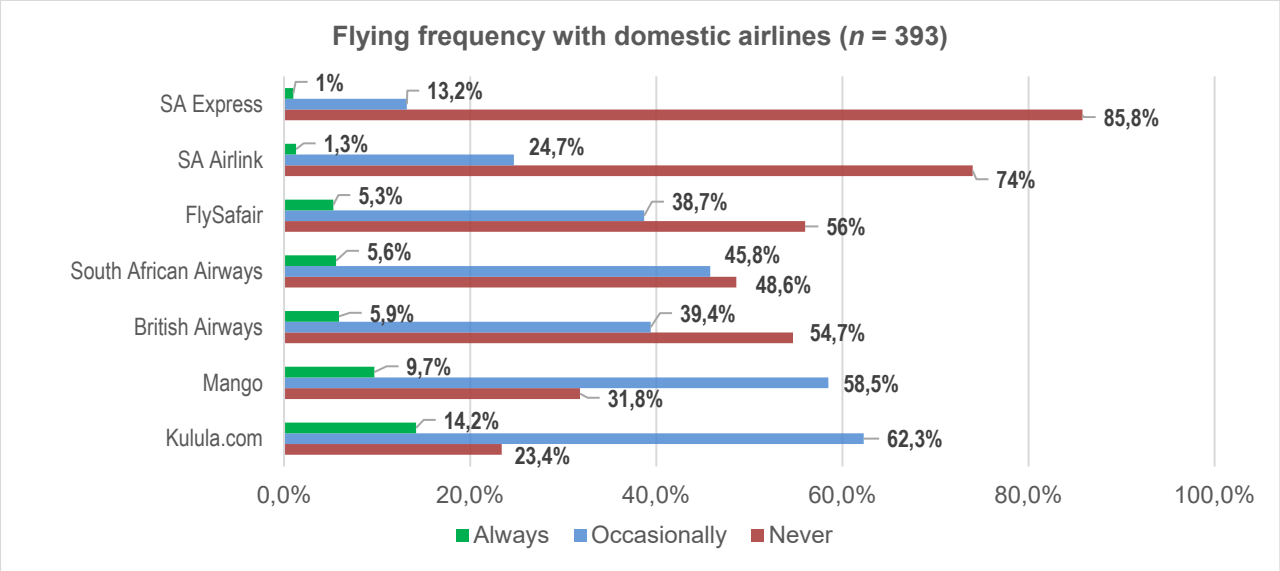


Figure 5.11: Air travel frequency with domestic airlines

Note: One respondent did not answer this question. Therefore, there is one missing value that could not be included in the analysis. Accordingly, the percentages presented in Figure 5.11 are calculated from 393 respondents.

Over three-quarters (76.5%) of the respondents occasionally or always flew with Kulula.com, making it the airline with which respondents most frequently travelled, followed by Mango (68.3%). For both SA Airlink and SA Express, only 1% of respondents indicated that they “always” fly with these airlines. The findings regarding SA Airlink and SA Express align with the industry events of these two airlines during 2018. Besides being smaller airlines in comparison to the other carriers in SA (Diggines, 2017:21), both airlines experienced turbulence during 2018. SA Express’ operations were suspended by the SACAA in May 2018, shortly after this survey was conducted. The suspension came after an audit revealed serious non-compliance which posed a safety and security risk to the public (Traveller24.com, 2018). SA Airlink revealed the suspension of its own services on the Pretoria (WNA) – Cape Town route, because of profitability issues experienced during the three years of operating this route (Business Day, 2018).

Based on the data reflecting the airline in which respondents most frequently fly, a ranking was compiled (using a combination of the “occasionally” and “always” values). The ranking is presented in Figure 5.12 below.

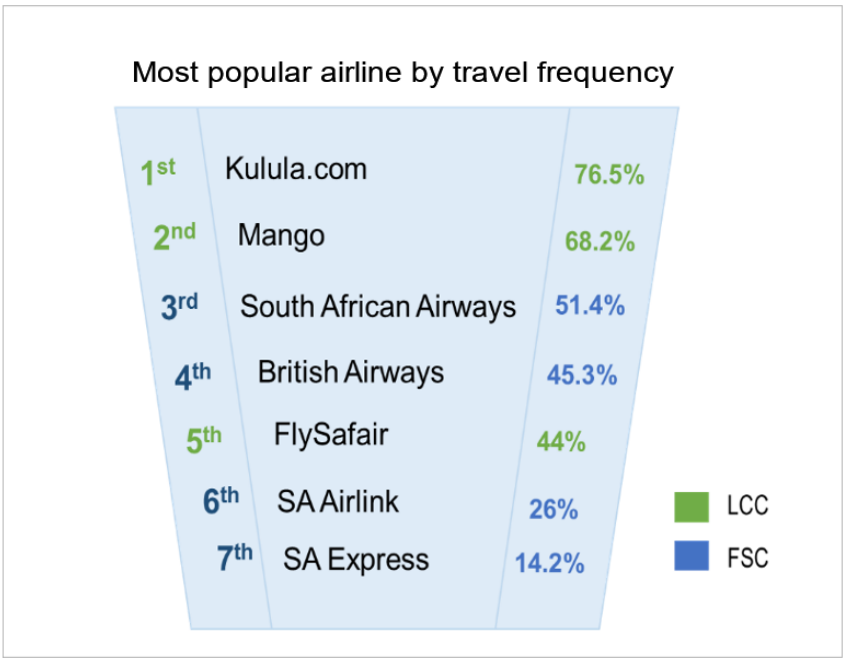


Figure 5.12: Airline ranking determined by respondent air travel frequency

Respondent airline preference

In Question five (5), respondents were requested to indicate their top three most preferred airlines. The airline ranking, determined by respondents' preference, is presented in Figure 5.13 below.

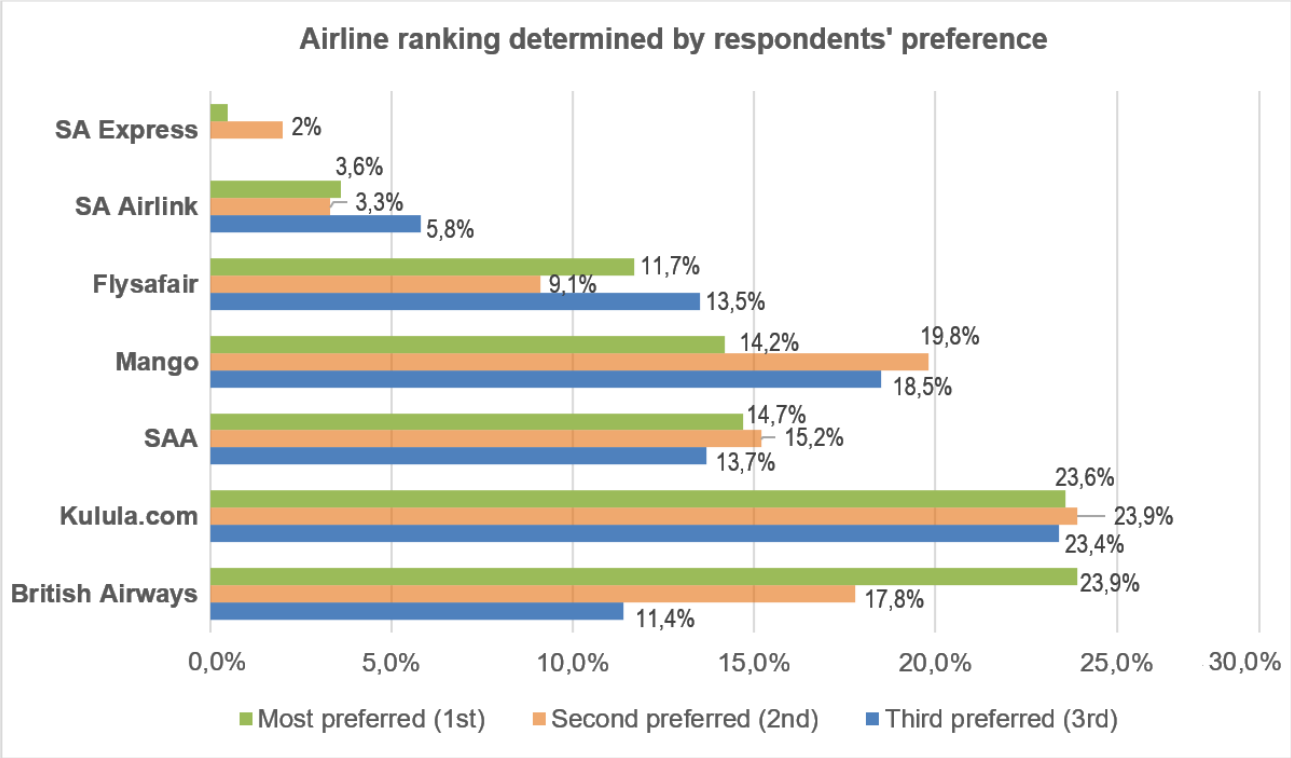


Figure 5.13: Airline ranking determined by respondents' preference

Although only ranked fourth in terms of flight frequency, BA was the most preferred airline in terms of respondent preference with 23.9% of respondents selecting this. Kulula.com ranked a close second (23.6%), SAA, Mango and FlySafair were ranked third (14.7%), fourth (14.2%) and fifth (11.7%) respectively.

SA Airlink and SA Express were selected as the most preferred airline by a minority of respondents (3.6% and 0.5% respectively). Diggines (2017:21) brings to light a plausible reason for this low preference, stating that these two airlines are small contenders operating on the "golden triangle" route. As regional airlines which fly on less popular routes, to smaller destinations, Diggines notes that these two airlines should probably not be considered part of the LCC and FSC models.

The 'frills' most often included in the air travel service

To better understand the type of air travel service most often used, respondents were requested to indicate which VASs were most often included in the total cost of their air travel ticket (Question 15). The findings are presented below in Figure 5.14.

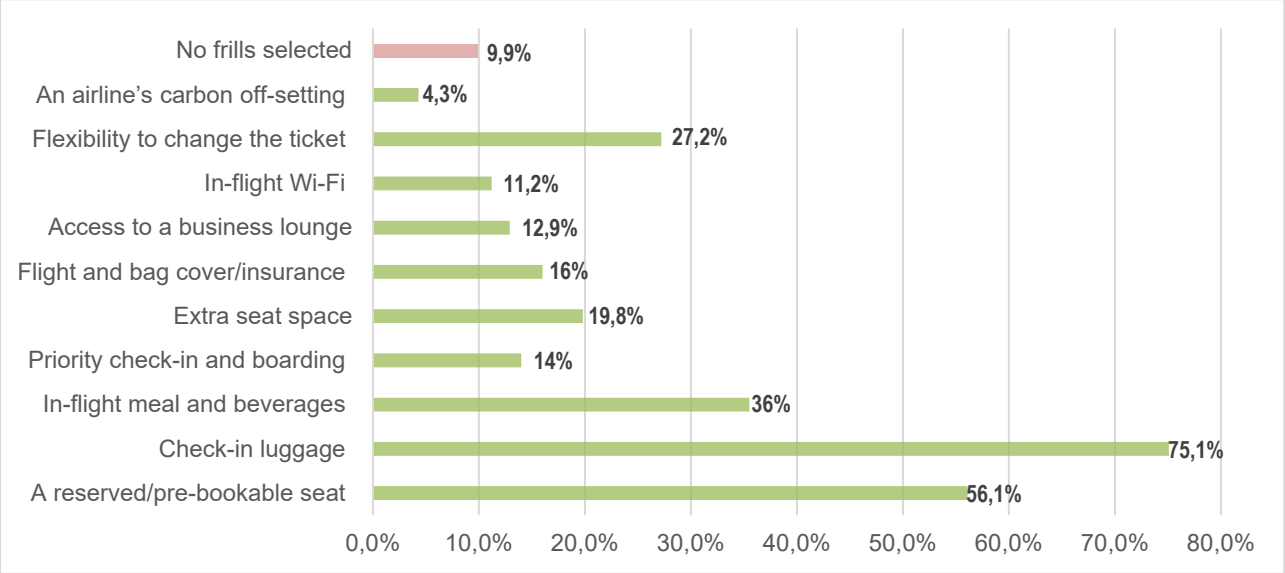


Figure 5.14: The 'frills' often included in the air travel service purchase

It is clear that the most frequently VAS was check-in luggage (75.1%). This was followed by a reserved/pre-bookable seat (56.1%), in-flight meals and beverages (36%), flexibility to change the ticket (27.2%) and extra seat space (19.8%). Less than 20% of respondents indicated that flight and bag insurance (16%), priority check-in and boarding (14%), access to a business lounge (12.9%) and in-flight Wi-Fi (11.2%) were included in their purchase. One-tenth of respondents indicated that they do not add any VASs to their purchase. Only 4.3% of respondents indicated that they would pay an additional amount to participate in an airline's carbon off-setting programme (VCO).

5.4.3 Summary of the descriptive statistics: Air travel behaviour

The air travel behaviour statistics were presented in this section, Section 5.4. Figure 5.15 below presents a summary of the key findings from this section.

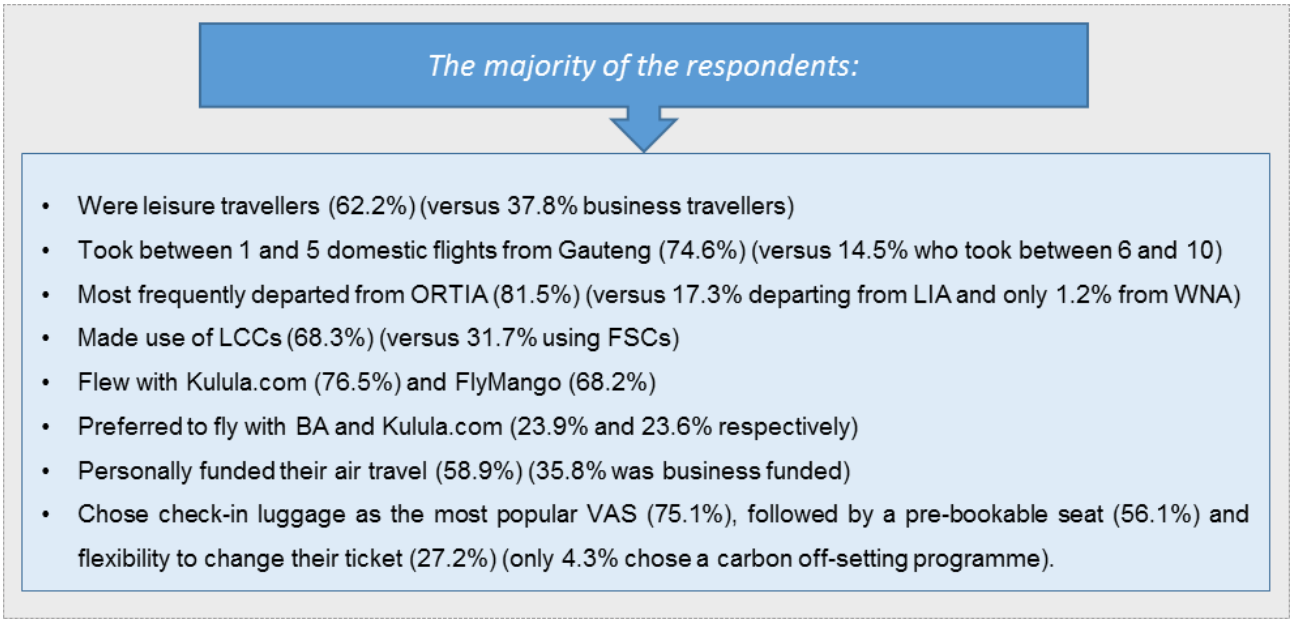


Figure 5.15: Summary of the descriptive statistics: Air travel behaviour

The next section, Section 5.5, reports on the descriptive statistics pertaining to the importance placed on a number of ATSAs. This data was obtained from questions 8 to 14 in Section B of the survey.

5.5 DESCRIPTIVE STATISTICS: IMPORTANCE OF ON AIR TRAVEL SERVICE ATTRIBUTES

Section B of the survey collected data relating to several air travel service attributes (ATSAs). Respondents were requested to rate these attributes in terms of their degree of importance when deciding on an air travel service to purchase (see Sections 8.1 to 14.7 in the questionnaire). These attributes were structured according to seven themes, namely, tangibility, reliability and operational efficiency, price and loyalty, customer service, value-added services, VIP value-added services, and finally, green attributes (conceptualised from the literature review, see Section 2.8.1).

For each statement, the level of importance was rated using a five-point Likert-type scale, including the following ranges: 1) *of no importance* (NI)*;* 2) *of low importance* (LI)*;* 3) *of moderate importance* (MI)*;* 4) *of large importance* (LaI)*; and* 5) *of extreme importance* (EI). Table 5.2 below reflects the initial construct themes, and the corresponding items (as presented in the survey).

Table 5.2: Descriptive statistics: ATSA items and themes from Section B of the survey

Reference to question	Description of item (Grouped according to the construct theme)	NI + LI	MI	LaI + EI
Tangibility				
8.1	An airline's brand image	38.1%	33.2%	28.7%
8.2	Comfortable seat	4.8%	28.7%	66.5%
8.3	Cleanliness of cabin	2.6%	14%	83.5%
8.4	Cleanliness of on-board restrooms	6.6%	18.3%	75.1%
8.5	Quality food and beverages on-board	27.7%	31.7%	40.7%
Reliability and operational efficiency				
9.1	Safety record of an airline	1.8%	7.1%	91.1%
9.2	Reliability of the airline	0.9%	4.1%	95%
9.3	On-time performance of the airline	1.2%	6.9%	91.9%
9.4	The age of the aircraft (*n* = 393)	13.7%	33.1%	53.2%
9.5	The route schedule offered by an airline	7.6%	23.6%	68.8%
Price and loyalty				
10.1	The cheapest air ticket	1.5%	19.8%	78.7%
10.2	Benefitting from a discount offered by a Rewards Programme associated with an airline	27.7%	23.4%	49%
10.3	Flying with an airline that offers attractive packaged deals (for example, with car rental companies and hotels)	43.9%	24.9%	31.3%
10.4	An airline promotion offering low fares	9.6%	20.8%	69.6%
10.5	Best value for money	1.8%	12.9%	85.3%
10.6	An airline's Frequent Flyer Programme	49.5%	26.9%	23.6%
10.7	The airline alliance that an airline is a member of	62.9%	20.1%	17%
Customer service				
11.1	Ease of booking	3.1%	6.9%	90.1%
11.2	Convenient ticketing process (*n* = 393)	3%	9.4%	87.5%
11.3	Efficient customer relations	3.8%	13.7%	82.5%
11.4	Professionalism of airline ground staff	5.8%	19.3%	74.9%
11.5	Professionalism of airline crew	3.6%	12.4%	84%
Value-added services				

12.1 A pre-bookable reserved seat	18.5%	27.9%	53.5%
12.2 Check-in luggage (20 kg)	10.7%	20.3%	69%
12.3 Complimentary food & beverage on-board	38.1%	30.7%	31.2%
12.4 Ticket flexibility allowing cancellation refunds	12.9%	30.7%	56.4%
12.5 Ticket flexibility allowing flight changes	11.6%	29.2%	59.1%
VIP value-add services			
13.1 Separate priority check-in	56.6%	25%	18.1%
13.2 Priority boarding accessing the aircraft	58.1%	22.8%	19%
13.3 Complimentary access to a business lounge before the flight	44.1%	25.4%	30.4%
13.4 Opportunity to disembark the aircraft first	58.8%	23.6%	17.6%
13.5 Priority luggage retrieval after flight	52%	24.4%	23.6%
13.6 Extra arm and leg space	27.2%	27.7%	45.2%
13.7 In-flight Wi-Fi	46.4%	25.4%	28.1%
Green attributes			
14.1 Electronic boarding passes	17.8%	26.6%	55.6%
14.2 A modern, fuel-efficient aircraft (*n* = 393)	18.1%	30.5%	51.4%
14.3 On-board food and beverages that are sourced from environmentally friendly suppliers	33.2%	32%	34.7%
14.4 Locally (South African) sourced on-board food and beverages	31%	28.4%	40.6%
14.5 Environmentally friendly materials for on-board items	30.7%	27.2%	42.2%
14.6 An airlines' display of environmentally responsible behaviour	24.3%	31.5%	44.2%
14.7 A carbon off-setting programme that passengers can contribute towards	39.4%	29.4%	31.2%

Table 5.2 presents the descriptive results from Section B of the Survey. Before the means and standard deviations from these statistics are calculated, further analyses are required (including EFA to identify potential factors, and statistical tests to determine validity and reliability). These analyses and findings will be presented later in this chapter (see Section 5.8). The discussion below presents a summary of the descriptive statistics for each ATSA theme.

With reference to **tangibility**, the items relating to cleanliness of the cabin (Item 8.3) and the on-board restrooms (Item 8.4) were of large or extreme importance to at least three-quarters (75.1%) of the respondents. This was followed by a comfortable seat,

which two-thirds (66.5%) of respondents found to be of large or extreme importance. Of less importance was the quality of food and beverage (F&B) on board, which over one-quarter (27.7%) of the respondents rated as low or of no importance. Of least importance in this theme was an airline's brand image.

All items listed within the theme of **reliability and operational efficiency** are of importance to the majority of respondents. Reliability, on-time performance and the safety record of an airline, were rated high by the vast majority (at least 91.1%) of respondents. Route schedule was of large or extreme importance to more than two-thirds (68.8%) of respondents. Just over half (53.2%) of respondents indicated that the age of the aircraft is considered to be of large or extreme importance.

In terms of **price and loyalty**, at least three-quarters of the respondents indicated that the air tickets that were the cheapest (Item 10.1) and the best value for money (Item 10.5), were of large or extreme importance. Next in terms of importance, were airline promotions offering low fares, which was of large or extreme importance to over two-thirds (69.6%) of respondents. Almost half (49%) of the respondents indicated that discounts offered by an airline's rewards programme were of large or extreme importance. Items that were of no or low importance to the majority of respondents included airline alliances (Item 10.7), Frequent Flyer Programmes (Item 10.6) and packaged deals (Item 10.3).

All the **customer service** attributes were of large or extreme importance to at least three-quarters (74.9%) of the respondents. Of highest importance in this category was the ease of booking (90.1%) and the convenience of the ticketing process (87.5%). This was followed by the professionalism of the airline crew, efficient customer relations and, finally, professionalism of the airline ground staff.

With reference to **value-added services**, respondents rated the majority of items as large or extreme importance. This is with the exception of complimentary F&B on-board, for which 38.1% of the respondents considered as low or no importance. In comparison to the other value-added services theme, items within the **VIP value-added services** theme, on the whole, reflected as less important to respondents. This is with the exception of extra arm and leg space which was of large or extreme 45.2% of the respondents.

Within the **green attributes** theme, the item rated with the highest importance was the electronic boarding pass, which 55.6% of the respondents rated to be of large or extreme importance. Next, in terms of large or extreme importance were a modern fuel-efficient aircraft, an airline's display of environmentally responsible behaviour and the use of environmentally friendly materials for on-board items (51.4%, 44.2% and 42.2% respectively). Only 34.7% of respondents considered on-board F&B sourced from environmentally friendly suppliers to be of large or extreme importance. Of least importance within this theme, was the prospect of a carbon off-setting programme to which passengers can contribute, which 31.2% considered to be of large or extreme importance.

5.5.1 A summary of the descriptive findings: ATSAs

The above section presented the descriptive results obtained from the ATSA themes of the survey. A summary of the findings is presented in Figure 5.16 below.

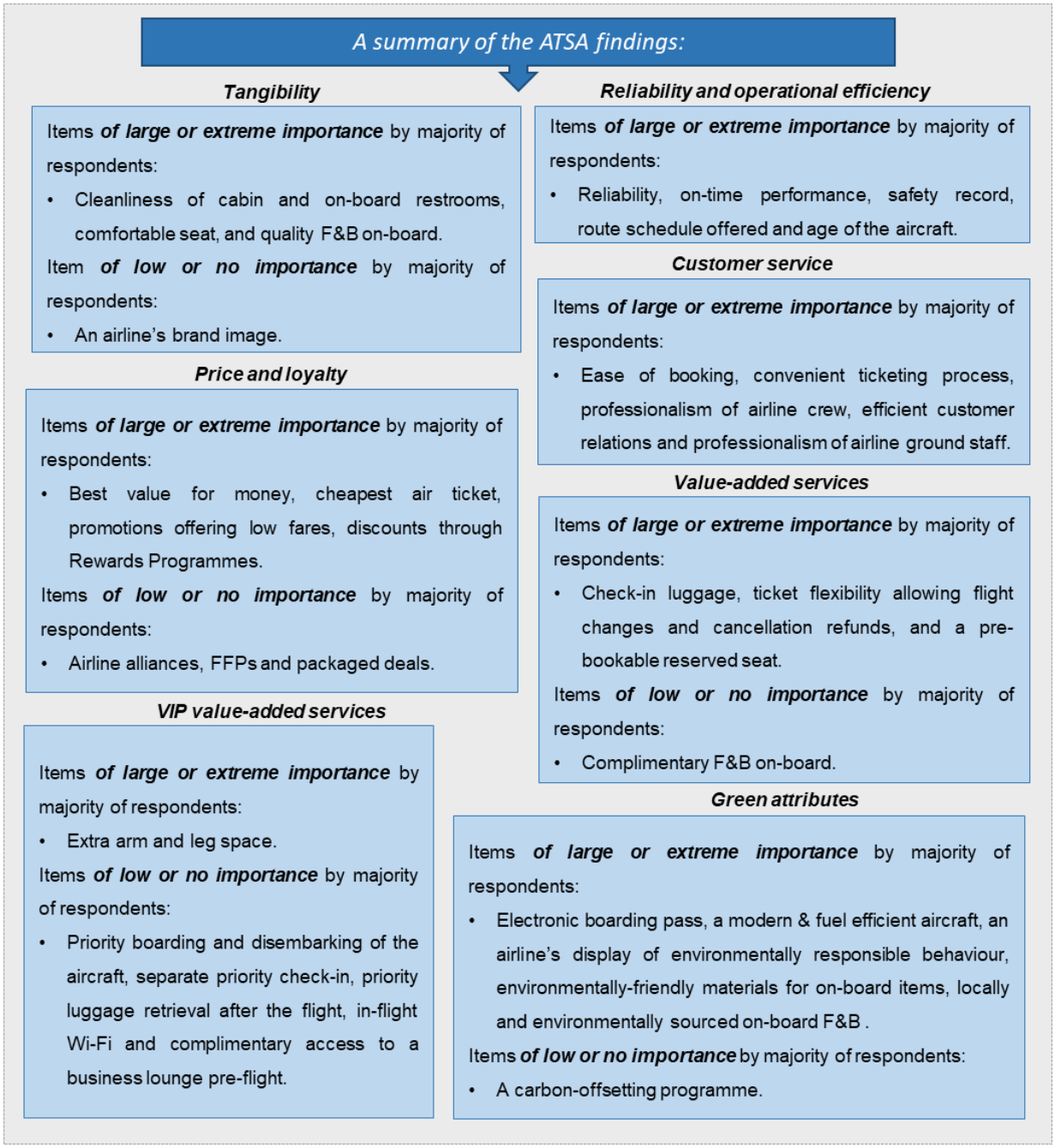


Figure 5.16: Summary of the ATSA descriptive findings

Section 5.5 presented the descriptive findings from the Likert-scale responses presented in Section B of the survey. The next section, Section 5.6, reports on the descriptive results pertaining to the environmental consciousness themes.

5.6 DESCRIPTIVE STATISTICS: ENVIRONMENTAL CONSCIOUSNESS

This section reports on the descriptive statistics pertaining to Section C of the survey. Section C of the survey used an agreement-based Likert-type scale to determine the respondents' level of environmental consciousness (EC). The questions were structured according to four themes. These themes include environmental knowledge, concern, attitudes and behaviour, as conceptualised from the literature review (see Chapter 2, Sections 2.6 and 2.7).

The descriptive statistics obtained for each of the EC themes are reported in this section, using the following scale ranges: 1) *strongly disagree* (SD); 2) *disagree* (D); 3) *neither agree nor disagree* (NA/D); 4) *agree* (A); 5) *strongly agree* (SA) and finally, 6) *I do not know (IDK)*.

Table 5.3 reflects the EC items as grouped according to the four themes and summarises the responses. This table is followed by a discussion of these results.

Table 5.3: Descriptive statistics: EC items and themes from Section C of the survey

Reference to question	Description of item (Grouped according to the construct theme)	SD + D	NA/D	A + SA	IDK
Environmental knowledge					
17.1	Air travel is a significant contributor to particular climate problems.	8.9%	28.7%	54.3%	8.1%
17.2	The airline industry is responsible for some of the climate change related problems.	9.6%	26.1%	55.8%	8.4%
17.3	The balance of nature is delicate and can be easily disrupted.	6.1%	16%	74.4%	4.1%
17.4	Climate change is a natural phenomenon and there is nothing the airline industry can do about it.	70.3%	15.5%	10.7%	3.6%
17.5	The attention given to the climate change is exaggerated.	73.1%	15%	9.4%	2.5%
Environmental awareness/concern					
18.1	I do not think that any changes in my air travel behaviour will make a difference.	35.5%	24.9%	36.3%	3.3%
18.2	I have thought about the negative effects of my flying behaviour on the climate.	34.7%	24.1%	37.8%	3.3%
18.3	I know what impact my air travel activities have on the environment.	31.2%	19.3%	36.5%	12.9%
18.4	As long as I plant a couple of trees in my lifetime, my environmental conscience is clear.	64.5%	25.6%	7.1%	2.8%
18.5	My conscience will only be clear when my daily activities cause minimal or no greenhouse gas (GHG) emissions.	20.6%	32.5%	41.6%	5.3%
18.6	The environment needs to be respected and protected, irrespective of the costs.	3.6%	15.5%	79.7%	1.3%
18.7	I worry about environmental problems caused by air travel.	22.8%	38.6%	34.5%	4.1%

Reference to question	Description of item (Grouped according to the construct theme)	SD + D	NA/D	A + SA	IDK
Environmental attitude					
19.1	Striving to conserve the environment should be an essential responsibility of airlines.	3%	12.4%	83.5%	1.5%
19.2	Airlines should only serve locally produced food and beverage items on board.	12.9%	26.4%	58.9%	1.8%
19.3	Airlines should reduce, reuse (where possible) and recycle all waste accumulated on-board.	2%	6.1%	90.9%	1%
19.4	Airlines should make use of only environmentally friendly materials for consumption on-board.	0.5%	12.2%	83.5%	1.3%
19.5	Airlines should continuously strive to reduce their negative impact on the environment.	1%	3.8%	93.9%	1.3%
19.6	Airlines should focus on technological innovations which improve their environmental performance.	0.5%	4.8%	93.1%	1.5%
19.7	The airline industry in South Africa must develop in an environmentally responsible manner.	0.5%	5.1%	91.9%	2.5%
19.8	Airlines should offer a “green class” for interested consumers.	12.2%	29.4%	54.1%	4.3%
19.9	A “green premium” (additional cost) should be mandatory for all air travellers to off-set (make up for) their carbon emissions.	39.4%	24.9%	34.1%	1.6%
Environmental behaviour					
20.1	I consider my impact on the environment when making air travel decision(s).	46.7%	33%	18.6%	1.7%
20.2	I now fly less frequently to reduce the impact of my air travel on the environment.	68.3%	21.8%	8.9%	1%
20.3	I purchase voluntary carbon off-setting credits for each flight to counteract my impact on the environment.	72.1%	18.5%	4.8%	4.6%

20.4	Air travel is the only suitable means of transportation for me to cover the distances I am required to travel within South Africa.	18.2%	14.2%	66.8%	0.8%
20.5	I do not believe that there is any urgency for me to change my air travel behaviour.	23.1%	35%	40.6%	1.3%
20.6	I use Skype or similar video-communication as a means to reduce my environmental impact from travel.	33.8%	27.4%	36.8%	2%
20.7	I only support airlines who reflect a strong commitment to being environmentally responsible.	44.9%	38.8%	11.1%	5.2%
20.8	I only fly with airlines which use a modern aircraft fleet.	38.3%	33.8%	20.8%	7.1%
20.9	I always use an electronic boarding pass/ticket (no paper).	32.3%	17.5%	49.4%	0.8%
20.10	I am willing to pay a “green premium” (additional cost) for an air travel product/service that contributes to environmentally friendly air travel.	44.9%	20.6%	31.5%	3%

Table 5.3 presents the descriptive results from Section C of the Survey. Before the means and standard deviations from these statistics were calculated, further analyses were required (including EFA to identify potential factors, and statistical tests to determine validity and reliability). These analyses and findings will be presented later in this chapter (see Section 5.9). The discussion below presents a summary of the descriptive statistics for EC each theme.

