An application of a service quality framework for agricultural services institutions that render service to small-scale poultry farmers in Botswana

by

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DECLARATION

I, Emmanuel Nduhle, Student number 79172105, declare that ***A service quality framework for agricultural services institutions that render service to small-scale poultry farmers in Botswana*** is my own work and that all sources that I have used have been acknowledged by means of a complete reference list.

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

I further declare that this thesis has been submitted to originality-checking software and that it falls within the accepted requirements for originality.

_____ November 2022

Emmanuel Nduhle, 79172105 Date

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As l reflect on my doctoral journey, l am delighted and grateful to have achieved this milestone in my studies. My doctoral journey was filled with multifaceted obstacles and challenges. Despite these challenges, many people encouraged me to persevere and provided me with valuable guidance during this period, and l will forever be grateful to them.

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DEDICATION

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ABSTRACT

This mixed-methods research adopts the realist and pragmatist problem-solving approach to establish an adapted SERVQUAL framework for ASIs in Botswana. The study aims to apply a modified SERVQUAL questionnaire in establishing gaps between small-scale poultry farmers expected and perceived service quality, and to investigate the gap's effects on farmer's business performance leading to establishment of an adapted SERVQUAL framework for ASIs in developing economies. Consulted literature indicates that Botswana's poultry farming value chain is marginally polarised towards large-scale poultry farmers, there is currently no service quality measurement tool for ASIs in Botswana and excellent ASI's service quality directly impacts farmers' business performance. Research questions coupled with gaps identified in literature formed the basis of the study's research instruments. The gaps identified are lack previous service quality studies in Botswana's agricultural sector, non-existence of a service quality measurement tool for ASIs and that previous service quality studies in Botswana focused on gaps between expected and perceived service quality with no focus impact of service provider's challenges on customer's business performance. Research participants for this mixed-methods research were drawn from 25 managers from five ASIs (qualitative interviews) and 200 small-scale poultry farmers drawn from a population of 650 poultry farmers in Botswana (Quantitative adapted SERVQUAL questionnaire). Qualitative data was analysed using word cloud content analysis and narrative analysis whereas SPSS was utilized to analyse quantitative data. Findings from interviews affirmed that ASI's service quality across all dimensions directly affects farmers' business performance, ASIs face challenges that affect their service delivery and there are currently no tool poultry farmers use to appraise ASI's service quality. Quantitative research findings affirm that small-scale poultry farmers are generally unsatisfied with the quality of service rendered by ASIs in Botswana. Both interviews and the questionnaire findings confirmed that ASIs' service quality has an impact on customers' business performance in terms of profitability, sales growth, market share, and business growth. This study adds value to the existing body of knowledge on SERVQUAL and the developed adapted SERVQUAL framework and tool would benefit ASI management in Botswana and other developing economies.

ABSTRAK

Hierdie gemengde metode-navorsing het die realistiese en pragmatiese probleemoplossingsbenadering gevolg om ’n aangepaste SERVQUAL-vraelys vir ASI’s in Botswana saam te stel. Die doel van die studie was om ’n gewysigde SERVQUAL-vraelys toe te pas om die gapings tussen kleinskaalse pluimveeboere se verwagte en waargeneemde diensgehalte te bepaal, en om die impak van die gapings op die boere se sakeprestasie te ondersoek. Dit het tot die daarstelling van ’n aangepaste SERVQUAL-raamwerk vir ASI’s in ontwikkelende ekonomieë gelei. Geraadpleegde literatuur dui aan dat Botswana se pluimveeboerdery-waardeketting marginaal gepolariseerd is teenoor grootskaalse pluimveeboere. Daar is tans geen metingsinstrument vir diensgehalte van ASI’s in Botswana nie, en uitstekende ASI-diensgehalte het ‘n direkte impak op boere se sakeprestasie. Die navorsingsvrae en leemtes wat in die literatuur geïdentifiseer is, het die basis van die instrumente van die navorsingstudie gevorm. Die gapings wat geïdentifiseer is, is ‘n gebrek aan vorige diensgehaltestudies in Botswana se landbousektor en die afwesigheid van ‘n metingsinstrument vir diensgehalte van ASI’s. Vorige diensgehaltestudies in Botswana het ook op gapings tussen verwagte en waargeneemde diensgehalte gefokus met geen fokus op die impak van die diensverskaffer se uitdagings op die kliënt se sakeprestasie nie. Deelnemers in die gemengde metode-navorsingstudie is gekies uit 25 bestuurders van vyf ASI’s (kwalitatiewe onderhoude) en 200 kleinskaalse pluimveeboere uit ‘n bevolking van 650 pluimveeboere in Botswana (kwantitatief aangepaste SERVQUAL-vraelys). Wolkinhoud-ontleding en narratiewe ontleding is gebruik om kwalitatiewe data te ontleed, terwyl SPSS gebruik is om kwantitatiewe data te ontleed. Bevindinge uit onderhoude het bevestig dat die diensgehalte van ASI’s oor alle dimensies boere se sakeprestasie direk beïnvloed. ASI’s staar uitdagings in die gesig wat hul dienslewering beïnvloed, en daar is tans geen instrument wat pluimveeboere gebruik om ASI’s se diensgehalte te evalueer nie. Kwantitatiewe navorsingsbevindinge bevestig dat klenskaalse pluimveeboere oor die algemeen ontevrede is met diens wat ASI’s in Botswana lewer. Beide die onderhoude en die vraelysbevindinge het bevestig dat ASI’s se diensgehalte ‘n impak op kliënte se sakeprestasie het wat betref winsgewendheid,verkoopgroei, markaandeel en sakegroei. Hierdie studie voeg waarde toe tot die bestaande kennis oor SERVQUAL, en die ontwikkelde, aangepaste SERVQUAL-raamwerk en instrument sal ASI-bestuur in Botswana en ander ontwikkelde ekonomieë bevoordeel.

TSHOBOKANYO

Tshekatsheko e ya tswakanyomekgwa e dirisa mokgwa wa tharabololomathata wa boammaruri le wa mmatota go ka fitlhelela letlhomeso la SERVQUAL la Ditheo tsa Ditirelo tsa Temothuo (ASI) kwa Botswana. Maikaelelo a tshekatsheko e ke go dirisa dipotsopatlisiso tse di fetotsweng tsa SERVQUAL gore go fitlhelelwe diphatlha magareng ga ditirelo tse di nonofileng tse di solofetsweng le tse di akantsweng tsa balemirui ba dikgogo ba dikgwebopotlana. Maikaelelo gape a tshekatsheko e ke go batlisisa ka ga diphelelo tsa diphatlha tse mo dikatlegong tsa dikgwebo tsa balemirui tseo di tlholang tlhamo ya letlhomeso la SERVQUAL la diASI mo diikonoming tse di tlhabologang. Dibuka le metswedi e e buisitsweng di supa gore ketane ya boleng ya bolemirui jwa dikgogo kwa Botswana e inametse gannye ka fa letlhakoreng la balemirui ba dikgogo ba dikgwebodikgolo mme ebile gape ga go sediriswa sa tekatekanyetso sa ditirelo tse di nonofileng tsa diASI kwa Botswana. Se sengwe gape ke gore ditirelo tse di nonofileng tsa diASI tse di molemo di na le seabe mo dikatlegong tsa dikgwebo tsa balemirui. Dipotso tsa patlisiso gammogo le diphatlha tse di fitlhetsweng mo dibukeng le metsweding mengwe di bopile motheo wa didiriswa tsa patlisiso tsa tshekatsheko. Diphatlha tse di fitlhetsweng ke tlhokego ya ditshekatsheko tsa ditirelo tse di nonofileng tse di fetileng mo lekaleng la bolemirui la Botswana, tlhokego ya sediriswa sa tekatekanyetso sa ditirelo tse di nonofileng tsa diASI, le gore ditshekatsheko tsa ditirelo tse di nonofileng tse di fetileng kwa Botswana di ne di tsepamisa mogopolo mo diphatlheng tse di leng magareng ga ditirelo tse di nonofileng tse di solofetsweng le tse di akantsweng mme gape di sa tsepamisa mogopolo mo kamong ya dikgwetlho tsa batlamedi ba ditirelo malebana le dikatlego tsa dikgwebo tsa bareki. Batsayakarolo mo patlisisong e ya tswakanyomekgwa ba nopotswe go tswa mo batsamaising ba le 25 go tswa kwa diASI di le tlhano (dipuisano tsa khwaletheithifi) gammogo le go tswa balemiruing ba dikgogo ba dikgwebopotlana ba le 200 bao ba nopotsweng go tswa mo palong ya balemirui ba dikgogo ba le 650 kwa Botswana (potsopatlisiso e e baakantsweng ya SERVQUAL ya khwanthitheithifi). Tshedimosetso ya khwaletheithifi e ne ya tlhatlhojwa ka tiriso ya go tlhatlhoba sediriswa sa tiriso ya mafoko (word cloud) gammogo le tlhatlhobo ya polelo mme SPSS e ne ya dirisiwa go tlhatlhoba tshedimosetso ya khwanthitheithifi. Diphitlhelelo go tswa dipuisanong di tlhotlhomisitse gore balemirui ba dikgogo ba dikgwebopotlana ga ba kgotsofadiwe ke ditirelo tse di nonofileng tsa diASI kwa Botswana. Dipuisano le diphitlhelelo tsa dipotsopatlisiso kabobedi di tlhomamisitse gore ditirelo tse di

nonofileng tsa diASI di na le seabe mo dikatlegong tsa dikgwebo tsa bareki malebana le dipoelo, kgolo ya ditheko, karolo ya mmaraka gammogo le kgolo ya kgwebo. Tshekatsheko e e oketsa boleng mo tshedimosetsong ya SERVQUAL e e fitlhelwang ga jaana gammogo le gore letlhomeso le le tlhabolotsweng la SERVQUAL le sediriswa di tla tswela mosola botsamaisi jwa ASI kwa Botswana le kwa diikonoming tse dingwe tse di tlhabologang.

KEYWORDS

Poultry farming industry, Service quality, Business performance, Impact, Agribusiness, Botswana, Agricultural services institutions (ASIs), SERVQUAL framework, expected service quality, Perceived service quality, Gap analysis, Small-scale poultry farmers, Service quality determinants.

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ACRONYMS AND ABBREVIATIONS

APFSQF- Adapted Poultry Farming SERVQUAL Framework

ASI- Agricultural Services Institution

BIDPA- Botswana Institute for Development Policy Analysis

BAMB-Botswana Agricultural Marketing Board

C-BDT- Customer-based discrepancy theory

CEDA- Citizen Entrepreneurial Development Agency

DFI- Development Finance Institution

EDT- Expectation Disconfirmation Theory

EU- European Union

FANRD- Food, Agricultural and Natural Resources Directorate

FAO- Food and Agricultural Organisation

FAP- Food Assistance Policy

GDP- Gross domestic product

IAPI- International Association of Poultry Instructors

ICT- Information and communications technology

LEA- Local Enterprise Authority

MDT- Multiple discrepancy theory

MoA- Ministry of Agricultural Development and Food Security

NGO- Non-governmental organisation

OECD- Organisation for Economic Corporation and Development

RERC- Research Ethics Review Committee

SADC- Southern African Development Community

SMMEs- Small micro and medium enterprises

SPSS- Statistical Package for the Social Sciences

PAMA- Poultry Agricultural Management Association

UNDP- Unite Nations Development Program

WHO- World Health Organisation

WPSA- World Poultry Science Association

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 **INTRODUCTION**

The purpose of this study is to develop and apply an adapted poultry farming SERVQUAL framework (APFSQF) for agricultural services institutions (ASIs) that render services to small-scale poultry farmers in Botswana. The SERVQUAL model was developed in 1988, founded on the conceptual model developed by Parasuraman, Zeithaml and Berry in 1985 (Gregory 2019). This study focuses on five ASIs that support small-scale poultry farmers in Botswana, namely the Citizen Entrepreneurial Development Agency (CEDA), Botswana Agricultural Marketing Board (BAMB), National Development Bank (NDB), Ministry of Agricultural development and Food Security (MoA) and Feed Centre Botswana (Masole et al. 2015). ASI's service quality to small-scaler poultry farmers affect these enterprises' growth and business performance in this industry (Siami & Gorji 2012).

This chapter focuses on the introduction and general background of the study. The chapter presents the problem statement, and sub-problems extracted from the statement of the problem. This leads to the main research question and sub-questions that are aligned to the sub-problems. A thesis statement is presented, followed by the main aim of the study. The aim is broken down into specific objectives, which are also aligned to sub-problems and sub-questions. This is followed by a brief outline of the research design, the scope or delimitations of the study, the thesis layout and finally the chapter conclusion.

1.2 **BACKGROUND OF THE STUDY**

The establishment of small-scale enterprises plays a vital role in the economic development of developing countries globally (Mwobobia 2012). In Botswana, small-scale enterprises are the biggest employer accounting for about 90% of registered business (Sentsho et al. 2009). These entrepreneurs are found in various sectors of the economy that includes farming, marketing, mechanical and

engineering, transportation industry, and financial services and vending (Masole et al. 2015). SMMEs contribute about 42% to the gross Domestic product (GDP) of the country (Temtime & Pansiri 2005). Globally, SMMEs constitute more than 80% of employment creation in most countries and contribute significantly to poverty alleviation, food security and the general national economic development (Musah et al. 2015)

Poultry farming was only known as a business during the 20th century when Maitland described the rearing, care, and breeding of all strains of poultry present at that time (Pica-Ciamarra & Otte 2010). The International Association of Poultry Instructors (IAPI) was formed and incepted in July 1912 and the IAPI later transformed into the present-day World Poultry Science Association (WPSA) (Amestoso et al. 2020). According to Ngoc and Nguyen (2010), small-scale farming is one of the commonly practiced business ventures in Africa. On the other hand, poultry farming is one of the mostly widely practised type of farming in Botswana (Moreki 2006).

In Botswana, poultry farming as a business started in 1975 with the development of a rural project known as *Thuo ya Dikoko* that was focused on egg production, and it lasted until 1980 (Grynberg & Motswapong 2016). Poultry extension officers provided technical expertise and the then Ministry of Agriculture bought day-old pullets and sold them to farmers at eight weeks at a relatively low cost (Moreki 2011). In 1982, the Financial Assistance Policy (FAP) was introduced and in 2000 this was terminated and replaced by the current Citizen Entrepreneurial Development Agency (CEDA) (Moreki 2013).

The government also assisted farmers through the formation of the Poultry Agricultural Management Association (PAMA) which was funded by the European Union (EU). PAMA's primary function was to collect, grade, process, and market poultry products for its members and to provided day-old chicks to the farmers (Moreki 2011). Because of poor management and lack of financial expertise, this organisation eventually collapsed (Masole Charity 2015). This caused a significant decline in access to markets that were previously available to small- scale producers and the market became dominated by large private firms (Grynberg & Motswapong 2016).

Success factors for poultry farming SMMEs in Botswana may be directly traced back to their ASIs (Wainaina et al. 2014). These factors include entrepreneurial training and business skills development (BAMA 2011), adequate funding and finance (Mwobobia 2012), infrastructural development in the small-scale poultry sector (Grynberg & Motswapong 2016), favourable market conditions and enabling government policies on poultry farming operations.

SERVQUAL is an instrument used to measure customer perceptions of service quality (Aigbavboa & Thwala 2013). Service quality is a strategic aspect in management service firms (Reddy et al. 2013). According to Parasuraman et al. (1988), service quality is defined as the discrepancy between customers' expectation of service and the customers' perception of the service offered. Various instruments have been developed to measure the quality of service in the agricultural industry and the SERVQUAL model was one of the first to be adopted (Ulman et al. 2013). This model was previously criticised by some researchers (Cronin & Taylor 1994; Teas 1994; Gupta et al. 2004; Coulthard 2004), however, SERVQUAL remains a valid and reliable instrument for measuring service quality. The five dimensions in the SERVQUAL model are generic in nature and thus they can be adapted for any service industry (Karnstedt & Winter 2015).

1.2.1 **Background of the problem**

Lack of funding and finance, poor infrastructural development and facilities, lack of entrepreneurial training and skills development, and poor market conditions and coordination are some of the factors that lead to small-scale poultry farming enterprises failure (Mmbengwa et al. 2013). Recent reports indicated an increased failure rate in small-scale poultry farming enterprises (Baliyan & Marumo 2016). Some scholars (Farayola et al. 2013; Mappigau et al. 2012; Masole et al. 2015 Ncube et al. 2016, Moreki 2011) concurred that poultry farming SMMEs challenges and subsequent failure are to some extent directly linked to ASIs service quality to these enterprises.

As one of the contributors to the Botswana agricultural sector, the long-term growth of the small-scale poultry farmers should be prioritised (Moreki 2006). For this to be achieved, training of the new entrepreneurs and continuous support and

development of those who are experienced in the industry are important (Grynberg & Motswapong 2016). In Botswana, the Local Enterprise Authority (LEA) is the only institution providing a wide range of training and business advisory services to small-scale entrepreneurs (Moreki 2013). Considering the diversity of SMMEs in Botswana, LEA on its own does not have the capacity to adequately provide the needed training of small-scale enterprises in all sectors (Ncube et al. 2016a). This background subsequently leads to the need for a SERVQUAL analysis on LEA to identify areas where there are negative GAPs on service quality and recommend strategies for improvement.

Availability and affordability of basic inputs required to start and successfully run a poultry business are important contributing factors to the existence of this industry (Handrinos et al. 2015). Feed Centre Botswana is one of the main suppliers of day-old chicks, chicken feeds, vaccines, and poultry equipment (Krepl et al. 2016). There is a need to analyse the quality of the service rendered to small-scale poultry farmers by their suppliers and establish strategies for areas that need improvement (Adedeji 2014).

Growth and business performance of poultry farming SMMEs in developing countries depend on the prevailing market conditions (Khaizu et al. 2023). In Botswana, the poultry market is highly polarised as it is mainly dominated by fewer than 10 large-scale commercial poultry producers (Grynberg & Motswapong 2016). This scenario leaves the small-scale poultry producers without a reliable and consistent market for their product, and this eventually pushes these entrepreneurs out of business (Masole 2015). There is therefore need for a shift in government policy on marketing and distribution of poultry products in Botswana, creating space for the small-scale producer in the market.

There is need for more research on the quality of service rendered to small-scale poultry farmers by ASIs in developing countries and the impact service quality has on these enterprises' business performance (Ebrahimi & Imani 2014). Moreover, to the best of the researcher's knowledge, there is no literature on use of the SERVQUAL instrument to measure service quality in the agricultural industry, or in agricultural services firms that support poultry farming SMMEs in Botswana (http://web.a.ebscohost.com).

1.3 **PROBLEM STATEMENT**

The Botswana poultry farming value chain is marginally polarised towards a few large-scale poultry farmers. These few commercial poultry producers in Botswana control the poultry farming sector from hatcheries of day-old chicks all the way up to the marketing and distribution chain of the end-product. Such an operating environment leaves the small-scale poultry farmer vulnerable and finding it difficult to survive. The agricultural industry in Botswana, that includes the small-scale poultry farming sector, to greater extent depends on Agricultural Services Institutions that render them various services. These services include funding and finance, training and poultry farming skills development, provision of inputs like day-old chicks, feeds and vaccines and extension services as well as the development and implementation of policies that foster favourable operational conditions for the small-scale poultry sector in Botswana.

Recent reports indicates that failure in the small-scale poultry sector in Botswana and other developing economies are to some extend because of ASI's failing to provide small-scale poultry farmers with excellent service quality. Evidence from literature further indicates that excellent service quality by ASIs directly impacts small-scale poultry farmers' business performance and that there is currently no service quality measurement tool used by ASIs that render service to small-scale poultry farmers in Botswana. This study seeks to close this gap in knowledge by contributing to literature on service quality in the small-scale poultry farming industry in Botswana and other developing countries. By applying a modified SERVQUAL tool in this study, leading to the development of an adapted SERVQUAL framework for ASIs in Botswana, this study endeavours to add value to service quality studies in general and the developed framework will be useful to managers of ASIs as well as policy makers for small-scale poultry farming sector in Botswana and beyond.

Most of the poultry farming SMMEs in Botswana are in remote rural communities and villages and are mostly owned by women and the youths (Moreki 2011). Grynberg and Motswapong (2016) reiterates that small-scale poultry farmers in Botswana lack basic infrastructure such as good road linkages, electricity, availability of clean running water, abattoirs, packaging equipment, cold-storage facilities for slaughtered birds and properly built poultry houses. These facilities are essential for any successful poultry project and determine the quality of the end-

product and the market that the product can reach (Ebiringa 2012). There is an urgent need to engage policy makers to address these shortcomings to improve production in this sector of the economy (CSO 2015).

1.3.1 **Sub-problems**

The following sub-problems summarises the above outlined general research problem:

1. The impact of ASI's service quality regarding small-scale poultry farmers' business performance in Botswana is yet to be established.
2. Challenges faced by Botswana ASIs, and the effects of these challenges on the quality of service they deliver to poultry farming SMMEs are unknown.
3. The appraisal of Botswana ASIs' service quality by small-scale poultry farmers is not yet understood.
4. The gap between Botswana small-scale poultry farmers' expected service quality and the actual quality of service they receive from ASIs is yet to be established.

1.4 **RESEARCH QUESTION**

The main research question is whether there is a gap between poultry farming SMMEs' expected service quality and the actual quality of service they receive from ASIs, and whether Botswana ASIs' service quality have an impact on small- scale poultry farmers' business performance?

1.4.1 **Sub-questions**

Specific sub-questioned are posed from the above-mentioned research question, with each sub-question designed to address a specific problem (Klopper & Lubbe 2012).

In this study, the following specific questions are addressed:

Q1. What is the impact of ASIs' service quality on small-scale poultry farmers' business performance in Botswana?

Q2**.** To what extent do challenges faced by ASIs as they render services to small-scale poultry farmers affect the farmers' business performance?

Q3. How do business customers appraise ASIs' service quality in Botswana?

Q4. What is the gap between small-scale poultry farmers' expected service quality and the actual quality of service they receive from ASIs?

1.5 **THESIS STATEMENT**

The use of an adapted SERVQUAL framework to assess service quality in ASIs should be adopted because poor business performance in the small-scale poultry sector, and lack of growth, profitability, and business performance of small-scale poultry farmers in developing countries are a result of poor quality of service received from ASIs that support them.