For the theme pertaining to **environmental knowledge**, almost three-quarters (74.4%) of the respondents agreed or strongly agreed that the balance of nature is delicate and can be easily disrupted. In terms of air travel being a major contributor to, and/or responsible for climate change, more than half of the respondents agreed or strongly agreed. Two statements within this theme were negatively coded statements, resulting in disagreement being the indicator of environmental consciousness. With reference to these two statements, 70.3% of the respondents disagreed or strongly disagreed that climate change is a natural phenomenon and that there is nothing the airline industry can do about it. A similar percentage of respondents (73.1%) also disagreed or strongly disagreed that the attention given to climate change is exaggerated. Based on the responses to these questions, the majority of respondents appeared knowledgeable on climate change issues and the environment, as well as the airline industry's impact on the environment.

At least one-third of respondents agreed with all the statements relating to **environmental awareness/concern**. The highest levels of agreement related to environmental respect, for which 79.7% of the respondents agreed or strongly agreed that the environment needs to be respected and protected irrespective of the costs involved. The statement which read, "as long as I plant a couple of trees in my lifetime, my environmental conscience is clear" was negatively coded/reversed. 64.5% of the respondents disagreed with this statement, revealing that more environmentally responsible actions (beyond simply tree planting) are necessary for a clear environmental conscience.

Environmental attitude was revealed to be positive, in that, with the exception of one statement, at least half of the respondents agreed or strongly agreed to all the statements. The exception related to the last statement, regarding the implementation of a mandatory "green premium" for all air travellers, for which only 34.2% of respondents agreed or strongly agreed. This reveals that even when positive attitudes

exist, many air travellers do not want to be forced to pay a compulsory green fee or premium. However, respondents did appear to be open to the idea of voluntary involvement, in that over half (54.1%) of the respondents agreed that airlines should offer a “green class” for interested consumers.

For a few statements within the **environmental air travel behaviour** theme, the extent to which respondents agreed or strongly agreed (that is, a very positive attitude) were very high, as summarised below:

- Striving to conserve the environment should be an essential responsibility of airlines (83.5%).
- Airlines should: make use of only environmentally friendly materials for consumption on-board (83.5%); reduce, reuse (where possible) and recycle all waste accumulated on-board (90.9%); focus on technological innovations which improve their environmental performance (93.1%); and continuously strive to reduce their negative impact on the environment (93.9%).
- The airline industry in SA must develop in an environmentally responsible manner (91.9%).

Within the theme of **environmental air travel behaviour**, responses indicated that the majority of respondents did not carry out environmentally responsible air travel behaviour. Amongst the ten items in this theme, eight items indicated environmentally responsible behaviour by virtue of agreement, while two items (Items 20.4 and 20.5) were reverse coded, indicating environmentally responsible behaviour by virtue of disagreement.

Levels of agreement indicate that 66.8% of respondents see air travel as the only suitable means of transportation to cover the required distances in SA (that is, the only available alternative to road transport). In addition, levels of agreement reflect that 40.6% of respondents do not believe there is an urgency for them to change their air travel behaviour.

With reference to the remaining eight items, levels of disagreement reflect that 68.3% of respondents do not fly less frequently to reduce the impact on the environment. Despite this, over one-third (36.8%) of respondents already use Skype or similar video-communication to reduce their environmental impact of their air travel. Since this

survey was conducted pre-Covid-19, the latter figure would likely look a lot higher in 2021 (at the time of finalising the current study).

44% of respondents disagree to supporting airlines that reflect a strong commitment towards being environmentally responsible, while 38.8% held a neutral stance (perhaps revealing that they do not know whether or not the airlines they support have environmentally responsible commitments). 38.3% of respondents do not fly with airlines that use a modern aircraft fleet, however, 20.8% do. Most respondents (72.1%) do not purchase VCO credits for their flights to counteract the air travel impact on the environment. Interestingly, almost half (49.4%) of respondents agreed to using an electronic boarding pass (however, this could be due to other reasons, such as online check-in and convenience, not necessarily as a measure of pro-environmental behaviour). Finally, 44.9% of respondents were not willing to pay a “green premium” to contribute to an environmentally friendly air travel experience, while 31.5% of the respondents showed a willingness to do so.

5.6.1 Summary of the descriptive findings: Environmental consciousness

The above section presented the descriptive results obtained from EC themes of the survey. A summary of the findings is presented in Figure 5.17 below.

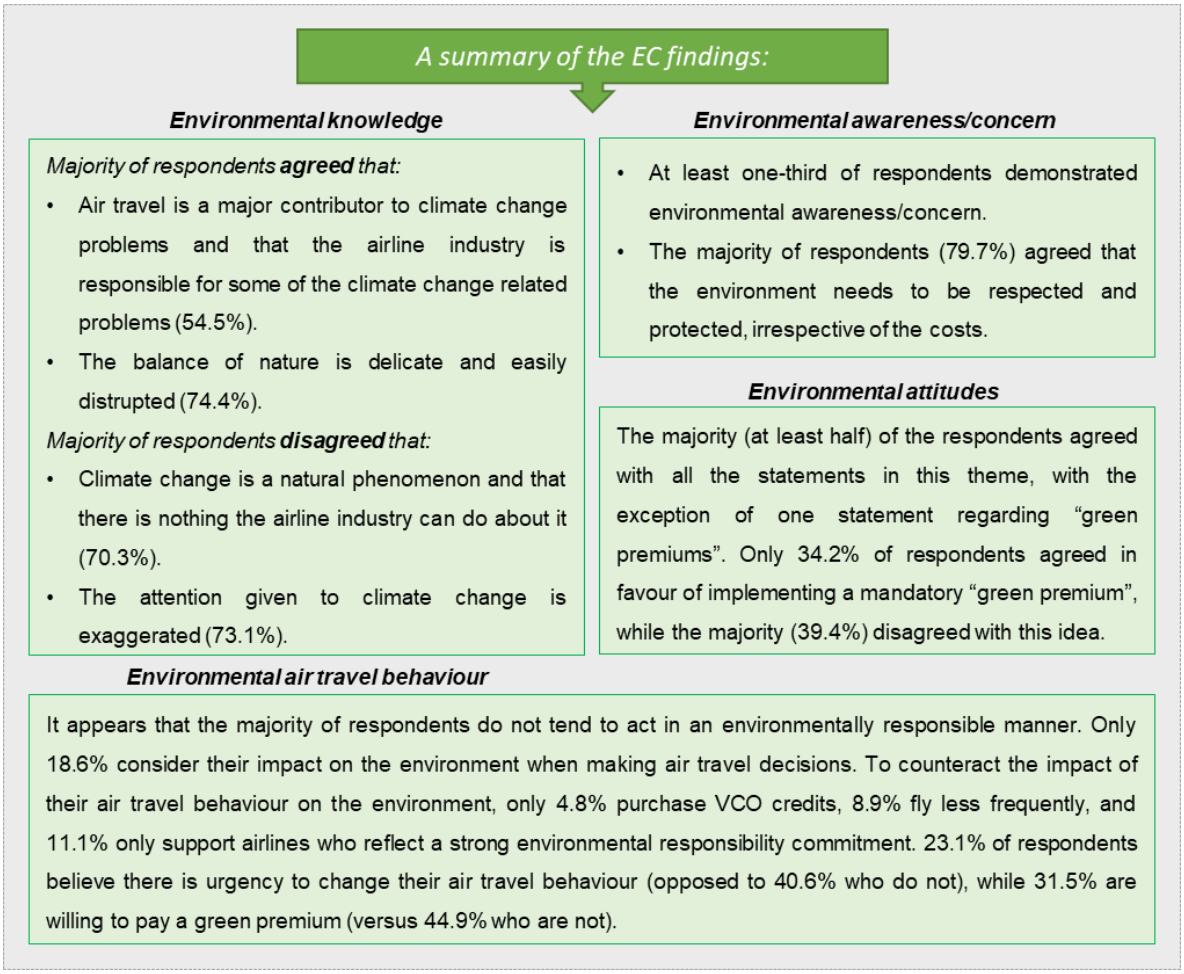


Figure 5.17: Summary of the EC descriptive findings

The basic descriptive research findings have now been presented as Stage 1 of the research analysis, forming the foundation for further analysis (see Figure 5.1). The first part of Stage 2 of the data analysis follows, namely, to determine the validity and reliability of the constructs and to conduct exploratory factor analysis for each theme.

5.7 CONSTRUCT VALIDITY AND RELIABILITY: AIR TRAVEL SERVICE ATTRIBUTES

Stage 2 of the data analysis reports on the results of the exploratory factor analysis (EFA) as well as the construct validity and reliability of the ATSA themes. The data presented in this section was obtained from the responses in Section B of the survey (the foundational descriptive statistics from this section were analysed in Section 5.5). Since new and adapted items were included in the themes presented in Section B of the survey, EFA rather than confirmatory factor analysis (CFA) was conducted to investigate the underlying structure of the data.

For each construct, principal axis factoring, as an extraction method, and Promax, as a rotation method, were used. To confirm the appropriateness of the EFA, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, as well as the Bartlett's test of sphericity, were considered for each construct. With reference to Tables 5.4 and 5.5 which follow, the KMO Measure of Sampling Adequacy for all themes reflected values above the acceptable threshold of 0.6 (Kaiser, 1974). In addition, for each theme, the Bartlett's Test of Sphericity was significant at 0.000 ($P< 0.001$), indicating that a factor analysis was appropriate for all themes.

The items used to construct each factor, and the means and standard deviations (SD) of each item included in the EFA, are presented within their respective themes in the following tables. Table 5.4 below presents the data for which one factor was identified, while Table 5.5 presents the data for which two factors were identified.

Table 5.4: ATSA EFA for which one factor was identified

Code	Items used to construct the factor	Mean	SD	N	Factor loadings	KMO Measure of Sampling Adequacy
Tangibility theme						
SecBQ1_1	An airline's brand image	2.83	1.149	394	-	0.682
SecBQ1_2	Comfortable seat	3.86	0.889	394	0.606	
SecBQ1_3	Cleanliness of cabin	4.17	0.788	394	0.856	
SecBQ1_4	Cleanliness of on-board restrooms	4.06	0.971	394	0.746	
SecBQ1_5	Quality of food and beverages on-board	3.18	1.144	394	0.552	
Reliability and operational efficiency theme						
SecBQ1B_1	Safety record of an airline	4.58	0.755	394	0.659	0.698
SecBQ1B_2	Reliability of the airline	4.61	0.642	394	0.897	
SecBQ1B_3	On-time performance of the airline	4.44	0.723	394	0.765	
*SecBQ1B_4_1	The age of the aircraft	3.583	1.0308	393	0.478	
SecBQ1B_5	The route schedule offered by an airline	3.87	0.936	394	-	
Customer service theme						
SecBQ1D_1	Ease of booking	4.35	0.772	394	0.732	0.749
*SecBQ1D_2_1	Convenient ticketing process	4.32	0.787	393	0.755	
SecBQ1D_3	Efficient customer relations	4.24	0.855	394	0.860	

SecBQ1D_4	Professionalism of airline ground staff	4.09	0.938	394	0.751	
SecBQ1D_5	Professionalism of airline crew	4.25	0.834	394	0.769	
VIP value-added attributes' theme						
SecBQ1F_1	Separate priority check-in	2.43	1.181	394	0.874	0.879
SecBQ1F_2	Priority boarding accessing the aircraft	2.43	1.179	394	0.900	
SecBQ1F_3	Complimentary access to a business lounge before the flight	2.79	1.279	394	0.746	
SecBQ1F_4	Opportunity to disembark the aircraft first	2.40	1.175	394	0.847	
SecBQ1F_5	Priority luggage retrieval after flight	2.58	1.236	394	0.882	
SecBQ1F_6	Extra arm and leg space	3.30	1.249	394	0.585	
SecBQ1F_7	In-flight Wi-Fi	2.73	1.288	394	0.453	
Green attributes' theme						
SecBQ1G_1	Electronic boarding passes	3.57	1.112	394	0.477	0.905
SecBQ1G_2_1	A modern, fuel-efficient aircraft	3.483	1.0891	394	0.747	
SecBQ1G_3	On-board food and beverages that are sourced from environmentally friendly suppliers	3.03	1.176	394	0.852	
SecBQ1G_4	Locally (South African) sourced on-board food and beverages	3.17	1.245	394	0.846	
SecBQ1G_5	Environmentally friendly materials for on-board items	3.20	1.231	394	0.911	
SecBQ1G_6	An airlines' display of environmentally responsible behaviour	3.29	1.166	394	0.866	

SecBQ1G_7	A carbon off-setting programme that passengers can contribute towards	2.90	1.211	394	0.816	

Notes: Scores: 1 = Of no importance, 2 = Of low importance, 3 = Of moderate importance, 4 = Of large importance, 5 = Of extreme importance.

*As presented above in Table 5.4, one respondent did not provide a response for items SecBQ1B_4_1 and SecBQ1D_2_1. To include the items in the analysis, an average value for these items were assigned to the missing value cases, to bring the respondent numbers to a consistent 394 per theme.

Table 5.5: ATSA EFA for which two factors were identified

Code	Items used to construct the factor	Mean	SD	N	Factor loadings		KMO Measure of Sampling Adequacy
					1	2	
Price and loyalty theme							
SecBQ1C_1	The cheapest air ticket	4.21	0.827	394		.758	0.725
SecBQ1C_2	Benefitting from a discount offered by a Rewards Programme associated with an airline	3.34	1.320	394	.537		
SecBQ1C_3	Flying with an airline that offers attractive packaged deals *(for example, with car rental companies and hotels)*	2.79	1.263	394	.610		
SecBQ1C_4	An airline promotion offering low fares	3.92	1.029	394		.822	
SecBQ1C_5	Best value for money	4.30	0.788	394		.650	
SecBQ1C_6	An airline's Frequent Flyer Programme	2.67	1.232	394	.841		
SecBQ1C_7	The airline alliance that an airline is a member of	2.30	1.197	394	.722		
Value-added services theme							
SecBQ1E_1	A pre-bookable reserved seat	3.52	1.146	394		0.572	0.668
SecBQ1E_2	Check-in luggage (20kg)	3.82	1.026	394		0.712	
SecBQ1E_3	Complimentary food and beverage on-board	2.92	1.137	394		0.555	
SecBQ1E_4	Ticket flexibility allowing cancellation refunds	3.62	1.030	394	0.933		
SecBQ1E_5	Ticket flexibility allowing flight changes	3.71	1.033	394	0.945		

The analysis identified one factor for each of the following themes: tangibility, reliability and operational efficiency, customer service, VIP value-added services, and green attributes. Each of these factors were identified on the basis of the criterion of eigenvalues greater than one, explaining the variance of 50.198%, 51.275%, 67.86%, 64.315% and 68.35%, respectively for the latter mentioned themes. For the themes of price and loyalty, and value-added services, two factors were identified. The factors for each of these themes were identified based on the eigenvalues greater than one, explaining the variance of 65.357% and 73.457%, respectively for the price and loyalty and value-added services themes.

5.7.1 Internal consistency (reliability) of the factors:

To determine the internal consistency (reliability) of the construct themes (factors), a Cronbach's alpha coefficient was calculated for each theme. A coefficient value of 0.7 or higher suggests that the items in the scale are measuring the same thing (Saunders *et al.*, 2016:451). Based on the factor analysis and the resultant coefficient per scale/factor, items were removed from a scale in instances where they did not fit within the theme being measured. This is explained as deemed necessary, in the respective themes below.

Tangibility:

Based on the factor loading scores, Item SecBQ1_1, because of its factor loading of less than 0.3, was removed from the "tangibility" theme. Using the remaining four items (SecBQ1_2, SecBQ1_3, SecBQ1_4 and SecBQ1_5) to calculate Cronbach's Alpha, the internal consistency for the theme was **0.765**. Since Cronbach's Alpha was above the threshold of 0.7, the theme was considered reliable. Accordingly, a factor-based score was calculated using the latter four items of the tangibility theme, that is, comfortable seat, cleanliness of cabin, cleanliness of on-board restrooms and the quality of food and beverages on-board.

Reliability and operational efficiency:

Item SecBQB1_5 was removed from the "reliability and operational efficiency" theme due to it having a factor loading of less than 0.3. The remaining four items (SecBQ1B_1, SecBQ1B_2, SecBQ1B_3 and SecBQ1B_4_1) were used to calculate Cronbach's alpha, resulting in an internal consistency value of **0.757**. As this value

demonstrates acceptable internal consistency and reliability, the factor was finalised as such and a factor-based score was calculated based on the latter four items of this theme (that is, safety record, reliability and on-time performance of an airline, as well as the age of the aircraft).

Customer service:

Using all five items of the "customer service" theme, the Cronbach's Alpha was **0.880**. Because this value demonstrates good internal consistency and reliability, the factor was finalised as such. Accordingly, a factor-based score was calculated based on all five items in this theme.

VIP value-added services:

Using all seven items of the "VIP value-added services" theme, the Cronbach's Alpha was **0.899.** In the light of this value being considered to be good, the factor was finalised as such. Accordingly, a factor-based score was calculated based on all seven items in this theme.

Green attributes:

Cronbach's Alpha for the "green attributes" theme was **0.920** with all seven items included. This value, above 0.9, is considered excellent, and accordingly, resulted in the factor being finalised as such, with a factor-based score based on all seven items in this theme.

Price and loyalty:

As reflected by the factor loadings for the initial "price and loyalty" theme (see Table 5.5), two factors were identified. Based on the EFA results, items SecBQ1C_2, SecBQ1C_3, SecBQ1C_6 and SecBQ1C_7 should be grouped together as a factor (Factor 1 loadings). These items relate to loyalty and rewards and inclusively, reflect a Cronbach's Alpha of **0.776**. In the light of the acceptable internal consistency across these four items, they were adopted as a new construct, namely, "loyalty and rewards".

With reference to the remaining items within this theme, the EFA results revealed that Items SecBQ1C_1, SecBQ1C_4 and SecBQ1C_5 should be grouped together (Factor 2 loadings). These items relate to price, and inclusively, reflect a Cronbach's Alpha of **0.781**. Accordingly, factor-based scores were calculated for the "loyalty and rewards"

factor (SecBQ1C_2, SecBQ1C_3, SecBQ1C_6 and SecBQ1C_7) and the “price” factor (SecBQ1C_1, SecBQ1C_4 and SecBQ1C_5).

Value-added services:

As reflected in Table 5.5, two factors were identified from this initial theme. Based on the EFA results, Items SecBQ1E_1, SecBQ1E_2 and SecBQ1E_3 should be grouped as a factor (Factor 2 loadings). These items reflect in-transit or on-board attributes, and inclusively, reflect a Cronbach’s Alpha of **0.652**. Although this value is below the threshold of 0.7 for reliability, it is still above the threshold recognised for exploratory research (Hair *et al.*, 2014), and although considered poor, it is acceptable (Athanasiou & Mavrikaki in Taber, 2018). In this light, the grouping of these items was deemed as acceptable for the purpose of the current study. Accordingly, a new factor was adopted, namely, “In-transit/on-board attributes”.

With reference to the remaining items, the EFA results reflect that Items SecBQ1E_4 and SecBQ1E_5 should be grouped as one factor. The common theme among these items is flexibility. Accordingly, a new factor was adopted, namely, “ticket flexibility”. Inclusively, these two items reflect a Cronbach’s Alpha of **0.939**. At above 0.9, this value is considered to be excellent, deeming this grouping as reliable.

In summary, factor-based scores were therefore calculated for the “in-transit/on-board attributes” factor (SecBQ1E_1, SecBQ1E_2 and SecBQ1E_3) and for the “ticket flexibility” factor (SecBQ1E_4 and SecBQ1E_5).

5.7.2 Summary of the validity and reliability of each theme/factor: Air Travel Service Attributes

Table 5.6 summarises of the outcomes of the reliability statistics, for each of the nine factors as finalised during the EFA. This is followed by Table 5.7, which provides statistics for the final ATSA factors.

Table 5.6: Summary of the reliability statistics for the final ATSA factors

Initial theme	Final factor label	No. of items	Cronbach's Alpha
Tangibility	Tangibility	4	0.765
Reliability and operational efficiency	Reliability and operational efficiency	4	0.757
Price and loyalty	Loyalty and rewards	4	0.776
	Price	3	0.781
Customer service	Customer service	5	0.880
Value-added services	Ticket flexibility	2	0.939
	In-transit/on-board attributes	3	0.652
VIP value-added services	VIP value-added services	7	0.899
Green attributes	Green attributes	7	0.920

Table 5.6 above shows the Cronbach's Alpha values for each final factor. Nine factors demonstrated sufficient internal consistency, namely, tangibility, reliability and operational efficiency, loyalty and rewards, price, customer service, ticket flexibility, in-transit/on-board attributes, VIP value-added services, and green attributes. Accordingly, these factors will be included for further analyses in the current study.

Table 5.7 below reflects a summary of the descriptive statistics, in terms of the nine ATSA factors, using means, medians and standard deviations (SD). In addition, the table provides a ranking of the means, thus highlighting the level of importance placed on each of the nine ATSA factors.

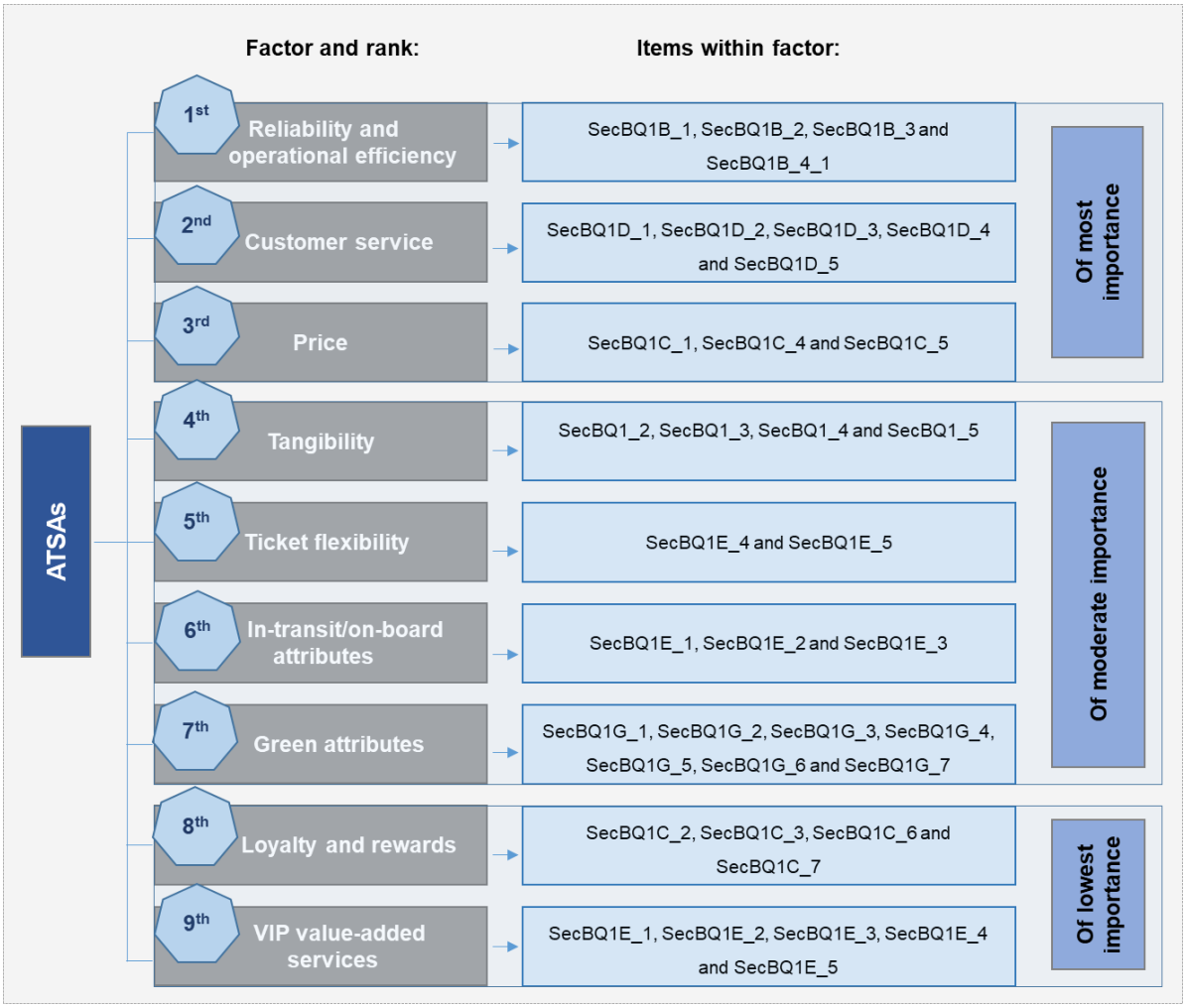
Table 5.7: Final descriptive statistics for the ATSA factors

Factor	Mean (scale is from 1 to 5)	Median	SD	Factor rank
Tangibility	3.8173	3.7500	0.73311	4
Reliability and operational efficiency	4.3037	4.5000	0.60890	1
Loyalty and rewards	2.7766	2.7500	0.96993	8
Price	4.1404	4.3333	0.74061	3
Customer service	4.2494	4.4000	0.68995	2
Ticket flexibility	3.6637	4.0000	1.00151	5
In-transit/on-board attributes	3.4222	3.3333	0.84792	6
VIP value-added services	2.6642	2.5714	0.96895	9
Green attributes	3.2374	3.2857	0.96638	7

Notes: The scale indicates 5 = Of extreme importance (maximum) and 1 = Of no importance (minimum). The skewness and kurtosis values indicate that the factor variables can be assumed to be normally distributed as all values lie between -2 and +2.

Based on the highest to lowest mean scores per factor, it is observed from Table 5.7 that respondents placed the greatest level of importance on “reliability and operational efficiency” (ranked 1st) and the lowest level of importance on “VIP value-added services” (ranked 9th). Figure 5.18 below provides a summary of the valid and reliable factors, the items included in each factor, their perceived level of importance during the decision-making process, and the ranked order, from first to ninth.

Figure 5.18: Final ATSA factors: Rank, items and level of importance



Section 5.7 covered the first part of Stage 2 of the data analysis, reporting on the EFA and reliability results for the constructs reflecting the importance air travellers place on various ATSAs. The second part of Stage 2, presented in Section 5.8, reports on the EFA results for the themes intended to measure air traveller EC.

5.8 CONSTRUCT VALIDITY AND RELIABILITY: AIR TRAVELLER ENVIRONMENTAL CONSCIOUSNESS

This section reports on the results of the EFA, as well as the construct validity and reliability for the themes relating to air traveller EC. The data presented in this section was obtained from the responses in Section C of the survey, for which the foundational descriptive statistics were analysed in Section 5.5. The results will be presented according to the four initial themes: environmental knowledge, environmental awareness/concern, environmental attitude and environmental air travel behaviour.

As with the themes presented in Section 5.7, EFA was employed for all the EC themes, in the light of them containing new and adapted items. For each construct, principal axis factoring (as an extraction method) and Promax (as a rotation method) were used. To confirm the appropriateness of the EFA, the KMO Measure of Sampling Adequacy and the Bartlett's test of sphericity were considered for each construct. The KMO Measure of Sampling Adequacy for all themes presented in Tables 5.8 and 5.9 reflect values above the acceptable threshold of 0.6 (Kaiser, 1974). The Bartlett's Test of Sphericity was significant at 0.000 (P< 0.001) for each theme, indicating that a factor analysis was appropriate for all themes in Tables 5.8 and 5.9.

Note: The data obtained from this section of the survey included missing values, due to some respondents choosing the "I don't know" option. The percentage of missing values for each theme were less than 10% of the total number of responses and could therefore be replaced with the average value for the item. In each case, this value was based on the valid responses submitted.

The items used to construct each factor, and the means and standard deviations (SD) of each item included in the EFA, are presented within their respective themes in the following tables. Table 5.8 below presents the data for which one factor was identified, while Table 5.9 presents the data for which two factors were identified.

Table 5.8: EC EFA for which one factor was identified

Code	Items used to construct the factor	Mean	SD	Factor loadings	KMO Measure of Sampling Adequacy
Environmental knowledge theme					
SecCQ1A_1_1	Air travel is a significant contributor to particular climate change problems.	3.660	.8755	.740	0.715
SecCQ1A_2_1	The airline industry is responsible for some of the climate change related problems.	3.643	.8663	.779	
SecCQ1A_3_1	The balance of nature is delicate and can be easily disrupted.	4.024	.8893	.514	
SecCQ1A_4_1*	Climate change is a natural phenomenon and there is nothing the airline industry can do about it.	2.139	.9672	-.691	
SecCQ1A_5_1*	The attention given to the climate change is exaggerated.	2.026	1.0035	-.590	

*After the means and SDs were calculated, the statement was recoded from a negative to a positive statement, for the statement to load within the most appropriate factor.

Table 5.9: EC EFA for which two factors were identified

Code	Items used to construct the factor	Mean	SD	Factor loadings		KMO Measure of Sampling Adequacy
				1	2	
Environmental awareness/concern theme						
SecCQ1B_1	I do not think that any changes in my air travel behaviour will make a difference.	3.00	1.106		.561	0.758
SecCQ1B_2	I have thought about the negative effects of my flying behaviour on the climate.	3.06	1.098	.820		

SecCQ1B_3	I know what impact my air travel activities have on the environment.	3.08	1.038	.835		
SecCQ1B_4*	As long as I plant a couple of trees in my lifetime, my environmental conscience is clear.	2.35	.901		-.475	
SecCQ1B_5	My conscience will only be clear when my daily activities cause minimal or no greenhouse gas (GHG) emissions.	3.27	.973	.314	.353	
SecCQ1B_6_1	The environment needs to be respected and protected, irrespective of the costs.	4.116	.8377		.374	
SecCQ1B_7	I worry about environmental problems caused by air travel.	3.18	.978	.586		
Environmental attitude theme						
SecCQC_1	Striving to conserve the environment should be an essential responsibility of airlines.	4.12	.733	.416		0.874
SecCQC_2	Airlines should only serve locally produced food and beverage items on-board.	3.74	1.036	.323	.371	
SecCQC_3	Airlines should reduce, reuse (where possible) and recycle all waste accumulated on-board.	4.36	.722	.679		
SecCQC_4	Airlines should make use of environmentally friendly materials for consumption on-board.	4.21	.790	.648		
SecCQC_5	Airlines should continuously strive to reduce their negative impact on the environment.	4.39	.612	.896		
SecCQC_6	Airlines should focus on technological innovations which improve their environmental performance.	4.41	.609	.944		
SecCQC_7	The airline industry in South Africa must develop in an environmentally responsible manner.	4.39	.609	.912		

SecCQC_8	Airlines should offer a “green class” for interested consumers.	3.68	1.011		.629	
SecCQC_9	A “green premium” should be mandatory for all air travellers to off-set their carbon emissions.	2.95	1.254		.826	
Environmental air travel behaviour theme						
SecCQ1D_1	I consider my impact on the environment when making air travel decision(s).	2.70	.932	.727		0.819
SecCQ1D_2	I now fly less frequently to reduce the impact of my air travel on the environment.	2.30	.843	.599		
SecCQ1D_3	I purchase voluntary carbon off-setting credits for each flight to counteract my impact on the environment.	2.12	.787	.698		
SecCQ1D_4	Air travel is the only suitable means of transportation for me to cover the distances I am required to travel within South Africa.	3.71	1.089		.383	
SecCQ1D_5	I do not believe that there is any urgency for me to change my air travel behaviour.	3.21	.964		.605	
SecCQ1D_6_1	I use Skype or similar video-communication as a means to reduce my environmental impact from travel.	3.07	1.105	.518		
SecCQ1D_7	I only support airlines who reflect a strong commitment to being environmentally responsible.	2.60	.856	.832		
SecCQ1D_8	I only fly with airlines which use a modern aircraft fleet.	2.80	.910	.527		
SecCQ1D_9	I always use an electronic boarding pass/ticket (no paper).	3.32	1.200	.369		
SecCQ1D_10	I am willing to pay a “green premium” for an air travel product/ service that contributes to environmentally friendly air travel.	2.78	1.192	.494		

*After the means and SDs were calculated, the statement was recoded from a negative to a positive statement, for the statement to load within the most appropriate factor.

The analysis identified one factor for the theme pertaining to environmental knowledge. The factor was identified based on the criterion of eigenvalues greater than one, explaining 71.5% of the variance. The analysis identified the following two factors from each of the three remaining themes: environmental awareness/concern, environmental attitudes and environmental air travel behaviour. The factors per theme were identified based on the eigenvalues greater than one, explaining the variance of 56.64%, 66.84% and 49.09%, respectively, for the latter themes. The internal consistency (reliability) of each identified factor will be discussed in the next section.