1.6 **AIM AND OBJECTIVES**

The initial literature review and a provisional understanding of the Botswana poultry farming sector guided the framing of the following research problem:

> A service quality framework for the Botswana poultry farming agricultural services institutions has not been done before.

The main aim of this study is to establish the impact of quality of service rendered to small-scale poultry farmers by ASIs on business performance of these enterprises. The study seeks to develop and apply an adapted SERVQUAL instrument on small-scale poultry farmers in Botswana and establish gaps between expected and perceived quality of service offered by five key ASIs. The purpose of this study is therefore to develop an adapted poultry farming SERVQUAL framework (PFSQF) for the poultry farming industry in Botswana and other developing economies. This model may be implemented by ASIs that render service to small-scale poultry farmers in a practical manner. Additionally, recommendations on the determinants of service quality that need improvement of ASI's quality of service to poultry farming SMMEs are then made.

1.6.1 **Specific objectives**

The following specific objectives of this study are derived from the aim stated in section 1.6 above, namely, to determine the following:

1. To determine the impact of ASIs' service quality on growth and business performance of poultry farming SMMEs in Botswana.

2. To identify the challenges faced by ASIs as they render service to small-scale poultry farmers and effects of such challenges on customer's business performance.

3. To determine how customers appraise ASIs' service quality in the Botswana's small-scale poultry farming sector.

4. To identify the gap between small-scale poultry farmer's expected service quality and the actual quality of service they receive from ASIs; and

5. To develop and confirm an adapted poultry farming SERVQUAL framework for assessing ASIs' service quality in the poultry farming industry in Botswana.

1.7 **The problem-research question alignment matrix**

Table 1.1 shows how the general research problems and subsequent sub- problems are linked to specific research questions. According to Klopper and Lubbe (2012), a well-thought-out research project entails the researcher extracting a specific number of sub-problems from the main research problem and each sub- problem is linked to a particular research question. This matrix is followed by the research question-questionnaire alignment matrix that ensures the data collected helps to solve the research questions. Adapting Klopper and Lubbe's (2012) problem-question alignment matrix, each sub-question in the problem statement is broken down into several questions in the research instruments. On the other hand, the literature review concepts are extracted from the main research problem and sub-problems (Klopper & Lubbe 2012).

Table 1.1: The problem- research question alignment matrix

General Problem	Sub-Problems	Research Question
The impact of quality of service rendered to Botswana poultry farming SMMEs by ASIs that provide funding and finance, entrepreneurial training, and skills development, and that lead to the establishment of favourable market conditions that enhance business performance of these enterprises is yet to be established.	1 The impact of ASI's service quality on small-scale poultry farmer's business performance in Botswana is yet to be established.	Q1 What is the impact of ASIs' service quality small-scale poultry farmers' business performance in Botswana?
	2 Challenges faced by Botswanan ASIs, and the effects of these challenges on the quality of service they deliver to poultry farming SMMEs are unknown.	Q2 To what extent do challenges faced by ASIs as they render service to small-scale poultry farmers affect the farmers' business performance?
	3 The appraisal of Botswana ASIs' service quality by small-scale poultry farmers is not yet understood/known?	Q3 How do small-scale poultry farmers appraise ASIs' service quality in the Botswanan?
	The gap between Botswanan small-scale poultry farmers' expected service quality and the actual quality of service they receive from ASIs is yet to be established	Q4. What are the gaps between small-scale poultry farmers expected service quality and the actual quality of service they receive from ASIs?

Source: Adapted from Klopper and Lubbe (2012)

1.8 **RESEARCH DESIGN**

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed, and used (Saunders & Tosey 2013)

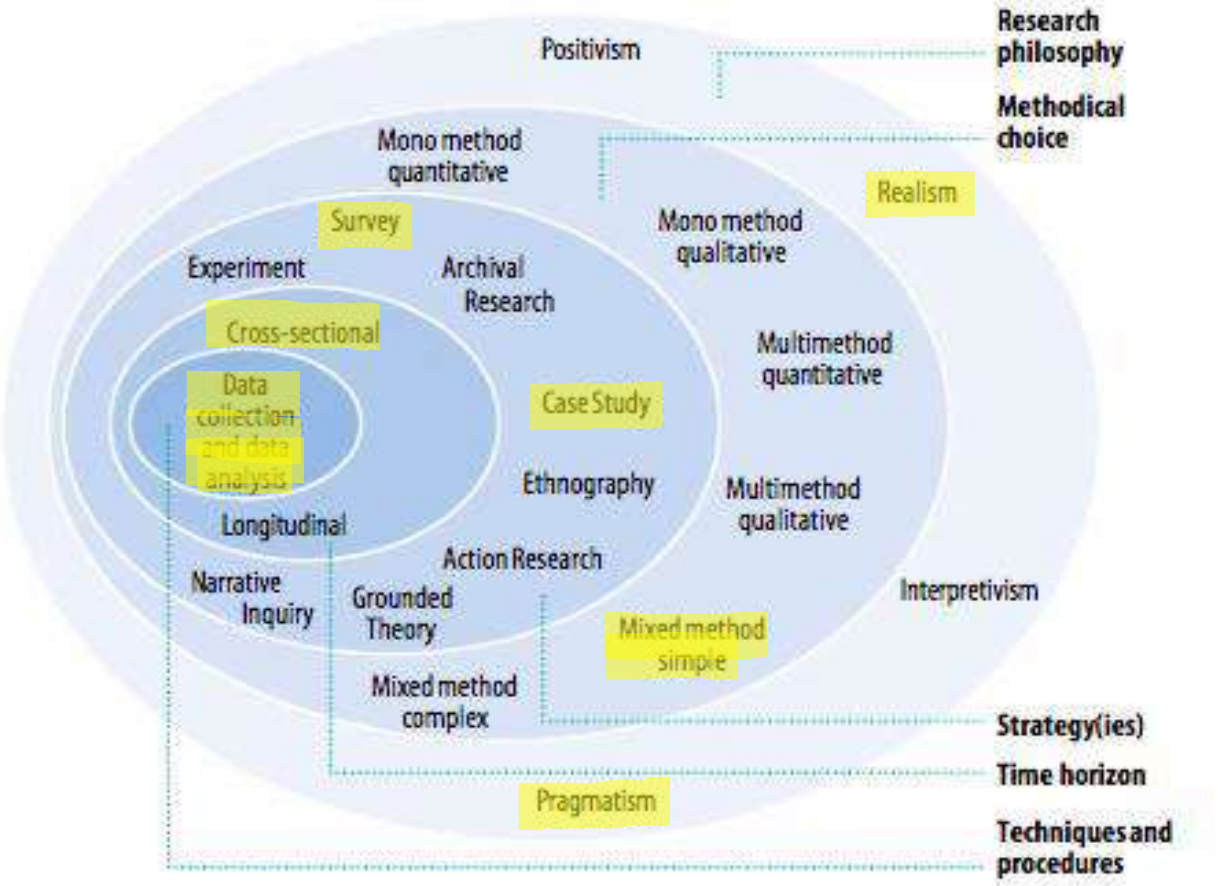

Figure 1.1 The research onion

Source: Adopted from Saunders and Tosey (2013)

In Figure 1.1 above, the highlighted research philosophy, methodological choice, research strategy, time horizon and data collection and analysis techniques underpin this study. According to Saunders and Tosey (2013), how researchers view the world, their assumptions about human knowledge and the nature of realities encountered, inevitably shape the researchers' understanding of research questions and the subsequent research design. Researchers should ensure that they appraise their choice of research philosophy and should find a good fit aligned to their research problem and objectives (Zamzam et al. 2022).

There are two main research philosophical schools of thought, namely epistemology and ontology. Epistemology relates to the theory of knowledge and what knowledge is acceptable whereas ontology is involved with assumptions researchers may have about the workings of the world (Perner 2016). This study adopts epistemology, consistent with Klopper and Lubbe (2012) who purports that research starts at a stage of relative ignorance and progresses to limited understanding of the research problem. This finally leads to a clear understanding of the topic.

Klopper and Lubbe (2012) went on to construct a four-phase continuum which can be applied by researchers to analyse relevant literature in problem-solution oriented research.

Unconscious Incompetence: Unaware of something and its relations to other things.

Conscious Incompetence: Aware that you do not know something that can be known.

Conscious Competence: Knowing something, but unable to use it as intended.

Unconscious Competence: Expert knowledge of the subject matter

Figure 1.2 Levels of competence when completing a conceptual task
Source: Adopted from Klopper and Lubbe (2012)

With epistemology as the research paradigm underpinning this research, this study specifically adopts critical realism and pragmatism research philosophies. According to Thanh et al. (2015), realism is a philosophical position associated with scientific inquiry and it advocates that reality exists independently of the mind. Although the researcher is influenced by other world views as well as their own experiences, what the researcher's senses show him or her is the truth (Saunders & Tosey 2013). Because of its nature, being problem-solving research, this study is grounded on the critical realism philosophy instead of direct realism. The research that seeks to carry out an in-depth analysis of the current factors that hinder the business performance of the small-scale poultry farming industry in

Botswana. The realist view in this study relates to Botswana small-scale poultry farmers (customers') real perceptions of ASIs' service quality.

On the other hand, pragmatism is the other research philosophy underpinning this study since it involves inquiry, concepts formation and hypothesis (Onwuegbuzie et al. 2016). Bergman (2011) furthers asserts that pragmatism mainly concentrates on empirical measurements that have practical applications in solving the research problem. The pragmatist view in this research relates to the collection of quantitative data using the adapted SERVQUAL questionnaire and hypothesis testing. The practical application in this case is the development of the envisaged SERVQUAL framework for poultry farming ASIs, applicable to Botswana and other developing economies.

1.9 **SCOPE**

The quantitative research focuses on the small-scale broiler farmers (customers) in four of the nine administrative districts of Botswana. This is where the developed SERVQUAL instrument was used. The researcher is based in the South-East District of Botswana which is geographically positioned in such a way that there is easy access to all surrounding districts, towns, villages, and rural communities where the poultry farming SMMEs exist (see map on Figure1.3. The following districts were covered: Southern District, South-East District, Kweneng District and Katleng District. These districts are well spread out in such a way that the study ultimately covered the entire southern part of the country as illustrated in Figure 1.3 below.

Figure 1.3: Map of Botswana by administrative districts

Source: https://www.ontheworldmap.com%2Fbotswana%2Fadministrative-map-of-Botswana

The qualitative research (in-depth interviews) considered five service-providers and promoters of small-scale poultry farmers in Botswana. These ASIs are CEDA, Botswana Agricultural Marketing Board (BAMB), Ministry of Agricultural Development and Food Security (MoA), Feed Centre Botswana and the National Development Bank (NDB). Furthermore, the study focussed on the broiler sector since broilers form the greatest part of poultry production in Botswana (Mwobobia 2012). In this sector the researcher considered the small-scale poultry supply chain since small-scale producers sell broilers both in the informal and commercial markets, making a significant contribution to the overall poultry production in the country (Grynberg & Motswapong 2016).

1.10 **THESIS LAYOUT AND STRUCTURE**

In this section, an outline of the thesis is provided, which is structured into four parts and split into eight chapters. The study was undertaken in two main phases, namely the qualitative phase followed by the quantitative phase.

PART 1 INTRODUCTION

- Background, motivation, purpose of the study, problem statement, research questions, thesis statement and thesis layout (Chapter 1)
- Theoretical and conceptual framework (Chapter 2)
- Review of literature (Chapter 3)

PART 2 METHODOLOGIES

- Research methods (Chapter 4)
- Research design and methodology (Chapter 4)

PART 3 RESEARCH PHASE 1 (QUALITATIVE)

- In depth-interviews, analysis, and transcription of qualitative data (Chapter 5)
- SERVQUAL instrument development and validation (Chapter 5)

PART 4 RESEARCH PHASE 2 (QUANTITATIVE)

- Quantitative data collection and analysis (Chapter 6)
- Triangulation of qualitative and quantitative research findings (Chapter 6)
- Refinement of the final SERVQUAL framework (Chapter 6)
- Recommendations for further work and conclusions (Chapter 7)
- References
- Appendices

1.11 **CHAPTER CONCLUSION**

This chapter mainly focused on the introduction and background of the research problem, breaking it down into researchable sub-problems and research questions. This chapter stated the thesis statement, followed by the main aim of the study as well as measurable specific objectives, each meant to address the corresponding sub-problem and answer a specific research question posed.

In this chapter, an overview of the poultry farming industry and its importance in growing economies was discussed. Additionally, factors that hinder poultry farming SMME growth in developing countries and the link between high failure rate of small-scale poultry farming enterprises ASI service quality in Botswana was also discussed in this chapter. In addition, the chapter mentioned the quality of service these enterprises receive from agricultural services institutions. Furthermore, the need for developing and using an adapted poultry farming SERVQUAL framework (PFSQF) for ASIs that render service to poultry farming SMMEs was also covered in this chapter. The chapter ended with an outline of the thesis as well as the layout of chapters.

The next chapter will discuss the theoretical and conceptual framework for this study as well as theories of customer satisfaction and service quality in detail. It will also provide a critical review of existing service quality models. In addition, the theoretical framework and model to guide this research will be confirmed in this chapter.

CHAPTER 2

THEORETICAL FOUNDATION AND CONCEPTUAL FRAMEWORK

2.1 **INTRODUCTION**

The previous chapter gave the introduction and purpose of the study. The problem statement was stated and divided into sub-problems, with specific sub-questions aligned to each sub-problem. Following Klopper and Lubbe's procedure, specific objectives of this study were stated, with each objective aligned to answering a specific research question.

This chapter provides the theoretical foundations of customer satisfaction and service quality, leading to the appraisal of the theory on which this study is grounded. The chapter begins with a comparison of goods and services, leading to the definition of service quality. Discrepancy theories, which are the foundation of theories of satisfaction, are discussed, namely Michalo's (1991) Multiple Discrepancy Theory (MDT) and the Customer- Based Discrepancy Theory (C-BDT). The Expectation Disconfirmation Theory (EDT) by Oliver (1977) is also considered, leading to the selection of a suitable theory on which this study is grounded.

2.1.1 **An Overview of Theoretical and Conceptual Framework**

A conceptual framework is a researcher's understanding of how the problem is best explored. It consists of key factors, constructs or variables and presumes relationships amongst them (Perner 2016). The conceptual framework can be the researcher's own constructed model used to explain the relationships that exist between the main variables in the study, or an adaptation of a model in an existing theory.

On the other hand, the theoretical framework is the blueprint for one's entire research dissertation, which serves as a foundation on which to build one's study (Grant 2014). It serves as a structure that justifies the rationale for the study, the problem statement, the purpose of the study, the significance of the study and the

research questions. In addition, the theoretical framework provides a grounding base, or an anchor for the literature review, methodology and data analysis (Adom et al. 2018). Thus, the theoretical framework consists of the selected theory (or theories) that undergirds the researcher's view of the research problem at hand. It provides a lens from which to support one's thinking on the research problem and data analysis (Godfred 2015).

Furthermore, the theoretical and conceptual framework explains the path of a research study and grounds it firmly in the theoretical constructs (Adom et al. 2018). The overall aim of these two frameworks is therefore to make research findings more meaningful, acceptable to the theoretical constructs in the research field and to ensure generalizability of the research results (Ebneyamini 2022).

2.2 **COMPARISON OF SERVICE AND PRODUCTS**

Products and services are two closely aligned concepts; in fact, most products have some characteristics of service in them (Haldar 2017). The most common features of all products are tangibility, perishability and returnability (Parasuraman et al. 1994). Products are tangible since they are physical in nature; they can be touched, smelt, felt, and seen; they are perishable since they can be stored for later use; and they are returnable because they can be taken back to the seller if not working properly (Wang et al. 2015). In the context of the agricultural sector, the two main categories of products are crop products and animal products.

On the other hand, the three common features common to all services are inseparability, value perspective and intangibility (Haldar 2017). Services are inseparable because they cannot be separated from the service providers since they can be consumed at the same time they are offered. Furthermore, the value of the service cannot be separated from the provider, and services do not remain the same as they can vary depending on the service provider (Krüger 2016). Services in the agricultural sector is usually provided by agricultural services institutions that render services to farmers in terms of finance and funding, agricultural inputs, training and skills development and extension service. For the small-scale poultry farming sector, ASIs play a vital role in the success of these enterprises.

The extent to which service is a difficult concept to measure is shown in this comparison. According to Naidoo (2016), each industry has its own methods and techniques of measuring and monitoring this concept. The agricultural industry, in particular poultry farming SMMEs in developing economies, is no exception. There is need to measure the quality of both the tangible products and intangible services provided by ASIs in this industry. The focus of this study is on the intangible side of ASIs for the small-scale poultry farming sector in Botswana and these include finance and funding, training and skills development in poultry farming, extension services, infrastructural development as well as information and technological transfer.

2.3 : SERVICE QUALITY

Service quality has been defined differently and researched extensively by several authors (Chiguvi 2023; Calvolino and Calcagni 2015; Cronin and Taylor 1994; Parasuraman et al. 1994; Teas 1994, Kontogeorgos et al. 2014; Zaibaf et al. 2013; Haldar 2017). However, there is no consensus to what the actual definition should be (Naidoo 2016). Quality is defined as the key strategies that organisations exercise to bring better value to customers to gain competitive advantage (Adom et al. 2018). Quality can also be defined as conformance to requirements (Ciavolino & Calcagnì 2015) or the ability to satisfy customer requirements continually (Parasuraman et al. 1985).

Service in the agricultural industry has several definitions and no valid concurrence exist (Reddy et al. 2013). The terms agricultural services are used to describe services offered by government or other agricultural supporting institutions to farmers or other agricultural stakeholders (James et al. 2012). For this study, agricultural services can be broadly categorised as funding and financing, training and skills development, supply of basic inputs, infrastructural development and market, operational policies as well as information and technological transfer. Agricultural services institutions (ASIs) are the organisations responsible for rendering the various agricultural support services for the benefit and success of the farmers (Ncube 2018).

Service quality can be defined as follows:

- It is the difference between customers' expectations of service prior to the service encounter and their perceptions of the service received (Ciavolino & Calcagnì 2015).
- It is a comparative evaluation made by the user between the quality of services they expect and what is received from the service provider (Zaibaf et al. 2013).
- It is the extent to which a service meets the customers' needs or expectations (Cronin & Taylor 1994).

This research adopted the definition of service quality by Parasuraman, Berry and Ziethaml (PBZ). They defined service quality as the difference between customer expectations of service and the actual quality of service customers receive from customers. If the actual service received surpasses expected service quality, then the customer is satisfied; however, if the expected service quality is less that actual service quality, then customer dissatisfaction occurs (Parasuraman et al. 1992). PBZ therefore conceptualized service quality as the gap between customers' expectations of service quality and the actual service they receive from providers. The following section reviews theories of service quality and customer satisfaction.

2.4 **THEORIES OF SATISFACTION AND SERVICE QUALITY**

The theory of satisfaction lies in mankind's ability to learn from previous experiences (Aigbavboa & Thwala 2013). All theories of satisfaction and service quality are variants of the consistency theory, and they all relate to the nature of service users' post-usage evaluation process (Krüger 2016). A number of theories have been utilised to explain the concepts of satisfaction and service quality, such as Oliver's (1981) Expectancy Disconfirmation Theory (EDT), (1987)s' the Contrast Theory of Holland et al., Lewis's (2011 Assimilation Theory, Michalo's (1991)s' Multiple Discrepancies Theory (MDT) and the Customer-Based Discrepancy Theory (C-BDT) of Yüksel and Yüksel (2008).

2.4.1 **The multiple discrepancy theory**

Satisfaction is viewed as the difference between what is expected and what is received, and this is the foundation of discrepancy theory (Yüksel & Yüksel 2008).

Disconfirmation is a comparison of what is expected and service perception. There are three scenarios as follows: expectations exceed performance, expectations are lower than performance or expectations equals performance (Aigbavboa & Thwala 2013).

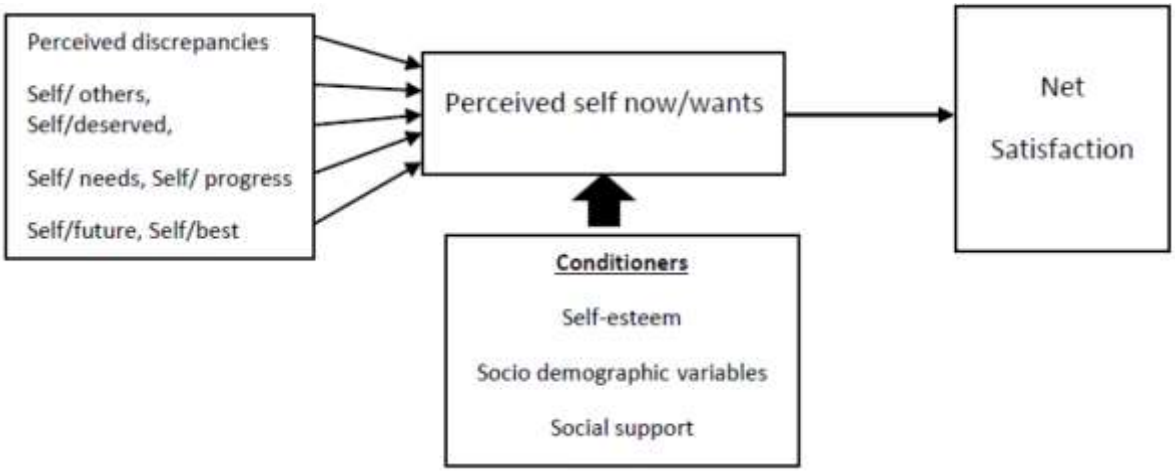

Figure 2.1: The multiple discrepancy theory (Michalos 1991)

Source: Adopted from Jiang et al. (2012)

The theory in Figure 2.1 above was developed by Michalos in 1991 to measure net satisfaction using variables such as self-esteem, socio-demographic variables, and social support (Isac & Rusu 2014). This model involves measuring life satisfaction and happiness by comparing what one has now against what one wants (Jiang et al. 2012). This model is not suitable for this research because it only measures the gap between 'has' and 'want', whereas the purpose of this study is to establish the GAP between expected and perceived service quality, hence measuring customer satisfaction.

2.4.2 **Customer-based discrepancy theory (Michalos 1985)**

The customer-based discrepancy theory mainly focuses on constructs such as customer satisfaction, user satisfaction, manipulated expectations, manipulated performance, perceived expectations, perceived performance, and disconfirmation (Krüger 2016). According to Jiang et al. (2012), according to this theory, satisfaction is measured through repeated purchases and customer brand loyalty, which in turn determine the profitability of the company.

This theory is not a good fit to be adopted for this study since it is mainly aligned with and more applicable to products than services.

2.4.3 **Expectation disconfirmation theory (Oliver 1977)**

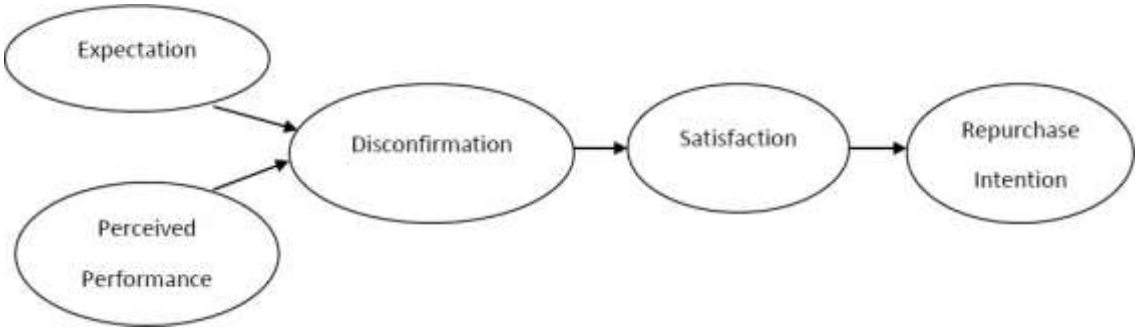

Fig 2.2: Expectation disconfirmation theory (Oliver 1977)

Source: Adopted from Yὺksel and Yὺksel (2008)

According to the expectation disconfirmation theory (EDT), users' satisfaction level is the difference between expected service and actual service performance as well as expectations and predictions of future performance (Aigbavboa & Thwala 2013). According to Isac and Rusu (2014), positive disconfirmation or satisfaction occurs when a service performs better than expected and negative disconfirmation or dissatisfaction occurs when a service performs less than expected (see Figure 2.2).

Furthermore, Aigbavboa et al. (2013) purport that a customer is either satisfied or dissatisfied because of the positive or negative differences (gaps) between expectations and perception. When service performance is greater than what the customer had initially expected, there is disconfirmation between expectation and perceptions leading to satisfaction, whereas the opposite leads to dissatisfaction (Yüksel & Yüksel 2008). This research adopts the expectation discrepancy theory to guide this study since it is aligned with the aim of this research that is primarily to assess gaps between expected and perceived service quality in ASIs that render service to poultry farming SMMEs as well as determining the impact of service quality on the business performance of these small-scale enterprises.

2.5 **MODELS OF SERVICE QUALITY**

The service industries are mostly likely customer driven; their survival in the competitive environment largely depends on the quality of services they provide (Karnstedt & Winter 2015). According to Makambe (2016), during the past few decades, service quality has received much attention from managers, researchers, customers, and various practitioners owing to its strong impact on business performance, lower costs, customer satisfaction, loyalty, and profitability for the business.

Over the years, several service quality models have been developed to enable management to understand and enhance the quality of the organization and its offering (Ebrahimi & Imani 2014). These models have been used in various industries, both public and private sectors, large corporations, and small-scale businesses. More than 19 models of service quality have been reviewed by different/various authors and have been categorized into two main groups (Yarimoglu 2014).

The first group are the Gap/SERVQUAL-based models. According to Osei (2012), these are models developed using the gaps model or its modifications and they use the SERVQUAL items or their modification for measurement of service quality. Parasuraman et al. first developed the SERVQUAL model in 1985. These models advocate for service quality being a measure of the gap between expected service quality and perceived quality of service (Ebrahimi & Imani 2014). This category of service quality models emerges as the most widely used and popular considering their applicability in various industries. Among the gap/SERVQUAL-based models, the SERVQUAL model by Parasuraman et al. (1988) remains the most popular and sort-after model because it is generic in nature and can be applied in any industry (Amjad et al. 2020).

The second category of service quality models comprise all other models that are not gap- or SERVQUAL-based. According to Agarwal et al. (2016), most of these models were tailor-made for certain service industries and they are not generic in nature as the SERVQUAL-based models are.

2.6 **THE SERVQUAL MODEL**

SERVQUAL is a generic instrument for measuring service quality that was developed in 1985 by Parasuraman et al (Singh & Khanduja 2010). The model was based on exploratory research carried out in the marketing sector with 10 service quality dimensions namely reliability, access, communication, responsiveness, tangibles, security, credibility, understanding the customer, competence, and courtesy (Handrinos et al. 2015).

SERVQUAL was later revised by PBZ in 1991, combining some dimensions and resulting in only five dimensions, namely tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al. 1994). The changes to SERVQUAL led to the splitting of tangibles dimensions into two sub-dimensions and including items that incorporated employee knowledge (Edvardsson & Mattsson 1993). These changes were not sufficient as they were criticised by Cronin and Taylor (1991) on methodological and conceptual grounds. They later developed a performance-based model called SERVPERF (Marquardt & Olaru 2017).

Figure 2.3 shows the original SERVQUAL/gap model by Parasuraman et al. The SERVQUAL instrument has been the predominant method of measuring customers' perceptions of service quality in various industries globally (Singh & Khanduja 2010). The SERVQUAL instrument consist of 22 expectation and perception items that are used to assess customers' satisfaction (Berry 1988). As suggested by Parasuraman et al (1990), these items are categorised into five dimensions of service quality namely Tangibles**,** Reliability, Assurance, Responsiveness and Empathy**.** The SERVQUAL model by Parasuraman et al. (1985) is shown in Figure 2.3:

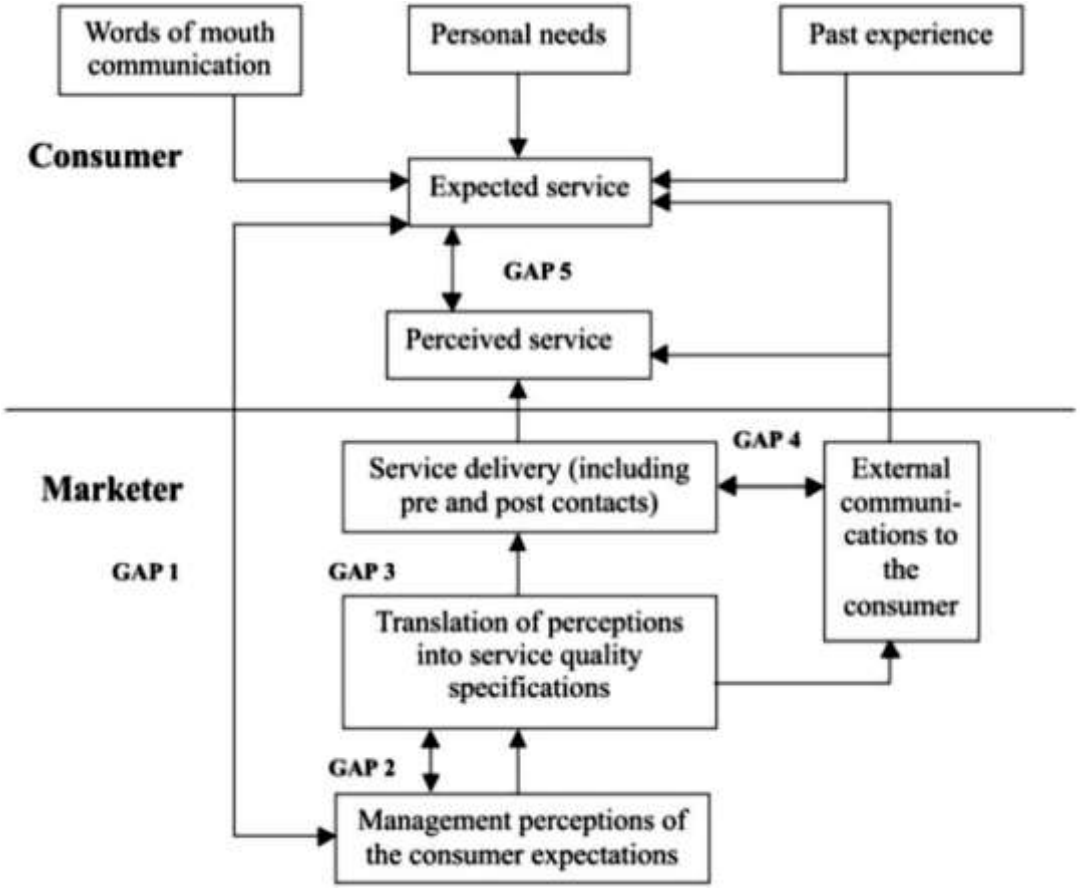

Fig 2.3: The Gap/ SERVQUAL model

Source: Parasuraman et al. (1985)

2.7 : **CRITICISM OF THE SERVQUAL MODEL**

Though the SERVQUAL MODEL has been generally robust as a measure of service quality, the instrument has been heavily criticised on conceptual and methodological grounds (Aigbavboa & Thwala 2013). The use of expectation as a comparison standard has been the focus of criticism for SERVQUAL. Various researchers (Selelo & Khaufelo 2017; Kontogeorgos et al. 2014; Marquardt et al. 2017; Teas 1994; Cronin, and Taylor 1994; Haldar 2017) argued that expectation is dynamic in nature, thus it can change with time depending on customers' service experiences and consumption situations.

One of the main problems mentioned in the literature is that of dimensionality (Ebrahimi & Imani 2014). This has to do with the applicability of the five

SERVQUAL dimensions in diverse service industries. Replication studies done/conducted by other investigators failed to support the five-dimensional factor structure of SERVQUAL as was originally obtained by PBZ in their development of SERVQUAL (Haldar 2017).

SERVQUAL still remains the most sought-after instrument for measuring service quality regardless of criticism by some researchers. This is because the dimensions in the model are generic in nature and can be adopted for any service industry (Karnstedt & Winter 2015). Validity of the SERVQUAL scale was tested adequately tested in several industries such as telephone companies, securities brokerage, insurance companies, banks and repair and maintenance companies (Marumoagae & Pansiri 2019).

2.8 : **APPLICATIONS OF THE SERVQUAL INSTRUMENT**

SERVQUAL has been used by various researchers in various industries such as banking sector (Chiguvi 2023), insurance sector (Marumoagae & Pansiri 2019), information systems (Naidoo 2016), real estate (Lee 2012), hospitality industry (Saleh & Ryan 1991), banking sector (Abdelghani 2012), education sector (Makambe 2016), food industry (Manwa 2011), retail banking (Haldar 2017) and agricultural sector (Reddy et al. 2012), just to mention a few.

2.8.1 **Applications of SERVQUAL in the Banking sector**

The study by Nair et al. (2010**)** evaluated service quality on banks in Navi, Mumbai (Maharashtra), India. The study was carried out on 101 respondents and considered the five original SERVQUAL dimensions by Parasuraman et al. (1988), namely tangibles, reliability, responsiveness, empathy, and assurance. The findings indicated that effective employee training methods in banks can be used to improve the gap between perceived and expected service (Nair et al. 2010).

In contrast, Haldar's (2017)'s study of India Post within the Kolkata Metropolitan area assessed the relative importance of the SERVQUAL dimensions, not the gaps between expected and perceived service quality as in the study by Nair et al. (2010) on the same sector. The findings indicated that both service providers and service receivers attach more importance to the reliability dimension whereas the tangibility dimension is the least important in retail banking in India (Haldar 2017). An

exploratory study on the banking sector in Morocco by Abdelghani (2012) applied a SERVQUAL instrument with the original five dimensions of service quality as outlined by Parasuraman et al. (1988). The study consisted of 240 respondents out of the 300 randomly sampled from the total Moroccan banking customers. Findings indicated that responsiveness, assurance, and empathy are the most important dimensions of service quality for the Moroccan banks (Abdelghani 2012). The study also showed that the expectations of the Moroccan banking customers far exceed perceptions on all five SERVQUAL dimensions.

2.8.2 **Application of the SERVQUAL model in the Hospitality Industry**

The study by Saleh et al. (1991) evaluated the application of the SERVQUAL model in the hotel industry in Canada. The findings indicated the existence of gaps between clients' and management's perceptions of the attributes of the hotel, and between clients' perceptions and expectations of the service delivered (Saleh & Ryan 1991). The existence of negative gaps indicated evidence of customer dissatisfaction with the services rendered.

Similarly, another study by State and Istudor (2009) used the original SERVQUAL model by Parasuraman et al. (1988) to analyse gaps between expected and perceived service quality at a hotel in Bucharest, Romania. The outcome of this research indicated that negative gaps existed on two dimensions of the SERVQUAL model, namely responsiveness and empathy (State & Istudor 2009). A study by Sharma (2014) investigated the level of service quality in a government- owned hotel, comparing it to a privately-owned hotel in Ujjain city, India. A survey with 36 questions of the 13 SERVQUAL attributes was used to gather data from 30 hotel customers. The findings were that service quality was better in a government hotel compared to a private hotel. In the government hotel, empathy, access, competence, and credibility dimensions indicated positive gaps whereas in the private hotel, only empathy and credibility revealed positive service gaps (Sharma 2014).

2.8.3 **Applications of SERVQUAL in the information systems sector**

Naidoo (2016)'s study applied the SERVQUAL model in South Africa to investigate the impact of service quality on customer business performance, looking at the softer side of internet service providers' service quality. The findings of this study

revealed that South African customers consider trustworthiness as the most crucial service dimension in the internet industry. This study also found that there were some negative gaps in the internet service providers ability to keep promises, deliver on time, perform the service right the first time, and show willingness to assist (Naidoo 2016).

In contrast, the study of Van Dyke et al. (1997) investigated the suitability of using SERVQUAL as a measuring instrument for service quality in information systems in the United States of America. The findings of this study indicated that SERVQUAL suffered from many empirical and conceptual difficulties. Conceptual difficulties include the operationalization of perceived quality as a gap score, ambiguity of the expectations construct and unsuitability of using a single service quality measure across diverse service industries. On the other hand, empirical weaknesses of the SERVQUAL instrument are reduced reliability, poor convergent validity and poor predictive validity (Haldar 2017).

2.8.4 **Applications of SERVQUAL in Real Estate Industry**

Lee's (2012) study used a SERVQUAL instrument to investigate real estate agents' relationships with property buyers and sellers in Taiwan. The findings of this study concluded that the causes of agency problems could positively affect ethical sales behaviour and real estate agent service quality. On the other hand, real estate agents improved ethical sales behaviour significantly enhanced customer satisfaction, loyalty and consequently resulted in improved service quality (Lee 2012).

2.8.5 **Application of SERVQUAL in Higher Education**

A study by Makambe (2016) investigated the existence of gaps between perceived and expected internal service quality in five institutions of higher learning in Botswana. The findings revealed the existence of negative gaps between perceived and expected service quality on all five dimensions of service quality. Employees of these institutions indicated that there was poor vertical and horizontal communication, excessive employee monitoring, and a s lack of stakeholder involvement in decision making (Makambe 2016).

2.8.6 **Use of SERVQUAL in the Agricultural Sector: some Case Studies**

The SERVQUAL model was used in various industries globally, including manufacturing, agriculture, education, health, and the food industry, to mention but a few (Chiguvi 2023). It has been noted, however, that the use of SERVQUAL in the agricultural sector, especially in developing economies, is still at its infancy (Ebrahimi & Imani 2014). Several authors concur that more research is needed on the relevance and application of the SERVQUAL instrument in the ASI (Wilson et al. 2011). The following section reviews the use of the SERVQUAL model to assess the quality of services in the agricultural sector.

2.8.6.1 **The case of Greece**

In Greece, Kontogeorgos et al. (2014) applied the SERVQUAL model to the Greek Ministry of Agriculture to assess young farmers' perceived service quality. The main aim of that study was to evaluate the quality of service rendered to young farmers by the Greek state through the Ministry of Rural Development and Food (MRDF). The research was carried out in Central Macedonia, Greece.

The original SERVQUAL instrument by Parasuraman et al. (1988) with five dimensions and 22 items drawn from these dimensions was used. These dimensions are reliability, responsiveness, assurance, empathy, and tangibility (Chiguvi 2016). The results of that study indicated that young farmers' expectations were more than their perceptions or perceived quality of service received from the Ministry of Agriculture (Kontogeorgos et al. 2014).

The researchers concluded that the original five-dimension structure of the SERVQUAL scale as initially proposed by Parasuraman et al. (1988) could not be confirmed (Kontogeorgos et al. 2014). Therefore, it is recommended to come up with a modified and improved version of the instrument more suitable to the Greece agricultural services industry.

2.8.6.2 **The case of India**

The SERVQUAL model was used in India to investigate the perceived service quality of agricultural organizations. Reddy et al. (2013) carried out this comparative analysis of both public and private agricultural sectors. The study in India was triggered by the fact that the Indian agricultural extension and delivery system was struggling hard to keep pace with change through reinvention and adaption.

Drought, floods, climate change, uneven distribution of rainfall, increased input costs and competition for resources and access to markets were some of the challenges faced by the Indian agricultural sector.

The study in India was conducted in four districts and an adapted SERVQUAL instrument, modified for increased relevancy to the agricultural services sector, was administered (Sharma 2014). According to Reddy et al. (2013), the SERVQUAL instrument consisted of seven service dimensions, namely access, assurance, empathy, reliability, responsiveness, tangibility, and timeliness. Nineteen items were drawn to evaluate information on perceptions of farmers having experience in both public and private agricultural sectors.

The key findings of this study were that the public sector was striving hard to improve service quality. In addition, there was a significant difference between public and private sector services in terms of perceived value (Reddy et al. 2013). Results from the empirical analysis showed that farmers perceived the quality of service from the private sector to be better than that from the public sector (Reddy et al. 2013). On the other hand, Haldar (2017) also noted that the use of perceived quality to measure organizational performance is necessary for both private and public sectors. It was also noteworthy that greater investments in infrastructural development and human capacity of the service providers were necessary as these could enable access and enhance services to much of the farming population in India (Reddy et al. 2013).

2.8.6.3 **The case of Ghana**

The SERVQUAL model was also used to access farmers' satisfaction of agronomic services in Ghana. James et al. (2012) carried out this case study in the Kumasi Metropolis. The main aim of the study was to determine whether the SERVQUAL model could be used to access quality of service delivered to farmers by agrochemical input dealers and to estimate the impact of each of the service dimensions on the overall quality of service rendered to farmers.

A pre-study conducted through group discussions revealed that the original SERVQUAL instrument was suitable to assess service quality in the agronomic sector with few modifications (James et al. 2012). An overall weighed SERVQUAL score of -0.86 was recorded indicating that farmers were highly unsatisfied with

services received from agrochemical input dealers within the Kumasi Metropolis. The researchers therefore concluded that the SERVQUAL model could be used in assessing quality of agronomic services in developing countries.

2.8.7 **The SERVQUAL model: Applications in Botswana**

The SERVQUAL model was previously adapted and used by some researchers to analyse the quality of service in various public and private service industries in Botswana, such as commercial banks (Chiguvi et al. 2017, Chiguvi 2023), food industry (Manwa 2011), higher education sector (Makambe 2016), information technology (Chiguvi 2016) and retail shops (Prithivirajh 2013). However, a review of existing literature has failed to reveal any evidence on the use of the SERVQUAL model to measure service quality in the agricultural industry in Botswana.

The SERVQUAL instrument was used to access perceptions of service quality in Botswana restaurants. According to Manwa (2011), the perceptions of 166 dinners on the quality of service were solicited; the key finding was that Botswana's restaurants only meet customer's expectations in tangibles areas. Deficiencies on other four dimensions of service quality, being reliability, responsiveness, assurance, and empathy are a cause of concern in the tourism and hospitality industry.

This research also concluded that in Botswana restaurants, customers do not trust the restaurant staff. In addition, employees are not well trained or experienced to work in the restaurants (Manwa 2011). This research revealed the fact that the decline in service quality is a region-wide problem affecting most countries in the SADC region.

The gaps model of service quality or the SERVQUAL model was also applied to higher education delivery in Botswana. Makambe (2016) carried out this study the main aim of which was to establish the existence or absence of gaps in the quality of service delivered in selected higher education institutions in Botswana.

Five higher education institutions were considered; the study revealed the existence of all five gaps in terms of the gaps model of service quality by Parasuraman et al. (1988). This study targeted the internal customers of these institutions and showed the existence of the five gaps. This indicated that the customers who were surveyed

believed that the quality of service offered by these institutions needed serious attention to ensure customer satisfaction (Makambe 2016).

Chiguvi (2017) most recently used the SERVQUAL model in the banking sector of Botswana. The main objective was to determine the level of customer satisfaction in commercial banks in Botswana. Results of this study indicated that commercial banks customers were not completely satisfied with the assurance, responsiveness, tangibles, or reliability dimensions of service quality (Chiguvi 2016).

The literature (Chiguvi et al. 2017; Manwa 2011; Makambe 2016; Chiguvi 2016; Prithivirajh 2013, Selelo & Lekobane 2017; Marumoagae & Pansiri 2019) has revealed only about nine cases where SERVQUAL was recently used in various industries to assess the quality of service in Botswana. This indicates that use of SERVQUAL is still in its infancy in Botswana and needs further development.

2.8.8 **Summary of applications of SERVQUAL**

The assessment shows that SERVQUAL has been prevalent in studies involving measuring service quality in both developed and developing countries. The SERVQUAL model was applied in developing countries such as India, Iran, Cambodia, Malaysia, Brazil, China, Botswana, and Turkey. It is clear from the above analysis that the model was not used much on the African continent, with recorded SERVQUAL studies in Ghana, Nigeria, Kenya, South Africa, and Botswana.