5.8.1 Internal consistency (reliability) of the factors

To determine the internal consistency of the construct themes (factors) identified by the EFA, as presented in Tables 5.8 and 5.9 above, Cronbach's alpha coefficient values were calculated for each theme. This is explained as deemed necessary, in the respective EC themes below.

Environmental knowledge:

The data in Table 5.8 was analysed to determine whether the grouping the environmental knowledge statements into one factor, was appropriate for factor analysis. Items SecCQ1A_4 and SecCQ1A_5 were both reverse statements; as such, both loaded negatively onto the factor. These statements were therefore recoded before calculating the Cronbach's Alpha value. When all five items within the "environmental knowledge" theme were grouped, the Cronbach's Alpha was 0.778. Since this value was above the threshold of 0.7, the factor was finalised as such, and a factor-based score was calculated based on items SecCQA_1_1, SecCQA_2_1 SecCQA_3_1 as well as the reverse scored items SecCQA_4_1* and SecCQA_5_1* for the environmental knowledge theme.

Environmental awareness/concern:

Reflected by the factor loadings in Table 5.9, two factors were identified from the environmental awareness/concern theme. Firstly, the EFA revealed that the items SecCQ1B_2, SecCQ1B_3, SecCQ1B_5 and SecCQ1B_7 should be grouped as a factor (Factor 1 loadings). These statements relate to an air traveller's own environmental awareness and, inclusively, reflect a Cronbach's Alpha of **0.767**. In view

of the acceptable internal consistency across these four items, they were adopted as a new construct, titled “environmental awareness”.

Secondly, the EFA showed that items SecCQ1B_1, SecCQ1B_4 and SecCQ1B_6rec should be grouped as a separate factor (Factor 2 loadings). The statements in this group reflect attitudes of “environmental indifference” (potential environmental bystanders or deniers) and, inclusively, reflected a Cronbach’s Alpha of **0.427**. This value is well below 0.6 and considered to be poor. Accordingly, these three items were not adopted as a factor. Within this theme, a factor-based score was only calculated for *environmental awareness*, based on the four items, namely, SecCQ1B_2, SecCQ1B_3, SecCQ1B_5 and SecCQ1B_7.

Note: Item SecCQ1B_5 loaded in both Factor 1 and Factor 2. Because this item distinctly relates to environmental awareness (that is, Factor 1), as opposed to environmental indifference (Factor 2), it was included within the Factor 1 item grouping.

Environmental attitude:

Reflected by the factor loadings in Table 5.9, two factors were identified from the environmental attitude theme. Firstly, the EFA revealed that items SecCQ1C_1, SecCQ1C_2, SecCQ1C_3, SecCQ1C_4, SecCQ1C_5, SecCQ1C_6 and SecCQ1C_7 should be grouped together (Factor 1 loadings). These items reflected a common theme relating to environmental operations, and inclusively, reflect a Cronbach’s Alpha of 0.874. In view of the good (< 0.8) internal consistency across these seven items, they were adopted as a new construct labelled “attitudes towards airline environmental operations”.

Secondly, the EFA for the environmental attitude theme revealed that items SecCQ1C_8 and SecCQ1C_9 should be grouped together as a factor (Factor 2 loadings). These items reflected a common theme relating to environmental service offerings, and inclusively, reflected a Cronbach’s Alpha of **0.691**. Since this value is below the threshold of 0.7, but still above the threshold recognised for exploratory research, it was considered acceptable. Accordingly, these two items were adopted as a new construct, labelled “attitudes towards environmental airline service offerings”, on which a factor-based score was calculated.

Note: Item SecQC_2 loaded in both Factor 1 and Factor 2. Because this item best relates to attitudes towards environmental airline operations (that is, Factor 1), as opposed to attitudes towards environmental airline service offerings (Factor 2), it was included within the Factor 1 item grouping.

Environmental air travel behaviour:

Two factors were identified from this theme. Based on the EFA it was identified that items SecCQ1D_4 and SecCQ1D_5 should be grouped together (Factor 2 loadings). The group for the latter two items was not labelled since the statements in this factor do not reflect a common theme. This was confirmed by the low Cronbach's Alpha of 0.261, considered unacceptable and therefore unsatisfactory. Therefore, without suitable reliability, a factor-based score for items SecCQ1D_4 and SecCQ1D_5 was not calculated.

Based on the EFA, it was also identified that items SecCQ1D_1, SecCQ1D_2, SecCQ1D_3, SecCQ1D_6, SecCQ1D_7, SecCQ1D_8, SecCQ1D_9 and SecCQ1D_10 should be grouped together (Factor 1 loadings). These eight items reflect a common theme in the sense that all the items related to pro-environmental air travel behaviour. The Cronbach's Alpha for these values was 0.789. As this is considered acceptable, a new construct was adopted, labelled "pro-environmental air travel behaviour", for which a factor-based score was calculated based on the eight items for this factor (namely, SecCQ1D_1, SecCQ1D_2, SecCQ1D_3, SecCQ1D_6, SecCQ1D_7, SecCQ1D_8, SecCQ1D_9 and SecCQ1D_10).

5.8.2 Summary of the validity and reliability of each theme/factor: air traveller environmental consciousness

Table 5.10 summarises the outcome of the reliability statistics, for all the factors identified during the EFA. This is followed by Table 5.11 which provides a summary of the descriptive statistics for the five finalised/adopted EC factors.

Table 5.10: Summary of the reliability statistics for the EC factors

Initial theme	Final factor label	No. of items	Cronbach's Alpha
Environmental knowledge	Environmental knowledge	5	0.778
Environmental awareness/concern	Environmental awareness	4	0.767
	Environmental indifference	3	0.427
Environmental attitude	Attitudes towards environmental airline operations	7	0.874
	Attitudes towards environmental airline service offerings	2	0.691
Environmental air travel behaviour	Pro-environmental air travel behaviour	8	0.789
	Not named	2	0.261

Table 5.10 shows the Cronbach's Alpha values for all the factors identified during the EFA. The following five factors demonstrated acceptable internal consistency: "environmental knowledge", "environmental awareness", "attitudes towards environmental airline operations", "attitudes towards environmental airline service offerings", and "pro-environmental air travel behaviour". Accordingly, these factors will be included for further analyses in the current study.

Using the final factors, and respective final factor descriptions, Table 5.11 reflects a summary of the descriptive statistics for the final five factors, along with a ranking of the means. The rankings highlight the respondents' level of agreeability, for each of the final factors pertaining to air traveller EC.

Table 5.11: Final descriptive statistics for the EC factors

Factor	Mean (scale is from 1 to 5)	Median	SD	Factor rank
Environmental knowledge	3.8090	3.8946	.68759	2
Environmental awareness	3.1485	3.000	.78441	4
Attitudes towards environmental airline operations	4.2313	4.1429	.56157	1
Attitudes towards environmental airline service offerings	3.3135	3.0000	.99559	3
Pro-environmental air travel behaviour	2.7129	2.6250	.62941	5

Notes: The scale indicates 5 = Strongly agree (maximum) and 1 = Strongly disagree (minimum). The skewness and kurtosis values indicate that the factor variables can be assumed to be normally distributed as all values lie between -2 and +2.

Based on the mean scores per factor in Table 5.11, it is observed that “pro-environmental air travel behaviour” ranked the lowest (5th) among the environmental consciousness factors. This suggests that air travellers do not change their air travel behaviour to reduce their environmental impact when travelling by air within SA. The factor that ranked the highest is “attitudes towards environmental airline operations” (1st). This reveals a high level of agreeability among air travellers, that airlines and the airline industry have the responsibility to implement environmentally friendly practices and to strive to conserve the environment.

An overall summary of the final factors is presented in Figure 5.19 below. The graphical summary illustrates the valid and reliable factors, the items included in each factor, and the order of rank, from first to fifth, in terms of level of agreeability by respondents.

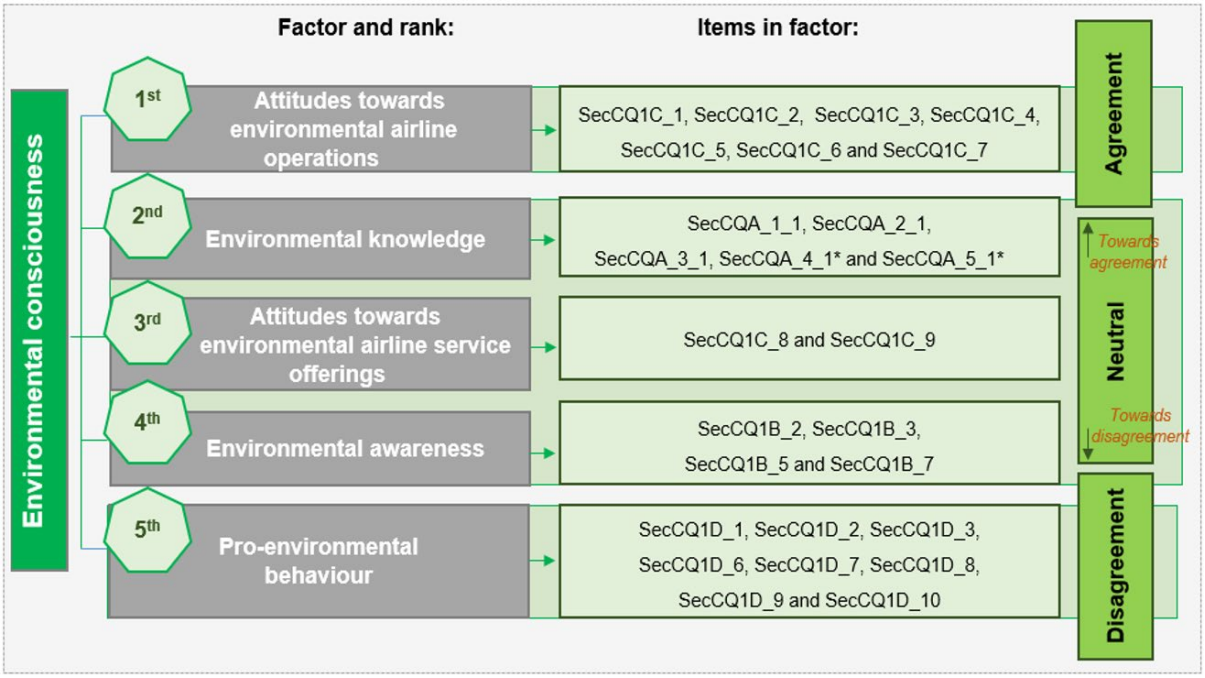


Figure 5.19: Final EC factors: Rank, items and level of agreeability

Section 5.8 covered the second part of Stage 2 of the data analysis process, which reported on the EFA and reliability results for the constructs which investigate the EC of air travellers. Using the factors identified in Sections 5.7 and 5.8 above as the basis, the next section identifies whether any statistically significant differences exist between the groups of respondents and the importance placed on various attributes and level of agreeability regarding the EC factors.

5.9 HYPOTHESES AND T-TEST RESULTS: DIFFERENCES BETWEEN RESPONDENT GROUPS

As the current study progressed, it gave rise to the formulation of several hypotheses. Considering the factors identified in Section 5.7 (the nine ATSA factors) and 5.8 (the five EC factors), as well as specifically identified respondent grouping (purpose of travel and type of carrier), the researcher set out to determine whether there are statistically significant differences between the identified respondent groups and the finalised factors.

To this end, four hypotheses were developed to determine whether statistically significant differences exist between the identified respondent groupings and the ATSA factors (in terms of level of importance) and the EC factors (in terms of level of agreeability). The identified respondent groupings were purpose of air travel (business

air travel versus leisure air travel) and type of air carrier used (FSC versus LCC). The four hypotheses, along with their accepted/rejected status, are presented in Table 5.12.

Table 5.12: Hypotheses: Differences between groups

Hypothesis	Description	Conclusion (accepted/ rejected)
Hypotheses to test differences between leisure and business travellers (air travel purpose):		
Hypothesis 1 (H1): To determine whether statistically significant differences exist between leisure and business travellers, regarding the importance placed on the ATSAs when deciding on the air travel ticket to purchase.	**H_0:** There **is no** statistically significant difference between the business air traveller group and the leisure air traveller group with regards to the importance placed on: (a) tangibility, (b) reliability and operational efficiency, (c) price, (d) loyalty, (e) customer service, (f) ticket flexibility, (g) in-transit attributes, (h) VIP value-added service, and (i) green attributes.	**Rejected** for: (c), (f) and (h) **Accepted** for: (a), (b), (d), (e), (g) and (i)
	H_a: There **is a** statistically significant difference between the business air traveller group and the leisure air traveller group with regards to the importance placed on: (a) tangibility, (b) reliability and operational efficiency, (c) price, (d) loyalty, (e) customer service, (f) ticket flexibility, (g) in-transit attributes, (h) VIP value-added service, and (i) green attributes.	**Accepted** for: (c), (f) and (h) **Rejected** for: (a), (b), (d), (e), (g) and (i)
Hypothesis 2 (H2): To determine whether statistically significant differences exist between leisure and business travellers, regarding their environmental consciousness.	**H_0:** There **is no** statistically significant difference between the business air traveller group and the leisure air traveller group with regards to their: (a) environmental knowledge, (b) environmental awareness, (c) attitude towards environmental air travel operations, (d) attitude towards environmental air travel service offerings, and (e) pro-environmental air travel behaviour.	**Accepted** for all
	H_a: There **is a** statistically significant difference between the business air traveller group and the leisure air traveller group with regards to their: (a) environmental knowledge, (b) environmental awareness, (c) attitude towards environmental operations, (d) attitude towards environmental service offerings, and (e) pro-environmental air travel behaviour.	**Rejected** for all
Hypotheses to test differences between FSC and LCC air travellers (air carrier type):		
Hypothesis 3 (H3):	**H_0:** There **is no** statistically significant difference between the FSC air traveller group and the LCC air traveller group with regards to the importance placed on: (a) tangibility, (b) reliability and operational	**Accepted** for: (i)

To determine whether statistically significant differences exist between FSC and LCC air travellers, regarding the importance placed on the ATSAs when deciding on the air travel ticket to purchase.	efficiency, (c) price, (d) loyalty, (e) customer service, (f) ticket flexibility, (g) in-transit attributes, (h) VIP value-added service, and (i) green attributes.	**Rejected** for: (a) – (h)
	H_a: There **is a** statistically significant difference between the FSC air traveller group and the LCC air traveller group with regards to the importance placed on: (a) tangibility, (b) reliability and operational efficiency, (c) price, (d) loyalty, (e) customer service, (f) ticket flexibility, (g) in-transit attributes, (h) VIP value-added service, and (i) green attributes.	**Accepted** for: (a) – (h) **Rejected** for: (i)
Hypothesis 4 (H4): To determine whether statistically significant differences exist between FSC and LCC air travellers, regarding their environmental consciousness.	**H_0:** There **is no** statistically significant difference between the FSC air traveller group and the LCC air traveller group with regards to their: (a) environmental knowledge, (b) environmental awareness, (c) attitude towards environmental air travel operations, (d) attitude towards environmental air travel service offerings, and (e) pro-environmental air travel behaviour.	**Accepted** for: (b), (c) and (d) **Rejected** for: (a) and (e)
	H_a: There **is a** statistically significant difference between the FSC air traveller group and the LCC air traveller group with regards to: (a) environmental knowledge, (b) environmental awareness, (c) attitude towards environmental operations, (d) attitude towards environmental service offerings, and (e) pro-environmental air travel behaviour.	**Accepted** for: (a) and (e) **Rejected** for: (b), (c) and (d)

Note: H_0: Null hypothesis; H_a: Alternative hypothesis

The statistical test used to determine whether the means for the identified respondent groupings differ significantly is the *t*-test (Gray, 2018). The next section (Section 5.9.1) reflects the *t*-test results for H1 and H3, which tested for significance between the identified groups (air travel purpose and air carrier type) and the ATSAs (in terms of level of importance). The section thereafter (Section 5.9.2) reflects the *t*-test results for H2 and H4, which tested for significance between the identified groupings (air travel purpose and air carrier type) and the EC factors (in terms of level of agreeability).

5.9.1 Group differences (air travel purpose and air carrier type): Importance placed on the ATSAs

The air travel purpose and air carrier type *t*-tests were used for the two independent groups (air travel purpose and air carrier type), to test hypotheses H1 and H3. The mean and SD of the performance values, and the results of the *t*-tests, per group, are presented in Table 5.13 below.

Table 5.13: Air travel purpose (H1) and air carrier type (H3): Means, SD and *t*-test results per ATSA factor

Factor and hypothesis it relates to:		Group	N	Mean	SD	Levene's Test for Equality of Variances		*t*-test for Equality of Means		
						F	Sig.	*t*	df	Sig. (2-tailed)
(a) Tangibility	H1	L	245	3.7990	.72474	.605	.798	-.634	392	.526
		B	149	3.8473	.74815			-.629	304.89	.530
	H3	FSC	125	4.0600	.70882	1.795	.181	4.593	392	.000
		LCC	269	3.7045	.71792			4.615	244.674	.000
(b) Reliability and operational efficiency	H1	L	245	4.3251	.61413	.504	.478	.895	392	.371
		B	149	4.2685	.60060			.900	318.055	.369
	H3	FSC	125	4.3812	.54444	1.001	.318	1.726	392	.085
		LCC	269	4.2677	.63438			1.825	278.522	.069
(c) Price	H1	L	245	4.2884	.63395	13.380	.000	5.256	392	.000
		B	149	3.8971	.83549			4.921	251.113	.000
	H3	FSC	125	3.9707	.86449	8.220	.004	-3.136	392	.002
		LCC	269	4.2193	.66247			-2.850	194.216	.005
(d) Loyalty	H1	L	245	2.7378	.93424	1.687	.195	-1.021	392	.308
		B	149	2.8406	1.02594			-.998	290.155	.319
	H3	FSC	125	3.1120	1.06939	8.591	.004	4.808	392	.000
		LCC	269	2.6208	.87954			4.479	204.843	.000

Factor and hypothesis it relates to:		Group	N	Mean	SD	Levene's Test for Equality of Variances		*t*-test for Equality of Means		
						F	Sig.	*t*	df	Sig. (2-tailed)
(e) Customer service	H1	L	245	4.2541	.69260	.055	.815	.175	392	.862
		B	149	4.2416	.68784			.175	314.304	.861
	H3	FSC	125	4.3637	.61286	3.611	.058	2.253	392	.025
		LCC	269	4.1963	.71789			2.387	279.888	.018
(f) Ticket flexibility	H1	L	245	3.5571	.98908	.003	.957	-2.730	392	.007
		B	149	3.8389	1.00045			-2.723	309.837	.007
	H3	FSC	125	4.0080	.88442	8.001	.005	4.779	392	.000
		LCC	269	3.5037	1.01389			5.023	274.356	.000
(g) In-transit attributes	H1	L	245	3.3864	.83872	.369	.544	-1.074	392	.283
		B	149	3.4810	.86245			-1.067	305.840	.287
	H3	FSC	125	3.7493	.82377	.083	.773	5.405	392	.000
		LCC	269	3.2701	.81683			5.388	240.013	.000
(h) VIP value-added services	H1	L	245	2.5359	.94149	.481	.488	-3.418	392	.001
		B	149	2.8754	.97956			-3.385	303.000	.001
	H3	FSC	125	3.0960	.99782	2.777	.096	6.321	392	.000
		LCC	269	2.4636	.88811			6.058	218.403	.000

Factor and hypothesis it relates to:		Group	N	Mean	SD	Levene's Test for Equality of Variances		*t*-test for Equality of Means		
						F	Sig.	*t*	df	Sig. (2-tailed)
(i) Green attributes	H1	L	245	3.2525	.94901	.280	.597	.398	391	.691
		B	149	3.2124	.99722			.394	298.090	.694
	H3	FSC	125	3.3497	.91697	1.731	.189	1.577	391	.116
		LCC	269	3.1850	.98586			1.619	258.811	.107

Note: L = Leisure; B = Business

The results in Table 5.13 reveal the differences between the groups and the importance placed on the ATSAs. These results will be interpreted below.

- **Do statistically significant differences exist between leisure and business air travellers and the importance placed on the ATSAs (H1)**

The results reveal significant statistical differences exist (at the 1% level of significance) between leisure and business air travellers and three of the ATSAs, namely, price (p = 0.000), flexibility (p = 0.007) and VIP value-added services (p = 0.001). Therefore, H_0 for these attributes is rejected, and H_a accepted. However, no significant statistical differences exist between leisure and business air travellers and the remaining ATSAs, namely, tangibility (p = 0.526), reliability and operational efficiency (p = 0.371), loyalty (p = 0.308), customer service (p = 0.862), in-transit/on-board attributes (p = 0.283) and green attributes (p = 0.691). Therefore, the H_0 for the latter ATSAs could be accepted, and the H_a rejected.

- **Do statistically significant differences exist between FSC and LCC air travellers and the importance placed on the ATSAs (H3)**

The results indicate that there are significant statistical differences between FSC and LCC air travellers and all the ATSAs, with the exception of “green attributes”. At the 1% level of significance, a statistically significant difference exists between the air carrier type and the importance placed on the following ATSAs: tangibility (p = .000), price (p = .005), loyalty (p = .000), ticket flexibility (p = .000), in-transit/on-board attributes (p = .000), and VIP value-added services (p = .000). For customer service (p = 0.018) and reliability and operational efficiency (p = .069), a statistically significant association exists at a 5% and 10% level of significance respectively. Thus, H_0 can be rejected, and H_a accepted for all ATSAs, with the exception of green attributes.

However, no statistically significant difference exists between the air carrier type on which respondents fly with, and the importance placed on green attributes. This is based on the p-value being greater than 0.1 (p = .116). Therefore, for the green attributes ATSA factor specifically, the H_0 could be accepted, and the H_a rejected.

5.9.2 Group differences (air travel purpose and air carrier type): Level of EC

This section presents the t-test results between the identified groupings and the EC factors. For the independent groups, namely, air travel purpose (leisure versus

business) and air carrier type (FSC versus LCC air traveller), *t*-tests were used to test hypotheses H2 and H4. The mean and SD of the performance values, and the results of the *t*-tests, per group, are presented in Table 5.14 below.

Table 5.14: Air travel purpose (H2) and air carrier type (H4): Means, SD and *t*-test results per EC factor

Factor and hypothesis it relates to:		Group	N	Mean	SD	Levene's Test for Equality of Variances		*t*-test for Equality of Means		
						F	Sig.	t	df	Sig. (2-tailed)
(a) Environmental knowledge	H2	L	245	3.8123	.69726	.138	.710	.121	392	.904
		B	149	3.8036	.67368			.122	321.011	.903
	H4	F	125	3.7080	.67444	.000	.995	-1.995	392	.047
		L	269	3.8559	.68982			-2.012	246.867	.045
(b) Environmental awareness	H2	L	245	3.1122	.72545	5.080	.025	-1.176	392	.240
		B	149	3.2081	.87205			-1.125	269.807	.262
	H4	F	125	3.1480	.80014	.005	.945	-.008	392	.993
		L	269	3.1487	.77851			-.008	235.963	.994
(c) Attitude towards environmental air travel operations	H2	L	245	4.2192	.54375	1.145	.285	-.547	392	.585
		B	149	4.2512	.59104			-.536	292.559	.592
	H4	F	125	4.1657	.63769	4.054	.045	-1.584	392	.114
		L	269	4.2618	.52092			-1.472	203.759	.143
(d) Attitude towards environmental air travel service offerings	H2	L	245	3.3306	.95754	1.347	.246	.438	392	.661
		B	149	3.2852	1.05788			.428	288.749	.669
	H4	F	125	3.4320	1.02458	.653	.420	1.614	392	.107
		L	269	3.2584	.97887			1.588	232.170	.114

Factor and hypothesis it relates to:		Group	N	Mean	SD	Levene's Test for Equality of Variances		*t*-test for Equality of Means		
						F	Sig.	t	df	Sig. (2-tailed)
(e) Pro-environmental air travel behaviour	H2	L	245	2.6903	.57489	3.240	.073	-.913	392	.362
		B	149	2.7500	.71053			-.867	263.931	.387
	H4	F	125	2.8020	.75872	7.216	.008	1.922	392	.055
		L	269	2.6715	.55603			1.721	188.193	.087

Note: L = Leisure; B = Business

The data from Table 5.14 above reveals the differences between the identified groupings and the EC factors. These results will be interpreted below.

- **Do leisure and business air travellers significantly differ with regard to their environmental consciousness? (H2)**

There are no significant statistical differences between leisure and business air travellers regarding all the elements of EC, namely, environmental knowledge (p = 0.904), environmental awareness (p = 0.240), attitude towards environmental operations (p = 0.585), attitude towards environmental service offerings (p = 0.661), and environmental air travel behaviour (p = 0.362). The conclusion was therefore drawn that the H_0 for H2 was accepted, and the H_a rejected.

- **Do FSC and LCC air travellers significantly differ with regard to their environmental consciousness? (H4)**

There are significant statistical differences between FSC and LCC air travellers and two EC factors, namely, environmental knowledge (p = 0.045) and pro-environmental air travel behaviour (p = 0.087), at a 5% and 10% level of significance respectively. Accordingly, for these two factors in H4, the H_0 can be rejected, and the H_a accepted.

There are no significant statistical differences between FSC and LCC air travellers and the following three EC factors: environmental awareness (p = 0.994), attitude towards environmental operations (p = 0.143), and attitude towards environmental service offerings (p = 0.114). Accordingly, for these three factors, the H_0 is accepted, and the H_a rejected.

5.9.3 Summary of the differences between the groups

Considering the *t*-test results presented in Sections 5.9.1 and 5.9.2, a summary of the differences between the groups is highlighted in this section. In Table 5.15, the differences are presented, respectively, for leisure versus business air travellers, and for FSC versus LCCs air travellers.

Table 5.15: Summary of the differences between groups

ATSA factor	Level of importance placed on the ATSA			
	Differences between leisure and business travellers (H1)		Differences between FSC and LCC air travellers (H3)	
	Leisure	Business	FSC	LCC
(a) Tangibility	Moderate	Moderate	Large ↑	Moderate (towards large) ↓
(b) Reliability and operational efficiency	Large	Large	Large ↑	Large ↓
(c) Price	Large ↑	Moderate ↓	Moderate (towards large) ↓	Large ↑
(d) Loyalty	Low	Low	Moderate ↑	Low (towards moderate) ↓
(e) Customer service	Large	Large	Large ↑	Large ↓
(f) Ticket flexibility	Moderate ↓	Moderate ↑	Large ↑	Moderate ↓
(g) In-transit attributes	Moderate	Moderate	Moderate ↑	Moderate ↓
(h) VIP value-added services	Low ↓	Low (to moderate) ↑	Moderate ↑	Low ↓
(i) Green attributes	Moderate	Moderate	Moderate	Moderate
EC factor	**Level of agreement with EC statement**			
	Differences between leisure and business air travellers (H2)		Differences between FSC and LCC air travellers (H4)	
	Leisure	Business	FSC	LCC
(a) Environmental knowledge	Neutral, leaning towards agreement	Neutral, leaning towards agreement	Neutral (leaning towards agreement) ↓	Neutral (leaning towards agreement) ↑
(b) Environmental awareness	Neutral	Neutral	Neutral	Neutral
(c) Attitude towards environmental operations	Agreement	Agreement	Agreement	Agreement
(d) Attitude towards environmental service offerings	Neutral	Neutral	Neutral	Neutral
(e) Pro-environmental air travel behaviour	Disagreement	Disagreement	Disagreement ↑	Disagreement ↓

Note: The downward arrow (↓) indicates less importance/agreeability, the upward arrow (↑) indicates greater importance/agreeability. Where there is no arrow, there are no statistically significant differences between the groups.

Few statistically significant differences exist between business and leisure air travellers. However, a number of statistically significant differences exist between FSC and LCC air travellers. The statistically significant differences are highlighted in Table 5.15 above, where the orange text (and downward arrow) highlights the lessor orientation between the respective groups, while the green bold text (and upward arrow) highlights the higher orientation. The black text (no arrow) highlights similar orientations towards the ATSAs and/or EC factors between the respective groups. The key findings in this regard inform the conclusions and recommendations, which are presented in Chapter 6.

In Section 5.9, the *t*-test analyses were completed to determine and interpret the respective comparisons between variables. The next section (Section 5.10) presents the correlation analyses to determine the associations and strengths of the relationships amongst the finalised factors.

5.10 CORRELATION RESULTS – RELATIONSHIPS AMONGST FACTORS

From a green consumer perspective, consumers' choice, preference, intention to purchase sustainable products and WTP may be positively affected by a plethora of factors (Bangsa & Schlegelmilch, 2020). This section presents the correlation analyses which were carried out to determine the relationships and strength of these relationships between the various factors. Specifically, the correlations evaluate the relationships between the EC factors and the various ATSAs when deciding on an air travel service to purchase. Pearson correlation coefficients were used to determine the statistical significance and strength of the relationships between the different combinations of factors. The correlation results are presented in Table 5.16 below.

Table 5.16: Correlation results – relationships between ATSA and EC factors

Variable combination	Environmental knowledge		Environmental awareness/concern		Attitudes towards environmental air travel operations		Attitudes towards environmental air travel service offerings		Pro-environmental air travel behaviour	
	Pearson	*p value*	*Pearson*	*p value*	*Pearson*	*p value*	*Pearson*	*p value*	*Pearson*	*p value*
Tangibility	0.008	0.876	0.180**	0.000	0.031	0.543	0.166**	0.001	0.243**	0.000
Reliability and operational efficiency	-0.024	0.636	0.123*	0.015	0.026	0.603	0.158**	0.002	0.126*	0.012
Price	0.044	0.379	0.048	0.346	0.123*	0.014	0.115*	0.022	0.003	0.959
Loyalty	-0.075	0.135	0.131**	0.009	0.037	0.466	0.279**	0.000	0.268**	0.000
Customer service	-0.023	0.642	0.145**	0.004	0.101*	0.044	0.173**	0.001	0.153**	0.002
Ticket flexibility	0.037	0.460	0.240**	0.000	0.070	0.168	0.154**	0.002	0.255**	0.000
In-transit/on-board attributes	-0.050	0.322	0.190**	0.000	0.002	0.968	0.164**	0.001	0.217**	0.000
VIP Value-added services	-0.053	0.290	0.170**	0.001	-0.075	0.136	0.158**	0.002	0.263**	0.000
Green attributes	0.274	0.000	0.539**	0.000	0.451**	0.000	0.433**	0.000	0.547**	0.000

The results presented in Table 5.16 above are interpreted according to each EC factor, in the discussions below. Only the statistically significant relationships are highlighted.

- ***Relationships relating to environmental knowledge***

At the 1% level of significance, and a correlation coefficient of 0.274, a **small positive relationship** exists between environmental knowledge, and the importance placed on green attributes.

- ***Relationships relating to environmental awareness/concern***

Statistically significant relationships exist between environmental awareness/concern and all the ATSAs, with the exception of price. At a 1% level of significance, and a correlation coefficient of 0.539, a **strong positive relationship** exists between environmental awareness and the importance placed on green attributes. The value of the correlation coefficients for environmental awareness/concern and the importance placed on tangibility, loyalty, customer service, ticket flexibility, in-transit/on-board attributes and VIP value-added services (at a 1% level of significance) and reliability and operational efficiency (at a 5% level of significance), varied between 0.123 and 0.240. This indicated **small positive relationships** between these variables and environmental awareness/concern.

- ***Relationships relating to attitudes towards environmental air travel operations***

At the 1% level of significance, and correlation coefficients of 0.123 and 0.101, for price and customer service, respectively, a **small positive relationship** is observed between the importance placed on these two ATSAs, and attitudes towards environmental air travel operations. At the 5% level of significance, and a correlation coefficient of 0.451, a **moderate positive relationship** exists between attitudes towards environmental air travel operations, and the importance placed on green attributes.

- ***Relationships relating to attitudes towards environmental air travel service offerings***

With a correlation coefficient value of 0.115 and a 5% level of significance, a **small positive relationship** exists between the attitudes towards environmental air travel service offerings and the importance placed on price. At a 1% level of significance, and a correlation coefficient of 0.433, a **moderate positive relationship** was observed, between green attributes and attitudes towards environmental air travel

service offerings. For the remaining ATSAs, namely, tangibility, reliability and operational efficiency, loyalty, customer service, ticket flexibility, in-transit/on-board attributes and VIP value-added services, the correlation coefficient values varied between 0.158 and 0.279 (at a 1% level of significance). This confirms **small positive relationships** between these variables and attitudes towards environmental air travel service offerings.

- ***Relationships relating to pro-environmental air travel behaviour***

At a 5% level of significance and a correlation coefficient of 0.126, a **small positive relationship** exists between pro-environmental air travel behaviour, and reliability and operational efficiency. At a 1% level of significance and correlation coefficient values between 0.153 and 0.268, **small positive relationships** exist between pro-environmental air travel behaviour and the importance placed on tangibility, loyalty, customer service, ticket flexibility, in-transit/on-board attributes and VIP value-added services. With a correlation coefficient of 0.547, at a 1% level of significance, a **strong positive relationship** exists between pro-environmental air travel behaviour and green attributes.

In addition to determining the strength and significance of the above relationships, further inferential statistical tests were performed to determine whether environmental knowledge, awareness and attitudes, are statistically significant predictors of the air travellers' pro-environmental air travel behaviour. The results are summarised in Table 5.17 below.

Table 5.17: Correlation results - relationships amongst EC factors and pro-environmental air travel behaviour

Variable combination with pro-environmental air travel behaviour	Pearson	*p* value
Environmental knowledge	.209**	0.000
Environmental awareness	.554**	0.000
Attitudes towards environmental air travel operations	.255**	0.000
Attitudes towards environmental air travel service offerings	.477**	0.000

The results in Table 5.17 above indicate that statistically significant relationships exist at the 1% level of significance between all combinations of EC (knowledge, awareness and attitudes) and the air travellers' actual pro-environmental air travel behaviour. The

correlation coefficients between environmental knowledge and pro-environmental air travel behaviour (0.209), and attitudes towards environmental air travel operations, and pro-environmental air travel behaviour (0.255) reflect **small positive relationships** between these variables. The correlation coefficient between attitudes towards environmental air travel service offerings and pro-environmental air travel behaviour was 0.477, indicating a **moderate positive relationship.** Finally, the relationship between environmental awareness and pro-environmental air travel behaviour reflected a correlation coefficient of 0.554, indicating a **slightly stronger positive relationship** between these two variables.

Overall, the correlation results confirm positive relationships between all the EC factors and pro-environmental air travel behaviour. Attitudes towards environmental air travel service offerings, and environmental awareness, reflect the strongest relationships with pro-environmental air travel behaviour.

5.10.1 Summary of the correlation results – relationships among factors

A summary of the relationships among factors is highlighted in this section. The differences are presented in Figure 5.20 below.

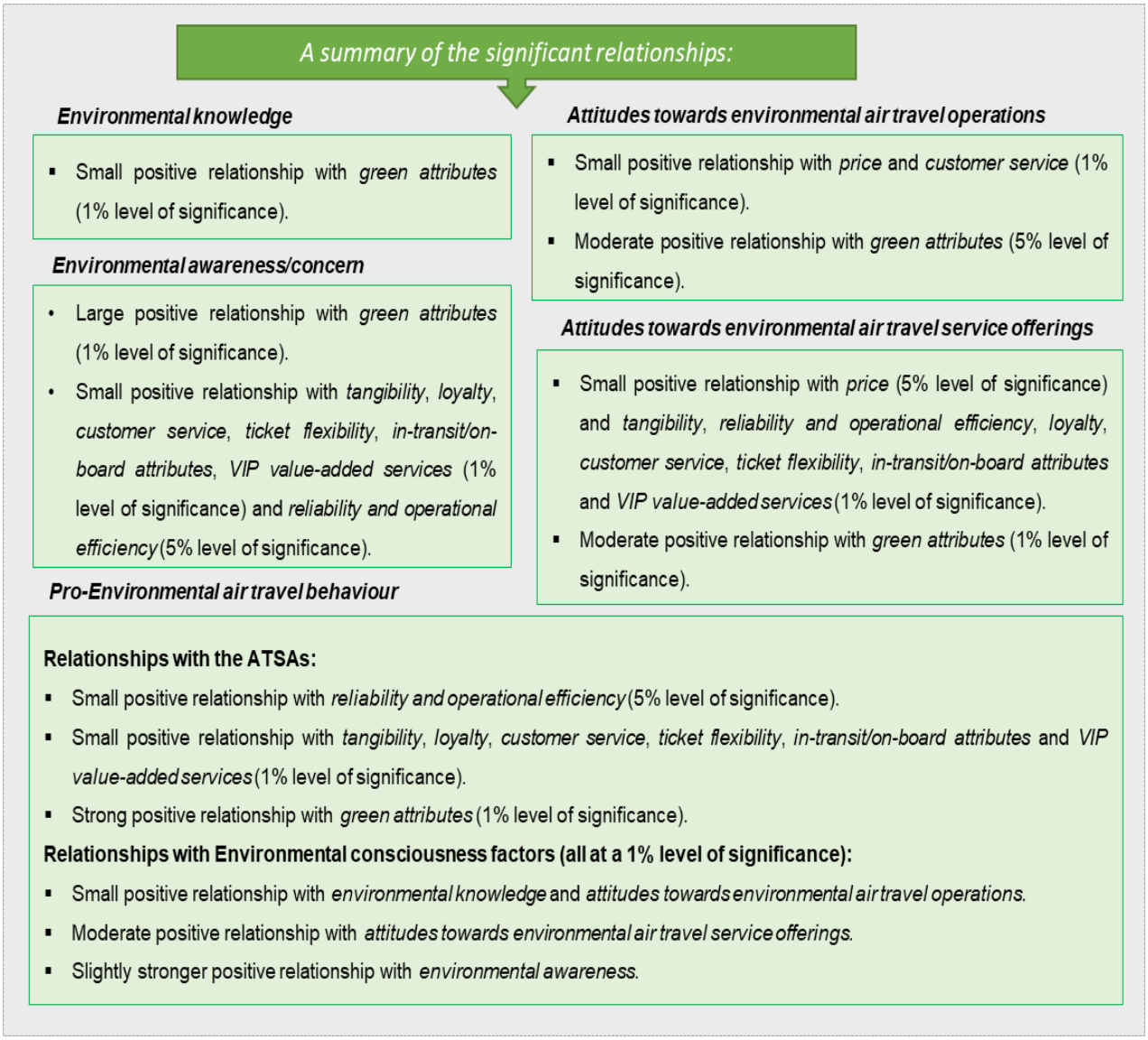


Figure 5.20: Summary of the correlation results – relationships among factors

In summary, the findings from the Pearson Correlation Coefficients revealed positive relationships between all the EC factors and the importance placed on green attributes. This confirms that the importance placed on the green attributes during the air travellers' decision-making, is positively related to the air travellers' level of EC. In addition, an air travellers' pro-environmental air travel behaviour is positively related to the other four EC factors.

Section 5.10 presented the correlations between the EC factors and the ATSAs. Correlations were also determined between pro-environmental air travel behaviour and environmental knowledge, awareness/concern, and attitudes. The next section, Section 5.11, concludes this chapter.

5.11 CONCLUSION

Chapter 5 presented the data analyses and research findings culminating from the quantitative analysis for the current study. Section 5.1 introduced the chapter, and with the aid of a figure, outlined the structure of this chapter (Figure 5.1). This was followed by a discussion of the data cleaning process (Section 5.2). As presented in Figure 5.1, the data analysis process for the current study was structured according to two stages: Stage 1 presented the descriptive statistical analyses (Sections 5.3 to 5.6), while Stage 2 presented the multivariate and inferential statistical analyses (Sections 5.7 to 5.10).

In Stage 1, the data obtained underwent foundational analysis, for each section of the survey. Thereafter, Sections 5.3 and 5.4, respectively, presented the descriptive analysis of the socio-demographic and air travel behaviour. Sections 5.5 and 5.6, respectively, presented the descriptive statistics relating to the ATSAs (in terms of level of importance) and the EC statements (in terms of level of agreeability).

In Stage 2, EFA (multivariate analysis) was conducted on all the themes relating to the ATSAs (Section 5.7) and EC (Section 5.8). This process included determination of the validity and reliability of each theme. Nine ATSA factors and five EC factors were identified as valid and reliable. These themes subsequently became the basis for further analysis (inferential) of the data in Sections 5.9 and 5.10. Section 5.9 presented the hypotheses and *t*-test results which identified statistically significant differences between identified respondent groups (business versus leisure, and FSC versus LCCs). Section 5.10 presented the correlation results, highlighting the statistically significant relationships among the factors.

The data analyses presented in Chapter 5 was conducted with the intention to address the PRO of the current study, namely, to

> *investigate the interrelationships between domestic air travellers' consumer behaviour and environmental consciousness, within a South African context.*

The six SROs, which were devised in the current study to address this PRO, guided the instrument development, data collection process and data analysis techniques. The sections in Chapter 5 which addressed the respective SROs are indicated in Table 5.18 below, alongside the respective SRO.

Table 5.18: Linking SROs to corresponding sections in Chapter 5

Secondary research objectives (SRO): (All SROs relate to domestic air travel within an SA context.)	
SRO 1:	*To investigate the 2018 consumer behaviour of domestic air travellers.*
The data analysis results presented in Section 5.4 addresses this SRO.	
SRO 2:	*To determine the importance domestic air travellers place on the air travel service attributes when deciding on an air travel ticket to purchase.*
The data analysis results presented in Sections 5.5, 5.7 and 5.9 addresses this SRO.	
SRO 3:	*To investigate the environmental consciousness of domestic air travellers.*
The data analysis results presented in Sections 5.6, 5.8 and 5.9 addresses this SRO.	
SRO 4:	*To investigate whether domestic air travellers engage in pro-environmental behaviour, or not.*
The data analysis results presented in Sections 5.5 (specifically the data on “green attributes”), 5.8 and 5.9 addresses this SRO.	
SRO 5:	*To investigate if domestic air travellers’ environmental knowledge, environmental awareness/concern, and environmental attitudes are statistically and significantly aligned with air travel behaviour.*
The data analysis and results presented in Section 5.10 addresses this SRO.	
SRO 6:	*To present a socio-demographic profile of the domestic air traveller.*
The data analysis and results presented in Section 5.3 addresses this SRO.	

Table 5.18 above provides an overview of the six SROs and the corresponding section(s) within Chapter 5, which address those SROs. The key findings emanating from Chapter 5 inform the conclusions and recommendations of the current study, as presented in Chapter 6. Importantly, Chapter 6 also highlights the current value and relevance of these findings, despite the data having been collected before the onset of Covid-19.

CHAPTER 6:
CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

Behavioural change is considered a way of reducing and mitigating the environmental impacts caused by air travel activities (Baumeister, 2017). Therefore, understanding environmental consciousness (EC) from a consumer behaviour perspective was the focus of the current study. Furthermore, the argument of the current study is that behaviour change is key to mitigating the environmental impacts caused by air travel.

The previous chapter, Chapter 5, covered the data analysis and the empirical research findings of the current study. These findings were based on the research objectives, which guided the researcher in answering the following overarching research question:

> *Does environmental consciousness influence the consumer behaviour of domestic air travellers within a South African context?*

This chapter, Chapter 6, serves as an all-encompassing summary of the preceding chapters in this dissertation. Chapter 6 intends to synthesise the literature, the empirical findings and the research objectives, to draw meaningful conclusions and make practical recommendations to the airline industry. Figure 6.1 below graphically depicts the position of Chapter 6 within the broad structure of the dissertation for the current study. Additionally, it presents the structural flow of this chapter.

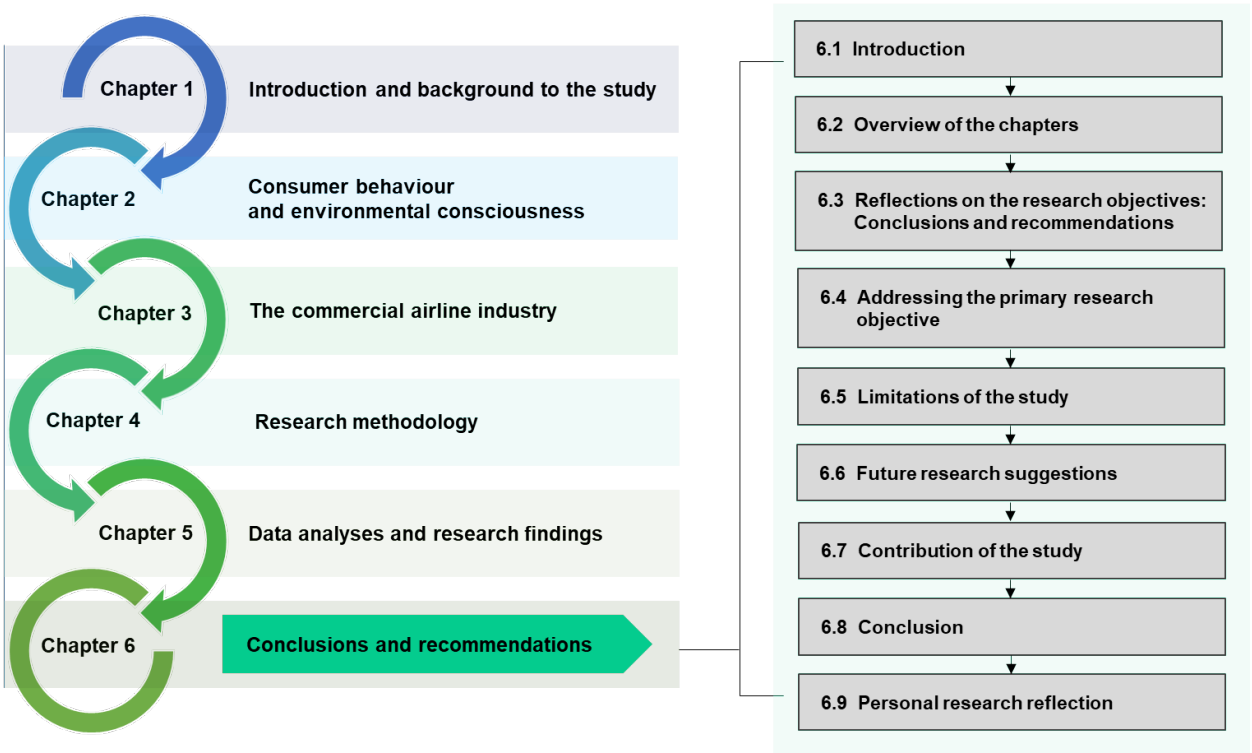


Figure 6.1: Structure of Chapter 6

Source: Researcher's own compilation

As depicted in Figure 6.1 above, Chapter 6 will commence with an overview of Chapters 1 to 5 (Section 6.2). Thereafter, each SRO will be reflected upon, linking each SRO to the literature review and empirical findings which were consulted, to draw conclusions and make recommendations (Section 6.3). Next, the primary research objective will be revisited and addressed (Section 6.4). The study-specific limitations will then be brought to light (Section 6.5), followed by suggestions for future research on similar topics (Section 6.6). The contributions of the current study will be highlighted (Section 6.7), before concluding the chapter and the current study (Section 6.8). The final section of this chapter, and this dissertation, is a personal reflection by the researcher (Section 6.9).

6.2 OVERVIEW OF THE CHAPTERS

The current study comprises of six chapters. This section will provide a recap of Chapters 1 to 5 (Sections 6.2.1 to 6.2.5), before continuing with Chapter 6.

6.2.1 Chapter 1: Introduction and background

Chapter 1 provided the introduction and background to the current study. The problem statement, research question and the primary and secondary research objectives,

were first presented. The chapter put forward the intended contribution of the current study. Thereafter, the research methodology and data analysis procedures adopted for the current study were introduced. The ethical considerations were highlighted, before listing the limitations encountered at the onset of the research process. Finally, the chapter concluded with a graphical illustration of the dissertation structure.

6.2.2 Chapter 2: Consumer behaviour and environmental consciousness

Chapter 2 presented a comprehensive literature review and the theoretical underpinning which was followed in the current study. The chapter provided a review of the relevant components of the consumer behaviour theory, and the factors influencing consumer behaviour and decision-making. The environmental imperative in relation to consumer behaviour was discussed, and the developing trends in green marketing and EC were covered extensively. Finally, the interplay between consumer behaviour and EC theory, in context of the airline industry, was synthesised.

6.2.3 Chapter 3: The airline industry

Chapter 3 provided an overview of the literature relating to the airline industry. It commenced by describing the two main traditional airline business models – low-cost carriers (LCCs) and full-service carriers (FSCs) – and presented the key differences and similarities between these models. Then, the various developments affecting the restructuring of airline business models were deliberated. This included the impacts which the Covid-19 pandemic has had on the industry. The chapter progressed to explain the impacts of the aviation industry on the environment, followed by the environmental mitigation efforts untaken by the global aviation industry.

Thereafter, the focus shifted to the SA domestic airline industry – the context on which the current study was based. The air transport industry's structure was outlined, followed by an historical overview of the scheduled passenger airlines that have operated in the SA market. An overview of the last decade (2011– 2021) of recent history of the domestic air travel market was covered. Additionally, the chapter highlighted the SA airline industry's environmental mitigation efforts, with reference to the response from the country's government and from the domestic airlines, specifically.

6.2.4 Chapter 4: Research methodology

The research methodology employed for the current study was covered in Chapter 4. A description of the current study's research design was the starting point of this chapter. The research design outlined the carefully planned journey to collect the study-specific data. The research universe of the current study was described, which included the target population, details of the sample, and the two different sampling plan approaches employed. Furthermore, the research strategy was explained, which included the survey strategy and the survey methods adopted. The details of the measurement instrument used were then discussed, including the levels of measurement and scaling techniques, the questionnaire design, as well as the pre-testing process. Furthermore, Chapter 4 included the important elements of the data analysis which were considered, as well the techniques that were used to determine the validity and reliability of the data. Finally, important research ethics' considerations for the current study were addressed.

6.2.5 Chapter 5: Data analyses and research findings

Chapter 5 presented the statistics, data analyses and empirical findings from the survey, which was administered amongst the sample. Firstly, the chapter explained the data cleaning process. Then, the descriptive analysis of the statistics were presented and discussed. This was followed by the EFA and statistical tests to determine the validity and reliability of the factors, which were identified by the EFA. Additionally, inferential statistical analyses were conducted to determine key differences between variables, as well as the correlations between factors. Finally, in the conclusion of Chapter 5, Table 5.18 was presented to highlight the links between the SROs and the research findings.

Section 6.2 revisited each chapter of the current study. The next section of this chapter will reflect on each one of the research objectives, and provide conclusions and recommendations.

6.3 REFLECTIONS ON THE RESEARCH OBJECTIVES: CONCLUSIONS AND RECOMMENDATIONS

In this section, each SRO will be reflected upon. Reflections are made by consulting the literature review (Chapters 2 and 3) and/or the empirical research findings

(Chapter 5). In doing so, a summary of the key elements, per objective, will be synthesised. As each objective is reflected upon, conclusions will be drawn, and practical industry recommendations will be made.

Section 6.3 will be structured in the same order of the SROs that were first presented in Chapter 1 (Section 1.7). In the light of the SROs laying the foundation required to achieve the primary research objective (PRO), the PRO will be reflected upon at the end of this section.

6.3.1 The consumer behaviour of air travellers (SRO1)

The SRO1 set out to:

> *investigate the 2018 consumer behaviour of domestic air travellers.*

The achievement of this objective was supported by the literature review, and the empirical findings for the current study. References to each, are summarised below.

Literature review

In Chapter 2, Sections 2.5.2.1, 2.5.2.3, and 2.7.2.1 covered the literature underscoring the need recognition and evaluation of alternatives during consumer decision-making. Section 2.7.2.1 expounded on the differences between business versus leisure markets, and low-cost carriers (LCCs) versus full-service carriers (FSC) markets. In Chapter 3, Sections 3.2 and 3.3, respectively, explored the literature on traditional airline business models and developments affecting these models. Lastly, Section 3.6.3 provided an overview of the various airlines within the SA domestic airline industry. This literature sets the context for the discussion and interpretation of the empirical findings relating to consumer air-travel behaviour, as well as the recommendations at the end of this section.

Empirical findings

To address SRO1, conclusions will be drawn based on the empirical findings in Section 5.4. The conclusions drawn from the empirical findings are based on the sample of the current study, and therefore cannot be generalised to the SA air travel market.

Furthermore, the data-collection process for the current study concluded in 2018 and was based on air travel in the preceding 12 months. Subsequent to 2018, due to the repercussions of the Covid-19 pandemic, the airline industry has changed substantially. Accordingly, this objective speaks specifically to the consumer behaviour of air travellers for the year 2018. However, where deemed to be relevant, the implications of the Covid-19 pandemic were considered and addressed.

6.3.1.1 Conclusions related to SRO1

The conclusions for SRO1 are structured according to the following themes: purpose of air travel, flight frequency, airline business models/air carrier type, airline flight frequency and airline preference, source of funding, airlines used versus airlines preferred, and, finally, the service ancillaries most often included in the air ticket.

Purpose of travel (business versus leisure)

The sample for the current study consisted of both business and leisure travellers. Predominantly, the sample travelled for the purpose of leisure (62.2%). The segment which flew for the purpose of business, was substantially lower, at 37.8%.

Post-Covid-19, the abovementioned air travel behaviour statistics would look substantially different. As mentioned in Chapters 2 and 3, the business traveller pool has shrunk and the leisure traveller market faces considerable uncertainty (Bouwer *et al.*, 2021). According to Bouwer *et al.* (2021), the business travel segment will take longer to recover than the leisure segment. More specifically, the authors forecast that, the business travel segment will only have recovered to approximately 80% of pre-pandemic levels by 2024. The authors forecast that as the pandemic subsides, the increase in leisure trips will outpace the recovery of the business travel segment.

Flight frequency

The majority of respondents (74.6%) flew between one and five times in a year, while 14.5% flew between six and ten times a year. Post-Covid-19, these figures would be drastically different. Dube *et al.* (2021) expound on the decline in scheduled flights resulting from Covid-19, noting that these declines mainly resulted from the measures implemented by the government, including, but not limited to, the closures of provincial borders. As elaborated in Section 3.5.3, these closures grounded domestic flights.

After the hard lockdowns, data from the DoT (2021), pertaining to the total number of domestic flights within SA, reflected an impressive recovery in the domestic air travel market. This strong recovery is most likely attributed to increased domestic air travel in the light of national borders re-opening, as well as unpredictable international travel restrictions.

Airline business models/air carrier type (FSC versus LCC)

In terms of the most frequently purchased ticket, it was observed that the LCC business model was more popular than the FSC model. 68.3% of the sample most frequently flew with LCCs, while 31.7% mostly used FSCs.

Airline flight frequency and airline preference

The empirical findings revealed that in the domestic market, Kulula.com was the most popular airline in terms of flight frequency (76.5%). This was followed by Mango (68.2%). In terms of airline preference, BA was rated the most preferred airline (23.9%), followed closely by Kulula.com (23.6%).

Charlier and Dobruszkes (2020) prepared a market share report based on seats supplied. The authors reported that Mango held the highest share of the SA market (21.7%) by January 2019, followed by FlySafair (20.3%), and then Kulula.com (19.6%) (See Table 3.5, Section 3.5.3). BA held the highest market share (15.8%) amongst the FSCs, while SAA held a share of 10.2%.

In total, the traditional FSCs (including the SAA affiliates) held a 38.4% share of the SA market by January 2019. LCCs collectively held 61.6% of the market (Charlier & Dobruszkes, 2020).

FSCs have traditionally offered more expensive ticket options, compared to traditionally lower fares offered by the LCCs. Hence, whilst FSCs are the most preferred type of airline among the sample, LCCs are the most frequently used, and hold the majority of the SA market share. This finding reveals strong price sensitivity amongst the SA air traveller market.

Source of ticket funding

The findings indicated that 58.9% of the respondents' airfares were personally funded. This aligns with the findings that 62.2% of the respondents were leisure air travellers, and 68.3% of the respondents LCC travellers. However, 35.8% of airfares were

business-funded. This aligns with the findings that 37.8% of the respondents were business air travellers and 31.7% of the respondents, FSC passengers.

These findings support the literature (see Section 2.7.2), which indicates that leisure air travellers, and those who pay for their own tickets, are more price sensitive than business air travellers who do not pay for their own tickets (Milioti *et al.*, 2015; Wensveen in Diggines, 2017). In terms of business travel, the Covid-19 pandemic crisis will likely further reduce travel funding sourced by business. Becken and Hughey (2021) note that as a result of business travel budget cuts, there will likely be less demand for short-haul flights and premium class travel.

Ancillary services

Amongst the 'frills' or ancillary services which are most often included in the purchased ticket, the option to check-in luggage scored highest. This was followed by pre-bookable seats, in-flight F&B, and ticket flexibility.

According to Diggines (2017), the pure LCC model is being eased out and transitioning towards a hybrid model. The majority of respondents in the current study categorised themselves as LCC users. However, the majority of respondents also included at least one of the many ancillary services which are not traditionally offered in the LCC model. Accordingly, it appears that there is indeed a transition towards a hybrid airline model in the SA airline market. This may lead to an overlap between the LCC and FSC target markets, which will challenge FSCs to differentiate themselves more aggressively than ever, to remain competitive.

During the Covid-19 pandemic, the gap between FSCs and LCCs has become even smaller. This is evident in that certain ancillaries, such as cleanliness, have become non-negotiables, while others, such as F&B, are no longer relevant for customers, regardless of the type of airline (FSC or LCC).

The least popular ancillary amongst respondents, was the inclusion of an airline's voluntary carbon offsetting (VCO) programme. At the time of the data collection for the current study, not all domestic airlines offered this option to their customers. Accordingly, the poor uptake of VCOs could be attributed to its lack of availability. In addition, not many air travellers are aware of this ancillary. Further discussions regarding the VCO are presented in SRO2, 3 and 4.

The repercussions of the Covid-19 pandemic have illustrated the substantial effects that market characteristics and stimuli can have on consumer air travel behaviour. Ivkovic (2021) noted that changes in the environment are directly related to changes in consumer behaviour. The Covid-19 pandemic has disrupted the airline industry, and as a result, air travel consumer behaviour. Accordingly, the statement by Bouwer *et al.* (2021: para. 3), that "Covid-19 has changed consumer behaviour – and the airline sector – irrevocably", is supported.

However, second to infectious disease (for example, Covid-19 and subsequent variants), "climate action failure" and other environmental risks are the highest impact long-term risks globally (WEF, 2021). Unlike with Covid-19, there is no vaccination for climate change. As noted in Section 1.3, developing countries such as SA, are likely to be more vulnerable to the disruptions caused by the natural shocks of climate change. With this in mind, the airline industry must not lose sight of climate change, a mounting risk, with catastrophic consequences.

6.3.1.2 SRO1 recommendations

With the post-pandemic market in mind, airline marketers should focus on the leisure market, which is forecast to fuel the air travel market recovery. With the consideration that the contraction of the business travel market is forecast to recover slowly, it is recommended that airlines create or identify innovative ways to differentiate their business-focused service offerings, for this altered business market.

As recovery from Covid-19 takes place, it is recommended that airlines do not lose sight of the climate change crisis, which could cause the next natural shock. Accordingly, airlines should proactively prepare for the climate change related business risks, and aim for long-term value creation (Bouwer *et al.*, 2021). In preparation, airlines should:

- invest in research and development (R&D) to upgrade current technologies and incorporate innovative, clean and green technology for greater efficiency.
- see this recovery period as an opportunity to restructure, innovate and transition towards environmentally responsible airline business models. In fact, the World Economic Forum (WEF) (2021) has indicated that a transition towards greener economies cannot be delayed until the shocks of the pandemic subside.

It is recommended that FSCs innovate their service offerings to establish clearer differences in this airline model. This differentiation strategy would aid the FSC to remain competitive in the increasingly overlapping market, and to warrant the higher airfares they charge.

In continuation with the above recommendation, FSC airline marketers should aim to achieve a sustainable competitive advantage (SCA) through environmentally friendly product or service innovations.

6.3.2 The importance placed on the ATSAs during decision-making (SRO2)

The SRO2 set out to:

> *determine the importance domestic air travellers place on air travel service attributes when deciding on an air travel ticket to purchase.*

The achievement of this objective was supported by the literature review, and the empirical findings for the current study. References to each, are summarised below.

Literature review

Section 2.7.1 in Chapter 2 presented a discussion of the air traveller service attributes (ATSAs), in terms of the critical attributes which passengers consider when deciding on an airline. In addition, Chapter 2 explored air travellers in terms of consumer behaviour relating to air traveller groups (Section 2.7.2) and green air travel service attributes (Section 2.7.2.1). The similarities and differences between the FSC and LCC (the traditional airline business models), and their respective offerings, were discussed in Section 3.2 of Chapter 3. Furthermore, Chapter 3 highlighted the recent developments that are affecting the traditional airline business models (Section 3.3). This literature sets the context for the discussion and interpretation of the empirical findings relating to the ATSAs considered during air traveller decision-making, as well as the recommendations at the end of this section.

Empirical findings

To address the SRO2, conclusions were drawn from the research findings presented in Sections 5.5, 5.7 and 5.9. Section 5.5 presented and discussed the descriptive statistics based on the Likert-scale results for the ATSA themes. Then, in Section 5.7, during the multivariate analysis, nine ATSA factors were identified as reliable, and

accordingly, were adopted for further analysis. These factors include: 1) tangibility, 2) reliability and operational efficiency, 3) price, 4) loyalty, 5) customer service, 6) ticket flexibility, 7) in-transit/on-board attributes, 8) VIP value-added services, and 9) green attributes.

To better understand the key factors as perceived by the respondents, two hypotheses were developed (H1 and H3), as presented in Section 5.9. To test the hypotheses, *t*-tests were conducted to determine if any statistically significant differences exist between each of the air traveller consumer groups, in terms of the level of importance placed on the various ATSA factors. The air traveller consumer groups, identified upon addressing SRO1, include: 1) business and leisure air travellers (purpose of air travel), and 2) FSC and LCC air travellers (airline model/carrier used).

The differences between business and leisure travellers, in terms of importance placed on the ATSA, are highlighted in Figure 6.2 below. Additionally, Figure 6.3 which follows, highlights the differences regarding the importance placed on the ATSAs by LCC and FSC users.