Secondly, it is noteworthy to say that SERVQUAL, to the best of the researcher's knowledge and based on the available literature, was recently used in only three service industries in Botswana, namely commercial banks (Chiguvi et al. 2017), the food industry (Manwa 2011), higher education sector (Makambe 2016), information technology (Chiguvi 2016) and retail shops (Prithivirajh 2013). However, a review of existing literature has failed to reveal any evidence on use of the SERVQUAL model to measure service quality in the agriculture industry ASIs in Botswana. There is clearly a gap in the body of knowledge concerning the use of the SERVQUAL instrument in the agricultural sector in Botswana since this study may be the first of its kind in the country.

2.9 : **RATIONALE FOR ADOPTING SERVQUAL**

The aim of this study is to investigate the gap between expected and perceived service quality for ASIs that render services to poultry farming SMMEs in developing economies. The use of models that incorporate technical quality and functionality, such as the Grönroos model and the Rust and Oliver model (ROM) is therefore not a good fit to deliver on the objectives of this research.

On the other hand, most of the other models are tailor-made for service industries, and their dimensions cannot be varied to suit diverse service industries. These models include Dabholka's technology-based model, Bonderick and Vachirapornpuck's internet banking model, and Zhuet's IT-based model, to mention but a few (Bugdol & Jarz 2010). Such models are not suitable for this research since they are not generic in nature.

Similarly, some models reviewed in the literature above only cater for one, not both, of expected service quality and perceived service quality, internal customer, or external customers. Examples of such are Spreng and Mackoy's perceived service quality model, Philip and Hazlett's PCP attribute model and Frost & Kumar's internal service quality model (Marquardt & Olaru 2017). These models, and others of this type, are not a suitable fit for this research objectives since this study involves both the internal customers (ASIs employees) and external customers (small-scale poultry farmers), and endeavours to measure gaps between perceived and expected service quality.

On the other hand, the SERVQUAL model is a commonly used and trusted model that has been extensively tested in diverse service industries, yielding credible, valid, and reliable empirical results in most cases (Naidoo 2016). It is evident from the literature that some scholars had to modify the traditional SERVQUAL model by PBZ (1988) to suit their research objectives. This led to the exodus of various versions of the SERVQUAL model with differing combinations of service dimensions and constructs suitable for different service industries.

The SERVQUAL model was selected for this study as the underpinning foundation for this empirical research because it gives room for modification, extension and strengthening of its dimensions and constructs to suit the agricultural services industry. ASIs that render services to small-scale poultry farmers were selected for

this study. This study aims to assess the Botswana ASI customers' perceptions and expectations of service quality and the impact of this quality of service on the performance of these poultry farming SMMEs. There is therefore a clear fit between the aim and objectives of this study and SERVQUAL principles. It should be noted, however, that prior to using this model, all efforts were made to secure permission from the founders of this model (PZB).

2.10 : **THEORETICAL MODEL**

The researcher adopted Oliver's (1981) expectancy disconfirmation theory (EDT) as the underpinning theory to guide this research. According to EDT, customer satisfaction level is the difference between expected service and actual service performance as well as expectations and predictions of future performance (Aigbavboa & Thwala 2013). Furthermore, a customer is either satisfied or dissatisfied because of the positive or negative differences (gaps) between expectations and perception (Jiang et al. 2012).

2.11 : **CHAPTER CONCLUSION**

This chapter provided the theoretical and conceptual framework of this research. Service quality definitions as well as the differences between service and products were explored. Of all the definitions of service quality found in the literature, the definition by Parasuraman et al. (1998) which indicates service as the difference between customer expectations of service and the perceived service was adopted for this study. An in-depth review was presented of theories of customer satisfaction and service quality.

The chapter further discussed the rationale for adapting the SERVQUAL model for this research, instead of other service quality models, such as the SERVPERF model, SERVQUAL model, Teas's EP&NQ model, Dabholka's attribute and overall effect model, Phillip Haztell's PCP attribute model, GM, ROM, and several other models. Despite its criticism by some researchers and authors such as Cronin and Tylor (1992), Dabholka et al. (2000) and Buttle (1996), SERVQUAL was selected as the model underpinning this study because the model was found to be well aligned with the aims and objectives of this research compared to the other models.

Applications of SERVQUAL in various service industries such as IT, banking, hospitality, education, and real estate, in various countries was explored in this chapter. The chapter further assessed the extent to which SERVQUAL was used in the agricultural industry with Greece, India, and Ghana as case studies.

It was found in this chapter, according to available literature, that in Botswana, SERVQUAL was only recently applied to service industries such as insurance industry (Marumogae and Pansiri 2019), banking sector (Chiguvi 2023; Chiguvi 2017), higher education (Makambe 2016), the food industry (Manwa 2011) and retail shops (Prithivirajh 2013). This indicates that the use of SERVQUAL is still in its infancy in Botswana and needs further development.

Moreover, there was no evidence in the literature, to the best of the researcher's knowledge, on use of the SERVQUAL model in the agricultural industry, particularly in poultry farming ASIs in Botswana. This therefore suggests the need for further research based on the SERVQUAL instrument in diverse industries in Botswana. There is a further gap in the literature regarding the relationship between service quality in ASIs and business performance on the part of poultry farming SMMEs. This research will thus expand the body of knowledge in this space. The chapter ended with an outline of the choice of the theoretical model underpinning this study.

The next chapter is a review of existing literature on SMME growth and development, trends in poultry production globally, in Sothern Africa and in other developing countries. The chapter further explores the current scenario in the Botswana poultry farming value chain and the small-scale poultry farmers' position in this value chain. A critical analysis of various service quality models is done in this chapter and the rationale for adapting the SERVQUAL as the model underpinning this study is supported.

CHAPTER 3

LITERATURE REVIEW

3.1 **INTRODUCTION**

The previous chapter gave a critical analysis of existing customer satisfaction and service quality theories and appraised the EDT as the theory on which this research will be grounded. Furthermore, several service quality models were critically reviewed to identify the gap in literature, and the SERVQUAL model by Parasuraman et al. (1988) was confirmed to be the model underpinning this study.

The purpose of this study is to develop an adapted poultry farming SERVQUAL framework (PFSQF) for ASIs that render services to poultry farming SMMEs in developing countries. Small-scale poultry farming enterprises are failing because of inadequate funding and finance, poor infrastructural development and facilities, lack of entrepreneurial training and skills development and poor market conditions and coordination Syahlani et al. (2022), Mmbengwa et al. (2013). Farayola et al. (2013), Mappigau et al. (2012), Ncube 2018, Ncube et al. (2016), Moreki (2011), Masole et al. (2015) and Geta & Abera (2014), investigated and documented that small-scale poultry farming enterprises' challenges and subsequent failure in Botswana may be directly linked to the quality of service these enterprises receive from ASIs.

The process of compiling a literature review for this research involved deriving literature search terms from the research problem and research question. There are five main themes in this review of literature, the first one being an overview of the historical background of poultry production as well as examining both global and regional poultry distribution. This was done to ascertain the importance of chickens as a business amongst all poultry and broiler production.

A review of the current Botswanan poultry farming value chain follows, to ascertain current challenges faced by the small-scale poultry farmers in Botswana. The third main literature review theme relates to factors that hinder the growth and business performance of poultry farming SMMEs in developing countries. Under this theme, human capacity, financial capacity, external capacity and infrastructure, facilities

and equipment are discussed. This chapter further conducts a critical review of several service quality models and the rationale for adapting the SERVQUAL model. The literature review concludes with an analysis of some studies conducted in the poultry farming industry and a review of the concept of service quality in relation to agribusiness. In this section, use of the SERVQUAL model by Parasuraman et al. (1985) in assessing service quality in the agricultural industry will be discussed.

3.2 **LITERATURE REVIEW CONCEPTS**

In this literature review, key concepts extracted from the problem statement are the bases of content analysis. This process follows procedures outlined in Klopper and Lubbe's (2012) article, "Using Matrix Analysis to Achieve Traction, Coherence, Progression and Closure in Problem-Solution Oriented Research". Furthermore, the process entails scanning through abstracts and conclusions of the various articles accessed using the respective search terms, with only relevant literature being selected (Klopper & Lubbe 2012).

3.2.1 Use of Mind Maps in Constructing Literature Review Concepts

A mind map is a powerful graphic technique which harnesses the full range of radiant thinking skills in a single, powerful manner (Macinerney 2015). Having been originated in the 1960s by Tony Buzan, Mind Maps (also referred to as concept maps) involve writing down a central idea and thinking up new and related ideas which radiate from the centre (Serang et al. 2022). Lines, arrows, colours, or branches in Mind Maps show some visual and meaningful connections between concepts. The researcher utilised the Mind Mapping technique to show important inter-linkages between literature review concepts to understand the research problem better (see Figure 3.1)

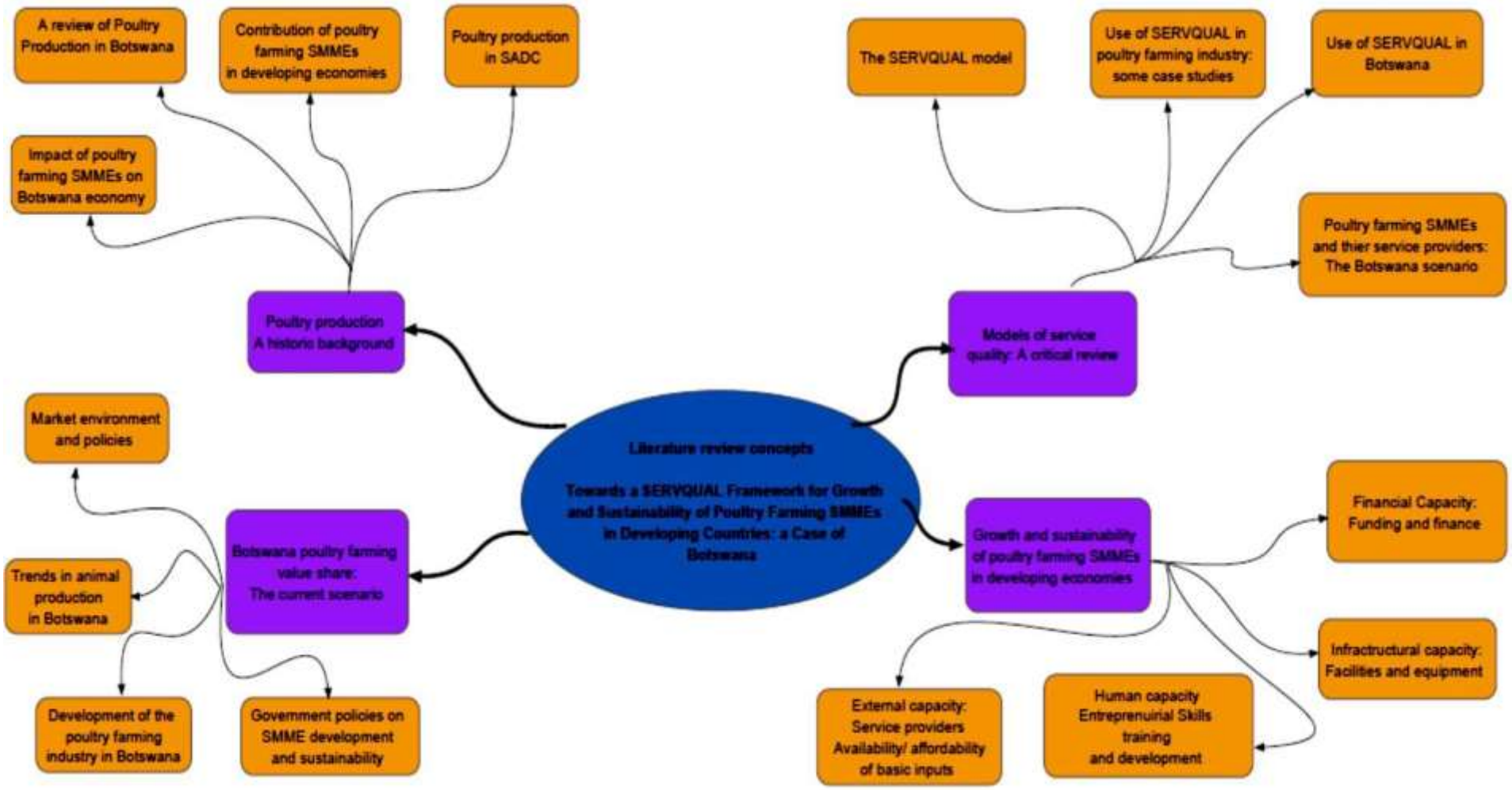

Fig 3.1**:** Literature review concepts using mind maps

Source: Macinerney (2015)

Figure 3.1 shows literature review concepts for this study displayed in the form of Mind Maps. The literature review key concepts were extracted from the problem statement (Petzer 2016). Literature on these key concepts was obtained by using relevant search terms to scan through abstracts and conclusions of various articles; only those articles relevant to the problem statement were selected (Klopper & Lubbe 2012).

3.2.2 : The literature review concept matrix

The matrix method of literature review is a powerful tool that forms the initial scaffolding to help researchers sharpen the focus of their research (Figure 3.2).

3.2.3 : Snapshot of the concept matrix

Concepts / References	Total relevant concepts per source	Finance and funding	Training and skills development	Favourable market environment	Infrastructural development	External capacity & government policies	Success factors for poultry farming SMMEs	Use of SERVQUAL in Botswana	The SERVQUAL model: some case studies	Service quality models: a critical review	Poultry farming SMMEs service providers	Impact of SMMEs in developing economies	Botswana poultry farming value chain	Poultry production: a historical background
Total sources per concept		13	5	2	7	5	10	8	6	7	2	4	5	5
Acharya and Kaphle (2015)	4	1			1				1	1				
Amestoso et al. (2020)	4						1				1	1		1
Baliyan and Marumo (2016)	2		1				1					1		1
Chatterjee et al. (2023)														
Chiguvi (2023)	2							1		1				
Chimucheka *et al.*(2011)	1	1												
Ebringa (2012)	1				1								1	
Eshun et al (2014)	3	1	1			1								
Eskeem (2014)	2	1						1						
Farayola et al (2013)	3		1	1					1					
Gynberg *et al.* (2016)	2							1	1		1		1	
Henuk (2014)	2	1						1						
Kelly (2012)	2				1	1								
Klopper (2009)	1									1				
Krepl *et al.* (2016)	1					1								
Mapiye et al. (2008)	1							1						
Mappigau *et al.* (2012)	5	1	1		1	1			1					
Marumoagae & Pansiri (2019	2							1	1					
Masole (2015)	2	1						1						
Mmbengwa et al. (2009)	2	1								1				
Mmbengwa *et al.* (2013)	2	1			1									
Moreki (2011)	1							1				1	1	1
Moreki (2013)	1			1									1	1
Mwobobia (2012)	2	1				1						1		
Ncube *et al.* (2016)	2	1							1				1	1
Shemi and Procter (2013)	1									1				
Svahlani et al. (2022)	2		1				1							
Sveinung et al (2010)	2	1			1									

Figure 3.2: Snapshot of the concept matrix

Source: Adapted from Klopper and Lubbe (2012)

This method, according to Klopper and Lubbe (2012), enables the researcher to search for relevant literature using only search terms from the research problem. In the process, sources not relevant in answering the research questions are eliminated. This helps in analysing relevant literature in problem-solution-oriented research. Klopper and Lubbe (2012) further indicate that concept matrices enable researchers to conduct concept-centric comparative literature analyses, avoiding analysing one source at a time.

The following section provides a brief historical background of world poultry production and the introduction of poultry farming in Botswana, followed by an analysis of poultry production in the SADC region and in Botswana. This section presents a comprehensive evaluation of the poultry farming industry in Botswana and the impact of ASIs' service quality on poultry farming SMMEs' business performance.

3.3 **POULTRY PRODUCTION: A HISTORICAL BACKGROUND**

Henuk (2014) defines poultry as domesticated birds' species that are raised for eggs, meat, and feathers (Henuk 2014). These includes a wide range of birds, from indigenous and commercial breeds of chickens to all kinds of ducks, guinea fowl, geese, quail, and turkeys (Mmbengwa et al. 2013). Domestication of poultry originated in Asia where there was evidence of chicken in China, dating back to 3000BC (Acharya & Kaphle 2015).

Table 3.1: Poultry species distribution by region (percentage)

Region	Chickens	Ducks	Geese and Guinea fowls	Turkeys	Other poultry
Africa	96.03	1.10	0.85	1.21	0.81
America	93.95	0.45	0.01	5.58	0.00
Asia	88.07	8.99	2.7	0.10	0.14
Europe	91.30	2.65	0.89	5.03	0.13
World	90.55	5.53	1.67	2.09	0.15

Source**:** Henuk (2014)

Table 3.1 shows that globally, chickens constitute about 90.55% of the world's poultry population. Being one of the mostly widely consumed type of meat, poultry provides a high biological protein in human nutrition (Rahman et al. 2021). The poultry industry,

particularly broiler and layers production, has occupied a leading role among the agricultural industries in Africa and beyond. It is on record that in the period 1970-2014, the global poultry meat production increased from 15,1 million tons to 85,3 tons (464.9%) and egg production from 19,5 tons to 70,4 million tons (261%) (Acharya & Kaphle 2015). This shows a remarkable increase in poultry and egg demand and consumption compared to those of beef and veal (83, 5%) and pork (192, 3%) in the same period.

These statistics show that globally, commercial poultry farming is essential to meet the ever-increasing demand for animal nutrition found in meat and eggs. As such, poultry meat and eggs are amongst the highest quality of fresh human foods that serve as an essential source of animal protein in those areas of the world that have protein deficiency (Syahlani et al. 2022).

Many African countries, Botswana included, have a daily per capita animal protein consumption below the level recommended by the Food and Agricultural Organization (FAO) and the World Health Organization (WHO) (Eshun et al. 2014). Beside the basic provision of human food requirements, poultry farming SMMEs also create employment opportunities, especially for the youth, women and the less educated (BIDPA 2011).

Small-scale poultry farming is one of the most basic business ventures in Botswana and Africa at large (Moreki 2006). Commercial poultry farming begun in the twentieth century, and this led to the formation and inception of the International Association of Poultry Instructors (IAPI) on 8 July 1912 (Pica- Ciamarra & Otte 2010). According to Ncube (2018), in 1921, the IAPI transformed into the present-day World Poultry Science Association (WPSA) which association held its first congress in the Hague, the Netherlands in the same year. The main objective of WPSA was to spread knowledge about profitable and sustainable poultry production.

3.4 **POULTRY PRODUCTION IN Southern African Development Community (SADC)**

Economic development, growth, peace and security, poverty alleviation, enhance standards and quality of life of the people in Southern Africa and support for the socially and economically disadvantaged are SADC's main objectives (Nkukwana 2018).

Whereas access to adequate food is a fundamental human right, SADC member states continue to face challenges of scarce and unpredictable food supply situations (Yemane et al. 2016).

The livestock unit of the Food, Agriculture and Natural Resources Directorate (FANRD) was introduced by SADC in addressing the food security challenges faced (South African Poultry Association 2015). Its priority areas are availability and access to food, promotion of improved safety and nutritional value of food and institutional framework strengthening capacity building. According to the Bureau for Economic Research (2016), poultry meat production is a top priority of SADC member states as it contributes significantly to nutritional requirements and food security for people in Southern Africa

Table 3.2: **Production figures in SADC countries-a comparative analysis**

	Production in 2003		% Growth	% of Total production		Population
SADC Country	2003	2013	(10 yr)	2003	2013	
Unit	Tonnes	tonnes	%			m
Angola	8 100	29 880	+ 269	0.70	1.61	22.82
Botswana	5760	7 200	+ 25.0	0.50	0.39	2.04
Dem. Republic Congo	10 572	11 700	+ 10.7	0.92	0.63	71.25
Lesotho	1 960	1 600	- 18.4	0.17	0.09	2.12
Malawi	11 240	22 800	+ 103	0.98	1.23	17.31
Mauritius	30 000	47 000	+ 56.7	2.61	2.53	1.29
Mozambique	22 950	24 300	+ 5.9	2.00	1.31	27.12
Namibia	8 160	12 480	+ 52.9	0.71	0.67	2.39
Seychelles	1020	700	- 31.4	0.09	0.04	0.10
South Africa	899 599	1 497 000	+ 66.4	78.2	80.6	53.49
Swaziland	10 500	5 850	- 44.3	0.91	0.31	1.11
United Rep. of Tanzania	61 500	87 408	+ 42.1	5.35	4.70	52.29
Zambia	38 500	46 000	+ 19.5	3.35	2.48	15.52
Zimbabwe	40 250	63 825	+ 58.6	3.50	3.44	15.05
Total for SADC	**1 150 111**	**1 857 743**				**283.9**

Source: Adapted from the South African Poultry Association (2015)

Statistics obtained from the FAO in 2013 as shown in Table 3.2 above indicates that South Africa was the major supplier of poultry meat; accounting to about 80% of the total production, an increase from about 78% in 2003. Botswana, on the other hand, accounted for 0.39% of the total production in 2013, which was a drop from 0.50% in 2003 (South African Poultry Association 2015).

These statistics indicate that the Botswana poultry industry is struggling to grow, and it needs effective and well-thought strategies for its growth and development.

3.5 **SMMEs IN DEVELOPING ECONOMIES**

SMMEs are defined differently in legislation across countries (OECD 2017). This is mainly because the dimensions 'small' and 'medium of a firm are relative to the domestic economic size. According to the Organisation for Economic Cooperation and Development (OECD), SMMEs are referred to as firms that employ up to 249 people, with the following breakdown: micro (1 to 9), small (10 to 49) and medium (50 to 249) (OECD 2017).

The establishment, business performance and profitability of SMMEs are important to the economic development of developing economies (Mwobobia 2012). Constituting more than 80% of employment creation in most countries, these enterprises significantly contribute to poverty alleviation, food security and the general national economic development (Musah et al. 2015).

A study conducted by Bharti (2007) in the Maharashtra State of India concluded that microenterprises are a source of livelihood. It discussed factors that affect their success. India is one of the largest agrarian economies in the world, with the sector contributing about 17.2% of India's GDP and 12.2% of total exports (Batra 2012). The study revealed that microenterprises are recognised as an important tool of employment generation and poverty alleviation in developing economies (Bharti 2007). The study-involved participants from entrepreneurs of diverse nature, most of them having started their businesses without any financial assistance. Lack of funding and finance was found to be a major constraint to growth and development of SMMEs in India (Bharti 2007).