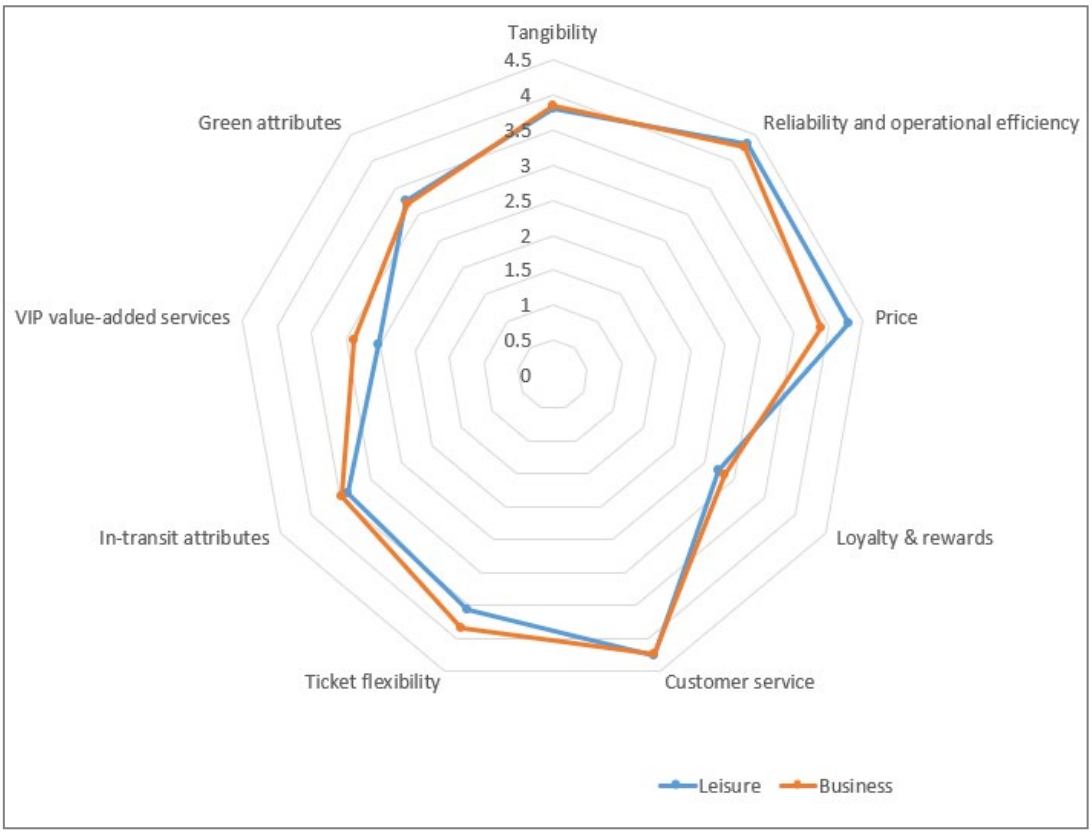


Figure 6.2: ATSA differences between business and leisure travellers

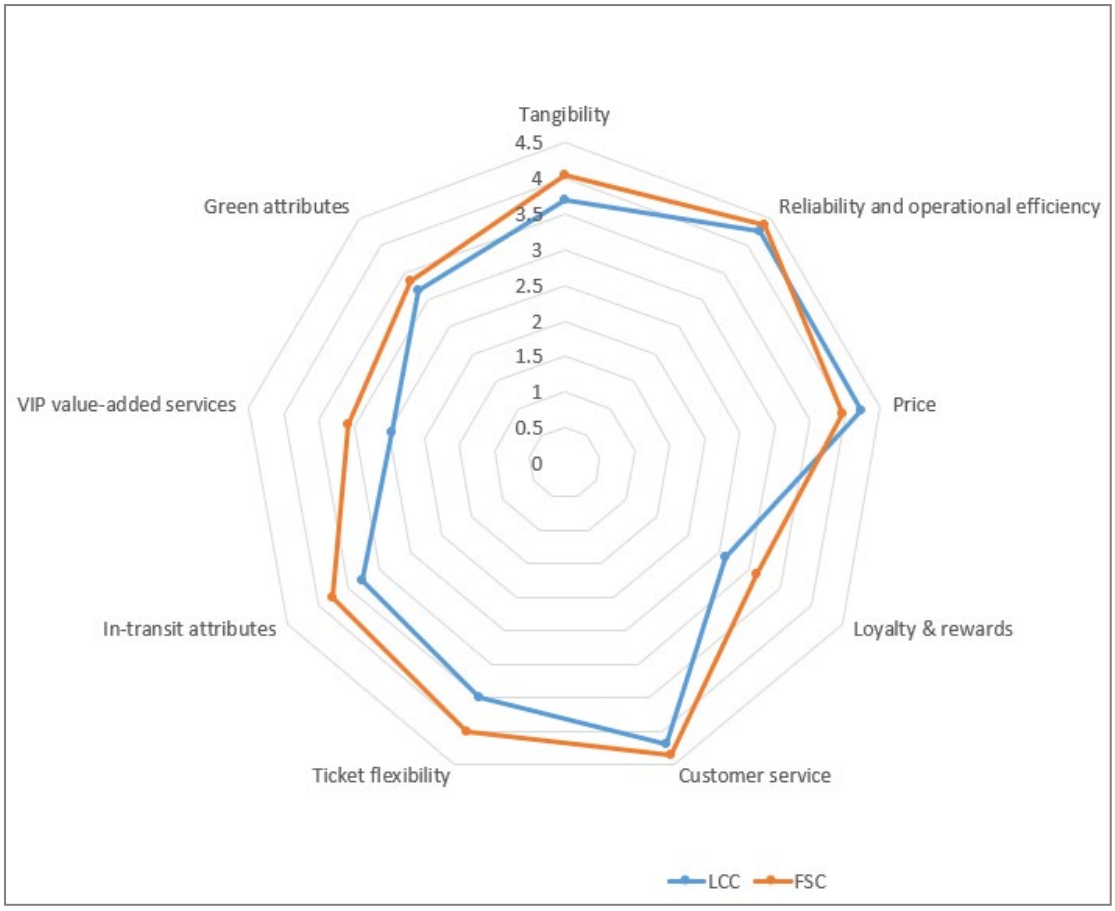


Figure 6.3: ATSA differences between LCC and FSC users

6.3.2.1 Conclusions related to SRO2

Conclusions for each ATSA factor (in order of most to least importance) will be discussed below. Any differences identified between the air traveller groups, will be addressed in the respective section of the discussion below.

With regards to the **reliability and operational efficiency** factor, the item representing reliability, safety, and on-time performance was rated the most important deciding factor. This was actually the highest rated item across the ATSA factors. With reference to FSC versus LCC users, FSC users regard the reliability and operational efficiency factor to be of a slightly higher importance.

Customer service is a key factor that air travellers consider when deciding on an air ticket to purchase. All items in this factor were of considerable importance to air travellers. However, FSC users consider this factor as more important than LCC users do.

Upon addressing SRO1, a price sensitivity among travellers was revealed. In SRO2, it is concluded that **price**, as a decision-making factor, is of high importance for air travellers. Despite the price sensitivity, air travellers regard “best value for money” to be even more important than finding the “cheapest air ticket”.

Chen and Chao (2015), Milioti *et al.* (2015), and Diggines (2017) posited that leisure air travellers are more price sensitive than business air travellers. The results from the current study concur with the findings of the above scholars. Leisure air travellers consider price to be of substantial importance, while business air travellers consider price to be of moderate importance.

Tangibility (cleanliness, noise level, on-board services) is a moderately important factor in decision-making. The moderate importance could be attributed to the length of domestic routes in SA. With the short-haul length of a flight, air travellers might not consider these items to be as important as the abovementioned core product attributes. FSC users, however, value tangibility items to be of great importance, whereas LCC users value tangibility as moderately important.

Ticket flexibility, as a factor, is of moderate importance in the decision-making process. The findings from the current study observed that, although moderate, business travellers place more importance on ticket flexibility than leisure travellers do. However, in terms of FSC users, this factor was found to be of high importance. This could be attributed to ticket flexibility traditionally being a default inclusion in the FSC offering, in comparison to the unbundled offerings of the LCC.

In-transit/on-board attributes as a factor in decision-making, is of moderate importance to the sample. The reason for this could be that these items are considered to be, according to Warnock-Smith *et al.* (2017), unbundled or a-la-carte items, and not part of the core service offering. It could also be attributable to the short-haul nature of the domestic market routes, where consumers may not be concerned with the option of pre-booking a seat in order to have a more comfortable flight. In addition, consumers may not concern themselves with complimentary refreshments on a flight that is less than two hours in duration. The in-transit/on-board attributes are typically items which are offered by the traditional FSC. It is therefore telling that no significant differences exist between FSC and LCC users, regarding the importance placed on this factor.

Green attributes, as a decision-making factor, is of moderate importance to air travellers. All the items in this factor were considered with moderate importance, with the exception of a carbon off-setting programme to which passengers can choose to contribute. The latter item was regarded with low to moderate importance. This could be attributed to the fact that most domestic airlines in SA do not offer this option. Additionally, passengers are not educated regarding airline environmental impacts. Hence, passengers would not have considered it in their decision-making (see SRO3 and SRO4).

It is often the case that frequent flyers are travelling for business purposes. As a result, the link between business travel and climate mitigation is brought to the forefront (Becken & Hughey, 2021). The findings from the current study did not identify any significant differences between leisure and business air travellers, in terms of the importance placed on green attributes. It is important to note that air travel does form a considerable part of an organisation's carbon profile. Accordingly, despite the fact that no significant differences were found, business travel is a relevant issue (Becken & Hughey, 2021).

Loyalty and rewards are considered to be of low importance to air travellers during the decision-making process. In terms of air carrier types, for FSC users, this factor is considered to be of moderate importance, while for LCC users, this factor is considered to be of low importance.

During the decision-making process, **VIP value-added services** were considered as least important by air travellers. Leisure air travellers placed less importance on this factor than business travellers. FSC users considered this factor as moderate in importance, while LCC users considered this factor as low in importance.

In summary, the two most important ATSA factors are reliability and operational efficiency, and customer service. With reference to these factors, Vlachos and Lin (2014) note that these include the core services which are the 'must-be' attributes. They are non-excludable and key operational factors. As such, they are the basic requirements or baseline services for an airline to operate in the market (Vlachos & Lin, 2014). Price, as a choice-criteria, is ranked only after customer service. Although air travellers do consider the cheapest ticket in their decision-making, a ticket that offers the 'best value for money' was regarded as a more important choice-criteria.

Milioti *et al.* (2015) noted that **business and leisure air travellers** differ in the way in which they are influenced by the ATSA choice-criteria. Based on the hypothesis results for H1 (presented in Section 5.9), the findings by Milioti *et al.* (2015) are supported. In particular, and these findings are evident in terms of the following factors: price, flexibility and VIP value-added services. Leisure air travellers are more price sensitive than business travellers. However, business travellers value flexibility and VIP value-added services more than leisure travellers do.

Of the many arguments in Chapter 3, it was purported that the FSC model is no longer as homogenous as it was in the past, especially when considering the recent developments towards a hybrid airline business model. However, the findings from the current study reveal that there are still significant differences between the FSC and LCC models in SA.

The hypothesis results for H3 (Section 5.9) reveal that **FSC and LCC users** place different levels of importance on all the ATSA factors during their decision-making, with the exception of green factors, to which FSC and LCC users ascribe similar levels of importance. These differences are described in the respective ATSA discussions above.

Although the SA domestic airline market has limited availability of green options (see Section 3.5.4), green attributes were valued as moderately important (higher than both the VIP value-added services and loyalty factors). This confirms that there is potential for airlines to incorporate green attributes into their service offerings, either as a core product, or as unbundled items.

6.3.2.2 SRO2 recommendations

The following recommendations are made based on the SRO2 findings and conclusions:

Incorporate green ATSAs into service offering

It is recommended that airlines incorporate green attributes into their service offerings, either as core products or as unbundled items. These green attributes can become marketable items to air travellers. Additionally, by incorporating green attributes, airlines have the potential to differentiate an airline's service offerings and to create an SCA.

Genuine attempts towards greening

For an airline aiming to develop a green image, it is recommended that attempts in this regard be toward genuine sustainability. Araghi *et al.* (2016) notes that genuine intentions incline consumers toward being more willing to pay a green premium to an airline. Krstić, Kostić-Stanković and Cvijović (2021) built on this, stating that real environmentally sustainable attempts should be made in order to make a real impact - the benefit of this, in turn, is that green advertising scepticism can be avoided.

Strengthen differentiation between the leisure and business target markets

Airline marketers should consider the differences between leisure and business air travellers when preparing or revising their marketing strategies for each of these groups. For instance, leisure travellers can be targeted according to the best price, while marketing strategies which target business travellers should consider flexibility and VIP-value added services.

LCCs and FSCs to differentiate based on the important ATSAs

Since LCC and FSC users differed with regard to the importance they placed on the ATSAs (excluding green attributes), it is recommended that airlines continue to differentiate based on these factors. LCCs should continue to focus on a price differentiation strategy. However, FCCs should focus on differentiating their offering with the following factors in mind (in order of importance): reliability and operational efficiency, customer service, ticket flexibility, tangibility, loyalty and rewards, and VIP value-added services.

Target business travellers with green attributes

By 2024, when business travel has mostly recovered from the post-Covid-19 shock, it is likely that climate change mitigation will be even higher on every company's agenda. Therefore, it is recommended that airlines start planning, developing and testing their green product innovations, to be ready for the business market comeback forecast for 2024. These could include green incentives to help support businesses in mitigating their climate change impacts.

Value for money and green product value creation

With regards to the findings in the current study which reveal that "value for money" is considered of greater importance than the cheapest airfare, it is recommended that

airline marketers clearly communicate the value consumers can derive from any green services introduced to the market.

Finally, regardless of which group of air traveller is being targeted, it is recommended that airlines create the best value for money possible. Based on the results in the current study, value for money could best be created by offering high levels of reliability and operational efficiency, and excellent customer service.

6.3.3 The environmental consciousness of air travellers (SRO3)

The SRO3 set out to:

> *investigate the environmental consciousness of domestic air travellers.*

The achievement of this objective was supported by the literature review, and the empirical findings for the current study. References to each, are summarised below. These summaries are followed by the conclusions and recommendations relating to the SRO3.

Literature review

Section 2.6 in Chapter 2 provided a review of relevant literature pertaining to air travel environmental consciousness, which in turn, laid the foundations for the environmental consciousness factors considered in the current study. Additionally, it highlighted the link between consumer behaviour and the environmental imperative. Sections 2.6.4.1 to 2.6.4.4 respectively, discussed the theory concerning environmental behaviour, environmental knowledge, environmental awareness/concern, and environmental attitudes. This literature provides the groundwork for the discussion and interpretation of the empirical findings relating to the EC of air travellers, as well as the recommendations at the end of this section.

Empirical findings

Section 5.6 presented and discussed the descriptive statistics based on the Likert-scale results for the EC themes. In Section 5.8, the EFA (multivariate analysis) identified seven factors from the EC themes. Five of the seven identified factors were deemed reliable and could be adopted for further analysis. These factors included: 1) environmental knowledge, 2) environmental awareness, 3) attitude towards

environmental air travel operations, 4) attitude towards environmental air travel offerings and, 5) environmental air travel behaviour.

To better understand the level of agreeability pertaining to the EC themes, two hypotheses (H2 and H4) were developed (Section 5.9). T-tests were subsequently carried out to determine whether any statistically significant differences exist between the two air traveller consumer groups, and the level of agreeability placed on the various EC factors. Statistically significant differences were only observed for the FSC and LCC air traveller groups, for two factors – environmental knowledge and pro-environmental behaviour (PEB). The conclusions regarding these differences are presented in the respective sections in the discussion below.

6.3.3.1 Conclusions related to SRO3

Strong consensus was observed among respondents in terms of their **attitudes towards environmental airline operations**. Overall, from the findings relating to this factor, it is concluded that air travellers expect airlines, as well as the SA airline industry in its entirety, to develop in an environmentally responsible manner. Air travellers believe that, amongst the essential responsibilities of airlines, they should strive to conserve the environment, reduce their negative environmental impact, and focus on technological innovation. This will, in turn, improve their environmental performance.

Within the **environmental knowledge** factor, it was observed that air travellers are knowledgeable of climate change, from a general point of view. However, the findings reveal that air travellers are unsure about the contribution that air travel, as well as the airline industry in its entirety, makes towards climate change-related problems.

Lu and Wang (2018) noted that there is an 'information gap” between air travellers and the airline industry, in terms of the environmental impacts of air travel, and the initiatives available to mitigate these environmental impacts. The findings from the current study confirm the existence of this information gap within the SA domestic airline industry.

Across the items within the **attitudes towards environmental airline service offerings** factor, the majority of respondents held a neutral stance. With reference to mandatory “green premiums” to offset carbon emissions, the majority of respondents were not in favour of paying such a premium. In terms of the option of a “green class”

for consumers who might be interested, respondents were largely neutral, with an inclination towards agreement.

It appears that, although green ATSAs were moderately important to respondents (see SRO2), respondents do not want the environmental imperative to come at a cost to themselves. Air travellers believe it is the responsibility of the airline industry to bear the costs involved in climate change mitigation initiatives. This finding corroborates that of Cocolas *et al.* (2021), who found that emissions are not considered a personal cost by air travellers. The authors inferred that air travellers psychologically distance themselves from the 'cost' of emissions from their flights.

For the majority of respondents, levels of agreement within the **environmental awareness/concern** factor were impartial, reflecting that those respondents were uncertain about the impact of their air travel behaviour on the environment. Furthermore, the results specifically revealed that respondents had not given much thought to the negative environmental impacts of their flying behaviour.

However, findings did reveal that respondents were aware that, irrespective of the costs, the environment needs to be respected and protected. Based on the respondent's unwillingness to pay "green premiums", and their neutral stance regarding a "green class", it appears that although the respondents have an appreciation for the importance of environmental protection, they do not feel that the associated costs should be their responsibility. Rather, these costs should form part of the airlines' environmental mitigation costs.

Reflecting on the findings above, in terms of the three aforementioned factors pertaining to the EC of air travellers, the findings of the current study agree with those of Cherian and Jacobs (2012), who state that green knowledge is still lacking by consumers, which in turn, results in low awareness towards green products. The authors provide a reason for this, stating that the low knowledge and poor awareness is a consequence of organisations not pushing towards the development of more green attributes, such as green labelling. The findings of the current study also concur with those of Paço *et al.* (2013), who recognised that even when consumers expressed concern for the environment, their attitudes did not always translate into behaviour.

Pro-environmental air travel behaviour, as a factor, scored the lowest amongst the EC factors. Based on the level of disagreement regarding this factor, it can be

concluded that air passengers travelling within SA do not engage in pro-environmental behaviour to reduce their environmental impact.

Merilä (2015), articulating the relationships between EC factors, noted that environmental knowledge and awareness/concern act as predecessors, which ultimately influence a consumer's level of pro-environmental behaviour. Accordingly, for PEB to take place, a deliberate and conscious knowledge of the environmental consequences is required (Akehurst *et al.*, 2012).

The respondents' low engagement in PEB could be attributed to a number of reasons. Firstly, consumer knowledge is lacking, specifically in terms of the negative impact of air travel. Therefore, reiterating the insights by Bangsa and Schlegelmilch (2021), that a consumers' prior awareness of the sustainable products and labels, plays a more important role in predicting their WTP green attributes or offerings, compared to their general environmental knowledge. Secondly, air travellers believe that negative environmental impacts caused by the airline industry, are the responsibility of the airline/airline industry, and accordingly, should be addressed by them and not the consumer. This aligns with the viewpoint of Higham *et al.* (2016) that states that air travellers believe that the responsibility to curb aviation emissions should, in order of priority, rest with aircraft manufacturers, followed by airlines, then government, and finally, consumers. Thirdly, the airline industry in SA has not sufficiently incorporated green attributes into their service offerings or operations. The reasons for this will be further elaborated in Section 6.3.4 (SRO4).

With reference to the differences in findings for PEB and LCC users respectively, results reveal that PEB is lower amongst LCC users, than FSC users. This finding is interesting considering that LCC users reflected slightly higher environmental knowledge than FSC users. Additionally, LCC operations are more efficient than FSC operations, and therefore are usually regarded as the environmentally friendlier options by air travellers (Baumeister, 2020).

Steg *et al.* (2014) provided a 'non-idealistic' viewpoint which could potentially fuel the low PEB behaviour seen amongst the respondents in the current study. The authors state that proactively trying to reduce environmental impacts can be criticised as being 'of continuing with environmentally harmful actions. Additionally, linked to any attempts to reduce environmental impact, time- and price- sensitive consumers may be deterred

by the perceived time- and cost- risks associated with learning about green products (Van Tonder, 2020). With the viewpoints of these authors in mind, and the findings in the current study, it appears that price is still king and that environmental attitudes remain flexible. With cost/price sensitivity in mind, it is also understandable that LCC users will be less inclined than FSC users, to act in a pro-environmental way.

6.3.3.2 SRO3 recommendations

The following recommendations are made based on the SRO3 findings and conclusions:

Incorporate green attributes into the service offering

It is recommended that airlines actively pursue the inclusion of a variety of green attributes, as part of their service offering. The availability of environmentally friendly products enables consumers to make simple decisions regarding green products, with less time and effort (Thøgersen, Jørgensen & Sandager in Krstić *et al.*, 2021). However, the aim of these green attributes should not be to create an ancillary revenue. Rather, airlines should incorporate these attributes with the viewpoint of differentiating themselves from their competitors. In the near future, if airlines do not incorporate environmental practices into their operations and marketing mix, they may find themselves losing market share.

Considering that air travellers can derive value from environmental initiatives, and that they are highly price sensitive (Araghi *et al.*, 2016), it is recommended that airlines offer green services which air travellers perceive as high in value. Consumers who acknowledge that the use of SAFs is more sustainable than kerosene, show a WTP up to 13% more for a flight operating on SAFs (Ragbir *et al.*, 2021).

When introducing green attributes, airlines should take cognisance of the stage of product launch (that is, infancy), and accordingly, acknowledge that it will take consumers time to learn about the new green attributes being offered. According to Zhang and Chang (2021), as the products reach the maturity stage, consumers will develop a general proficiency to make choices with minimal effort. The airline market needs strategies to secure competitiveness (Kim & Son, 2021), implementing VCOs and SAFs could be a way for airlines to do so.

Environmental conservation should become an essential business responsibility

Airlines should make genuine efforts to ensure that “conserving the environment”, becomes an essential business responsibility. Investment in research and development (R&D) regarding ‘greening’ initiatives should be done. Furthermore, it is recommended that airlines should identify ways to reduce their negative impact on the environment, by identifying technological innovations that will improve their environmental performance. Airlines should also strive, and determine ways, to grow in an environmentally responsible way.

Close the information gap through environmental communication strategies

With relevant information, marketers can influence consumer decisions (George, 2019). It is recommended that airlines close the information gap by developing relevant environmental communication strategies. Airline marketers should design and implement educational programs which specifically focus on the environmental impacts of their airline. Included in these educational programs, there could be specific information on the relevant airline’s environmental performance. As such, the airline could elaborate on the specific initiatives they implement as part of their goal toward reducing their environmental impact.

An additional opportunity and/or benefit of such educational programs could be to include information on the consumer-related initiatives in which consumers can engage. With such engagement, consumers could pursue attempts in their personal capacity, to achieve personal goals towards mitigating their individual impacts, for example, through VCO programmes.

One example of a tool that airlines could use as a means of sharing their product’s environmental information with consumers, is an eco-label (see Sections 2.6.4.2 and 3.4.2.4). Such a label would enable consumers to make consumption decisions that are both well-informed and sustainable, without compromising their freedom of choice (Baumeister & Onkila, 2017). With reference to knowledge on products and services, Makanyeza and Du Toit (2015) argued that once a consumer has been exposed to knowledge, this knowledge can provide a sense of consciousness, which in turn, can direct consumers to make better purchase decisions.

In light of the suggested time- and cost- risks associated with consumers researching new green attribute products or services before using them, it is recommended that airlines make the learning about these attributes as easy as possible. This simplified learning is especially important when considering the high level of uncertainty on the airline industry's environment impact, and the moderate importance placed by respondents on green attributes during their decision-making. Furthermore, it is suggested that FSCs use eco-labels as a tool to better position themselves, in the battle against LCCs, to gain an SCA though environmental product differentiation (Baumeister & Onkila, 2018).

6.3.4 Engagement in pro-environmental behaviour (SRO4)

The SRO4 set out to:

investigate whether domestic air travellers
engage in pro-environmental behaviour, or not.

The achievement of this objective was aided by the literature review, and the empirical findings for the current study. References to each, are summarised below.

Literature study

Sections 2.4.1, and 2.6.4.1 to 2.6.4.4, discussed the theory concerning environmental behaviour, environmental knowledge, environmental awareness/concern, and environmental attitudes. Linked to environmental behaviour, is consumer behaviour and decision-making. Accordingly, of additional relevance to SRO4, Section 2.7.2.1 presented a discussion of the green ATSAs that could potentially serve as decision-making items, when passengers select an airline. This literature study provides a basis for the discussion and interpretation of the empirical findings relating to the environmental behaviour of air travellers, as well as the recommendations at the end of this section.

Empirical findings

To address SRO4, related findings from SROs 1, 2 and 3 were considered. Findings from Section 5.3.7 were considered (SRO1 - Section 6.3.1), in order to understand the respondents' uptake of – and participation in – an airline's VCO programme. Findings from Section 5.5 were consulted (SRO2 - Section 6.3.2), to determine the level of

importance which air travellers place on green ATSAs. Lastly, findings from Sections 5.6 and 5.8 were referred to (SRO3 – Section 6.3.3), in order to understand pro-environmental air travel behaviour. The conclusions for SRO4 focus specifically on the status of PEB by air travellers in the sample.

6.3.4.1 Conclusions related to SRO4

From a consumer behaviour perspective, environmental behaviour is associated with purchasing in a sustainable, environmentally friendly and responsible manner (Paço *et al.*, 2019). Based on the findings in the current study, it can be confirmed that air travellers in SA do not behave in an environmentally friendly way when travelling domestically. Figure 6.4 below highlights the areas in which air travellers are, or are not, engaging in PEB from an air travel perspective.

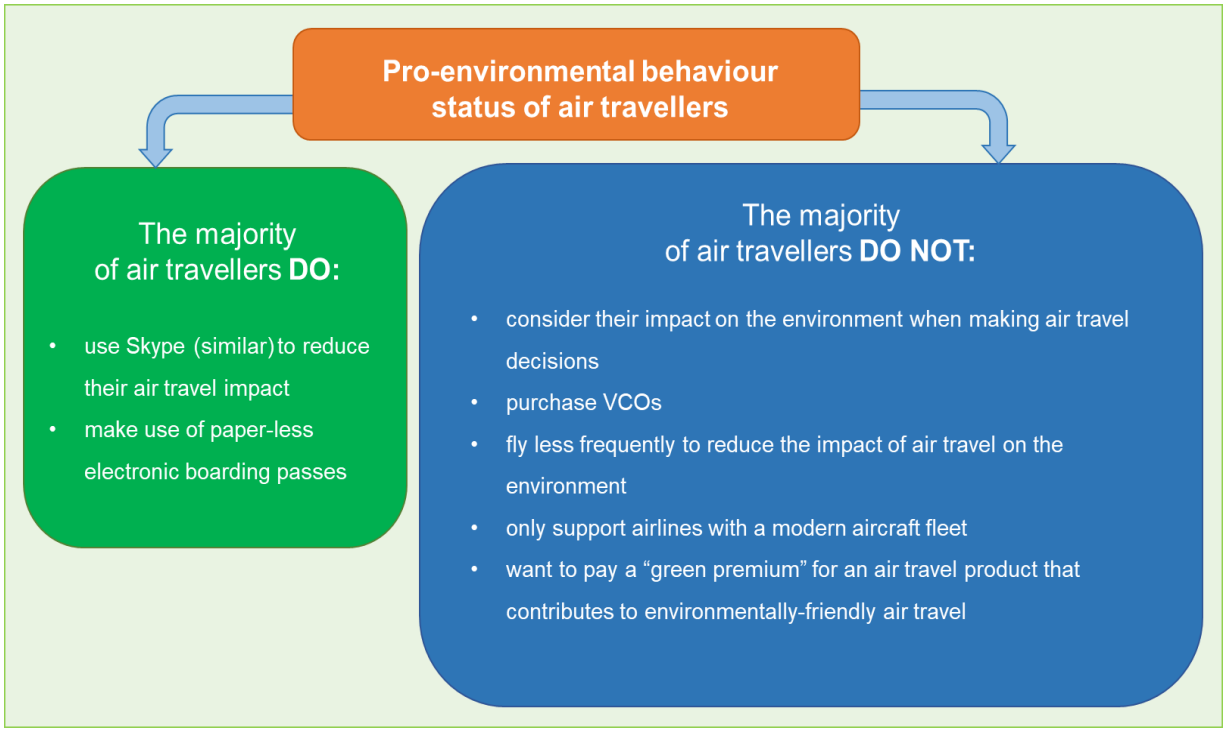


Figure 6.4: The pro-environmental behaviour status of air travellers

Engagement in PEB

The majority of air travellers in the current study indicated that they made use of Skype or similar video conferencing tools, such as Zoom and Microsoft Teams, to reduce the environmental impact from their air travel. Video conferencing is not a green ATSA 'per se', instead, it can be considered 'green air travel behaviour', simply by virtue of flying less often. Post-Covid-19, the motivation to fly less and/or use video

conferencing tools, is more likely motivated by travel restrictions and/or consumer vigilance, rather than the environmental prerogative. The assertion by Becken and Hughey (2021), that Covid-19 has resulted in business travel budget cuts, and hence, lower demand, could be a strong motivating factor for current and/or future use of video conferencing.

A second way in which the majority of the respondents displayed PEB pertained to the use of electronic boarding passes. The electronic boarding pass is considered to be pro-environmental, in that it prevents avoidable, single-use waste (McMah, 2019). Of importance, the use of an electronic boarding pass can also be considered advantageous in terms of convenience and time-saving, by avoiding queues at check-in counters. Accordingly, it is also possible that respondents' make use of electronic boarding passes primarily for their efficiency and/or convenience.

Non-engagement in PEB

The findings observed that while air travellers hold high regard for modern, fuel-efficient aircraft, they do not only fly with airlines operating a modern fleet. This confirms that attitudes do not always translate into PEB, as pointed out by Paço *et al.* (2013). In terms of airline fleet specifically, the reason for the misalignment between attitude and behaviour, could be due to low or no knowledge on the environmental efficiency differences between old and modern aircraft.

Interestingly, although almost half of the respondents expressed some level of awareness/concern over air travel emissions (Item 18.5 within the environmental awareness/concern factor), this awareness/concern did not translate to respondents adjusting their air travel behaviour. This aligns with the research by Cohen *et al.* (2011) which found that despite increasing concern over travel emissions, there appears to be a reluctance for air travellers to adjust their behaviour on a significant scale. However, as brought to light in the research by Mayer (2013) and Merilä (2015), this reluctance may be due to other barriers, such as the types of aircraft available, which prevent consumers from behaving in a pro-environmental way.

Amongst the reasons for the sample's low environmental knowledge and PEB relating to air travel, could be the limited green ATSAs offered by SA domestic airlines. If respondents were not aware of green ATSA's at any of the SA domestic airlines, they would very likely have indicated neutral environmental concern and low PEB. As

mentioned in Section 3.5.2.4, if the option is not available, the consumer cannot purchase it, and oftentimes, would not even be aware of it. Whereas if the information is available during the need recognition state of the decision-making process, air travellers' awareness of green products might alter (Momberg, 2011). Additionally, Lu and Wang (2018) point out that passengers receive little, if any, information on the potential impact a change in travel behaviour could have on reducing carbon emission. Hence, respondents might have reflected positive PEB if airlines: implemented environmentally responsible initiatives and offered green attributes; communicated their environmental commitments, and informed air travellers of the value that can be derived by choosing a particular green attribute or service.

However, if a green option is offered to the consumer, it can be chosen. For instance, the electronic boarding pass option is offered by all the SA domestic airlines. Therefore, an opportunity was created for air travellers to easily choose to change their behaviour, by switching from using a paper-based boarding pass, to an electronic boarding pass. This resulted in the majority of respondents considering this green ATSA to be of moderate, large or extreme importance (82.2%). Accordingly, if more green options are presented to consumers, it could result in higher levels of PEB.

Contrary to this statement though, specifically in terms of VCOs as a green option, only a minority of respondents (less than 5%) showed a WTP a green premium or contribute to such a programme. This low uptake could be attributed to air travellers' attitudes reflecting that the responsibilities for greening costs are not their own, but the airlines. Another potential reason for the low uptake could be, as mentioned in Section 6.3.1 (SRO1), that only two of the SA domestic airlines offered a VCO at the time of the data collection for the current study.

With reference to the ATSAs, and 'green attributes' as one of the ATSA factors, almost one third of the respondents rated all the items across this factor, as having large or extreme importance during their decision-making. This was despite the green attributes mentioned within this factor not being readily available at the time of the data collection. When comparing the various ATSA factors, it is noteworthy that the green attributes factor was found to be more important than two factors with which the respondents would be more familiar, namely, loyalty and rewards, and VIP value-added services. These findings suggest that, should green options be presented to air

travellers, there is potential for air travellers to be drivers of change on the climate change agenda.

In conclusion, the results of the current study suggest that air travellers in the SA domestic airline market do not actively engage in PEB. On the basis of the literature and the empirical findings, it is proposed that this non-active engagement is attributed to three points. Firstly, the SA airline industry has not taken a proactive stance regarding their environmental responsibility. Secondly, from an airline market supply perspective, there is an insufficiency in terms of green products/services. Thirdly, air travellers have limited knowledge of the impact of air travel on the environment.

Overall, the findings relating to SRO4 reveal that, although apparent air traveller PEB is very low, there does appear to be a willingness on the part of air travellers, albeit moderate, to engage in PEB. Should more green products/services be introduced, there could be an uptake in air traveller PEB.

6.3.4.2 SRO4 recommendations

The recommendations from SRO3 in Section 6.3.3.2, are directly applicable for SRO4. In summary, it is recommended that: 1) environmental conservation becomes an essential business responsibility for airlines; 2) green attributes (including VCOs and SAFs) should be incorporated into the airline product/service offering; and 3) environmental communication strategies should be implemented to improve environmental knowledge among consumers.

Additionally, airline marketers could explore the option of establishing green loyalty programs, where air-travellers score ‘points’ (with monetary value) for engaging in PEB. Such loyalty programmes could incentivise air travellers to participate in environmentally friendly initiatives, as provided by the airline and/or affiliated companies. Affiliate organisations, for example, could be eco-friendly lodges or other tourism suppliers, which practice low carbon and environmentally friendly behaviour. Affiliate companies could also be larger organisations, such as banks, which partner in such programs and incentivise travellers to apply their spending on environmentally friendly products/services. This idea could be valuable to the post-Covid-19 business travel market seeking to mitigate their high carbon business profiles.

6.3.5 Relationships between EC factors and air travel behaviour (SRO5)

The SRO5 set out to:

> *investigate if domestic air travellers' environmental knowledge, environmental awareness/concern, and environmental attitudes are statistically and significantly aligned with air travel behaviour.*

SROs 2 and 3 set out to measure and analyse the factors in the current study. These objectives were achieved in Sections 6.3.2 and 6.3.3 and lay the foundation for addressing SRO5.

The achievement of this objective was supported by further empirical findings from the current study. The empirical findings are summarised below. Thereafter, conclusions and recommendations are presented.

Empirical findings

To address SRO5, the analyses and empirical findings presented in Section 5.10 in Chapter 5 were considered. The analyses in Section 5.10 were carried out to determine the relationships between the different combinations of the EC and ATSA factors.

The empirical findings revealed that statistically significant relationships exist between a number of the decision-making criteria (ATSAs) and the EC factors. These relationships were statistically identified using the Pearson's Correlation Coefficient (See Table 5.16, Chapter 5). A summary which highlights the significant relationships, and their respective strengths, is presented in Table 6.1.

Table 6.1: Summary of the significant relationships between factors

Relationship and strength	Environmental knowledge	Environmental awareness/ concern	Attitudes towards environmental air travel operations	Attitudes towards environmental air travel service offerings	Pro-environmental air travel behaviour
Tangibility		**0.180** *Small*		**0.166** *Small*	**0.243** *Small*
Reliability and operational efficiency		**0.123** *Small*		**0.158** *Small*	**0.126** *Small*
Price			**0.123** *Small*	**0.115** *Small*	
Loyalty		**0.131** *Small*		**0.279** *Small*	**0.268** *Small*
Customer service		**0.145** *Small*	**0.101** *Small*	**0.173** *Small*	**0.153** *Small*
Ticket flexibility		**0.240** *Small*		**0.154** *Small*	**0.255** *Small*
In-transit/on-board attributes		**0.190** *Small*		**0.164** *Small*	**0.217** *Small*
VIP Value-added services		**0.170** *Small*		**0.158** *Small*	**0.263** *Small*
Green attributes	**0.274** *Small*	**0.539** *Strong*	**0.451** *Moderate*	**0.433** *Moderate*	**0.547** *Strong*
Pro-environmental air travel behaviour	**0.209** *Small*	**0.554** *Strong*	**0.255** *Small*	**0.477** *Moderate*	

Note: Where no significant relationship exists, the cells are shaded grey.

6.3.5.1 Conclusions related to SRO5

Based on the key observations from Section 5.10, a number of statistically significant relationships among factors were identified. This section presents the conclusions relating to the key relationships identified between the EC and ATSA factors. (Note: The relationships described in the discussion below refer to correlation, not causation, between factors.)

Findings that come to light are the relationships between the green attributes factor and all the EC factors. In this regard, correlations were identified between all the EC factors, and "the importance placed by air travellers on green attributes during decision-making". This indicates that an air travellers' inclination to purchase green attributes, is related to their environmental consciousness. However, the strength of the correlations differ.

Figure 6.5 illustrates the correlations between the green attributes and the EC factors. The figure also illustrates the strength of these relationships.

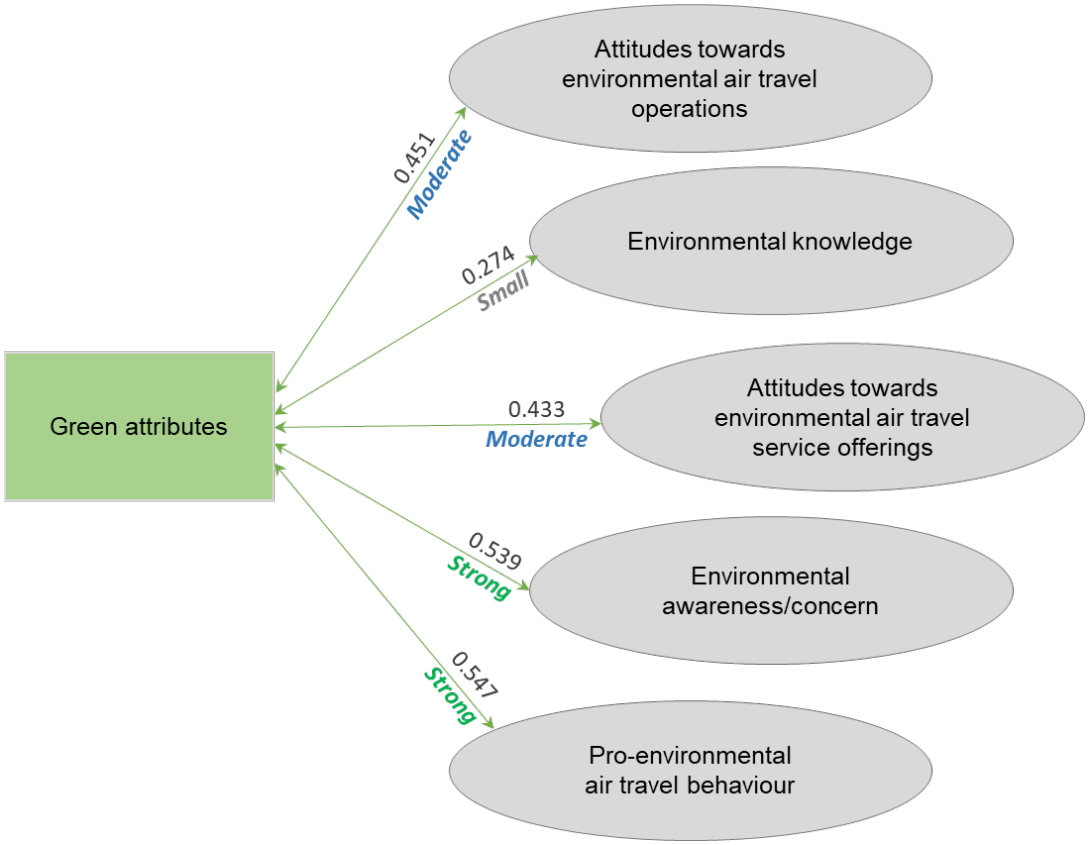


Figure 6.5: Statistically significant relationships between the green attributes ATSA factor and all the EC factors

Based on the correlation findings, the level of importance which an air traveller places on **green attributes** during decision-making, can *strongly influence*, or *strongly be influenced by*, their level of **environmental awareness/concern** and their level of **pro-environmental behaviour**.

Additionally, the level of importance which an air traveller places on **green attributes** during decision-making, can *moderately influence*, or *moderately be influenced by*,

their **attitudes towards environmental airline operations** and **attitudes towards environmental airline service offerings**.

Finally, the findings show small, yet statistically significant correlations, between some EC factors and the remaining ATSA factors, that is, factors other than "green attributes". Figure 6.6 below illustrates the correlations between the relevant EC factors, that is, those reflecting relationships and the three most important ATSAs, namely, **operational reliability and efficiency**, **customer service**, and **price**.

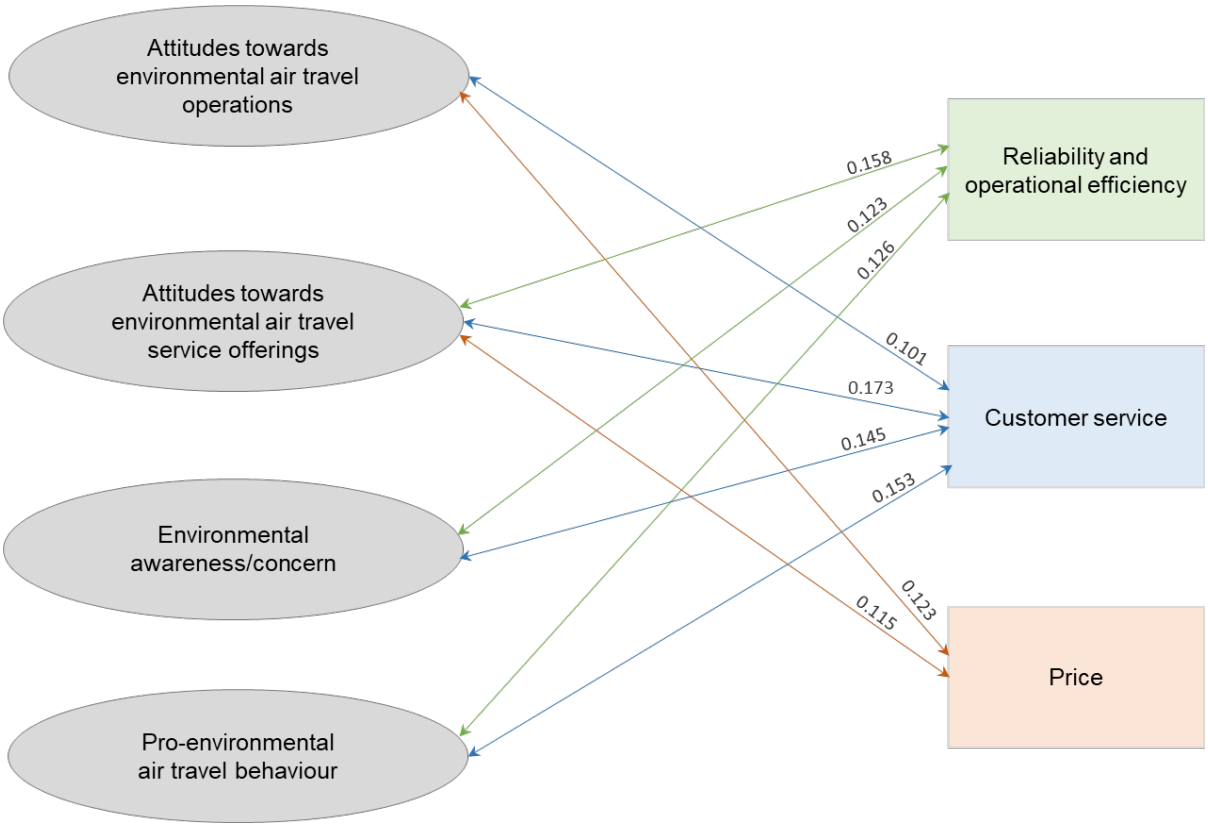


Figure 6.6: Statistically significant relationships between the four EC factors and the three most important ATSAs

The correlations reflect that the importance placed on **price** *can influence*, or *be influenced by*, an air travellers' **attitudes towards environmental air travel operations**, as well as **attitudes towards environmental air travel service offerings**. This reveals that price sensitive air travellers, that is, the leisure air travellers and LCC users, may not be willing to change their air travel behaviour, if it comes at a cost. However, the less price sensitive air traveller, that is, the business and FSC air travellers, may be willing to change their air travel behaviour, if value for money can be found.

Finally, statistically significant relationships were identified between **pro-environmental behaviour** and the other EC factors. Figure 6.7 below illustrates the correlations between these factors.

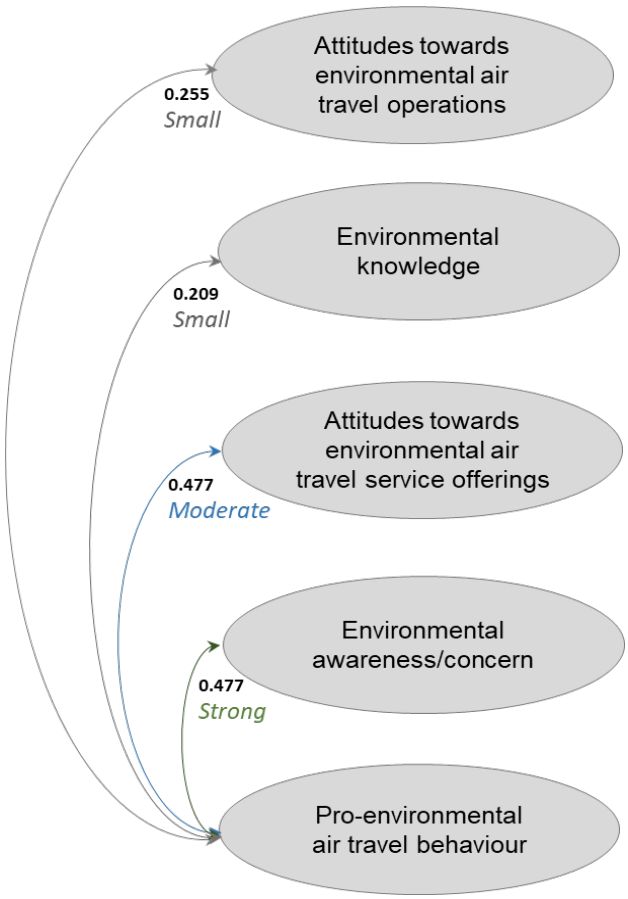


Figure 6.7: Statistically significant relationships between pro-environmental air travel behaviour and environmental knowledge, awareness/concern and attitudes (towards operations and service offerings respectively)

The correlations reflect that air travellers' engagement in **pro-environmental air travel behaviour** *can influence*, or *be influenced by*, an air travellers' **environmental knowledge** (small correlation), **environmental awareness/concern** (strong correlation) as well as **attitudes towards environmental air travel operations** (small correlation) and **service offerings** (moderate correlation). These statistically significant relationships suggest that environmental knowledge, attitudes and awareness/concern are indeed predecessors for PEB (Cherian & Jacobs, 2012; Akehurst *et al.*, 2012; Merilä, 2015; Lu & Wang, 2018; Khan *et al.*, 2020) (refer to Section 6.3.3.1).

In summary, the findings reveal statistically significant relationships between air travellers' environmental consciousness and their air travel behaviour, from a choice-

criteria/decision-making perspective. Furthermore, there are statistically significant relationships between air travellers' pro-environmental air travel behaviour and the other EC factors.

6.3.5.2 SRO5 recommendations

It is recommended that structural equation modelling (SEM) is conducted on the current study's data, to test or identify the directions of the relationships between factors.

6.3.6 Socio-demographic profile of air travel behaviours (SRO6)

The SRO6 set out to:

> *present a socio-demographic profile of the domestic air traveller.*

Literature review

Sections 2.3.1 and 2.4.2 pertaining to consumer characteristics relate to SRO6.

Empirical findings

Section 5.3 presented and discussed the descriptive statistics pertaining to the socio-demographic data of the sample for the current study. The socio-demographic categories include gender, age, employment status, income classification and education.

6.3.6.1 Conclusions related to SRO6

A cluster analysis was initially planned to address SRO6, to explore potential domestic air traveller segments. The cluster analysis did not produce significant results, and consequently, could not be used. Therefore, this section will briefly describe the 2018 (pre-Covid-19) demographic composition of the sample. Due to the nature of the sampling approach employed for the current study, this profile described cannot be generalised to the SA domestic flying population.

With this in mind, the findings and conclusions of the preceding objectives are reflective of a millennial consumer group that is well educated, employed and receiving middle-income salaries. The socio-demographic variables are background variables which influence consumer behaviour. Figure 6.8 below presents an infographic

summary of the demographic profile of the sample of domestic air travellers with an SA context.

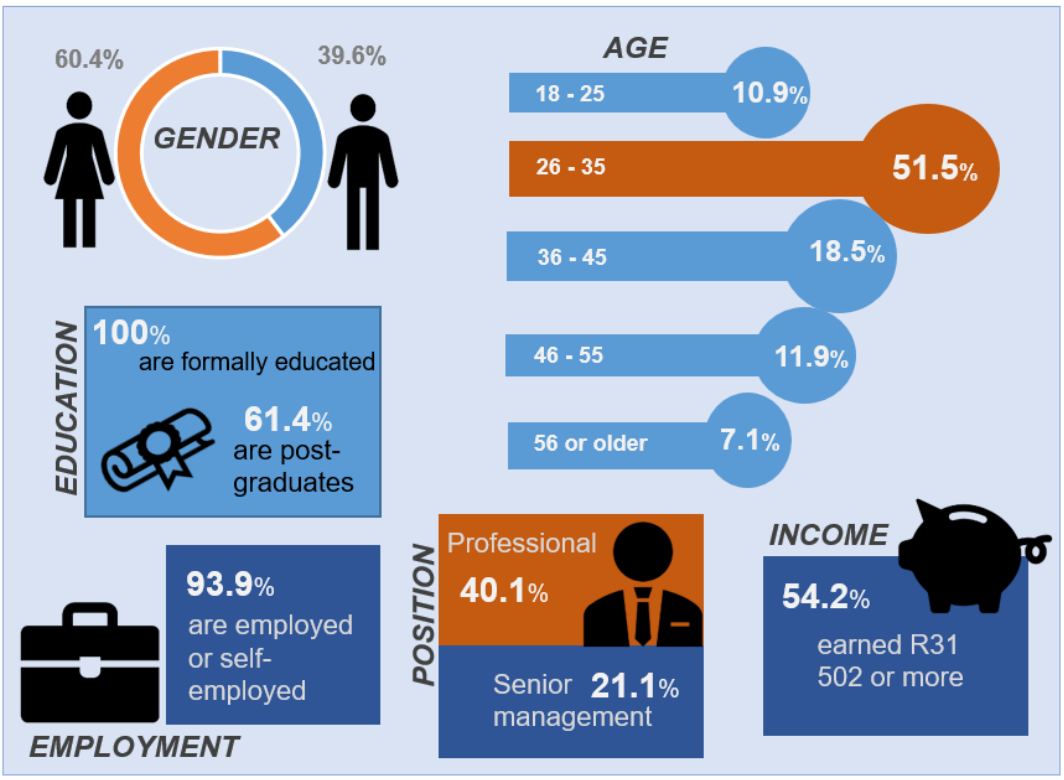


Figure 6.8: Respondent infographic

The findings reveal homogeneity among the respondent group/sample, in terms of being in the younger age categories, middle-income earners, and employed. Although not representative of the air traveller group, it can be concluded that the results of the current study are more aligned to a group of air travellers with these socio-demographic characteristics.

These socio-demographic characteristics influence how an individual thinks, makes decisions and what products/services to purchase (Roberts-Lombard & Brijball Parumasur, 2017). The emerging middle-class market is boosting local consumption in Africa (Bangsa & Schlegelmilch, 2020), and this subculture could constitute an important market segment to receive attention from marketers to design tailored products and marketing programmes (Kotler *et al.*, 2021). Education, income, occupation and other variables determine social class, within a culture or sub-culture (Schiffman & Wisenblit, 2019).

Zhang and Chang (2021) suggest that younger consumer groups' have dynamic and evolving needs. Subsequently, the authors note that a younger consumer group may

be more willing to make changes in their consumer behaviour, compared to the older age categories, who are more set in their ways and are less willing to change due to the cost and time risks involved.

6.3.6.2 Recommendations based on SRO6 findings and conclusions

The following recommendations are made based on the SRO6 findings and conclusions:

Target the younger air traveller

Considering the sample for the current study were predominately between 18 and 35 of years of age, it is recommended that airline marketers target the younger air traveller segments when introducing green attributes to their offerings. With the viewpoint of Zhang and Chang (2021) in mind, airline marketers should take into consideration the dynamic variations that emerge, as the air travellers' needs evolve through their life stages.

Replicate the current study using a probability-sampling approach

A probability-sampling approach, with a larger, more diverse sample in terms of socio-demographic variables such as economic situations and age, is recommended to perform a cluster analysis. A cluster analysis would be beneficial to explore potential EC consumer segments, which would be of value to airline marketers.

6.4 ADDRESSING THE PRIMARY RESEARCH OBJECTIVE

Section 6.3 reflected on each SRO in the current study. Sections 6.3.1 to 6.3.6, presented the conclusions and recommendations for SROs 1 to 6, based on the literature study and empirical findings. This section, Section 6.4, addresses the primary research objective (PRO) of the current study.

The PRO, as presented in Chapter 1, is to:

> *investigate the interrelationships between domestic air travellers' consumer behaviour and environmental consciousness, within a South African context.*

The PRO was pursued by addressing the six SROs. A summary of the main findings, according to each SRO and their link to the literature and empirical findings in the current study, are illustrated in Table 6.2 below. Thereafter, the key findings, as they relate to the PRO, are condensed in Figure 6.9, which follows.

Table 6.2: Summary of the main findings

SRO	Literature review	Findings	Summary of main findings	Summary of recommendations
SRO1: To investigate the 2018 consumer behaviour of domestic air travellers.	2.5.2.1, 2.5.2.3, 2.7.2.1, 3.2, 3.3, 3.6.3	5.4	▪ Travel purpose: leisure (62.2%); business (37.8%) ▪ Aircraft type: LCC (68.3%); FSC (31.7%). ▪ Flight frequency: 74.6% (between 1 and 5 flights); 14.5% between 6 and 10 flights) ▪ Most popular airlines: Kulula.com (76.5%), FlyMango (68.2%) ▪ Preferred airlines: BA (23.9%); Kulula.com (23.6%) ▪ Source of funding: Personally (58.9%); business (35.8%) ▪ Most popular ATSA: Check-in luggage (75.1%), pre-bookable seat (56.1%), ticket flexibility (27.2%) ▪ Least popular ATSA: VCO (4.3%)	▪ Focus on the leisure market to fuel market recovery. ▪ Identify innovative ways to differentiate the business-focused service offerings for the altered business market. ▪ To avoid or mitigate the next potential natural shock that the climate change crisis could bring, airlines should proactively prepare for the climate change related business risks. In doing so, airlines should strive for long-term value creation as they restructure, innovate and transition towards environmentally responsible airline business models. ▪ FSCs should establish clearer differences in their business models, through environmentally friendly product/service innovations.
SRO2: To determine the importance domestic air travellers place on air travel service attributes, when deciding on an air travel ticket to purchase.	2.7.1, 2.7.2, 3.2, 3.3	5.5, 5.7, 5.9	Nine reliable ATSA factors were identified, namely: ▪ 1) tangibility, 2) reliability and operational efficiency, 3) price, 4) loyalty, 5) customer service, 6) ticket flexibility, 7) in-transit/on-board attributes, 8) VIP value-added services, and 9) green attributes. ▪ Reliability and operational efficiency was the most important ATSA factor, followed by customer service and price. ▪ VIP value-added services was the least important ATSA factor, after loyalty and rewards. ▪ Leisure air travellers are more price sensitive than business travellers. ▪ Business travellers value ticket flexibility and VIP value-added services more than leisure travellers.	▪ Incorporate marketable green ATSAs into offerings. ▪ Genuine attempts towards a green image. ▪ Strengthen differentiation between leisure and business target markets. ▪ LCCs should continue differentiating based on price. ▪ FSCs should focus on differentiation based on reliability and operational efficiency, customer service, ticket flexibility, tangibility, loyalty and rewards, and VIP value-added services. ▪ When business travel is recovering from the post-Covid-19 shock, airlines should target business travellers using green attributes and green incentives which support businesses in mitigating their climate change impacts from travel.

SRO	Literature review	Findings	Summary of main findings	Summary of recommendations
			▪ FSC and LCC users place different levels of important on all ATSA factors, with the exception of green attributes. ▪ Green attributes were considered with moderate importance (more important than VIP value-added services and loyalty and rewards, which were considered with low importance). This reveals potential for airlines to incorporate green attributes into their offerings.	▪ Communicate the value for money which consumers can derive by purchasing a ticket with green attributes. ▪ Overall, regardless of air traveller being targeted, create and communicate value for money through optimal reliability and operational efficiency, and excellent customer service.
SRO3: To investigate the environmental consciousness of domestic air travellers.	2.6	5.6, 5.8, 5.9	▪ Five reliable factors were identified, namely: 1) environmental knowledge, 2) environmental awareness, 3) attitude towards environmental air travel operations, 4) attitude towards environmental air travel offerings, and 5) environmental air travel behaviour. ▪ Strong consensus was observed among respondents, regarding their attitudes towards environmental airline operations. Air travellers expect airlines (and the airline industry holistically), to develop in an environmentally responsible manner. Additionally, respondents believe that among this responsibility, airlines should strive to conserve the environment, reduce negative environmental impacts, and focus on technological innovation. ▪ Air travellers are knowledgeable of climate change from a general point of view; however, they are unsure of the contribution of air travel on climate change and climate change-related problems. ▪ An information gap is confirmed between the airline industry and air travellers in the SA. ▪ Respondents were not in favour of paying green premiums to offset carbon emissions.	It is recommended that airlines: ▪ incorporate green attributes into their service offering. Not to create ancillary revenues, rather, with the intention of creating an SCA over competitors (and to avoid losing market share in the long-term). ▪ offer green attributes which are perceived to have the greatest value by air travellers. ▪ take cognisance of the infancy stage of green attributes when launching these attributes as offerings. ▪ close the information gap between airlines and air travellers, by developing relevant environmental communication strategies. ▪ incorporate environmental conservation as an essential business responsibility.

SRO	Literature review	Findings	Summary of main findings	Summary of recommendations
			▪ Respondents do not want the environmental imperative to come at a cost to themselves. They feel the airline industry should take responsibility and bear the costs of climate change mitigation initiatives. ▪ From an awareness/concern viewpoint, respondents had not given much thought to the negative environmental impacts of their personal flying behaviour. However, respondents were aware that the environment needs to be respected and protected, irrespective of the costs. ▪ PEB scored the lowest among the EC factors, indicating that respondents do not engage in PEB in when travelling by air in SA. ▪ Business and leisure air travellers do not differ in their EC. ▪ LCC and FSC users statistically differ in their environmental knowledge and PEB. LCC users reflected slightly higher environmental knowledge than FSC users. However, PEB is lower among LCC users, compared to FSC users.	
SRO4: To investigate whether domestic air travellers engage in pro-environmental behaviour, or not.	2.6.4.1 to 2.6.4.4, 2.7.2.1	5.3.7, 5.5, 5.6, 5.8	▪ Respondents do not actively engage in PEB when travelling by air, domestically within SA. The majority of respondents: ▪ use Skype (similar) to reduce their air travel impact ▪ make use of paper-less electronic boarding passes ▪ These actions may be attributable to reasons other than attempting to engage in PEB. The majority of respondents did not: ▪ consider their impact on the environment when making air travel decisions	It is recommended that: ▪ Environmental conservation becomes an essential business responsibility for airlines. ▪ Green attributes should be incorporated into the airline product/service offering. ▪ Environmental communication strategies should be implemented to improve environmental knowledge among consumers. ▪ Airlines should explore the notion of establishing green loyalty programmes or incentives. This could be of particular value to the business travel market.

SRO	Literature review	Findings	Summary of main findings	Summary of recommendations
			▪ purchase VCOs ▪ fly less frequently to reduce the impact of air travel on the environment ▪ only support airlines with a modern aircraft fleet ▪ want to pay a "green premium" for an air travel product that contributes to environmentally friendly air travel.	
SRO5: To investigate if domestic air travellers' environmental knowledge, environmental awareness/ concern, and environmental attitudes are statistically and significantly aligned with air travel behaviour.	Linked to SRO2 (2.7.1, 2.7.2, 3.2, 3.3) Linked to SRO3 (2.6)	5.10	▪ Refer to Table 6.1 presenting a summary of the significant relationships between factors. ▪ Statistically significant relationships between green attributes and all the EC factors. ▪ The level of importance which an air traveller places on green attributes during decision-making, can strongly influence, or strongly be influenced by, their level of environmental awareness/concern and their level of PEB. ▪ The level of importance which air travellers place on green attributes during decision-making, can moderately influence, or moderately be influenced by, their attitudes towards environmental airline operations and attitudes towards environmental airline service offerings. ▪ Statistically significant relationships exist between some EC factors and the other ATSA factors. ▪ The importance placed on price can influence, or be influenced by, an air travellers' attitudes towards environmental air travel operations as well as attitudes towards environmental air travel service offerings. ▪ Statistically significant relationships were identified between PEB and the other EC factors.	▪ SEM should be conducted on the current study's data, to test/identify the directions of the statistically significant relationships.

SRO	Literature review	Findings	Summary of main findings	Summary of recommendations
			▪ PEB can influence, or be influenced by, an air travellers' environmental knowledge (small correlation), environmental awareness/concern (strong correlation), attitudes towards environmental air travel operations (small correlation), and service offerings (moderate correlation).	
SRO6: To present a socio-demographic profile of the domestic air traveller.	2.3.1, 2.4.2	5.3	▪ The sample is reflective of a socio-demographic group with the following characteristics: ▪ Millennial consumer group (51.5% being between 26 to 35 years of age) ▪ Formally educated (100% possess a matric certificate; 79.2% possess a Bachelor's degree or higher; 61.4% have post-graduate qualifications) ▪ Employed and receiving middle-income salaries (93.9% are employed or self-employed; 54.2% earn a gross monthly salary of R31 501). ▪ Female (60.4%); Male (39.6%)	▪ When introducing green ATSAs to their offerings, airlines are recommended to target the younger air traveller market. ▪ A replication of the current study using a probability-sampling approach is recommended.

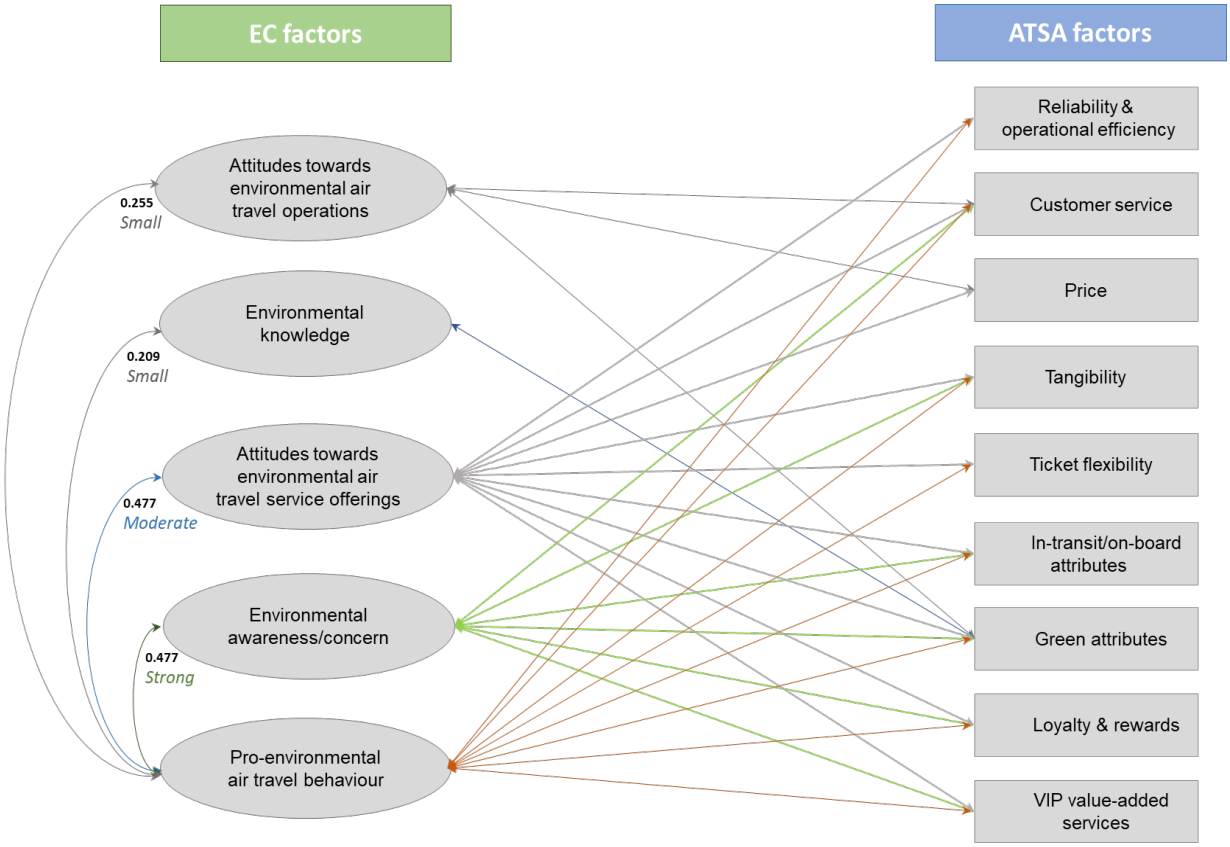


Figure 6.9: Relationships between the factors identified in the current study

Figure 6.9 graphically depicts the significant relationships between the EC factors and the ATSA decision-making factors. It also depicts the relationships between the pro-environmental behaviour factor and the remaining four factors in the EC theme.

Based on the empirical findings from the current study, there is evidence that an air travellers' EC *can influence*, or *be influenced by*, their level of pro-environmental behaviour. Additionally, an air travellers' EC *can influence*, or *be influenced by*, the ATSA decision-making factors. The intricacies of these relationships were elaborated in the respective SRO discussions. In summary, while air traveller EC *influences*, and/or *is influenced by*, the ATSAs decision-making factors, it appears that a cost-consciousness of consumers supersedes their environmental consciousness, confirming that price is still king.