In their study on contributions of SMMEs to economic growth in Ghana, Musah et al. (2015) revealed that the informal sector is the mainstay of developing economies. The study involved 160 small-scale farming SMMEs participants from Northern Ghana. The study revealed that employment creation, rural infrastructural development and poverty reduction are all linked to the presence of SMMEs in the rural communities of Ghana (Musah et al. 2015).

Limited access to credit, poor infrastructural development such as road linkages and lack of business skills amongst the entrepreneurs were noted as the major challenges hindering growth and development of these enterprises (Musah et al. 2015).

Another study was conducted by Khalique et al. (2014) to identify the importance of SMMEs in the Malaysian and Pakistani economies. The findings of study were that, though SMMEs play a vital role in the economies of developing and developed countries, their contribution to the economies of Malaysia and Pakistan is relatively small (Khalique et al 2014). In Malaysia, SMMEs make up over 90% of the manufacturing sector and 97.3% of the total establishments in the country (Khalique et al 2014).

Khalique et al. (2014) further indicates that SMMEs are a main source of poverty reduction, creating value and innovation for the country in Pakistan. Research in Pakistan revealed that SMMEs contribute 25% of the export of manufacturing and agricultural products and 30% of the GDP (Khalique et al. 2014). The findings in both countries revealed challenges faced by SMMEs as lack of funding and financing, lack of entrepreneurial training and skills development, poor infrastructure, and the energy crisis in Pakistan (Khalique et al. 2014).

A study conducted by the Bureau for Economic Research (2016), commissioned by the Small Enterprise Development Agency (SEDA), analysed the importance of SMMEs in the economic development of South Africa. It was the South African government's recognition of the importance of this segment of business activity that led to the introduction of a new Ministry of Small Business Development in 2014 (Bureau for Economic Research 2016). In addition, this sector is the biggest employer in South Africa, contributing significantly to the national GDP. Regardless of the government's efforts of over 20 years to see this sector grow, Bruwer et al. (2014) revealed that about 70%-80% of SMMEs in South Africa fail within their first three years of existence. Lack of access to finance and credit, poor infrastructure, low levels of research and development, lack of entrepreneurial education and skills and inefficient government bureaucracy emerged as the factors that lead to the high

failure rate of SMMEs in all sectors in South Africa (South African Society for Animal Science 2017). In Botswana, an SMME is defined according to size, employment levels and annual turnover (Majama & Magang 2017).

Table 3.3: SMMEs Thresholds in Botswana

Item	Size category	Employment levels	Annual Turnover in (Botswana Pula)	In US$ Dollar (Equivalent)
1.	Micro Enterprise	Less than 6 workers	Less than P60 000	US$7200
2.	Small Enterprise	Less than 25 workers	Between P60 000 and P1 500 000	Between US $7 200 and US$180 000
3.	Medium Enterprise	Less than 100 workers	Between P1 500 000 and P5 000 000	Between US $180 000 and US $600 000

Source: BIDPA (2011)

In Botswana, Small-scale enterprises are the biggest employer accounting to about 90% of registered businesses and employing about 300 000 people (Sentsho et al. 2009). These enterprises specialise in several sectors of the economy that includes farming, marketing, engineering, transportation and logistics industry, financial services, and vending services (Masole et al. 2015). Small-scale enterprises contribute about 42% to the gross domestic product (GDP) of the country (Temtime & Pansiri 2005). GDP is the value of a country's overall output of goods and services at market prices excluding net income from abroad (Mutoko 2014).

3.5.1 **Contributions of SMMEs in developed economies**

The Organisation for Economic Cooperation and Development (OECD) is an intergovernmental economic organisation with 36 member countries, the majority of which are developed countries (see Table 5).

Table 3.4: A snapshot of member states of the OEDC

AUS	Australia	**ITA**	Italy
AUT	Austria	**JPN**	Japan
BEL	Belgium	**KOR**	Korea
BRA	Brazil	**LVA**	Latvia
BGR	Bulgaria	**LTU**	Lithuania
CAN	Canada	**LUX**	Luxembourg
CHE	Switzerland	**MEX**	Mexico
CHL	Chile	**NLD**	Netherlands
COL	Colombia	**NZL**	New Zealand
HRV	Croatia	**NOR**	Norway
CZE	Czech Republic	**POL**	Poland
DNK	Denmark	**PRT**	Portugal
EST	Estonia	**RUS**	Russian Federation
FIN	Finland	**SVK**	Slovak Republic
FRA	France	**SVN**	Slovenia
HUN	Hungary	**ESP**	Spain
DEU	Germany	**SWE**	Sweden
GRC	Greece	**CHE**	Switzerland
ISL	Iceland	**TUR**	Turkey
IRL	Ireland	**GBR**	United Kingdom
ISR	Israel	**USA**	United States

Source: OECD (2017)

This organisation was established in 1961 to stimulate economic progress and world trade. In its 7-8 June 2017 Council of Ministers meeting in Paris, the OECD acknowledged that SMMEs play a key role in national economies globally, generating employment, eradicating poverty, and creating innovation (OECD 2017). The theme of this council meeting was Enhancing the Contributions of SMEs in a Global and Digitalised Economy (OECD 2017).

The OECD council further maintained that SMEs are the main source of jobs in the business sector in both developed and developing economies. In developed countries, SMEs account for 99% of all firms globally, provide 70% of jobs on average and contribute 60% of the total GDP. On the contrary, in developing economies, SMEs contribute about 45% of total employment and 33% of the GDP on average (OECD 2017). It was, however, noted that SMEs are less connected to international knowledge networks than large firms are and lag behind in the adoption of more sophisticated digital technologies (OECD 2017). This poor physical ICT structure prevents SMEs from operating efficiently and accessing international markets at competitive costs (UNDP 2012). The Council, through feedback from ministers of various member countries, agreed that the lack of

access strategic resources such as finance, good management skills, and workforce training limited access to public procurement constrain SMEs' productivity and competitiveness (OECD 2017).

A study by Karadag (2016) in Turkey investigated the role of SMMEs and entrepreneurship on economic growth in emerging economies, after the global financial crises of 2008. The study revealed that SMMEs are acknowledged worldwide as drivers of economic development owing to their role in GPD growth, new job creation and entrepreneurship (Karadag 2016). According to this study, economic growth, and development of the SMME sector are closely linked in both developed and developing countries, although value-added contribution of this sector to the global economy differs significantly across different continents (Karadag 2016). Another study on the contribution of SMEs in the global economy by Katau (2014) revealed that there is a consensus among scholars and policy makers that the advantage of the SME sector is its employment potential at low capital cost. Extant literature revealed that SMEs contribute more than 98% of employment creation and more than 40% to the GDP of most European Union countries and beyond (Majama et al. 2017).

3.5.2 **Summary of Contribution of SMMEs in Economic Development**

Extant literature revealed that SMMEs are important in both developing and developed economies, and they are the biggest employer globally. Several sources of literature consulted on the importance of the SMME sector in developing countries (Nkukwana 2018; Musah et al. 2015; Mwabobia 2012; Batra 2012; Khalique 2014; Masole et al. 2016) revealed that this sector is the driver of any emerging economy as it contributes significantly to GDP growth (about 15%-30% on average), employment creation (about 90% on average) and poverty eradication.

Studies conducted on the importance of SMMEs in developed economies (Karadag 2016; OECD 2017; Katau 2014), concurred with those in developing countries on the fact that SMMEs are the biggest employer. These studies, however, differed on the value addition of SMMEs to the overall economic growth of these various economies. SMMEs in developed economies add more value to the general economic growth, contributing above 40% to GDP growth in these countries. This difference shows that SMMEs are performing much better in developed economies

than in developing countries since they have better access to access to strategic resources critical for their competitiveness (OECD 2017). A gap in the literature on strategies that can improve productivity in the SMEs sector in developing economies has been identified, including the small-scale poultry sector. This research seeks to fill that gap.

In both developing and developed economies, studies showed that SMMEs in these two economic environments face the same challenges that hinder their growth and business performance. Lack of access to credit and finance, poor entrepreneurial management skills, lack of employee training, poor infrastructural development and poor market coordination were revealed as factors that lead to SMME failure across the various economic environments. The factors that deter SMME growth are, however, more prevalent in developing than developed economies, justifying the need to establish ways of improving these aspects of SMME growth and development.

3.6 POULTRY PRODUCTION IN BOTSWANA: A HISTORICAL BACKGROUND

Poultry farming as a business in Botswana started in 1975 with the development of a rural project known as *Thuo ya Dikoko* that was focused on egg production, and it lasted until 1980 (Grynberg & Motswapong 2016). Poultry extension officers provided technical expertise and the then Ministry of Agriculture bought day-old pullets and sold them to farmers at eight weeks at a relatively low cost (Moreki 2011). In 1982, the Financial Assistance Policy (FAP) was introduced and in 2000 this was terminated and replaced by the current Citizen Entrepreneurial Development Agency (CEDA) (Moreki 2013).

The basic intention of government, non-governmental organisations, and the donor community in the early days of the industry in the 1970s and 1980s was to use the poultry industry as a tool to increase small-scale holder income (Ncube et al. 2017). This mainly targeted the rural communities and the disadvantaged and could consequently lead to employment creation for such groups as well as poverty alleviation.

The government also assisted farmers through the formation of the Poultry Agricultural Management Association (PAMA) which was funded by the European Union (EU). PAMA's primary function was to collect, grade, process, and market

poultry products for its members and to provided day-old chicks to the farmers (Moreki 2011). Because of poor management and lack of financial expertise, this organisation eventually collapsed (Masole Charity 2015). This caused a significant decline in access to markets that were previously available to small- scale producers and the market became dominated by large private firms (Grynberg & Motswapong 2016).

The Botswana poultry farming sector operate on three different scales of production. These are: small- scale farmers are those who produce ≤20 000 birds in one batch, medium-scale farmers producing 20 001 to 50 000 in one batch and large-scale farmers producing over 50 000 birds in one batch (Moreki 2015). Small-scale poultry producers face various challenges that include lack of slaughtering facilities, high cost of feed and veterinary drugs, high utility costs, high mortality rate due to inexperience on skill and management, poor infrastructure, and lack of a reliable and consistent market (Ncube et al. 2016).

3.6.1 **Botswana Poultry Import Substitution Policy**

The Botswana poultry sector is the most successful example of import substitution with the country having achieved national self-sufficiency in the year 2004 (Grynberg & Motswapong 2011).

Table 3.5 Trends in local poultry production, import and consumption (1995-2004)

Year	Local broiler meat (tons)	Local table eggs (dozens)	Imports of broiler meat (tons)	Imports of table eggs (dozens)	Consumption of broiler meat (Kg/capita)	Consumption of table eggs (eggs/capita)
1995	7,850	4,741,849	965	40,095	6.0	39
1996	7,722	4,010,849	834	51,596	5.7	33
1997	11,847	3,886,345	96	60,020	7.8	31
1998	15,461	4,963,861	1,201	11,024	10.6	38
1999	17,219	4,707,471	340	47,250	10.9	35
2000	27,950	5,625,000	43.1	0	16.1	45
2001	32,500	7,189,896	612	0	20	62
2002	38,961	9,975,150	434.9	240	21	78
2003	57,323	6,285 050	48.4	26,016	34	62
2004	64,323	6,285,050	0	0	37.8	44

Source: Centre for Applied Research Botswana (2005

Table 3.5 shows that broiler meat production rose significantly from 7850 tonnes in 1995 to 64323 tonnes in 2004. As a result of the sector's growth, Botswana reached virtual self-sufficiency in chicken meat and egg production, and there was no need

for any further importation of these products (Masole Charity 2015). This, however, is not such good news as the country's poultry sector is still dominated by fewer than 10 large firms and there is little room for competition in this industry (BIDPA 2011).

The original intention of the government of Botswana, the donor community, and NGOs in the early days of the industry (1970s-1980s) was to use the poultry sector as a way of increasing rural incomes of small-holders and alleviate poverty (Grynberg & Motswapong 2011). However, the reality on the ground is that poultry farming SMMEs operate in a peripheral place in the industry, either supporting large producers as out-growers or selling to individual rural buyers since they do not have direct access to the primary markets (Baliyani & Marumo 2016).

In Botswana, government policy towards poultry farming SMMEs has not been sufficiently robust to change their situation fundamentally and help this industry return to a productive and more competitive sector (Grynberg & Motswapong 2011). If the government wishes to see the smallholder part of the industry thrive, a more imaginative, comprehensive, and well-thought-out plan needs to be considered (BIDPA 2011). This research seeks to close this gap by confronting the quality of service rendered by ASIs for this sector, identifying those service dimensions that need attention and making relevant recommendations.

3.7 **CURRENT SCENARIO OF BOTSWANA POULTRY FARMING VALUE CHAIN**

In Botswana, the poultry sector is mainly dominated by a few large-scale producers who control most of the value chain. The producers oversee the whole process from chick hatcheries up to the freezer and distribution facilities for the processed chickens (Baliyan & Marumo 2016). They are also in full control of the prime and reliable chicken meat markets in the country, thus making the market environment oligopolistic in nature and hardly accessible to the small-scale poultry farmers (Moreki 2015).

Figure 3.5 shows that the main broiler producers in Botswana are Goodwill Chickens, Moleps Poultry, Tswana Pride, Medina Chickens, Richmark, Tswana Pride and Bobbsies Chickens. These few companies are vertically integrated along the value chain, dominating all processes from hatcheries (day-old chicks),

production, packaging, and labelling and finally, freezer and distribution. These large-scale poultry farmers have direct marketing links to large supermarkets while small-scale farmers do not have direct access to the primary poultry market such as the large chain stores (Eskesen 2014).

3.7.1 : Inter-linkages between key players in the Botswana poultry farming value chain

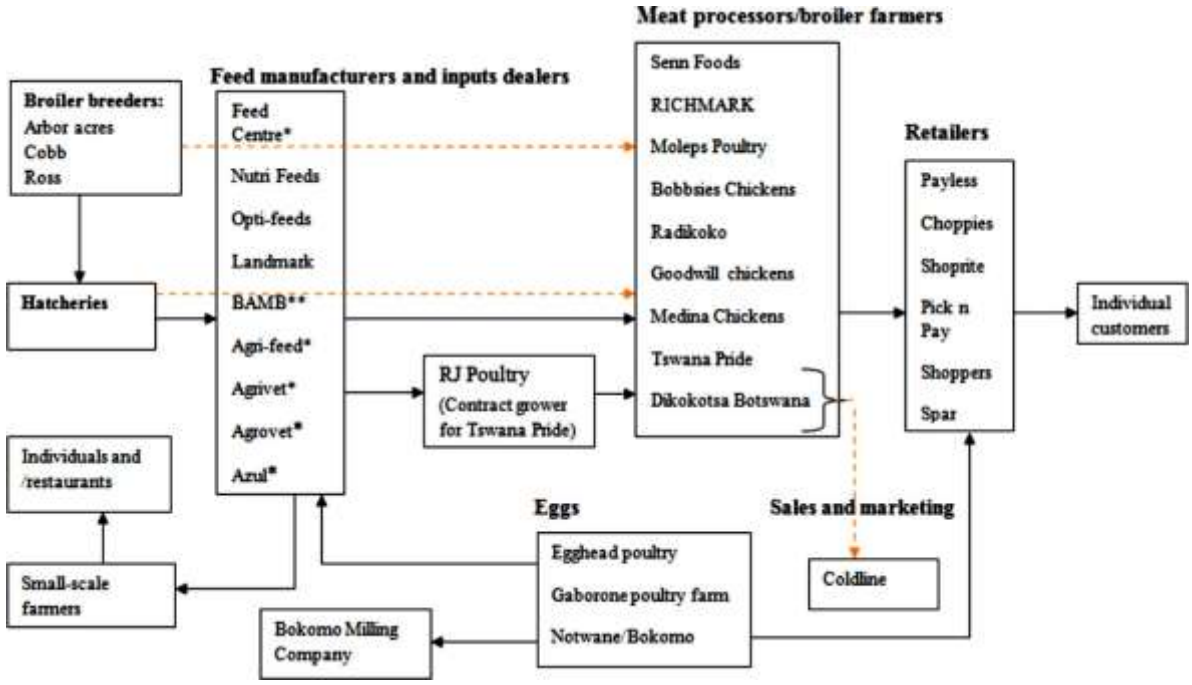

Figure 3.3: Inter-linkages between key players in the Botswana poultry farming value chain

Source: Adopted from Masole et al. (2015)

3.7.2 : Current government policies on poultry farming SMME growth

The original plan of the government of Botswana, non-governmental organisations, and the donor community in the early days of commercialisation of poultry farming was to increase smallholder income, thereby alleviating poverty, especially amongst the rural populace (Grynberg & Motswapong 2016). In 1980, the government came up with a new policy of import substitution on all poultry products. This policy was meant to promote the local farmers by creating a reliable and stable market for poultry products (Moreki 2015).

The import substitution policy was anchored on three instruments that are largely responsible for its success since 1980. The first instrument was the development of government-controlled marketing and distribution channels, giving Botswana access to primary poultry markets (Ncube et al. 2016). The second instrument was the Financial Assistance Policy (FAP) in 1982 the purpose of which was to provide financial assistance to community groups who intended to start or expand already existing agricultural production businesses. This was eventually terminated in 2000 owing to lack of effectiveness and widespread abuse of the provisions (Majama 2017). The FPA was immediately replaced by the current Citizen Enterprise Development Authority (CEDA) the main mandate of which is to provide financial assistance to local entrepreneurs (Ncube 2018).

The third, and arguably the most powerful and enduring instrument was a trade policy which significantly restricted quantities of imported poultry meat and eggs (Baliyan & Marumo 2016). This gradually opened primary poultry markets for the local farmers. Currently, the poultry industry is Botswana's most successful import substitution sector, and the government is proud of achieving national self-sufficiency in poultry products (Grynberg & Motswapong 2016). Other scholars (Bagopi et al. 2014; Moreki 2011; Masole et al. 2015; Nkukwana 2018) investigated and documented that this achievement is not such good news to the small-scale poultry producer because the industry remains vertically integrated along the value chain with only a few large-scale firms in control.

According to Farayola (2013), a policy of import substitution funded with generous assistance to local producers and entrepreneurs, along with state-sponsored market and distribution channels, was a common hallmark of early post-colonial African agriculture. This therefore makes the history of development of the poultry sector in Botswana a microcosm of African agriculture in the post-independence era.

3.7.3 : Market environment and policies

Access to stable, consistent, and reliable markets is also one of the challenges faced by small-scale poultry producers across developing countries (Sveinung Fjose, Chris Green 2010). The major retailers and chain supermarkets in Botswana are supplied by about five or six large-scale poultry producers who are closely interrelated (Ncube et al. 2016). According to industry sources, supermarkets in

Botswana, which purchase more than 45% of all poultry produced in the country, only buy from suppliers who meet their pricing and production standards (Baliyan & Marumo 2016). One of the industry standards in Botswana is that the efficient scale for broiler industry is achieved if a farmer can produce and supply 30 000-50 000 birds per week (CSO 2015). There are a considerable number of small-scale poultry farmers and contract growers who are below this scale; hence they are automatically disqualified from some prime markets (BAMA 2011).

Small-scale poultry producers have no direct access to the prime market, which is the supermarkets. A few of these therefore exist as contract farmers supplying the large-scale producers whilst their biggest markets are small village retail outlets and individuals (Grynberg & Motswapong 2016). Another important market for the small-scale retailers are government tenders to supply government institutions such as senior schools, hospitals, and the Botswana Defence Forces, to name but a few (Masole Charity 2015). This shows the need to improve the quality of service rendered to small-scale poultry farmers by poultry farming ASIs responsible for entrepreneurial training and skills development as well as those responsible for crafting the market policy for this industry (Ebrahimi & Imani 2014). This research will close this gap in literature by conducting a SERVQUAL analysis on the relevant government of Botswana ministry responsible for policy formulation for the small-scale poultry sector.

Table 3.6: Market distribution for small-scale poultry farmers in Botswana

Customers	No. of respondents	Percent
Individuals	66	47.8
Vendors	3	2.17
Retailers	8	5.80
Individuals and vendors	18	13.0
Vendors and retailers	4	2.90
Retailers and wholesalers	2	1.45
Individuals and retailers	11	7.97
Government institutions	3	2.17
Individuals & Govt. institutions	5	3.62
All	18	13.0
Total	138	100.0

Source: Majama et al. (2017)

Table 3.6 above shows that the biggest markets (84%) for poultry farming SMMEs are individual buyers and vendors (Grynberg & Motswapong 2011). These markets are neither reliable nor consistent. There is a need for policy makers to establish and implement market-related and operational policies that favour and protect

small-scale entrepreneurs if these enterprises are to survive and grow in this highly competitive global economic environment (Eshun et al. 2014). It is therefore evident that the dominant firms in the Botswana poultry industry are vertically integrated along the value chain, starting from day-old chicks, production and finally freezer and distribution facilities (Bagopi et al. 2014).

3.8 : FACTORS THAT AFFECT SMME GROWTH AND BUSINESS PERFORMANCE

Failure of SMMEs in developing countries is mainly attributed to inadequate funding and finance, poor infrastructural development and facilities, lack of entrepreneurial training and skills development, and poor market conditions and co-ordination (Mmbengwa et al. 2013). Baliyan & Marumo (2016) reiterates that there have been recent reports that indicate a high failure rate in small-scale poultry farming enterprises in Botswana. Other researchers (Farayola et al. 2013; Mappigau et al. 2012; Masole et al. 2015; Moreki 2011; Ncube et al. 2016) pointed out that small-scale poultry farmer's challenges and subsequent failure may be linked to the quality of service these enterprises receive from their ASIs.

3.8.1 : Human capacity

Lack of training and skills development is one of the constraints hindering entrepreneurial growth and the development of poultry farming SMMEs in developing economies (Farayola et al. 2013). In Botswana, only one organisation, the Local Enterprise Authority (LEA), is mandated with training, development, and performance evaluation of all entrepreneurs in all sectors of the economy (Moreki 2011).

The LEA would subsequently make recommendations of those who qualify for financial support from CEDA and other financial institutions. According to Grynberg and Motswapog (2012), LEA also carries out performance evaluation on poultry farming SMMEs to obtain objective feedback on the current performance of these enterprises. Through evaluation exercises, LEA identifies the challenges these enterprises are facing and advises the government and policy makers who are service providers on areas that need improvement.