Section 6.4 addressed the PRO. Section 6.5 will discuss the limitations which were encountered in the current study.

6.5 LIMITATIONS OF THE STUDY

The current study was subject to a number of limitations that are discussed in this section.

6.5.1 Covid-19 implications

The data collection for the current study was completed in 2018. The data is therefore based on a modern context. However, the onset of Covid-19 disrupted the global and domestic airline industry irrevocably. This became a limitation for the current study, as the researcher needed to find new meaning for the current study within the context of the Covid-19 pandemic. Although a time-intensive exercise, this limitation was overcome by repackaging the current study to incorporate Covid-19 related literature and industry insights. Accordingly, the implications of the Covid-19 pandemic, where relevant, were considered and incorporated throughout this dissertation.

6.5.2 Sampling limitations

Two non-probability sampling approaches were employed for the current study, namely, purposive and snowball sampling. Unfortunately, the researcher did not have access to an air traveller consumer database for a probability sampling method to be employed. Consequently, the sample was restricted to air travellers departing from airports based in the Gauteng province. This was a limitation as the non-probability sampling approach did not allow the researcher to generalise the research results and findings to the air traveller population.

To counteract the weaknesses of the non-probability sampling methods employed, the researcher aimed to obtain a larger sample base. This enabled the researcher to obtain 394 completed surveys. However, this was a limitation as it was a time intensive exercise which took over five months to complete.

6.5.3 Data collection limitations

The researcher planned to intercept air travellers at three Gauteng-based airports, to administer a paper-based survey. Unfortunately, the process of reaching the relevant airport gatekeepers proved to be a timely exercise. Then, once the relevant gatekeepers had been identified and approached, the time-period awaiting a response delayed the start of the data-collection process even further.

Whilst awaiting the gatekeeper responses, the researcher commenced with the Internet-based data collection (see Section 4.3.3). The Internet-based approach enabled the researcher to avoid further delay and to commence with the data-collection process. However, the Internet-based approach was coupled with technical difficulties and Internet-based limitations. Firstly, the Internet-based survey did not have the functionality which enabled the respondent to “pause”, “save”, and “resume” the survey at a later stage. This was a limitation because many Internet-based surveys were started, but not submitted. Secondly, the researcher experienced an unforeseen issue when distributing the survey invitation via certain online platforms. Facebook (via Messenger or status shares) and Gmail were the platforms on which the issue was encountered. When the survey was distributed via Facebook and Gmail, the link to the LimeSurvey website was “hijacked” by a spam Internet competition advertisement. This deterred many prospective respondents from trying to access the survey again. Hence, those respondents became lost respondents.

Permission to conduct fieldwork was granted by one of the three airports which were approached by the researcher. ACSA granted Gatekeeper permission to conduct the fieldwork at the ORTIA. However, this permission was granted on condition that restrictions were adhered to. Only one fieldworker was permitted to intercept air travellers at the ORTIA (restriction 1). Conducting fieldwork alone limited the number of prospective respondents could be intercepted in a day.

The fieldwork vicinity at the ORTIA was restricted to the domestic check-in terminal, namely, “Terminal B: Domestic departures” (restriction 2). The fieldwork vicinity at the ORTIA became a limitation because most prospective respondents who were approached, had limited time before their flight, and therefore declined the invitation. However, many of these air travellers requested that the survey invitation should be emailed to them. This became the solution that would counteract this intercept limitation. Air travellers who were willing to take part in the survey could choose between two survey methods, either they could: 1) complete the paper-based survey at the ORTIA (if their schedule allowed), or 2) voluntarily share their email address with the researcher, to receive the Internet-based survey via email.

6.5.4 Data capture and analysis limitations

At the start of the data coding process, a coding problem was identified when merging the paper-based and Internet-based survey responses. The problem occurred due to inconsistencies in the numbering of the screening questions between the different survey versions. This was a limitation due to the additional time that was required to solve the problem. However, this became a valuable exercise, as it served as an additional quality-check when coding and cleaning the data.

The breadth of the scope of the current study and the lengthiness of the survey resulted in two limitations. Firstly, it prolonged the amount of time spent on the statistical data analyses. Secondly, due to the vast amount of data that was collected from the research instrument, an extended amount of time needed to be invested into writing up the findings (Chapter 5) and the conclusions (Chapter 6). The vastness and richness of the data resulted in findings beyond the scope and research objectives of the current study.

Two data analysis issues were encountered. Firstly, the planned cluster analysis did not produce any significant results worth reporting. This was because the sample for the current study reflected a relatively homogenous group of air travellers (see Section 6.3.6). This was a limitation because the results of a cluster analysis were required to meet SRO6. Consequently, the researcher could not compare demographic groups or segments, or propose recommendations to airline marketers based on these segments. Secondly, structural equation modelling was explored and applied with significant results. However, due to the page limitations and scope of a Master of Commerce dissertation, these results were not incorporated into the current study.

Section 6.5 highlighted the main limitations of the current study, as identified by the researcher. These limitations should be considered by future researchers who plan to embark on a similar research path. Recommendations for future research will be shared in the next section, Section 6.6.

6.6 FUTURE RESEARCH SUGGESTIONS

Rich data was obtained and analysed for the current study. However, the research was also exposed to many limitations as pointed out in Section 6.5. Consequently,

many questions relating to this research topic remain unresolved and give rise to further research opportunities.

6.6.1 Research recommendations based on the existing data

The existing data from the current study can be further analysed to gain deeper insights into the environmental consciousness and consumer behaviour of air travellers in the SA market. Structural equation modelling (SEM) is recommended to uncover the direction of the relationships between the EC factors and the ATSA decision-making factors. The empirical findings presented in SRO5, and the PRO have already established a foundation for the SEM. The basis for the SEM will be SRO5 and the PRO.

6.6.2 Further research recommendations based on the research topic

The current study offers insights into the EC and consumer behaviour of air travellers within a modern context. However, the data for the current study is based on the 2018 domestic air travel market. Since 2018, substantial changes have been observed within the airline industry and among air travel behaviour. Therefore, it is recommended that a replica of the current study is conducted. A replication will gain insights of the post-Covid-19 air traveller. Additionally, valuable insights can be drawn based on the comparisons between the 2018 (pre-Covid-19) and the post-Covid-19 data.

The current study made use of non-probability sampling methods. It is recommended that a post-Covid-19 replica of the current study is employed using probability sampling and a larger sample frame. Additionally, it is recommended that confirmatory factor analysis (CFA) is conducted on the EC and ATSA factors identified in the current study. Furthermore, it is recommended that a cluster analysis of the data is conducted to identify possible air traveller profiles according to their level engagement in PEB.

Finally, future research is recommended to investigate the drivers for, and barriers against, engaging in PEB in the SA airline industry. Perspectives from the air traveller (consumer) and airline (supplier) should be studied. From a supplier perspective, for example, elements to consider within this scope could include investments in technological innovations, like hybrid and electric jet engines; adoption of SAFs; environmental product/service innovation; government and industry policy; corporate

governance and risk management; business strategy and the environmental imperative; and, pressure from the market.

6.7 CONTRIBUTION OF THE STUDY

The achievement of the six SROs, and accordingly, the PRO, resulted in new and specific insights into the relationship between the environmental consciousness (EC) of SA domestic air travellers, and their consumer behaviour. The current study argued that behaviour change is key in mitigating the environmental impacts caused by air travel. Findings of the current study not only offer insights into an improved understanding of consumer air travel decisions, but also add value by offering insights into the motivations behind these decisions, and how airlines could ultimately influence these decisions towards pro-environmental behaviour (PEB). Consumers' choice, preferences, intentions and willingness to purchase sustainable products or services are affected by a plethora of factors, as confirmed by the current study and that of Bangsa and Schlegelmilch (2020).

It is not enough to just know what customers want or need, it is also necessary for the marketer to understand how customers make their buying decisions (Roberts-Lombard & Brijball Parumasur, 2017). The exploratory factor analysis (EFA) of the measuring instruments resulted in nine reliable factors for air travel decision-making choice-criteria, and five reliable factors for EC (see Sections 6.3.2 and 6.3.3, respectively). These factors can be incorporated into the existing consumer behaviour and EC literature. The green attributes factor is a completely new addition to the choice-criteria literature and is therefore a valuable contribution of the current study. The factors identified in the current study can be used in future studies with similar research settings, and as such, are considered theoretical contributions.

As guided by the IPCC (2018), airlines have the responsibility to ultimately reach "net-zero emissions by 2050". As a result of Covid-19, the airline industry saw a significant drop in passenger demand and consequently a period of decarbonising. Yet, IATA deems this period as temporary which confirms the value of the research findings in a post-Covid-19 era. The findings and insight gained from the current study gave rise to several recommendations which airlines could implement, as part to their current operations and marketing mix, to mitigate their environmental impacts, and to drive

and enable behaviour change (refer to Sections 6.3.1 to 6.3.4). These recommendations are considered practical contributions of the current study.

As stated in Chapters 1 and 3, the post-Covid-19 recovery period will present a rare opportunity for the airline industry to rebuild towards a more sustainable, resilient and climate-safe 21st century. The findings from the current study may be valuable in understanding the consumer in terms of driving the climate change mitigation agenda from a market-based perspective.

6.8 CONCLUSION

Grounded in the limited knowledge on a green business model in the airline industry, and the argument that behaviour change is key in driving the mitigation of the environmental impacts caused by air travel, the current study investigated the consumer behaviour and environmental consciousness (EC) of domestic air travellers within an SA context. The gaps in the literature were filled by investigating the underexplored EC factors in conjunction with the ATSAs as choice-criteria influencing air traveller decisions and consumer behaviour, as well as the interrelationships between the factors. The findings, conclusions and recommendations culminating from the current study, add value; especially when considering the plethora of ever-changing factors influencing consumer behaviour, from an environmental perspective, and within a developing country context.

The SA domestic airline industry was a useful context for the current study, as 7.7% of SA's transport sector's GHG emissions come from SA domestic aviation (DEA, 2014) – a figure which will likely increase. As an effect of Covid-19, air passenger demand globally saw a dramatic and sustained decline (Garrow & Lurkin, 2021), consequently there was a period of decarbonisation (Perkins *et al.*, 2021). This period is considered temporary, and the global travel demand is forecast to return to the 'normal' (pre-pandemic levels) in 2024 (ATAG, 2020; Cornwell, 2021). This means that the collapse of the airline industry during Covid-19 has not negated the IPCC's quest for zero emissions by 2050. Environmental concerns have not dissipated, rather, Covid-19 has illuminated the environmental concern and imperative for airlines to chase this target in the post-Covid-19 recovery era and beyond.

Covid-19 has brought to light the world's vulnerability to natural catastrophes. If the global zero emissions target is not met by 2050, the consequences will be even greater than what has been experienced during the Covid-19 era. The pandemic has revealed the importance of consistently managing risks. There may not have been warning signs before the Covid-19 pandemic, but there have been manifold signs regarding the impending climate crisis. Even before the Covid-19 pandemic, the relevance of understanding the global impact of the aviation industry on the natural environment had become increasingly evident (Becken & Hughey, 2020). In 2021, along with the Covid-19 pandemic, natural catastrophes and climate change ranked among the top ten biggest business risks globally (Bouwer *et al.*, 2021). If proactive action is not taken by chasing the IPCC's target of zero emissions by 2050, these risks have the potential to become natural shocks that could catapult into economic shocks – which arguably could have been prevented. With the extreme weather and natural disasters brought on by climate change, it is vital for businesses to take climate change risks seriously by incorporating these risks into their strategic decision-making (Demrovsky, 2020).

Despite promising recovery in the domestic airline industry, the repercussions of Covid-19 are expected to linger for some time, and how airlines manage the recovery post-Covid-19 is critical (Lange 2020 in Garrow & Lurkin, 2021). Post-Covid-19 recovery offers airlines an opportunity to shift to more authentic and genuine corporate social responsibility (CSR) practices, and to contribute to addressing the pressing environmental challenges (He & Harris, 2020). As the airline industry seeks ways to bounce back and recover from the shock of the Covid-19 pandemic, strategies are needed to secure competitiveness (Nhamo *et al.*, 2020). The post-Covid-19 recovery period presents a rare opportunity for the airline industry to rebuild towards a more sustainable, resilient and climate-safe 21st century (Cocolas *et al.*, 2021). A successful sustainability strategy can provide the airline industry with a licence to grow whilst continuing to enable increasing numbers of people to experience the economic and social benefits offered by air transport connectivity (IATA, 2018).

The current study offers findings which can be incorporated into the marketing and business recovery strategies of airlines. The findings of the current study reveal that the air traveller in SA is influenced by a cost-consciousness when deciding on an air travel ticket to purchase. However, it also found that value for money is more important than the "cheapest ticket". Additionally, the findings showed that air travellers consider

green air travel service attributes (ATSAs) with moderate importance as a determinant influencing their decision-making (more important than loyalty and VIP value-added service factors). This finding is despite air travellers in SA having little environmental knowledge regarding the environmental impacts of air travel specifically, and keeping in mind that airlines in SA do not aggressively engage in environmental sustainability initiatives or actively promote green ATSAs. This shows that green ATSAs can become marketable items to air travellers, if the value that can be derived is communicated clearly to consumers. Green attributes could be the differentiating factor that could evoke the attention of the modern air traveller. Although the current study reveals that air travellers in SA do not activity engage in pro-environmental behaviour (PEB), George (2019) asserts that marketers can influence the consumer decision by providing the relevant information. Therefore, by closing the information gap through relevant communication strategies, enhanced environmental knowledge can inevitably generate a change in air traveller behaviour.

Therefore, the current study concurs with Baumeister (2017), that air travellers as consumers can be drivers in mitigating environmental impacts of air travel, by supporting airlines that pursue genuine environmental sustainability and engage in environmental initiatives. This reveals an opportunity for airlines to innovate towards sustainability during their post-Covid-19 recoveries. Not only does it make business and risk-management sense, but by addressing the environmental imperative, airlines can establish a sustainable competitive advantage.

6.9 PERSONAL RESEARCH REFLECTION

It feels surreal to write this personal research reflection because it means I have reached the end of my master's journey, a project that has been part of my daily life for so many years. It is almost as though I am scared to close this chapter.

My research topic and focus evolved greatly since registering for my Master of Commerce degree. The concepts of sustainability and corporate social responsibility had not featured much when I was an undergraduate student. However, the more I learned about these concepts in my teaching career, the more I could not shake the damaging environmental impacts of the kerosene-heavy airline industry on which my study was based. At risk of sounding whimsical, I felt a strong call to explore the environmental consciousness (EC) literature as it related to consumer behaviour in

the airline industry. The more I read, the more I realised there were research gaps worth investigating. As I reworked my study to include the elements of EC, I faced the difficult challenge of balancing the depth and breadth of the consumer behaviour and EC literature whilst doing justice to both themes. It was an overwhelming experience and getting to the finish line seemed impossible on more occasions than I could count.

Whilst in the process of tying up the loose ends to finalise my dissertation in 2020, the Covid-19 pandemic completely disrupted the airline industry, the context of my study. Although it was a timely and testing period, both personally and academically, to incorporate Covid-19 into the study, it was an invaluable learning opportunity for me as a novice researcher.

Personally, professionally, academically and socially, this master's experience has been the most difficult project I have ever embarked upon. It challenged me intellectually, physically, emotionally and spiritually. In hindsight, I started my journey naïvely and underprepared, trying to reach the finish line with many fast and exhausting sprints. It took me a while to realise that the only sustainable way to reach the end of the longest marathon I have ever run in my life, would be through the compound effect of completing bite-sized chunks, momentum and perseverance. There were moments where I felt like I had conquered, moments I felt like I had failed, and many moments of differing scales in between. It was a rollercoaster of hope gained, hope lost, and hope renewed.

My master's journey has been a long and winding road filled with adversity and hardship. It has also been a journey of opportunity, personal growth, and the realignment of goals, priorities and boundaries. Looking back, I see my challenges as character-building trials which I have overcome and been humbled by on many levels. The process was not smooth, nor perfect, but in the end, I am proud of the dissertation I have produced and the contribution of my research.

"It always seems impossible until it's done." – Nelson Mandela

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APPENDIX A:
ETHICAL CLEARANCE CERTIFICATE

Document one (amended certificate: 31 May 2021):

UNISA university of south africa

UNISA COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

18th April 2016 (Date of issue)
31 May 2021 **(Date of amendment)**

Ref #: 2016_CRERC_008
Student No # 44808798

Dear Ms Tracey Cohen

Decision: Ethics Approval Extended to 31 December 2022

Working title of research:

Consumer behaviour and environmental consciousness of domestic air travellers from Gauteng airports

Qualification: MCOM Degree

Thank you for the application requesting **amendments** to the original research ethics certificate issued by the Department of Business Management for the above mentioned research in 18 April 2016. The approval of the requested amendment is granted/extended for the study for the period 1 May 2021 – 31 December 2022.

*The **low risk application** was reviewed by the departmental CRERC in compliance with the Unisa Policy on Research Ethics by the University of South Africa using the expedited method.*

The proposed research may now continue with the proviso 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, as well as changes in the methodology, should be communicated in writing to the UNISA Research Ethics Review Committee. An amended application could be requested if there are substantial*

Open Rubric

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changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

3. *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.*

Kind regards,

Prof Nisha Sewdass
CRERC Chair
012 429-2795
sewdan@unisa.ac.za

University of South Africa
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Document two (original certificate: 18 April 2016):

UNISA university of south africa

COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCES
RESEARCH ETHICS REVIEW COMMITTEE

18th April 2016

Ref #: 2016_CRERC_008(FA)
Name of applicant: Tracey Cohen
Student number #: 90130197

Dear Ms Tracey Cohen

Decision: Ethics Approval

Name: Tracey Cohen, cohent@unisa.ac.za, 012 429 6136 or [redacted]3

Proposal: An investigation of the buying-behaviour of business air travellers within the Short-haul domestic market in South Africa

Qualification: MCOM Degree

Thank you for the application for research ethics clearance by the College of Economic and Management Sciences Research Ethics Review Committee for the above mentioned research. Final approval is granted from 13th **April 2016 to 12 April 2018.**

For full approval: *The revised application was reviewed in compliance with the Unisa Policy on Research Ethics by the CRERC on* ***13TH APRIL 2016.***

The proposed research may now commence with the proviso 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*

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is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the CRERC.

3) *An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*
4) *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.*

Note:

The reference number **2016_CRERC_008(FA)** should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the CRERC.

Kind regards,

Prof JS Wessels
Chairperson of the CRERC, CEMS, UNISA
012 429-6099 or wessejs@unisa.ac.za

Prof M.T. Mogale
Executive Dean: CEMS
mogalmt@unisa.ac.za

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ACSA GATEKEEPER PERMISSION

From: Sarvesh Naidoo [mailto:S[redacted]@airports.co.za]
Sent: 21 November 2017 11:02 AM
To: Cohen, Tracey <Cohent@unisa.ac.za>
Cc: [redacted]
Subject: RE: Research survey: Permission to invite air travellers at the ORTIA (domestic departures) to participate in a research survey

Hi Tracy,

Hope all is well. I have gone through the questionnaire ,which is rather lengthy in my opinion ,it could take more ten minutes to complete. Considering the airport operations and a time constraint environment for our passengers. Asking for our passengers to complete a survey that will take more than ten minutes to completed will be in most cases a challenge and which in return will cause an unpleasant experience to them .

We can grant limited permission to conduct your survey which is as follows:

- Survey can only be conducted in the public area at Domestic terminal (Terminal B)
- If we find that our passenger are getting annoyed in completing the survey ,the process will not continue any further and should stop.
- You will be required to meet with me or one of my team members before you start with the surveys. We will also assess if the surveys should continue or not based on passenger reaction to the survey .
- There will be a certain period of time that you will not be allowed to conduct any survey due to other surveys been conducted by our company very 1st to 10th of each month.
- You can have one person to assist you in conducting the surveys.
- You will be required to be dressed and behave in a professional manner.

There are also certain information that I can provide to you for example type of travellers, gender , frequency of travel and age groups.

If you may need further clarity ,please contact me .Please make a print out this mail and keep with you at all times during the surveys ,you may require to produce this to certain staff.

My contact number is 07[redacted]7 when required .

Kind regards and take care

From: Cohen, Tracey [mailto:Cohent@unisa.ac.za]
Sent: Tuesday, 21 November 2017 9:46 AM
To: [redacted]@airports.co.za>; [redacted]@airports.co.za>
Cc: [redacted]@airports.co.za>

APPENDIX B:
QUESTIONNAIRE I: PAPER-BASED ORTIA INTERCEPT APPROACH

PARTICIPANT INFORMATION SHEET & CONSENT TO PARTICIPATE
Dear Prospective Participant,

You are invited to participate in a survey conducted by Ms Tracey Cohen under the supervision of Prof Johan Strydom, a professor in the Department of Business Management towards a Masters of Commerce degree at the University of South Africa.

Background of the study and ***criteria for participation***

This survey has been designed to ***investigate the consumer behaviour of domestic air passengers travelling locally within South Africa***. You were selected to participate in this survey because you have travelled by air within South Africa in the **last 12 months**, departing from an airport based in the Gauteng province. Please note that you will not be eligible to complete the survey if you do not fulfil these criteria and/or if you are younger than 18 years of age.

It is anticipated that the information gained from this survey will help the researcher to develop an understanding of the consumer behaviour of the current air traveller in South Africa, with respect to decision-making factors and environmental consciousness.

To help you decide whether you would like to participate in this survey, please read the following information.

Voluntary and anonymous *nature of this survey*

The survey should take up no more than **10 to 15 minutes** of your time. You are under no obligation to complete the survey and you **can withdraw from the study at any time before completing the survey**. This is an anonymous survey, therefore there is no way of connecting the information that you provide, to you personally. If you consent to participating in this voluntary survey, the information you provide may be used for research purposes, this includes dissemination through peer-reviewed publications and conference proceedings. Although no incentives are offered for participation in this survey, it is envisioned that a level of environmental awareness when travelling, will be established amongst respondents. Furthermore, it is anticipated that the findings of this survey will advocate for a more environmentally friendly airline industry.

We do not foresee that you will experience any negative consequences by completing the survey. The researcher undertakes to keep any information provided herein confidential and to report on the findings from the perspective of the participating group and not from the perspective of an individual. Furthermore, the paper records will be locked in a cabinet for five years for audit purposes, where after they will be destroyed (shredded and recycled).

Research ethics

The research was reviewed and approved by the College of Economic and Management Sciences Research Ethics Review Committee (CRERC), Ref: 2016_CRERC_008(FA). Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the CRERC, at email CEMS-ethics@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 86 96 93.

If you would like to be informed of the final research findings or should you require any further information about this study, please contact the primary researcher (email: cohent@unisa.ac.za or tel: [redacted]). Should you have any concerns about the way the research has been conducted, the study leader, Prof Johan Strydom, can be contacted using email address: strydjw@unisa.ac.za.

If you voluntarily consent to partaking in this survey, kindly sign below:

Participant signature: _____ Date: _____

Thank you for your time and interest in participating in this survey, your inputs are extremely valuable to the success of this research study.

SURVEY:

An investigation of the consumer-behaviour of air travellers within a South African context

Resp. no. | 0 | 2 | - | | |

This survey is divided into the following four sections:

Section A: Air travel behaviour

Section B: Air travel product/service attributes

Section C: Air traveller environmental consciousness

Section D: Socio-demographic information

Before you commence with the survey, please read the descriptions of the following types of travel:

- Travel for ***leisure purposes*** includes visiting friends and family, vacations, personal reasons, etc.
- Travel for ***business purposes*** includes travelling for meetings (with colleagues/ clients/ customers), conferences, training, business events, etc.
- ***Domestic air travel*** refers to air travel where departures and arrival occur within the same country. For this study specifically, it refers to departure on a commercial airline from any airport in Gauteng to arrive/land at any other airport within South Africa.

Please read each question carefully and select the option which most accurately represents your air travel behaviour and your point of view. Please provide an honest answer to each question – while there are no "wrong" answers, a sincere and truthful response represents the "right" answer.

Section A: Air travel behaviour

1.1 Take a minute to think about your domestic air travel within South Africa. Which of the following have you done in the last 12 months, when departing from an **airport in Gauteng**?

1.1.1 Travelled by air to another airport in South Africa for the purpose of **leisure only**	
1.1.2 Travelled by air to another airport in South Africa for the purpose of **business only**	
1.1.3 Travelled by air to another airport in South Africa for the purpose of **both business and leisure**	
1.1.4 I have not travelled by air to another airport in South Africa in the last **12 months**	

If you selected **1.1.1** or **1.1.2**, please move on to **question 2**.

If you selected **1.1.3**, please move on to **question 1.2**.

If you selected **1.1.4**, I would like to thank you for your time and willingness to participate in this study. Please stop here, as only those who fulfil one of the above criteria qualify to participate in this survey.

1.2 Please indicate if you choose to answer this survey from the perspective of a business traveller or a leisure traveller. *For instance, if you travel more often for business reasons, please answer this survey from the perspective of a business traveller, and vice versa. If you travel an equal amount for business and leisure reasons, please choose the perspective you are most comfortable with.*

1.2.1 The perspective of a **leisure traveller**	
1.2.2 The perspective of a **business traveller**	

2. In total, how many **departing flights** have you taken from a Gauteng airport in the **last 12 months**?

Number of departing flights	
2.1 1 – 5	
2.2 6 – 10	
2.3 11 – 15	
2.4 16 – 20	
2.5 21 or more	

3. Please indicate the airport in Gauteng which you **most frequently** depart from *(please select only one option)*.

Airport	
3.1 Lanseria International Airport	
3.2 Wonderboom National Airport	
3.3 O.R. Tambo International Airport	
3.4 Other (*please specify airport name*): _____	

4. How **often** have you flown on **each** of the following airlines, when departing from an airport in Gauteng in the last 12 months? (*Please select one option for each airline listed below.)*

Airline	**Never**	**Occasionally**	**Always**
4.1 British Airways Comair			
4.2 FlySafair			
4.3 Kulula.com			
4.4 Mango			
4.5 South African Airways			
4.6 SA Airlink			
4.7 SA Express			
4.8 Other (*please specify*): _____			

5. Please **rank** your three (3) **most preferred** airlines, in **order from 1 to 3** (where 1 is “most preferred”, 2 is “second preferred” and 3 is “third preferred”).

Airline	Ranking
5.1 British Airways Comair	
5.2 FlySafair	
5.3 Kulula.com	
5.4 Mango	
5.5 South African Airways	
5.6 SA Airlink	
5.7 SA Express	

6. What channel is usually used to book your air ticket when flying domestically within South Africa? *(Please select one option only.)*

Mode of booking	
6.1 The airline’s website	
6.2 The airline’s call centre	
6.3 Travel agency *Please specify:* _____	
6.4 I am not sure, it was booked by a friend or family member	
6.5 I am not sure, it was booked through the organisation I work for	
6.6 I am not sure, it was booked through a client / customer that I do business for	

7. Who pays for your air ticket when flying domestically? *(Please select one option only.)*

7.1 Personally funded	
7.2 Business funded	
7.3 Friends/family funded	

Section B: Air travel product/service attributes

Please indicate the **degree of importance** that you place on each of the **following product or service attributes when deciding on an air travel product to purchase** (where 1 is *"Of no importance"* and 5 is *"of extreme importance"*).

Attributes of the air travel product	Of no importance (1)	Of low importance (2)	Of moderate importance (3)	Of large importance (4)	Of extreme importance (5)
Tangibility					
8.1 An airline's brand image	1	2	3	4	5
8.2 Comfortable seat	1	2	3	4	5
8.3 Cleanliness of cabin	1	2	3	4	5
8.4 Cleanliness of on-board restrooms	1	2	3	4	5
8.5 Quality food and beverages on-board	1	2	3	4	5
Reliability and operational efficiency					
9.1 Safety record of an airline	1	2	3	4	5
9.2 Reliability of the airline	1	2	3	4	5
9.3 On-time performance of the airline	1	2	3	4	5
9.4 The age of the aircraft	1	2	3	4	5
9.5 The route schedule offered by an airline	1	2	3	4	5
Price and loyalty					
10.1 The cheapest air ticket	1	2	3	4	5
10.2 Benefitting from a discount offered by a Rewards Programme associated with an airline *(for example, Discovery Vitality, Momentum Multiply)*	1	2	3	4	5
10.3 Flying with an airline that offers attractive packaged deals *(for example, with car rental companies and hotels)*	1	2	3	4	5
10.4 An airline promotion offering low fares	1	2	3	4	5
10.5 Best value for money	1	2	3	4	5
10.6 An airline's Frequent Flyer Programme	1	2	3	4	5
10.7 The airline alliance that an airline is a member of *(for example, SAA belongs to Star Alliance and BA belongs to Oneworld)*	1	2	3	4	5

Attributes of the air travel product	Of no importance (1)	Of low importance (2)	Of moderate importance (3)	Of large importance (4)	Of extreme importance (5)
Customer service					
11.1 Ease of booking	1	2	3	4	5
11.2 Convenient ticketing process	1	2	3	4	5
11.3 Efficient customer relations	1	2	3	4	5
11.4 Professionalism of airline ground staff	1	2	3	4	5
11.5 Professionalism of airline crew	1	2	3	4	5
Value-added services					
12.1 A pre-bookable reserved seat	1	2	3	4	5
12.2 Check-in luggage (20 kg)	1	2	3	4	5
12.3 Complimentary food & beverage on-board	1	2	3	4	5
12.4 Ticket flexibility allowing cancellation refunds	1	2	3	4	5
12.5 Ticket flexibility allowing flight changes	1	2	3	4	5
VIP value-added services					
13.1 Separate priority check-in	1	2	3	4	5
13.2 Priority boarding accessing the aircraft	1	2	3	4	5
13.3 Complimentary access to a business lounge before the flight	1	2	3	4	5
13.4 Opportunity to disembark the aircraft first	1	2	3	4	5
13.5 Priority luggage retrieval after flight	1	2	3	4	5
13.6 Extra arm and leg space	1	2	3	4	5
13.7 In-flight Wi-Fi	1	2	3	4	5
Green attributes					
14.1 Electronic boarding passes	1	2	3	4	5
14.2 A modern, fuel-efficient aircraft	1	2	3	4	5
14.3 On-board food and beverages that are sourced from environmentally-friendly suppliers	1	2	3	4	5
14.4 Locally (South African) sourced on-board food and beverages	1	2	3	4	5
14.5 Environmentally-friendly materials for on-board items *(for example, environmentally-friendly packaging,*	1	2	3	4	5

cups and utensils)					
14.6 An airlines' display of environmentally responsible behaviour	1	2	3	4	5
14.7 A carbon off-setting programme that passengers can contribute towards *A carbon off-setting programme is a way for air passengers to "neutralise" their proportion of an aircraft's carbon emissions on a particular journey, by investing in the airline's carbon reduction project.*	1	2	3	4	5

15. What 'frills' (i.e. value-added services) are **most often** included in the total cost of your air travel ticket? *(Please select all options that apply)*

'Frills'	
15.1 A reserved/pre-bookable seat	
15.2 Check-in luggage	
15.3 In-flight meal and beverages	
15.4 Priority check-in and boarding	
15.5 Extra seat space (extra leg and arm room)	
15.6 Flight and bag cover / insurance	
15.7 Access to a business lounge	
15.8 In-flight Wi-Fi	
15.9 Flexibility to change the ticket	
15.10 Participation in an airline's carbon off-setting programme	
15.11 None of the above	

16. Considering the 'frills' selected in the previous question, which of the categories below best reflects the type of air travel ticket you **most frequently** use? *(Please select one option only)*

Type of air ticket	
16.1 A *Full-Service Carrier **business class** ticket	
16.2 A *Full-Service Carrier **economy class** ticket	
16.3 A **Low-Cost Carrier ticket with **no added frills**	
16.4 A **Low-Cost Carrier ticket with **a few added frills**	
16.5 A **Low-Cost Carrier ticket with **all the frills**	

* A **Full-Service Carrier (FSC)** is a type of airline which usually includes "all the frills", however this may depend on the "class" of travel. Examples of FSCs in South Africa are British Airways, South African Airways, SA Express and SA Airlink.
** A **Low-Cost Carrier (LCC)** is a type of airline which usually offers the passenger the core air travel service (i.e., the aircraft seat). If passengers wish to add any 'frills' to the basic air ticket, they may do so at an extra cost. Examples of LCCs in South Africa are FlySafair, FlyMango and Kulula.

Section C: Environmental consciousness

On a scale of 1 to 5, where 1 is "strongly disagree" and 5 is "strongly agree", please rate the following statements regarding the airline industry and the environment.

Environmental statement	**gly disagree (1)**	**sagree (2)**	**gree nor disagree (3)**	**gree (4)**	**ngly agree (5)**	**not know (6)**
Environmental Knowledge						
17.1 Air travel is a significant contributor to particular climate problems.	1	2	3	4	5	6
17.2 The airline industry is responsible for some of the climate change related problems.	1	2	3	4	5	6
17.3 The balance of nature is delicate and can be easily disrupted.	1	2	3	4	5	6
17.4 Climate change is a natural phenomenon and there is nothing the airline industry can do about it.	1	2	3	4	5	6
17.5 The attention given to the climate change is exaggerated.	1	2	3	4	5	6
Environmental statement	**Strongly disagree (1)**	**Disagree (2)**	**Neither agree nor disagree (3)**	**Agree (4)**	**Strongly agree (5)**	**I do not know (6)**
Environmental awareness /concern						6
18.1 I do not think that any changes in my air travel behaviour will make a difference.	1	2	3	4	5	6
18.2 I have thought about the negative effects of my flying behaviour on the climate.	1	2	3	4	5	6
18.3 I know what impact my air travel activities have on the environment.	1	2	3	4	5	6
18.4 As long as I plant a couple of trees in my lifetime, my environmental conscience is clear.	1	2	3	4	5	6

[18.5] My conscience will only be clear when my daily activities cause minimal or no greenhouse gas (GHG) emissions.	1	2	3	4	5	6
[18.6] The environment needs to be respected and protected, irrespective of the costs.	1	2	3	4	5	6
[18.7] I worry about environmental problems caused by air travel.	1	2	3	4	5	6
Environmental attitude						
[19.1] Striving to conserve the environment should be an essential responsibility of airlines.	1	2	3	4	5	6
[19.2] Airlines should only serve locally produced food and beverage items on board.	1	2	3	4	5	6
[19.3] Airlines should reduce, reuse (where possible) and recycle all waste accumulated on-board.	1	2	3	4	5	6
[19.4] Airlines should make use of only environmentally-friendly materials for consumption on-board.	1	2	3	4	5	6
[19.5] Airlines should continuously strive to reduce their negative impact on the environment.	1	2	3	4	5	6
[19.6] Airlines should focus on technological innovations which improve their environmental performance.	1	2	3	4	5	6
[19.7] The airline industry in South Africa must develop in an environmentally responsible manner.	1	2	3	4	5	6
[19.8] Airlines should offer a “green class” for interested consumers.	1	2	3	4	5	6
[19.9] A “green premium” (additional cost) should be mandatory for all air travellers to off-set (make up for) their carbon emissions.	1	2	3	4	5	6
Environmental air travel behaviour						
[20.1] I consider my impact on the environment when making air travel decision(s).	1	2	3	4	5	6
[20.2] I now fly less frequently to reduce the impact of my air travel on the environment.	1	2	3	4	5	6
[20.3] I purchase voluntary carbon off-setting credits for each flight to counteract my impact on the environment.	1	2	3	4	5	6

20.4 Air travel is the only suitable means of transportation for me to cover the distances I am required to travel within South Africa.	1	2	3	4	5	6
20.5 I do not believe that there is any urgency for me to change my air travel behaviour.	1	2	3	4	5	6
20.6 I use Skype or similar video-communication as a means to reduce my environmental impact from travel.	1	2	3	4	5	6
Environmental statement	**Strongly disagree (1)**	**Disagree (2)**	**Neither agree nor disagree (3)**	**Agree (4)**	**Strongly agree (5)**	**I do not know (6)**
20.7 I only support airlines who reflect a strong commitment to being environmentally responsible.	1	2	3	4	5	6
20.8 I only fly with airlines which use a modern aircraft fleet.	1	2	3	4	5	6
20.9 I always use an electronic boarding pass/ticket (no paper).	1	2	3	4	5	6
20.10 I am willing to pay a “green premium” (additional cost) for an air travel product/ service that contributes to environmentally-friendly air travel.	1	2	3	4	5	6

Section D: Socio-demographic information

21. Please indicate your age:

21.1 18 to 25	
21.2 26 to 35	
21.3 36 to 45	
21.4 46 to 55	
21.5 56 to 65	
21.6 66 or older	

22. Please indicate your gender:

22.1 Male	
22.2 Female	

23. Please indicate your highest level of formal education *(Please select only one option)*:

23.1 Grade 10 (equivalent to Std 8) or below	
23.2 Grade 12 (equivalent to Matric)	
23.3 Higher certificate/ similar	
23.4 National Diploma /similar	
23.5 Bachelors degree	
23.6 Honours degree/ post-graduate diploma	
23.7 Masters Degree	
23.8 Doctoral Degree	

24. Please indicate your average gross monthly income:

24.1 R0 – R9 000	
24.2 R9 001 – R19 500	
24.3 R19 501 – R31 500	
24.4 R31 501 – R65 250	
24.5 R65 251 – R141 000	
24.6 R141 001 +	
24.7 I do not want to say	

25. Which category below best describes your employment status?

25.1 Employed	
25.2 Self-employed	
25.3 Unemployed	
25.4 Student	
25.5 Volunteer	
25.6 Retired	

26. Which category below best describes your role/ position (or equivalent) in the workplace? *(Please select only one option)*

26.1 Administrative (in a non-management position)	
26.2 Professional (in a non-management position)	
26.3 Lower management	
26.4 Middle management	
26.5 Senior management	
26.6 Other (please specify): _____	
26.7 NONE (unemployed / student / retired)	

27. Which category below best fits the type of organisation that you are employed by? *(Please select only one option)*

27.1 Parastatal	
27.2 Private company	
27.3 Public company or corporation	
27.4 Non-profit organisation	
27.5 Government organisation	
27.6 Educational institution	
27.7 Other (please specify): _____	
27.8 NONE (unemployed / student / retired)	

Thank you for your time in completing this survey, your inputs are greatly appreciated!

APPENDIX C:
QUESTIONNAIRE II: INTERNET-BASED SURVEY APPROACH

SECTION A: ***EXAMPLE I OF PRE-NOTICE TO PROSPECTIVE PARTICIPANT (VIA EMAIL)***

Cohen, Tracey

An invitation to participate in a research survey investigating the consumer behaviour of domestic air travellers within a South Afri

To [redacted]gmail.com'

Bcc [redacted]

Participant Information Sheet.pdf
437 KB

An investigation of the consumer behaviour of air travellers within a South African context (Survey link: http://survey.unisa.ac.za/index.php/562672?lang=en)

Dear Prospective Participant,

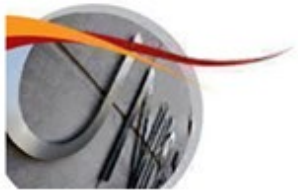
I would like to invite you to participate in an online survey conducted for my Masters of Commerce degree at the University of South Africa. The purpose of this survey is to develop an understanding of the **consumer behaviour of air travellers**, with respect to **decision-making factors** and **environmental consciousness** within the airline industry. The research focuses on **air passengers** who have **travelled on a domestic route** within South Africa, **departing from an airport based in Gauteng**. As you have travelled on a domestic route from an airport in Gauteng within the last 12 months, you are an eligible candidate and your participation would be greatly appreciated.

The study involves a completely **anonymous online survey**, which can be accessed by clicking on this link: http://survey.unisa.ac.za/index.php/562672?lang=en. Your participation is **voluntary** and should not take more than **10 – 15 minutes** of your time. If you would like to understand the nature of this study in more detail, the Participant Information Sheet attached to this email *and* the consent form presented on the first page of the online survey provide further information.

It would be greatly appreciated if you would forward this survey invitation to two or more (the more the merrier) contacts in your network whom meet the criteria of this study. Thank you for taking time to read this information and for considering participating in this study. Your time and inputs are most valued!

Sincerely,

Tracey



UNISA university of south africa

Ms Tracey Cohen
Student: Master of Commerce
Department of Business Management
Tel: 012 429 6136 | **Cell:** [redacted] |
E-mail: cohent@unisa.ac.za

SECTION B: ***EXAMPLE II OF PRE-NOTICE TO PROSPECTIVE PARTICIPANT (VIA LINKEDIN)***

Good day to my LinkedIn Network,

You are invited to participate in an online survey conducted for a Masters of Commerce degree at the University of South Africa.

The research focuses on air passengers who have travelled on a domestic route within South Africa, departing from an airport based in Gauteng. If you have travelled on a domestic route from an airport in Gauteng (for leisure and/or business reasons) within the last 12 months, you are an eligible candidate and your participation would be greatly appreciated.

The purpose of this survey is to develop an understanding of the consumer behaviour of South African air travellers, with respect to decision-making factors and their environmental consciousness.

This is a completely anonymous online survey, which can be accessed by clicking on this link: https://lnkd.in/eg5hFQG

Participation is voluntary and should not take more than 10 – 15 minutes of your time. If you would like to find out more about the nature of this study, please feel free to contact me via LinkedIn or email me at cohent@unisa.ac.za .

It would be greatly appreciated if you would consider sharing this survey invitation with those in your network :)

Your time and inputs are most valued! Thank you kindly!

Sincerely,
Tracey

An investigation of the consumer behaviour of air travellers within a …
survey.unisa.ac.za
You are invited to participate in a survey conducted by Ms Trace…

3 Likes

Like Comment Share

276 views of your post in the feed

SECTION C: ***PARTICIPANT INFORMATION SHEET (FOR RESPONDENTS TO REFER TO FOR FURTHER DETAIL REGARDING THE STUDY)***

UNISA university of south africa

An investigation of the consumer behaviour of air travellers within a South African context

Dear Prospective Participant

My name is Tracey Cohen and I am doing research with Prof Johan Strydom, a professor in the Department of Business Management towards a Masters of Commerce degree at the University of South Africa (Unisa). This study has received funding from the Masters and Doctoral Support Programme (MDSP) at Unisa. We are inviting you to participate in a study titled: "An investigation of the consumer behaviour of air travellers within a South African context".

WHAT IS THE PURPOSE OF THE STUDY?

It is anticipated that the information gained from this survey will help the researcher to develop an understanding of the consumer behaviour of the current air traveller in South Africa, with respect to **decision-making factors** and **environmental consciousness**.

To help you decide whether you would like to participate in this survey, please read the following information.

WHY AM I BEING INVITED TO PARTICIPATE?

The research focuses on air passengers who have travelled on a domestic route within South Africa, departing from an airport based in Gauteng. If you have travelled on a domestic route from an airport in Gauteng, within the last 12 months, you are an eligible candidate and your participation would be greatly appreciated.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves an **anonymous online survey**, which can be accessed by clicking on this link: http://survey.unisa.ac.za/index.php/562672?lang=en. The survey consists of a number of multiple-choice type questions and respondents will be requested to answer the questions by selecting an option which most appropriately reflects their air travel behaviour. This survey should not take more than **10 to 15 minutes** of the respondent's time.

CAN I WITHDRAW FROM THIS STUDY?

Participating in this study is completely **voluntary** and you are under no obligation to consent to participation. Furthermore, if you do start the survey, you are free to withdraw from the study at any time prior to clicking the "submit" button at the end of the survey. Due to the anonymous nature of this study, the only time that you will not be able to withdraw from this study is once you have clicked the "submit" button.

If you decide to take part, you may get access to the survey using the following web link http://survey.unisa.ac.za/index.php/562672?lang=en. When clicking on this link, you will be directed to a webpage which presents the online invitation and consent information. This webpage will reiterate the information in this email, to ensure that participants understand the nature of this study.

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Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

The findings from this study will create a new understanding of the consumer behaviour of the current air traveller within a South African context. Furthermore, the findings will help the airline industry understand the level of **environmental consciousness of air travellers**, a concept that has not received attention in the airline industry in a South African context. While no incentives are offered for participation in this study, it is envisioned that a **level of environmental awareness** when travelling, will be established amongst respondents.

WHAT IS THE ANTICIPATED INCONVENIENCE OF TAKING PART IN THIS STUDY?

The researcher does not reasonably foresee that respondents can be negatively affected in any sense. Should the participant find him/herself uncomfortable at any point when answering the questionnaire, he/she must **please feel free to withdraw from the survey at any time**.

WILL WHAT I SAY BE KEPT CONFIDENTIAL?

The nature of this research is **anonymous**. In other words, your name or email address will not be recorded anywhere and no one will be able to connect you to the answers you provide. Even so, the researcher will keep the data collected confidential. Any reports on the findings will be from the perspective of the participating group and not from the perspective of an individual.

The data obtained from this survey may be reviewed by people responsible for making sure the research is done properly, namely the statistician, the research study leader, an external examiner as well as members of the Research Ethics Committee (upon request).

The findings from the **anonymous data** received from this survey may be used for other purposes, e.g. industry and research reports, journal articles and conference presentations. Individual participants will not be identifiable in any of these documents or presentations.

HOW WILL INFORMATION BE STORED AND ULTIMATELY DESTROYED?

Despite the anonymity, the information obtained from this survey will be treated with confidentiality. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. The records will be kept for five years for audit purposes where after it will be permanently destroyed by deleting the electronic versions.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

The study fulfills all the requirements as set out in the Unisa Policy on Research Ethics and has received written approval from the Research Ethics Committee of the College of Economic and Management Sciences, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS?

If you would like to be informed of the final research findings, please contact Ms Tracey Cohen on 012 429 6136 or email: cohent@unisa.ac.za. The findings are accessible for 5 years.

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PO Box 392 UNISA 0003 South Africa
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www.unisa.ac.za

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Tracey Cohen using the above details. Should you have concerns about the way in which the research has been conducted, you may contact Prof Johan W Strydom via email: strydjw@unisa.ac.za.

Thank you for taking time to read this information sheet and for considering participation in this study.

Sincerely,

Tracey Cohen

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
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***SECTION D:* INTERNET-BASED SURVEY ADMINISTERED BY LIMESURVEY**

UNISA university of south africa

Exit and clear survey

An investigation of the consumer behaviour of air travellers within a South African context

Dear Prospective Participant,

You are invited to participate in a survey conducted by Ms Tracey Cohen under the supervision of Prof Johan Strydom, a professor in the Department of Business Management towards a Masters of Commerce degree at the University of South Africa.

Background of the study and criteria for participation

This survey you have received has been designed to *investigate the consumer behaviour of* ***domestic*** *air passengers travelling locally within South Africa.* You were selected to participate in this survey because you have travelled by air within South Africa in the last 12 months, departing from an airport based in the Gauteng province. Please note that you will not be eligible to complete the survey if you do not fulfil these criteria and/or if you are younger than 18 years of age.

It is anticipated that the information gained from this survey will help the researcher to develop an understanding of the consumer behaviour of the current air traveller in South Africa, with respect to decision-making factors and environmental consciousness.

To help you decide whether you would like to participate in this survey, please read the following information.

Voluntary and anonymous nature of this survey

If you choose to participate in this survey it will take up no more than **10 to 15 minutes** of your time. You are under no obligation to complete the survey and **you can withdraw from the study at any time before submitting the survey**. Since this is an anonymous survey we will have no way of connecting the information that you provide, to you personally. For this reason, once you click the "submit" button at the end of the survey, we will not be able to trace your submission, hence you will not be able to withdraw your responses. By submitting your responses at the end of the survey, you agree that the information you provide may be used for research purposes, this includes dissemination through peer-reviewed publications and conference proceedings. Although no incentives are offered for participation in this survey, it is envisioned that a level of environmental awareness when travelling, will be established amongst respondents. Furthermore, it is anticipated that the findings of this survey will advocate for a more environmentally friendly airline industry.

We do not foresee that you will experience any negative consequences by completing the survey. The researchers undertake to keep any information provided herein confidential and to report on the findings from the perspective of the participating group and not from the perspective of an individual. Furthermore, the records will be kept electronically on a password protected device for five years for audit purposes, where after they will be permanently deleted.

Research ethics

The research was reviewed and approved by the College of Economic and Management Sciences Ethics Review Committee (reference number: 2016_CRERC_008(FA)). A copy of the approved letter can be obtained from the researcher if you wish (the primary researcher, Ms Tracey Cohen, can be contacted at tel. 012 429 6136 and email cohent@unisa.ac.za). Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the College of Economic and Management Sciences Research Ethics Review committee, at email CEMS-ethics@unisa.ac.za. Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 86 96 93.

If you would like to be informed of the final research findings or should you require any further information about this study, please contact the primary researcher (using her contact details presented above). Should you have any concerns about the way the research has been conducted, the study leader, Prof Johan Strydom, can be contacted during office hours at tel. 012 429 4455 and email strydjw@unisa.ac.za.

If you consent to partaking in this survey, kindly click the "Next" button below. If not, you may close this page.

Thank you for your time and interest in participating in this survey, your inputs are extremely valuable to the success of this research study. It would be greatly appreciated if you would share this survey link with your friends, family, colleagues and/or acquaintances who fulfil the criteria to participate in this survey.

Thank you!!!

Next

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Exit and clear survey

0%

Section A: Air travel behaviour

This survey is divided into the following four sections:

Section A: Air travel behaviour

Section B: Air travel product/service attributes

Section C: Air traveller environmental consciousness

Section D: Socio-demographic information

Before you commence with the survey, please read the descriptions of the following types of travel:

Travel for ***leisure purposes*** includes visiting friends and family, vacations, personal reasons, etc.

Travel for ***business purposes*** includes travelling for meetings (with colleagues/ clients/ customers), conferences, training, business events, etc.

Domestic air travel refers to local air travel where departure and arrival occur within the same country. For this study specifically, it refers to departure on a commercial airline from any airport in Gauteng to arrive/land at any other airport within South Africa.

Please read each question carefully and select the option which most accurately represents your air travel behaviour and your point of view. Please provide an honest answer to each question – while there are no "wrong" answers, a sincere and truthful response represents the "right" answer.

Previous

Next

* 1. Take a minute to think about your domestic air travel within South Africa. Which of the following have you done in the last 12 months, when departing from an airport in Gauteng?

- ○ Travelled by air to another airport in South Africa for the purpose of leisure only
- ○ Travelled by air to another airport in South Africa for the purpose of business only
- ○ Travelled by air to another airport in South Africa for the purpose of both business and leisure
- ○ I have not travelled by air to another airport in South Africa in the last 12 months

* 2. Please indicate if you choose to answer this survey from the perspective of a business traveller or a leisure traveller. *For instance, if you travel more often for business reasons, please answer this survey from the perspective of a business traveller, and vice versa. If you travel an equal amount for business and leisure reasons, please choose the perspective you are most comfortable with.*

- ○ The perspective of a leisure traveller
- ○ The perspective of a business traveller

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Exit and clear survey

20%

Section A: Air travel behaviour

3. In total, how many **departing** flights have you taken from a Gauteng airport in the **last 12 months**?

- 1 – 5
- 6 – 10
- 11 – 15
- 16 – 20
- 21 or more

4. Please indicate the airport in Gauteng which you **most frequently** depart from.

- Lanseria International Airport
- Wonderboom National Airport
- O.R. Tambo International Airport
- Other (please specify airport name)

5. How **often** have you flown on **each** of the following airlines, when departing from an airport in Gauteng in the last 12 months? *(Please select one option for each airline listed below.)*

	Never	Occasionally	Always
British Airways Comair			
FlySafair			
Kulula.com			
Mango			
South African Airways			
SA Airlink			
SA Express			
Other (please specify below)			

6. Please **rank** your three (3) most **preferred airlines**.

*To rank the airlines, **double-click** the items in the left list to move them to the right (where your "most preferred" airline should be placed at the top right, followed by your "second preferred" airline placed second, and the "third preferred" airline placed third and last). Please select **at most 3 airlines** and double-check that the airlines are listed in the **correct order**. You can re-order your list by "dragging" the airlines into the correct position.*

Your choices	Your ranking
British Airways Comair	
FlySafair	
Kulula.com	
Mango	
South African Airways	
SA Airlink	
SA Express	

* 7. What channel is usually used to book your air ticket when flying domestically within South Africa?

- ○ The airline's website
- ○ The airline's call centre
- ○ Travel agency (Please specify) _____
- ○ I am not sure, it was booked by a friend or family member
- ○ I am not sure, it was booked through the organisation I work for
- ○ I am not sure, it was booked through a client / customer that I do business for

8. Who pays for your air ticket when flying domestically?

- ○ Personally funded
- ○ Business funded
- ○ Friends/family funded

Previous Next

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Exit and clear survey

40%

Section B: Air travel product/service attributes

1. Please indicate the **degree of importance** that you place on each of the **following product or service attributes when deciding on an air travel product to purchase.**

Attributes of the air travel product

Tangibility

	Of no importance	Of low importance	Of moderate importance	Of large importance	Of extreme importance
An airline's brand image					
Comfortable seat					
Cleanliness of cabin					
Cleanliness of on-board restrooms					
Quality food and beverages on-board					

Reliability and operational efficiency

	Of no importance	Of low importance	Of moderate importance	Of large importance	Of extreme importance
Safety record of an airline					
Reliability of the airline					
On-time performance of the airline					
The age of the aircraft					
The route schedule offered by an airline					

* Price and loyalty

	Of no importance	Of low importance	Of moderate importance	Of large importance	Of extreme importance
The cheapest air ticket	○	○	○	○	○
Benefitting from a discount offered by a Rewards Programme associated with an airline *(for example, Discovery Vitality, Momentum Multiply)*	○	○	○	○	○
Flying with an airline that offers attractive packaged deals *(for example, with car rental companies and hotels)*	○	○	○	○	○
An airline promotion offering low fares	○	○	○	○	○
Best value for money	○	○	○	○	○
An airline's Frequent Flyer Programme	○	○	○	○	○
The airline alliance that an airline is a member of *(for example, SAA belongs to Star Alliance and BA belongs to Oneworld)*	○	○	○	○	○

* Customer service

	Of no importance	Of low importance	Of moderate importance	Of large importance	Of extreme importance
Ease of booking	○	○	○	○	○
Convenient ticketing process	○	○	○	○	○
Efficient customer relations	○	○	○	○	○
Professionalism of airline ground staff	○	○	○	○	○
Professionalism of airline crew	○	○	○	○	○

Value-added services

	Of no importance	Of low importance	Of moderate importance	Of large importance	Of extreme importance
A pre-bookable reserved seat					
Check-in luggage (20 kg)					
Complimentary food & beverage on-board					
Ticket flexibility allowing cancellation refunds					
Ticket flexibility allowing flight changes					

VIP value-added services

	Of no importance	Of low importance	Of moderate importance	Of large importance	Of extreme importance
Separate priority check-in					
Priority boarding accessing the aircraft					
Complimentary access to a business lounge before the flight					
Opportunity to disembark the aircraft first					
Priority luggage retrieval after flight					
Extra arm and leg space					
In-flight Wi-Fi					

*
Green attributes

	Of no importance	Of low importance	Of moderate importance	Of large importance	Of extreme importance
Electronic boarding passes	○	○	○	○	○
A modern, fuel efficient aircraft	○	○	○	○	○
On-board food and beverages that are sourced from environmentally-friendly suppliers	○	○	○	○	○
Locally (South African) sourced on-board food and beverages	○	○	○	○	○
Environmentally-friendly materials for on-board items *(for example, environmentally-friendly packaging, cups and utensils)*	○	○	○	○	○
An airlines' display of environmentally responsible behaviour	○	○	○	○	○
A carbon off-setting programme that passengers can contribute towards *(A carbon off-setting programme is a way for air passengers to "neutralise" their proportion of an aircraft's carbon emissions on a particular journey, by investing in the airline's carbon reduction project)*	○	○	○	○	○

* 2. What "frills" (i.e. value-added services) are **most often** included in the total cost of your air travel ticket? *(Please select all options that apply)*

- ☐ A reserved/pre-bookable seat
- ☐ Check-in luggage
- ☐ In-flight meal and beverages
- ☐ Priority check-in and boarding
- ☐ Extra seat space (extra leg and arm room)
- ☐ Flight and bag cover / insurance
- ☐ Access to a business lounge
- ☐ In-flight Wi-Fi
- ☐ Flexibility to change the ticket
- ☐ Participation in an airline's carbon off-setting programme
- ☐ None of the above

*

3. Considering the "frills" selected in the previous question, which of the categories below best reflects the type of air travel ticket you **most frequently** use?

Please note:
** A **Full-Service Carrier (FSC)** is a type of airline which usually includes "all the frills", however this may depend on the "class" of travel. Examples of FSCs in South Africa are British Airways, South African Airways, SA Express and SA Airlink.*

*** A **Low-Cost Carrier (LCC)** is a type of airline which usually offers the passenger the core air travel service (i.e. the aircraft seat). If passengers wish to add any "frills" to the basic air ticket, they may do so at an extra cost. Examples of LCCs in South Africa are FlySafair, FlyMango and Kulula.*

- ○ A *Full-Service Carrier **business class** ticket
- ○ A *Full-Service Carrier **economy class** ticket
- ○ A **Low-Cost Carrier ticket with **no added frills**
- ○ A **Low-Cost Carrier ticket with a **few added frills**
- ○ A **Low-Cost Carrier ticket with **all the frills**

Previous Next

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Exit and clear survey

60%

Section C: Environmental consciousness

*

1. Using the scale below, please rate the following statements regarding the airline industry and the environment.

Environmental statement

Environmental Knowledge

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
Air travel is a significant contributor to particular climate problems.	○	○	○	○	○	○
The airline industry is responsible for some of the climate change related problems.	○	○	○	○	○	○
The balance of nature is delicate and can be easily disrupted.	○	○	○	○	○	○
Climate change is a natural phenomenon and there is nothing the airline industry can do about it.	○	○	○	○	○	○
The attention given to climate change is exaggerated.	○	○	○	○	○	○

Environmental awareness /concern

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
I do not think that any changes in my air travel behaviour will make a difference.						
I have thought about the negative effects of my flying behaviour on the climate.						
I know what impact my air travel activities have on the environment.						
As long as I plant a couple of trees in my lifetime, my environmental conscience is clear.						
My conscience will only be clear when my daily activities cause minimal or no greenhouse gas (GHG) emissions.						
The environment needs to be respected and protected, irrespective of the costs.						
I worry about environmental problems caused by air travel.						

Environmental attitude

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
Striving to conserve the environment should be an essential responsibility of airlines.						
Airlines should only serve locally produced food and beverage items on board.						
Airlines should reduce, reuse (where possible) and recycle all waste accumulated on-board.						
Airlines should make use of only environmentally-friendly materials for consumption on-board.						
Airlines should continuously strive to reduce their negative impact on the environment.						
Airlines should focus on technological innovations which improve their environmental performance.						
The airline industry in South Africa must develop in an environmentally responsible manner.						
Airlines should offer a “green class” for interested consumers.						
A “green premium” (additional cost) should be mandatory for all air travellers to off-set (make up for) their carbon emissions.						

*

Environmental air travel behaviour

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
I consider my impact on the environment when making air travel decision(s).	○	○	○	○	○	○
I now fly less frequently to reduce the impact of my air travel on the environment.	○	○	○	○	○	○
I purchase voluntary carbon off-setting credits for each flight to counteract my impact on the environment.	○	○	○	○	○	○
Air travel is the only suitable means of transportation for me to cover the distances I am required to travel within South Africa.	○	○	○	○	○	○
I do not believe that there is any urgency for me to change my air travel behaviour.	○	○	○	○	○	○
I use Skype or similar video-communication as a means to reduce my environmental impact from travel.	○	○	○	○	○	○
I only support airlines who reflect a strong commitment to being environmentally responsible.	○	○	○	○	○	○
I only fly with airlines which use a modern aircraft fleet.	○	○	○	○	○	○
I always use an electronic boarding pass/ticket (no paper).	○	○	○	○	○	○
I am willing to pay a “green premium” (additional cost) for an air travel product/ service that contributes to environmentally-friendly air travel.	○	○	○	○	○	○

Previous

Next

UNISA university of south africa

Exit and clear survey

80%

Section D: Socio-demographic information

* 1. Please indicate your age:

- 18 to 25
- 26 to 35
- 36 to 45
- 46 to 55
- 56 to 65
- 66 or older

* 2. Please indicate your gender:

- Male
- Female

* 3. Please indicate your highest level of formal education *(Please select only one option)*:

- Grade 10 (equivalent to Std 8) or below
- Grade 12 (equivalent to Matric)
- Higher certificate/ similar
- National Diploma /similar
- Bachelors degree
- Honours degree/ post-graduate diploma
- Masters Degree
- Doctoral Degree

*

4. Please indicate your average gross monthly income:

- ○ R0 – R9 000
- ○ R9 001 – R19 500
- ○ R19 501 – R31 500
- ○ R31 501 – R65 250
- ○ R65 251 – R141 000
- ○ R141 001 +
- ○ I do not want to say

*

5. Which category below best describes your employment status?

- ○ Employed
- ○ Self-employed
- ○ Unemployed
- ○ Student
- ○ Volunteer
- ○ Retired

*

6. Which category below best describes your role/ position (or equivalent) in the workplace? *(Please select only one option)*

- ○ Administrative (in a non-management position)
- ○ Professional (in a non-management position)
- ○ Lower management
- ○ Middle management
- ○ Senior management
- ○ NONE (unemployed / student / retired)
- ○ Other (please specify) _____

*

7. Which category below best fits the type of organisation that you are employed by? *(Please select only one option)*

- ○ Parastatal
- ○ Private company
- ○ Public company or corporation
- ○ Non-profit organisation
- ○ Government organisation
- ○ Educational institution
- ○ NONE (unemployed / student / retired)
- ○ Other (please specify)

Thank you for your time in completing this survey, your input is greatly appreciated!

Previous

Submit

APPENDIX D:
DECLARATION OF PROFESSIONAL EDIT

Retha Burger
B.A.(H.E.D.)
tel : 012 807 3864
cell : 083 653 5255
fax : 012 807 3864
e-mail : retha@skillnet.co.za
Independent Skills Development Facilitator

Dear Ms Cohen

This letter is to record that I have completed a language edit of your dissertation entitled, "The consumer behaviour and environmental consciousness of air travellers within a South African context".

The edit that I carried out included the following:

-Spelling
-Grammar
-Vocabulary
-Punctuation
-Pronoun matches
-Word usage
-Sentence structure
-Correct acronyms (matching your supplied list)
-Captions and labels for figures and tables
-Spot checking of 10 references

The edit that I carried out excluded the following:

-Content
-Correctness or truth of information (unless obvious)
-Correctness/spelling of specific technical terms and words (unless obvious)
-Correctness/spelling of unfamiliar names and proper nouns (unless obvious)
-Correctness of specific formulae or symbols, or illustrations.

Yours sincerely

Retha Burger

12 January 2022

APPENDIX E:
TURNITIN DIGITAL RECEIPT

turnitin

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	Tracey Cohen
Assignment title:	Revision 1
Submission title:	Complete dissertation _ Draft 2
File name:	Tracey_MCom__TC_Draft2_for_tii.pdf
File size:	5.99M
Page count:	307
Word count:	91,513
Character count:	509,925
Submission date:	06-Feb-2022 06:34AM (UTC+0200)
Submission ID:	1755748249

CHAPTER 1:
INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) described the effects of global warming as widespread and intensifying (Vigaverre, 2021). At the 26th Conference of the Parties (COP) Climate Conference in 2021, the aviation industry affirmed its commitment to work towards the IPCC goal of net-zero emissions by 2050 (United Nations Climate Change, 2021). However, the industry advised that multi-stakeholder cooperation is needed if this goal is to be met.

According to Baumeister, Zeng and Hoffenlohl (2020), behavioural change has been identified as a measure with the most potential to mitigate the carbon emissions and related environmental impacts of air travel. Environmental concern has been identified as an important antecedent to green consumer behaviour (Sharma, 2021). Therefore, consumer behaviour, as a driver in reducing the negative environmental impacts caused by air travel, warrants investigation.

The complex nature of studying consumer behaviour has been confirmed by Wells, Ponting and Peattie (2011) who indicated that sustainability concerns complicate the study of consumer behaviour even further. At the same time, with each passing decade, concerns about environmental issues have increased (Pago, Shiel & Alves, 2019). Therefore, environmental sustainability requires a societal shift to redefine the benefits and functions which consumers seek from product and service offerings (Zhang & Chang, 2021). Furthermore, changes in consumer behaviour are occurring faster than ever before due to rapidly evolving environments. With the current advances in technology and the effects of the Covid-19 pandemic, changes have occurred in a fraction of the time they would have taken in previous eras (Zhang & Chang, 2021). This calls for insight into the behaviour of modern consumers, in order to predict how this behaviour may continue to develop and change in the coming years (Mailer, Holbrook, Kahn, Parker & Lehmann, 2020).

According to Bouwer, Saxon and Wittkamp (2021), Covid-19 has caused irrevocable changes to the airline industry. Despite the many challenges and volatility that Covid-

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