3.8.2 : Financial capacity

Another main challenge faced by small-scale enterprises in the agricultural sector across Africa is limited access to finance and funding for their start-up and continuous business operations (Eskesen 2014). Survival of these poultry farming SMMEs greatly depend on the access to financing and funding (Krepl et al. 2016). It is important in developing economies to have readily accessible development financial institutions (DFIs) with varied financing instruments and packages that are tailor-made for the small-scale entrepreneurs is important in all developing countries (Khaizu et al 2023).

The quality of service provided to small-scale poultry farmers by ASIs responsible for funding and financing directly affects the ease with which these enterprises can capitalize and grow their business (Tandoğan & Çiçek 2016). In Botswana, women and the youth own most of the small-scale poultry farming businesses that are mainly funded by the government through the Ministry of Trade and Industry and the Ministry of Agricultural development and food security's Youth Fund (Grynberg & Motswapong 2016). Some of these entrepreneurs capitalize their businesses by securing low-cost loans from the Citizens Enterprise Development Agency at a concessionary rate of 7% per annum (Moreki 2013). The donor community is also another major player in financing small-scale agricultural business in Botswana.

Other financial institutions such as banks also offer loans to the SMMEs, for example, the Stanbic SMME's Quick Loan which was launched in Gaborone in 2014. During the launch of this loan scheme, the then Minister of Trade and Industry, Dorcas Makgato, pointed out that SMMEs are faced with challenges such as access to finance, poor quality of products, lack of access to markets and poor management structures and practices. The main challenge in accessing finance from lending institutions, especially for the rural entrepreneurs, is that most of these institutions are sceptical and reluctant to offer such finance to small-scale farmers to start up their businesses because of the amount of risk involved (Chimucheka & Rungani 2011).

Most of these financial institutions usually present very stringent loan requirements that include providing security against such loans (Mmbengwa 2009). These financial institutions implement these policies knowing full well that many of these

poor youths and women in need of such finance do not have much valuable in terms of material possessions to present as security; hence, they automatically fail to qualify for these business loans. Some DFIs in developing countries, however, have SMME-focused access to finance programmes and they provide various funds and financing instruments across African countries (Chimucheka & Rungani 2011).

3.8.3 **External capacity and market environment**

Access to and the affordability of basic inputs for poultry farmers are important for the existence and survival of small-scale poultry farmers (Henuk 2014). These inputs include day-old chicks, the main breeders in Botswana being Cobb, Ross, and Arbor Acres (Bagopi et al. 2014). According to Masole et al. (2015), broilers in small-scale enterprises take up to six weeks to be ready for slaughter while in most larger scale producers' birds are slaughtered at five weeks. This implies that large poultry producers are the ones who enjoy the cost benefit from economies of scale. Additionally, Moreki (2011) argued that because of their limited levels of production, small-scale producers cannot gain access to big retail outlets because they cannot maintain a regular supply of broiler meat.

3.8.4 : Infrastructural capacity

Most of the poultry farming SMMEs in Botswana are in remote rural communities and villages and are generally owned by women and the youth. In Botswana, there is lack of infrastructural developments such as good road linkages, electricity, clean running water, abattoirs, packaging equipment, cold-storage facilities for slaughtered birds and properly built poultry houses (Grynberg & Motswapong 2016). These are essential facilities for any successful poultry project, and they determine the quality of meat produced as well as the market that the product can reach (Ebiringa 2012).

Small-scale poultry producers are struggling to compete, even on the local front. This scenario has been characterised by a number of youths who obtain funding from the government and donors as well as credit finance from lending organisations such as the Citizen Entrepreneurial Development Authority (CEDA) and banks to start up their business (Ncube et al. 2016b). Unfortunately, the entrepreneurs usually abandon the projects barely a year or two later (Grynberg & Motswapong 2016).

3.8.5 : Botswana poultry farming SMMEs and their service providers

The growth and business performance of the poultry farming SMMEs in Botswana is anchored upon the existence of several agricultural services institutions ASIs that support poultry farmers in one way or another (Mappigau 2012). Such service organizations render assistance through the development of human capacity, infrastructural development, funding and financing, training and development as well as supplying basic inputs and equipment (Baliyan & Marumo 2016).

The CEDA was founded in 2000 to replace the FAP. According to Masole et al. (2015), the main mandate of CEDA is to provide financial assistance to local entrepreneurs, including poultry farmers. A substantial portion of the agricultural projects under the FAP was for the development of the poultry sector. Several entrepreneurs in Botswana start their businesses by securing low-cost loans from the CEDA at a concessionary rate of 5.5% per annum for individual citizen entrepreneurs and up to 7% per annum for companies (BIDPA 2011). This makes CEDA one of the key supporting institutions for the poultry farming industry and various other SMMEs.

Training and business skills development is one of the key variables for the success of any SMME in any sector (Mutoko 2014). In Botswana, the LEA has the sole duty of training new entrepreneurs and providing them with business and management skills (BIDPA 2011). Additionally, Ncube (2016) argues that LEA is the organisation mandated by government to recommend those entrepreneurs whom they have equipped with skills for funding from CEDA and other direct finance institutions (DFIs).

Entrepreneurial growth and development are of great importance for any developing economy (Moreki 2015). Therefore, the Ministry of Agriculture and Food Security (MoA) is determined to see growth in this sector. SMMEs in Botswana are the biggest employers, contributing more than 42% to the country's GDP (CSO 2015). This makes the MoA one of the key supporting institutions for poultry farming in SMMEs in Botswana. According to Masole et al. (2015), this Ministry administers the government-run Young Farmers Fund (YFF) that is meant to assist small-scale farmers with capital and equipment to start up their own businesses.

The success of SMMEs in developing economies also depends on the presence of DFIs to provide suitable financial instruments to finance developmental and business projects (UNDP 2012). In Botswana, the National Development Bank (NDB) is a finance institution created by the government of Botswana to provide finance for the purposes of economic development of the country. The NDB offers two types of loans, namely business loans, and capital development loans (individual loans). Business loans range from P10 000 up to P60 million (Bagopi et al. 2014).

Availability and affordability of basic inputs such as feeds, day-old chicks, equipment and proper infrastructure are two of the main factors that lead to sustainable growth of poultry farming SMMEs (Yusuf 2014). Feed Centre Botswana Limited (FCB) is one the largest distributors of various basic inputs, mainly targeting the small-scale poultry producers (Nkwakana 2018). This makes FCB one of the key institutions supporting farming sectors in Botswana. According to Mwobobia (2012), the quality of service provided by ASIs to farmers has a direct impact on the farmers' productivity, profitability, sustainable growth, and existence.

3.9 **SOME STUDIES CONDUCTED ON SMME GROWTH AND DEVELOPMENT**

Several studies (Sedek et al. 2017; Johson et al. 2017; Khan et al. 2017) have been conducted on factors that affect SMME growth and development in developing economies. Many of these studies pointed to financial capacity, human capacity, external capacity, infrastructural development and business environment and policies as the major success factors for any entrepreneur (Visser et al. 2016).

A study conducted by Johnson et al. (2017) in six counties of the lower Mississippi Delta in the USA evaluated programmes that small rural businesses need to secure a stable footing for their business development. The study identified financial capacity and financial management, education, workforce skills training and the development of future generations as the main anchors on which any small business should stand (Johnson et al. 2017). Given the success of these programmes in the lower Mississippi Delta, Johnson et al. purport that such programmes can be extrapolated to any rural community globally.

The study of Khan et al. (2017) assessed the association between resources and capabilities of growth of micro-firms (MFs). Entrepreneurial orientation, human capital, financial capital, and business environment were mentioned as the factors that form the basis of MFs' growth in developing economies (Khan & Quaddus 2017). This was further supported by the study of Sedek et al. (2017) in Malaysia and Syahlani et al. (2022) in Indonesia which developed a success model for the progression and development of micro- businesses to the level of SMMEs. Funding and finance, a good market environment and reliable business advisory services were found to be the main variables of this business development model (Sedek et al. 2017).

Ahiawodzi and Adade's (2012) study in the Volta Region of Ghana identified the effect of variables as access to credit, total current investment, age of firm, start- up capital and education level on SME growth. Both survey and economic methods were used, and the results indicated that access to credit exerts a significant positive effect on SME growth (Ahiawodzi & Adade 2012). On the other hand, studies by Mbugua et al. (2013) in Eldoret, Kenya and Abera and Geta (2014) in Haramaya District of Ethiopia identified factors that constrain SMME growth and sustainability in developing economies to be the unavailability of finance and funding, poor business management skills, poor marketing skills and poor entrepreneurial attributes of the owner-managers. It was recommended that government and other business support organisations should team up to facilitate the development of business skills training programmes for the owner-managers of these enterprises as well as mobilising finance and funding for these firms (Mbugua et al. 2013).

3.9.1 : Summary of Studies Conducted on SMME Growth and Development

The literature (Mmbengwa et al. 2013; Moreki 2015; Eskesen et al. 2014; SAPA 2015; Yusuf 2014, Khaizu et al. 2023) reveals some success factors for growth and business performance of SMMEs in both developed and developing economies. These factors are adequate finance and funding, entrepreneurial training and business skills development, physical infrastructural development, an enabling market environment, favourable operational policies from policy makers and a good external support system, to mention but a few. It is further evident that poor performance in these areas consequently leads to poor business performance of

the enterprises (Amestoso et al. 2020). These success factors are services rendered to SMMEs by service providers. In the case of the agricultural industry, in particular poultry farming SMMEs, ASIs are the service providers who should ensure the success of their customers by rendering a good service.

Very few studies (Mmbengwa 2009; Farayola et al. 2013; Kelly 2012; Adedeji et al. 2014) were conducted on factors hindering poultry farming SMME growth in developing economies, especially in Southern African. There is a gap in the literature on studies conducted on the Botswanan poultry farming SMMEs success factors. The same gap in literature exists on how quality of the service rendered to small-scale farmers by ASIs determine their business performance. This study concentrates on closing this gap.

3.10 **SOME RESEARCH CONDUCTED IN THE POULTRY FARMING INDUSTRY**

There are various studies (Nwandu et al. 2016; Amestoso et al. 2020; Khaizu et al. 2023; Ncube 2018; Syahlani et al. 2022) to ascertain the impact of poultry production as a business in developing economies as well as assessing factors that hinder growth and business performance in this industry.

A study conducted by Nwandu et al. (2016) in Nigeria appraised the potency of the poultry production business as a means of poverty alleviation in the poor communities of Nigeria. The study concluded that the government could use the poultry production business to pursue youth empowerment with vigour and significantly reduce the level of unemployment prevalent in Nigeria (Nwandu et al. 2016). On the other hand, a study conducted by Morrison et al. (2006) in Sarawak, Malaysia found that the state-administered poultry farming contract scheme is part of the broader national goal to eradicate poverty, raise rural incomes and ultimately develop indigenous entrepreneurship. The study further noted that the poultry farming contract scheme administered by the Sarawak Economic Development Corporation (SEDC) led to a significant increase in business performance amongst poultry farming SMMEs in Malaysia (Morrison et al. 2006).

Wynne and Lyne's (2003) study investigated factors hindering the growth and sustainability of poultry farming SMMEs in KwaZula-Natal Province, South Africa. The study identified poor access to credit, high transaction costs, unreliable local

markets, and poor physical infrastructure as the main causes of the high failure rate in poultry farming SMMEs in South Africa (Wynne & Lyne 2003).

3.10.1 : Summary of research conducted on the poultry farming industry.

It is evident from the literature that poultry farming SMMEs in developing countries are failing because of lack of funding and finance, poor infrastructural development and facilities, lack of entrepreneurial training and skills development and poor market conditions and coordination. In Botswana, there have been recent reports that indicate lack of business performance in small-scale poultry farming enterprises (Baliyan & Marumo 2016). Other scholars (Farayola et al. 2013; Mappigau et al., 2012; Masole et al. 2015; Moreki 2011; Ncube et al. 2016) investigated and documented the root cause of poultry farming SMMEs' challenges and subsequent failure as being directly linked to the quality of service these enterprises receive from ASIs that support them.

3.11 : MODELS OF SERVICE QUALITY: A CRITICAL REVIEW

Service quality was defined differently by several authors and there is no consensus as to what the actual definition is. This study adopts the definition by Parasuraman et al. (1988), who define service quality as the difference between customers' expectation of service and the customers' perception of the service offered. If expectations are exceeding performance, then the perceived service quality is not satisfactory and hence customer dissatisfaction occurs (Berry 1988). It follows therefore that customer satisfaction occurs when the actual quality of service received exceeds the quality of service expected by the customer.

The following section critically analyses the various service quality models as presented by different researchers and applied in diverse service industries. Key findings, strengths and weaknesses of each model are discussed, leading to a justification of the rationale for adapting SERVQUAL as the model underpinning this study.

Table 3.7: An evaluation of service quality models.

SQ No	Author	Service quality model	Key findings/applications	Weaknesses/ Limitations
SQ1	Grönroos, 1984	Technical and functional service quality model	Contains 3 dimensions: technical, functional and image. Focuses on service quality outcomes, not the process	A clear explanation on how to measure functional and technical quality required
SQ2	Parasuraman et al. 1985	Gap/SERVQUAL model	Contains 5 dimensions: tangibles, reliability, empathy, responsiveness, and assurance. Externally focused and enables management to identify service quality factors that need immediate attention from the viewpoint of the customer	It is an exploratory study mainly focusing on the process of service delivery, not the outcomes of the service encounter. Does not explain the clear measurement procedure for the management of gaps at different levels
SQ3	Haywood-Farmer	Attribute service quality model	3 dimensions: professional judgement, physical facilities, and behavioural aspect	No measurement scale for service quality and no practical procedure available for

	1988			management to identify service quality gaps
SQ4	Brogowicz et al.1990	Synthesized model of service quality	Consider 3 dimensions: company image, external influences, and traditional marketing activities. Aims to identify dimensions associated with traditional managerial framework	Needs empirical validation and needs to be reviewed for different types of service settings
SQ5	Cronin & Taylor 1992	Performance only/ SERVPERF model	Service quality to be conceptualised as an attitude. Reduces the number of items of SERVQUAL by 50% and generates better results	The model needs to be generalised to all types of service settings and needs to establish quantitative relationships between consumer satisfaction and service quality
SQ6	Mattsson, 1992	Ideal value model of service quality	Provides new perspective on how an ideal standard can be formed and sustained mentally. Model highlights attention to the importance of negative disconfirmation experience as a	Model needs to be defined for all types of service settings. Fewer number of items used for value and customer satisfaction

			determinant of satisfaction outcome	
SQ7	Teas 1993	Evaluated performance and normed quality model (EP & NQ model)	Raised a few issues pertaining to conceptual and operational definitions of expectation and revised expectation. Criterion and construct validity higher than SERVQUAL and NQ models	Tested for limited sample size and for narrow service settings (only discount store)
SQ8	Berkley & Gupta 1994	IT alignment model	Describes how IT integration can improve customer service. Dimensions: reliability, responsiveness, competence, access, communication, and security and understanding customer. It helps managers to realise benefits of using IT	Only highlight impact of IT on service quality and does not offer way to measure and monitor service quality. Is silent about level of IT use for service settings
SQ9	Dabholka 1996	Attribute and overall effect model	Favoured in forming evaluations of service quality for technology-based self-service options	Effects of demographic variables, price, physical environment etc. not considered. Model needs to be generalized for different

				service settings
SQ10	Spreng & Mackoy 1996	Model of perceived service quality and satisfaction	Service quality and satisfaction are distinct and desires congruency influences satisfaction. Meeting consumer desires the key determinant of service quality and customer satisfaction	Does not highlight how the service quality is achieved and operationalised Weak in providing directions for improvements in service quality
SQ11	Phillip & Hazlett 1997	PCP attribute model	Provides a simple, effective, and general framework for assessing service quality in any service sector. Dimensions to the three levels of attributes specific sector-dependant and with reference to the consumer	Lacks empirical validation: does not provide general dimensions to the three levels of attributes
SQ12	Sweeney et al. 1997	Retail service quality and perceived value model	Technical service quality an important contributor to product quality and value perceptions, thus influences willingness to buy. Functional service quality has influence on willingness to buy	Limited since it considers only one value construct, value for money Small number of items per construct

			independent of product assessment.	
SQ13	Oh 1999	Service quality, customer value and customer satisfaction model	Can be used as a framework to understand consumer decision processes as well as evaluating company performance. Provides directions and targets for customer-oriented company efforts	Needs generalisation for different service types Model variables measure through relatively fewer items
SQ14	Dabholkar et al. 2000	Antecedents and mediator model	Customers evaluate different factors related to service but also form separate overall evaluation of the service quality. Model can provide a complete understanding of service quality and how evaluations are formed. Customer satisfaction a better predictor of behavioural intentions	Need to explore antecedents of customer satisfaction. Measures behavioural intention rather than actual behaviour. Needs to be generalised to different service settings
SQ15	Frost & Kumar	Internal service quality model	Perceptions and expectations of internal customers and internal suppliers play	Need to be generalised to all types of internal service environments. Effects of

	2000		major role in recognising t level of internal service quality perceived	changes in the external environment on model not considered
SQ16	Soteriou & Stavrinides 2000	Internal service quality DEA model	Indicates resources that can be better utilised to produce higher service quality levels.	Does not supply measurement of service quality. Ignores other bank performance measures
SQ17	Bonderick &	Internet banking model	In internet banking, implication for management of quality arises in two areas a) within the service interface, b) with management of increased customer role	Not much empirical work carried out
	Vachirapornpuk 2002		Level of customer participation greatly influences quality of service experience	Based on experience with one wed site only; needs to be validated with other experiences
SQ18	Zhuet et al. 2002	IT-based model	IT- based services have direct impact on reliability, responsiveness and assurance dimensions and indirect impact on	Does not provide measure of service quality of IT-based transactions.

			customer satisfaction and perceived service quality. IT can help service providers have high levels of service quality. Preference towards traditional services, experience in IT-bases services and perceived IT policies affect customer evaluation of IT-based services	Small number of items chosen to measure the feeling of self-control and comfort in using IT-based services.
SQ19	Santos2003	Model of e-service quality	Provides better understanding of e-service quality. All companies that engage in e-commerce or plan to do so can use it.	Exploratory study Did not provide specific measurement scales and no statistical analysis carried out.

3.12 : THE SERVQUAL MODEL

In 1985, Parasuraman, Berry and Zeithaml developed the SERVQUAL model, an instrument for measuring service quality. This model was designed to measure service quality based on focus groups (Singh & Khanduja 2010).The model was based on exploratory research carried out in the marketing sector with 10 service quality dimensions namely reliability, access, communication, responsiveness, tangibles, security, credibility, understanding the customer, competence and courtesy (Handrinos et al. 2015). These dimensions and their definitions served as the basic structure of the service quality domain from which the 22 items of the SERVQUAL scale were derived (Siami & Gorji 2012).

SERVQUAL was later revised by PBZ in 1991, combining some dimensions and resulting in only five dimensions, namely tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al. 1994). The changes to SERVQUAL led to the splitting of tangibles dimensions into two sub-dimensions, changing of the negatively worded statements into positive statements and the inclusion of items that incorporated employee knowledge (Gregory 2019). These changes were not sufficient as they were criticised by Cronin and Taylor (1991) on methodological and conceptual grounds. They later developed a performance-based model called SERVPERF (Marquardt & Olaru 2017).

3.13 **Service quality and business customers**

Customers are defined as individuals or businesses that purchases another company's goods or services (Wilson et al. 2011). It follows therefore that customers are end-users who may be individual customers or business customers (Makambe 2016). Business customers are customers that also operate a business in any form, including sole proprietorships (Sharma 2014). According to Naidoo (2016), business customers, also known as industrial customers, purchase products or services to use in the production of other products.

3.13.1 : Some service quality studies involving business customers.

Kontogeorgos et al. (2014) applied the SERVQUAL model to the Greek Ministry of Agriculture to assess young farmers' perceived service quality. The main aim of this study was to evaluate quality services rendered to young farmers by the Greek state

through the Ministry of Rural Development and Food (MRD. The research was carried out in the Central Macedonia, Greece.

Parasuraman, Berry and Zeithaml (1988)'s original SERVQUAL instrument with five dimensions and 22 items drawn from these dimensions was used. The results of this study indicated that young farmers' expectations were more than their perceptions or perceived quality of service received from the Ministry of Agriculture (Kontogeorgos et al. 2014). It was further concluded by the researchers that the original five-dimension structure of the SERVQUAL scale, as initially proposed by Parasuraman et al. (1988), could not be confirmed (Kontogeorgos et al. 2014). This shows the need to come up with a modified and improved version of the instrument more suitable to the agricultural services industry in developing economies.

In India, the study of Reddy et al. (2013) applied the SERVQUAL model to investigate the perceived service quality of agricultural organizations. This was a comparative analysis of both public and private agricultural sectors. The Indian agricultural extension and delivery system had been struggling to keep pace with change through reinvention and adaptation, thereby triggering this study. Drought, floods, climate change, uneven distribution of rainfall, increased input costs and competition for resources and access to markets were some of the challenges faced by the Indian agricultural sector.

The study in India was conducted in four districts and an adapted SERVQUAL instrument, modified for increased relevancy to the agricultural services sector was administered (Sharma 2014). The key findings of this study were that the public sector was striving hard to improve service quality and that there was a significant difference between public and private sector services in terms of perceived value (Reddy et al. 2013). Results from empirical analysis showed that farmers perceived the quality of service from the private sector to be better than that from the public sector. The researchers also noted that the use of the perceived quality to measure organizational performance works for both private and public sectors. It was also noteworthy that greater investments in infrastructural development and human capacity of the service providers were necessary as these could enable access and enhance services to most of the farming population in India (Reddy et al. 2013).

The SERVQUAL model was also used in the study by James et al. (2012) aimed at assessing small-scale farmers' satisfaction with agronomic services in Kumisa Metropolis, Ghana. The main aim of the study was to determine whether the SERVQUAL model works in assessing the quality of service delivered to farmers by agrochemical input dealers and to estimate the impact of each of the service dimensions on the overall quality of service rendered to farmers.

A pre-study conducted through group discussions revealed that the original SERVQUAL instrument was suitable to assess service quality in the agronomic sector with few modifications (James et al. 2012). An overall weighted SERVQUAL score of -0.86 was recorded, indicating that farmers were highly unsatisfied with services received from agrochemical input dealers in the Kumasi Metropolis. The researchers therefore concluded that the SERVQUAL model works in assessing the quality of agronomic services in developing countries.

Naidoo (2016) applied an adapted SERVQUAL model to establish the impact of internet service providers (ISPs) service quality on performance of their business customers. Additionally, the study analysed challenges faced by ISPs as they render services to customers and how these challenges affect business customers' performance. The study findings confirmed that South African ISPs service quality positively impacts the corporate customers' business performance. Additionally, findings from this study revealed that business customers are generally satisfied with the quality of service they receive from their ISPs.

3.13.2 : Summary of service quality studies involving business customers

It is evident from the literature that researchers used the SERVQUAL model to assess customer's perceptions on ASIs and other service institution's' service quality. It was worth noting that the model, in some instances was modified to suit service industries under study. In Africa, in particular Southern Africa and Botswana as a country, very few studies of this nature were conducted. This study will endeavour to close this gap in the body of knowledge in this area.

Service quality studies conducted in Greece's Ministry of Agriculture by Kontogeorgos et al. (2014), In India private and government ASIs by Reddy et al. (2013) and in Kumisa Metropolis, Ghana's Agrochemical Inputs Dealers by James et al. (2012) all focused on establishing gaps between expected service quality and

perceived service quality (see Table 3.8 below). These studies also revealed the relationship between ASI's service quality and the business customers' satisfaction. The studies however did not investigate challenges faced by the ASIs as the render service to business customers and the impact such challenges have on the customer's Business Performance. Additionally, the studies on service quality to agricultural business customers did not reveal the impact of agricultural service provider's service quality on the business performance of the business customer (the farmers). Further research is required in these contexts and this study seeks to fill this gap in literature on service quality in the agricultural industry.

Table 3.8: Service quality studies involving business customers.

Author	Service Industry	Business Customer	Purpose of the study
Kontogeorgos et al. (2014)	Agriculture sector by Greece MoA	Young farmers in Greece	Assess perceived SQ of young farmers by Greek state through MRDF
Reddy et al. (2013	Agriculture-Public and Private Agricultural Service Providers	Farmers in India	Compare public and private ASP's service quality to farmers
James et al (2012)	Ghana's Agrochemical Input Dealers	Ghana Farmers in Kamusi Metropolis	Impact of each service dimension on overall service quality rendered to farmers
Naidoo (2016)	South African Internet Service Providers	Internet corporate business customers	Establish effects of ISP's service quality on business performance of corporate business customers

3.14 : EXTENT OF USE OF THE SERVQUAL MODEL IN BOTSWANA

The literature consulted revealed that the SERVQUAL model was previously adapted and applied by some scholars in various service sectors of Botswana. These are: commercial banks (Chiguvi et al. 2017), the food industry (Manwa 2011), the higher education sector (Makambe 2016), information technology (Chiguvi 2016), the hotel industry (Musikavanhu 2017) and retail shops (Prithivirajh 2013). However, a review of existing literature has failed to confirm evidence of use of the

SERVQUAL model to measure service quality in the agricultural industry, in particular agricultural services organisations in Botswana.

Manwa's (2011) study applied the SERVQUAL instrument in Botswana to access perceptions of service quality in food outlets. According to Manwa (2011), perceptions of 166 dinners on the quality of service were solicited and the key finding was that Botswana's restaurants only meet customers' expectations in tangibles areas. Deficiencies in other four dimensions of service quality, namely reliability, responsiveness, assurance, and empathy are a cause of concern in the tourism and hospitality industry.

This research also concluded that in Botswana restaurants, customers do not trust the restaurant staff, and employees are not well trained or experienced to work in the restaurants (Manwa 2011). This research revealed that poor service delivery is a region-wide problem affecting business performance in most countries in the SADC region.

Makambe's (2016) study also applied the gaps model of service quality or the SERVQUAL model to assess higher education service delivery in Botswana. The main aim of the research was to establish the existence or absence of gaps in the quality of service delivered in selected higher education institutions in Botswana.

The study involved five higher education institutions and revealed the existence of all five gaps in terms of the gaps model of service quality by Parasuman et al. (1988). This study targeted the internal customers of these institutions and revealed the existence of the five gaps. This indicated that those employees surveyed believed that the quality of service offered by these institutions needed serious attention to ensure customer satisfaction and subsequently improve business performance (Makambe 2016).

Chiguvi (2017) most recently used the SERVQUAL model in his study of service quality in the banking sector of Botswana. The main objective was to determine the level of customer satisfaction in commercial in banks in Botswana. Results of this study indicated that commercial banks' customers were not completely satisfied with the assurance, responsiveness, tangibles, or reliability dimensions of service quality (Chiguvi 2016).

3.14.1 : Summary of applications of SERVQUAL in Botswana

The literature has revealed only four cases where SERVQUAL was recently used in various industries to assess the quality of service in Botswana. The above findings indicate that, although it is a tried and tested tool for assessing service quality in various industries globally, the use of SERVQUAL is still at its infancy in Botswana, and it needs further development. Moreover, there is no evidence, the best of the researcher's knowledge, in existing literature of the use of the SERVQUAL model in the agricultural industry, particularly in poultry farming ASIs in Botswana. This therefore suggests the need for further research based on the SERVQUAL instrument in diverse industries in Botswana. The research seeks to fill that gap in literature by using an adapted SERVQUAL model on ASIs. This study will thus expand on the body of knowledge in this space.

3.15 **ANALYSIS OF THE LITERATURE**

A review of literature relevant to this research followed the method of Klopper and Lubbe (2012) of scanning through abstracts and conclusions of various articles and making a comparative analysis of those relevant to this study. An analysis of the historical background of poultry farming indicated that it is a business practised in all developing economies and chickens are the most widely consumed of all poultry globally. The literature also revealed that SMMEs play a significant role as drivers of both developing and developed economies as these are the biggest employer globally. Several authors, however, concurred that SMMEs in general, regardless of industry, face the same challenges. The challenges are access to finance, markets, skills training, infrastructural development, and government support in terms of operational policy.

The current Botswana poultry farming value chain was also analysed and several researchers (Moreki 2011: Moreki 2015; Masole, et. al 2016; Ncube et.al 2016; Grynberg and Motswapong 2016; Bagopi 2014; Majama et al. 2017) were of the same view that a few large-scale producers who control it from production to the market dominate the industry. This leaves the smallholder farmer vulnerable and finding it difficult to survive, calling for ASIs to focus their attention more on this ailing sector of the poultry farming industry in Botswana.

The literature consulted confirmed that service quality studies have been conducted in Botswana using the SERVQUAL model. This was done in industries such as the banking industry (Chiguvi et al. 2017; Chiguvi 2023), the hotel industry (Musikavanhu, 2017), the Higher education sector (Makambe, 2016), retail shops (Prithivirajh, 2013), information technology (Chiguvi, 2016), the telecommunications industry (Selelo & Lekobane 2017), insurance industry (Marumoagae & Pansiri 2019) and the food industry (Manwa, 2011). However, the literature failed to confirm any previous studies conducted on service quality in the agricultural industry in Botswana. This study aimed to close that gap by developing an adapted SERVQUAL framework for poultry farming ASIs in Botswana, also applicable to other developing countries. Additionally, the study confirmed the relationship between ASI's service quality and poultry farming SMME's business performance.

A critical analysis of the reviewed literature on applications of SERVQUAL in various industries and countries, including Botswana, shows little evidence of focus on challenges faced by the various service providers as they render service to customers or the impact that such challenges have on the customers' business performance. Of all the reviewed literature on applications of SERVQUAL, only one study was found that focused on the challenges faced by internet service providers as they render service to corporate business customers and how such challenges affect these customers' business performance (Naidoo, 2016). This lack of existence of adequate and varied research on this area of service quality is clear evidence of a gap in the literature on this theory of service quality in general.

All studies on SERVQUAL conducted in Botswana focused mostly on establishing the gaps between perceived service quality and expected service quality and making recommendations on service dimensions with negative gaps. There is therefore a clear knowledge gap on the challenges faced by service providers as they render services to customers and how such challenges affect customer's business performance. This study aims to close that gap by identifying challenges faced by ASIs as they render services to small-scale poultry farming SMMEs and establishing the impact such challenges have on customers' business performance. These challenges, if identified and if workable solutions are suggested, may be applied to other service industries in Botswana and beyond.

3.16 : CONCLUSION

Principles in Klopper and Lubbe's (2012) article "Using Matrix Analysis to Achieve Traction, Coherence, Progression and Closure in Problem-Solution Oriented Research" guided this literature review. Abstracts and findings of articles were scanned and only those relevant to this study were selected (see the Concept Matrix in Annexure O).

This chapter reviewed poultry production from a historical approach. Most scholars concurred that poultry meat is the most widely consumed type of meat, and poultry farming remains one of the basic agricultural businesses in developing countries. The chapter further presented a review of related literature on SMME growth and sustainability. Factors that hinder the growth and development of SMMEs globally, in Africa, in the SADC and in Botswana were analysed. Several authors concurred that lack of funding and finance, poor infrastructural development, lack of training in business skills and the availability and affordability of basic inputs are the main factors that hinder the growth of SMMEs in developing economies.

It was also evident that poultry farming in Botswana has declined. The poultry farming value chain is marginally polarised, mostly dominated by a minority of large-scale farmers whilst the small-scale producer is suffering. Several scholars agreed that the productivity and profitability of Botswana poultry farming SMMEs are directly linked to the quality of service they receive from ASIs. The use of the SERVQUAL instrument in the agricultural sector was reviewed with some case studies of India, Greece, and Ghana, and it was revealed that the use of SERVQUAL in Botswana is still at its infancy. The literature failed to reveal evidence of any assessment of ASIs' service quality on poultry farming SMMEs in Botswana and the impact of service quality on these enterprises' performance. There is clearly a gap in the body of knowledge in this space and this study concentrated on filling this gap.

The chapter also critically reviewed several service quality models found in literature, such as the SERVPERF model, SERVQUAL model, Teas EP&NQ model, Dabholka's attribute and overall effect model, Phillip Haztell's PCP attribute model, GM, ROM, and several other models. Despite its criticism by some researchers and authors, such as Cronin and Tylor (1992), Dabholka et al. (2000) and Buttle (1996),

SERVQUL still remains the most sought-after model for measuring service quality because it is generic in nature, and it can be applied in diverse service industries (Naidoo 2016).

The next chapter outlines the research design and methodology. The research philosophy to guide this study, research methods and the research strategies are discussed in this chapter. The design of the modified SERVQUAL instrument, sampling procedures, data collection procedures and processes are also outlined and discussed in this chapter.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 **INTRODUCTION**

The previous chapter provided an extensive review and analysis of existing literature pertaining to this research. This includes a historical background of poultry farming and a review of the world poultry production, a critical analysis of the current Botswana poultry farming value chain, a critical review of several service quality models, the rationale for adapting SERVQUAL for this study and a review of some studies conducted in this industry. In addition, the literature review chapter suggested a gap in existing knowledge and helped to provide the rationale for the envisaged contribution of this study's findings to the existing knowledge on SERVQUAL. It is used in the poultry farming industry in Botswana and other developing economies.

The purpose of this chapter is to provide a clear and detailed description of the research design, methodology, analysis, limitations, and ethical considerations. The chapter begins with the research design and philosophical assumptions that underpin this study. To develop an ASI service quality measurement instrument in Botswana and understand the impact of service quality on performance of poultry farming SMMEs in developing economies, the researcher chose to use the mixed methods research approach.

This chapter describes both phase 1 (qualitative) and phase 2 (quantitative) of this research. The chapter further elaborates on the actual research process that includes sampling techniques, data gathering methods, qualitative and quantitative data analysis and data design quality in each case as well as the ethical considerations of each phase.

4.2 **RESEARCH DESIGN**

Unquestionably, the research design and methodology are two of the most complex and mysterious of all the phases of the research, and those that receive the least thoughtful discussion in the literature of the research (Terrell, 2012).

Creswell et al. (2011) refer to research design as a blueprint for the collection, measurement, and analysis of data. The design helps researchers to allocate their resources wisely by choosing appropriate research instruments (Zamzam et al. 2022). On the other hand, Gunawan (2015) sees the research methodology as a planned sequence of the entire process involved in conducting research while according to Pearson et al. (2016), research methodology is a planned architecture of inquiry as it highlights the key issues related to carrying out a qualitative or quantitative research.

To achieve the objectives of this study and to answer the research questions, this research followed the mixed-methods approach by incorporating both qualitative and quantitative research methods (see Figure 4.1). Mixed-methods research is formally defined as a form of research where qualitative and quantitative research techniques, methods, approaches, and language are combined into a single study (Bergman, 2011). The qualitative side of this research aimed at providing a deeper insight and understanding of the identified problem whereas the quantitative side gave a more general understanding of the research problem (Amjad et al. 2020).

Mixed-methods research is an attempt to legitimate the use of multiple approaches in answering research questions (Terrell, 2012). It is an expansive and creative form of research whereby the two methods, qualitative and quantitative, complement the weaknesses and limitations of one method by the strengths of the other method (Pearson and Vossler, 2016) to provide a comprehensive understanding of the research problem (Gunawan, 2015). This approach used the qualitative phase to inform the design of the quantitative phase, thereby enhancing the validity of the study.

The main aim of this study was to design an adapted SERVQUAL framework for poultry farming ASIs in Botswana. To achieve this objective, a SERVQUAL questionnaire was developed and used to collect data from participants. The mixed-methods approach was deemed to be the most appropriate method since the qualitative phase could be carried out first, the results of which could be used to develop and refine the modified SERVQUAL instrument for use in the quantitative phase. A mono-method was not suitable for achieving the aim of this research and answering the posed research questions.

4.2.1 : A conceptual framework for the research design

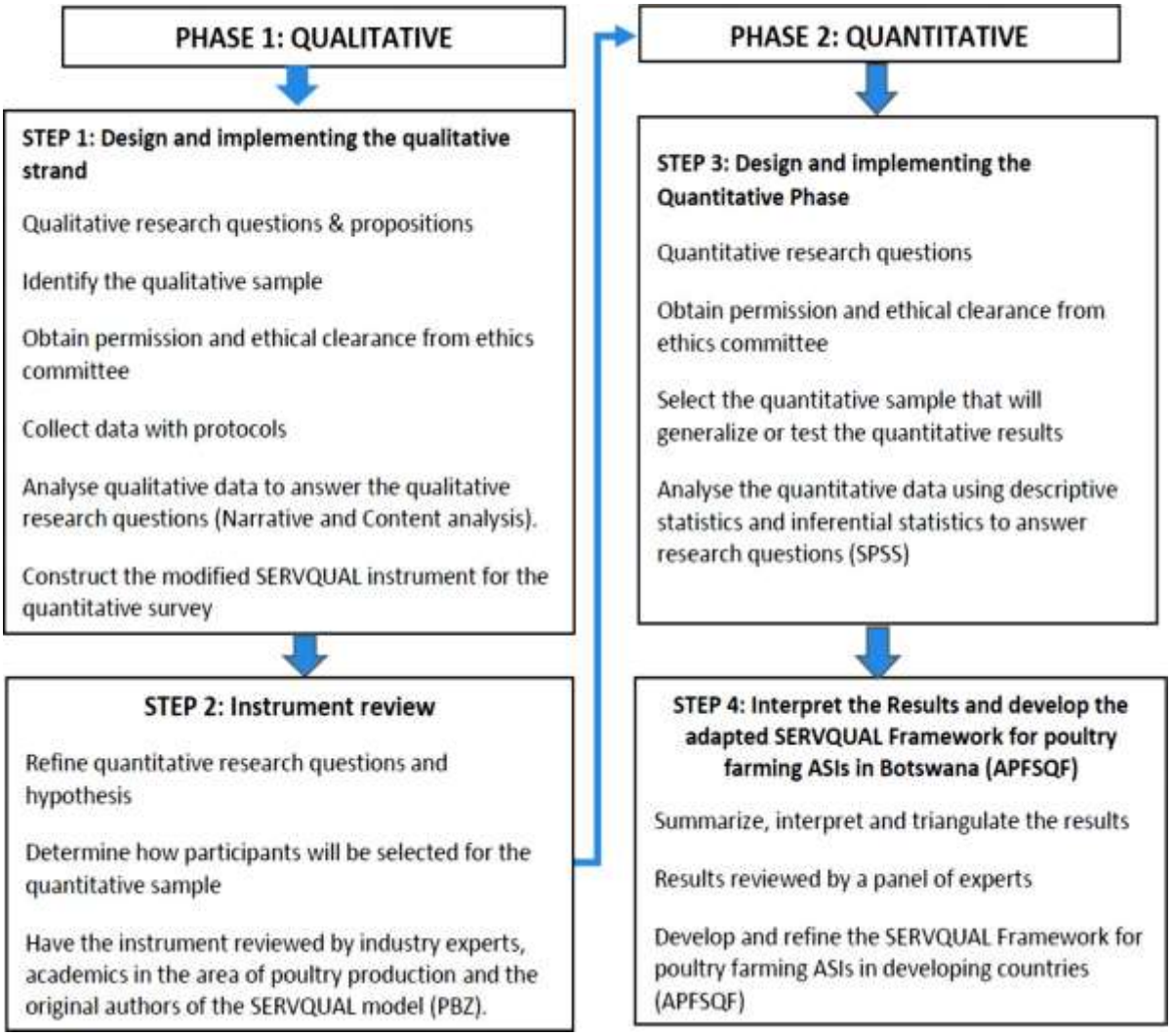

Figure 4.1**:** A conceptual framework for the research design

Source: Researcher's construct

4.3 **PHILOSOPHICAL ASSUMPTIONS**

The research process should have a philosophical grounding; therefore, this study adopted epistemology, consistent with the views of Klopper and Lubbe (2012), who purport that research starts at a stage of relative ignorance and progresses to a limited understanding of the research problem, finally leading to a clear understanding of the topic. A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed, and used (Saunders and Tosey, 2013). There are two major research philosophical schools of thought,

namely epistemology which relates to the theory of knowledge and what knowledge is acceptable (Bergman, 2011), and ontology which is concerned with assumptions researchers may have about the workings of the world (Perner 2016).

With epistemology as the research paradigm underpinning this research, this study adopted critical realism and pragmatism research philosophies. Being a philosophical position associated with scientific inquiry (Thanh et al. 2015), realism advocates that reality exists independently of the mind. Furthermore, this research philosophy asserts that what a researcher's senses show him or her is the truth, although the research is also influenced by other world views and their own experiences (Saunders and Tosey, 2013). On the other hand, pragmatism is a philosophy of common sense, using human purposeful inquiry as a focal point (Cresswell and Clark, 2011).

Critical realism is one of the philosophies underpinning this study instead of direct realism because of its nature, being problem-solving research. It seeks to carry out an in-depth analysis of the current factors that hinder growth and business performance of poultry farming SMMEs in developing economies. Furthermore, impact of ASI's service quality on this performance is analysed. The realist view in this study related to Botswana poultry farming SMMEs' (customers) real perceptions of ASIs' service quality. Research participants in the quantitative phase of this research were made up of the poultry farming SMMEs. The research was carried out through the completion of an adapted SERVQUAL questionnaire that was developed with input from the findings of interviews in the preceding qualitative phase as well as extant literature review.

On the other hand, pragmatism is the other research philosophy underpinning this study since it involves inquiry, concepts formation and hypothesis (Onwuegbuzie et al. 2016). Bergman (2011) furthers asserts that pragmatism mainly concentrates on empirical measurements that have practical applications in solving the research problem. The pragmatist view in this research relates to the collection of quantitative data using the adapted SERVQUAL questionnaire and hypothesis testing. The practical application in this case is the development of the envisaged SERVQUAL framework for poultry farming ASIs, applicable to Botswana and other developing economies.

4.4 : RESEARCH METHODOLOGY

The researcher chose to employ the survey and case study methods in this research. The reason for adopting the survey research strategy is that this study involved collecting data in structured form, using structured questionnaires, from a finite sample drawn from the whole population (Ebneyamini 2022). On the other hand, this research was a case study by nature since it focused only on the small-scale poultry farming industry amongst the diverse SMMEs in Botswana.

The alignment of research questions to research problem was critical to ensure that the research always remained focused and that the research would achieve what it was intended to (Klopper and Lubbe, 2012). To develop and confirm a service quality measurement instrument for ASIs in developing countries, and to understand the impact of ASI's service quality on poultry farming SMME's business performance, this research aimed to answer the following questions:

Q1. What is the impact of ASIs' service quality on small-scale poultry farmer's business performance in Botswana?

Q2**.** To what extent do challenges faced by ASIs as they render services to small-scale poultry farmers affect the farmers' business performance?

Q3. How do business customers appraise ASIs' service quality in Botswana, and what strategies exist to improve the quality of service delivered to small-scale poultry farmers by ASIs?

Q4. What is the gap between small-scale poultry farmers expected service quality and the actual quality of service they receive from ASIs?

4.4.1 Table 4.1: Linking research questions to methods and data sources.

Research Question	**Targeted respondents and methods**	**Justification**
What is the impact of ASIs' service quality on small-scale poultry farmer's' business performance in Botswana?	Business customers of ASIs in Botswana (small-scale poultry farmers). **Questionnaires/SERVQUAL instrument** ASI management; **Semi- structured In-depth Interviews**	Questionnaires could be used to collect large quantities of data from many ASIs over a short period. Data could then be scientifically analysed using SPSS software. In-depth interviews using a structured interview guide would provide detailed information on ASIs' service quality as they render service to poultry farming SMMEs.
To what extent do challenges faced by ASIs as they render service to small-scale poultry farmers affect the farmers' business performance?	ASI management; **Semi-structured In-depth interviews**	Semi-structured in-depth interviews could be used to obtain detailed information on ASI management. Furthermore, questionnaires could be used to collect large quantity of data from many ASIs over a short period. Data could then be scientifically analysed using SPSS software.

How do business customers appraise ASIs' service quality in Botswana? What strategies exist to improve quality of service delivered to small-scale poultry farmers by ASIs?	ASI management; **Semi-structured in-depth interviews**	Data could be collected from ASIs through in-depth interviews. This qualitative data could then be analysed. Development of the modified SERVQUAL questionnaire for the data collection from business customers and employees of ASIs would be informed by the qualitative results.
What is the gap between small-scale poultry farmers' expected service quality and the actual quality of service they receive from ASIs?	Business customers of ASIs (poultry farming SMMEs). **Questionnaires/SERVQUAL instrument**	A large quantity of data could be collected from many ASIs over a short period. Furthermore, questionnaires could be easily quantified through SPSS software and data could be scientifically analysed. Further detailed information could be obtained through interviews with ASI management and employees, and then analysed.

4.4.2 **Propositions and Hypothesis**

In this section, the main findings from extensive literature review were combined and propositions and hypothesis were formulated. Overall, this study focused on the questions whether Botswana ASIs' service quality has an impact on small-scale poultry farmers' business performance, and whether there is a gap between poultry farming SMMEs' expected service quality and the quality of service they receive from ASIs.

Previous studies in various industries in Botswana and beyond found that there is a negative gap between perceived service quality and expected service quality along most service dimensions under investigation. The literature consulted confirmed that service quality studies were conducted in Botswana using the SERVQUAL model in industries such as the banking industry (Chiguvi et al. 2017), the hotel industry (Musikavanhu, 2017), the higher education sector (Makambe 2016), retail shops (Prithivirajh, 2013), information technology (Chiguvi, 2016; Chiguvi 2023) and the food industry (Manwa, 2011). The literature, however, failed to confirm any previous studies conducted on service quality in the agricultural industry in Botswana; this study intends to fill the gap in knowledge in this area.

In all the reviewed literature on the applications of SERVQUAL in Botswana and beyond, only a few studies (Naidoo 2016; Reddy et al. 2013) were found that focused on the challenges faced by service providers as they render service to business customers and how such challenges affect these customers' business performance. Most researchers only focused on establishing the existence of gaps in service quality on business customers and giving recommendations for the improvement of certain service quality dimensions. This lack of existence of adequate and varied research in this area of the quality of service to business customers is clear evidence of a gap in the knowledge on this aspect of service quality. Further research on service quality in the agricultural sector will add value to the literature on service quality in general and small-scale poultry farming business customers.

Service quality studies conducted regarding Greece's Ministry of Agriculture by Kontogeorgos et al. (2014), on Indian private and government ASIs by Reddy et al. (2013) and in Kumisa Metropolis, Ghana's agrochemical inputs dealers by James et

al. (2012) all focused on establishing gaps between expected service quality and perceived service quality. These studies also revealed the relationship between ASIs' service quality and the customer's business performance. However, the studies did not investigate challenges faced by the ASIs as they render services to business customers. Nor did they investigate the impact such challenges have on the customers' business performance. Further research was required in this context; this study endeavoured to fill this gap in the literature on service quality in the agricultural industry in developing economies.

The current Botswanan poultry farming value chain was also analysed and several researchers (Majama 2017, Bagopi 2014; Grynberg and Motswapong 2016; Masole et.al 2016; Moreki 2011; Moreki 2015; Ncube et.al 2016) shared the same view that a few large- scale producers who control the value chain from production to the market dominate the industry. This leaves the small-holder farmer vulnerable and finding it difficult to survive, calling for ASIs to focus their attention more on this ailing sector of the poultry farming industry in Botswana.

The following proposed poultry farming ASI service quality framework (Figure 4.2) provided an overview of the variables included in this study. The service quality dimensions were examined as the predictor variables whereas the SMME business performance areas as the dependent variables. This conceptual model would be modified to include only those service quality determinants appraised by the findings of the qualitative research. These service quality dimensions motivated the development of the adapted SERVQUAL questionnaire that was used to collect quantitative data from the customers of the ASIs, namely the small-scale poultry farmers.

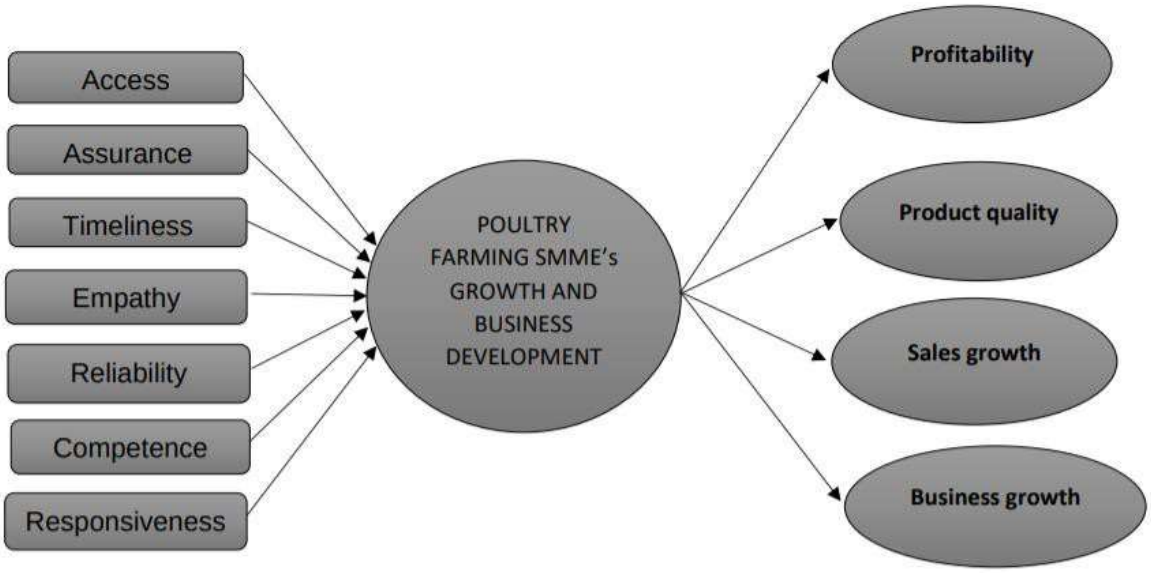

Figure 4.2**:** An ASI service quality framework showing study variables included in this study.

Source: Author's/Researcher's construct (2020)

4.4.2.1 : Propositions for the qualitative research

Propositions for the qualitative research were derived from research gaps identified in the literature (sections 3.15 and 3.16) and guided by the research question and sub-questions stated in the introduction chapter (sections 1.4 and 1.4.1). The main research questions are whether Botswana ASIs' service quality has an impact on small-scale poultry farmers' business performance, and whether there is a gap between poultry farming SMMEs' expected service quality and the quality of service they receive from ASIs.

Proposition 1

Agricultural services institutions' service quality has an impact on poultry farming small, micro, and medium enterprises' business performance in Botswana and other developing economies.

Proposition 2

There are challenges faced by ASIs as they render service to small-scale poultry farmers, and these challenges negatively affect the poultry farming enterprises' business performance.

Proposition 3

Business customers have a way of appraising ASIs' service quality in Botswana, and strategies exist to improve the quality of service delivered to poultry farming SMMEs by ASIs.

4.4.2.2 : Research hypotheses for the quantitative phase

Research hypotheses for the quantitative research were derived from research gaps identified in the literature (sections 3.15 and 3.16) and guided by the research question and sub-questions from the introduction chapter (sections 1.4 and 1.4.1). The propositions outlined in section 4.4.2.1 also motivated the following hypotheses:

Table 4.2: Hypotheses

Research Question	**Hypothesis**
What is the gap between small- scale poultry farmers expected service quality and quality of service they receive from ASIs?	**H4:** There is an overall weighted negative gap between poultry farming SMMEs' expected service quality and the actual quality of service they receive from ASIs in Botswana.
What is the impact of ASIs' service quality on the growth and business performance of poultry farming SMMEs in Botswana?	**H1a:** ASIs' service quality positively impacts poultry farming SMME's sales. **H1b:** ASIs' service quality positively impacts poultry farming SMME's profitability. **H1c:** ASIs' service quality positively impacts poultry farming SMME's business growth. **H1d:** ASIs' service quality positively impacts poultry farming SMMEs' product quality.

4.4.3 : An overview of the alternative research methods

It is worth noting that other research methodologies or strategies were considered, such as the participatory action research (PAR), experiments, desktop studies, grounded theory, and ethnography. However, these strategies were not relevant or appropriate to address the research questions and to conclude the findings. PAR is time-consuming and costly, requires more energy and commitment to undertake the activities and calls for a high level of trust amongst research participants (Pearson and Vossler 2016). Furthermore, the ideal participation becomes a challenge when participants with different levels of power, status, influence, cultural practices, traditions, and knowledge come together (Shannon-Baker, 2016). For these reasons, PAR was not deemed an appropriate strategy for this research.

The desktop study involves the use of the Internet, online journals, and emails (Drost, 2011). The merits of this research strategy are that there is a pool of accessible data on the Internet, it is cost effective compared to primary data, there is no need for designing and undertaking a field study and it is less time-consuming (Creswell and Clark, 2011). However, the researcher could not employ this method because of the nature of the research participants, being small-scale poultry farmers, mostly located in rural communities and without any access to technologies such as the Internet.

4.5 : Research strategy

This research followed Terrell (2012)'s Sequential Exploratory Design as illustrated in Figure 4.6. This strategy entails the collection and analysis of qualitative data, the development of quantitative instrument, followed by the collection and analysis of quantitative data (Jacobs & Cornelius 2022).

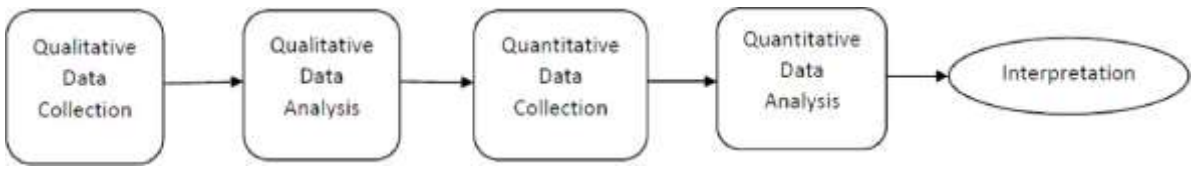

Figure 4.3: Mixed–methods design adapting Terrell's (2012) Sequential exploratory design.

Source: Terrell (2012).

According to Onwuegbuzie et al. (2016), this is also called the qualitative----QUANTITATIVE approach, whereby the qualitative method is given less priority

compared to the quantitative method, as indicated by the capital letters on the quantitative approach. The quantitative phase was given high priority in this research because it was more time consuming. This phase involved a larger number of small-scale poultry farmers, drawn from four districts in Botswana. On the other hand, the qualitative phase only involved in-depth interviews with the top managers of five ASIs based in cities across Botswana, and it was less time consuming.

To gather data on the impact of ASIs' service quality on small-scale poultry farmers' business performance, the challenges experienced by ASIs as they render service to customers in Botswana, the gap between customers' expected service quality and the actual quality of service they receive from these ASIs, the study commenced by interviewing top managers of selected ASIs in Botswana. In-depth interviews were conducted with these managers, thereby obtaining a deeper and richer understanding of challenges faced by ASIs as they render service to Botswana poultry farming SMMEs. Results of this qualitative phase were be used to appraise the service quality dimension by developing and refining the adapted SERVQUAL questionnaire that was used in the quantitative phase to gather data from small-scale poultry farmers.

The study followed a systematic, sequential process by first completing phase 1 of the research before starting phase 2. This method is generally used in creating instrumentation using a smaller group of participants, followed by collecting quantitative data based on the instrumentation developed (Amjad et al. 2020).

4.5.1 **Qualitative research phase**

In this study, phase 1 of this research was completed by the conducting of semi-structured in-depth interviews to collect qualitative data from top managers of five selected poultry farming ASIs in Botswana. Qualitative research is defined as any kind of research that produces findings not arrived at by means of statistical procedures. It is a rather research that produces findings arrived at from real-world settings, where the phenomenon of interest unfolds naturally (Zamzam et al. 2022). Zamzam (2022) further asserts that methods such as interviews and observations apply in the naturalistic (interpretive) paradigm, which is in qualitative research.

In qualitative research, the researcher is deemed to be the primary data collection instrument (Gunawan, 2015). The researcher in the qualitative phase of this research was more concerned with uncovering knowledge about the views of management of

the selected poultry farming ASIs about circumstances in which they find themselves and making judgements about whether those thoughts and feelings are valid.

4.5.1.1 **The qualitative research process.**

The development of the interview schedule was guided by Klopper and Lubbe (2013)'s questionnaire development matrix. In this regard, research questions were employed as a foundation for the definition of the initial interview schedule. This initial interview guide was further reviewed by the statistician for internal consistency, progression, overlaps as well as to ensuring that the interview guide and survey questionnaire were well aligned. This feedback was used to further revise and refine the interview schedule before using it to gather data from ASIs' managers.

In-depth interviews were subsequently conducted with ASIs' top managers. The services of a professional transcriber were sought to audio-record these interviews and transcribe them. The coding process and systematic content analysis were performed, searching for patterns, themes, and holistic features. Findings of this qualitative data analysis then played an instrumental role in developing the SERVQUAL questionnaire that was used to gather quantitative data in phase 2 of this research (Figure 4.7):

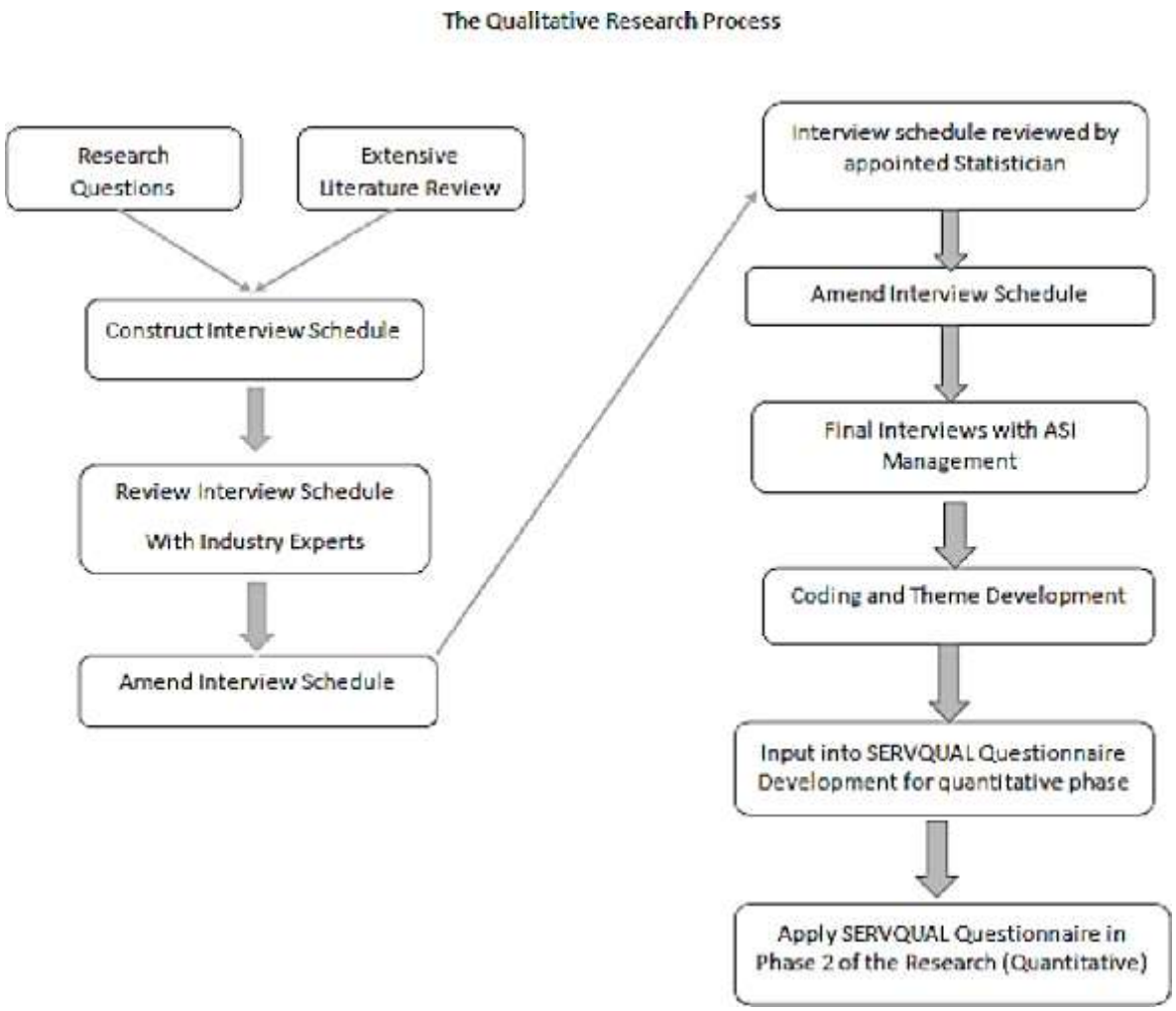

Figure 4.4: Outline of the process of the qualitative phase of this research.

Source: Author's/Researcher's? construct (2019)

4.5.1.2 : Description of the site of the study

The qualitative phase of this research was carried out through in-depth interviews with top managers of five ASIs. These ASIs are the Ministry of Agricultural Development and Food Security (MoA), the Citizen Entrepreneurial Development Agency (CEDA), the Botswana Agricultural Marketing Board (BAMB), the National Development Bank (NDB) and the Agri-shop Botswana. All these ASIs have their head offices in the capital city of Botswana, Gaborone, where the researcher is also based. This implied easy access to research participants and data gathering was relatively less costly because of the proximity of the research participants.

Of the above-mentioned ASIs, CEDA and NDB are responsible for the finance and funding of poultry farming SMMEs in Botswana, whilst the MoA is responsible for

entrepreneurial skills training and development (Grynberg and Motswapong, 2011). On the other hand, the Agri-Shop Botswana is one of the major suppliers of basic inputs such as day-old chicks, chicken feeds, feeding and slaughtering equipment and vaccines for poultry farming SMMEs in Botswana (Ncube et al. 2016). The MoA is the government ministry responsible for commercial poultry production at all scales in Botswana (BIDPA, 2011). The MoA is also responsible for the Young Farmers Fund and the Youth Fund, which are both arms of the government of Botswana responsible for promoting entrepreneurial and SME growth and development (Majama et al. 2017).

4.5.1.3 **Sampling**

To obtain a deeper, richer understanding of the challenges faced by ASIs and the management's view of the quality of service they render to their customers, a non-probabilistic sampling method was adopted, namely purposive sampling (Shannon-Baker 2016). This sampling approach was based on the factors such as the size of the ASI, location, and top management component.

Random sampling, which is probabilistic by nature, is commonly used in research studies since it allows researchers to display rigour, while at the same time allowing the research results to be generalised (Pearson and Vossler 2016). However, this approach was not applicable to this phase of this study as the aim of this qualitative research was not to generalise the results, but rather to provide deeper insights into and richer understanding of the research problem (Gunawan 2015).

The researcher identified at least five managers from each of the five ASIs involved in this study across all branches in the country. This makes the target population for this qualitative research phase to number about 25 possible participants. Initially, the researcher selected two top managers from each ASI to initiate the interview process, and then proceeded to apply snowball sampling through participants' referrals (Creswell et al. 2006). This method continued until data saturation was achieved after 12 interviews. According to Terrell (2012), data saturation is a point when no new information is obtained from research participants and the same concepts start to recur. Having achieved data saturation, the researcher then embarked on the transcription, coding, and content analysis of the qualitative data.

4.5.1.4 **Role of the researcher**

The researcher is the primary data collection instrument in qualitative research (Broadhurst et al. 2012). In this study, the researcher and the research team were responsible for carrying out in-depth interviews with top managers of the selected ASIs. The research participants who were interviewed in this research phase are key individuals, referred to as top management in their organisations; hence, it was critical to be cognisant of their time. Considering this, the researcher arranged interview appointments in advance and made sure to honour the appointments and be punctual, readily equipped with the recording instrument, interview schedule and a notepad. Owing to the COVID-19 restrictions and protocols, most of the interviews were conducted virtually through various video-conferencing platforms. More details on how the interviews were carried out are provided in Chapter 5.

When engaging in conversations or interviews of this nature, the confidentiality and transparency of the research are significant elements (De Lisle 2011). In this study, the researcher begun each interview by explaining the purpose of the research, the participant's role, the expected duration of the interview and the risks and benefits associated with this research. The researcher also explained the confidentiality clauses and obtained oral consent from the research participants (Ebneyamini 2022). Whilst they have the responsibility to keep the interviewee at ease and relaxed, the interviewers must also ensure that they are in control of the whole interview process (Creswell and Clark 2011).

Furthermore, it was the researcher's responsibility to ensure that all transcripts were anonymised, and the participants' identities were protected (Drost 2011). During the interview process, the researcher also ensures that questions were asked in a neutral manner, not letting his own opinions and thoughts to influence the participants' responses.

4.5.1.5 **Data collection**

Qualitative was collected data through in-depth interviews with top managers of ASIs, who are key individuals in the industry. This process ensured that valuable insights would be gained into these managers' perspectives, beliefs, and extensive experiences regarding the challenges ASIs face when rendering services to small-scale poultry farmers. Additionally, ASIs' views were sought regarding the gaps in the

quality of service they render to their customers and the customers' expected service quality. Taking into consideration the social distancing protocols imposed by the COVID-19 pandemic, all interviews were conducted through online video platforms such as Microsoft Teams, Zoom, Google Meet, Cisco Webex, and Skype. All interviews were audio-recorded with the consent of the research participants. This was done to ensure that data could be captured accurately before transcription.

4.5.1.6 : Systematic content analysis and narrative analysis

The interviews were audio-recorded and then professionally transcribed and coded. The transcribed responses were examined on a question-by-question basis, making it easier to compare responses and identify trends. Systematic content analysis, narrative analysis, emerging themes analysis, quotable quotes analysis, word frequency analysis and word cloud analysis were the analysis techniques used for the qualitative data analysis. The trends established were broken down into codes, followed by content analysis to establish key themes (Bergman 2011). The seven service dimensions were appraised during the interviews and the appraisal played a vital role in the development of the SERVQUAL questionnaire later used in the quantitative phase to gather data from small-scale poultry farmers.

4.5.1.7 : Issues of trustworthiness in conducting qualitative research

In qualitative research, trustworthiness refers to the credibility, applicability, dependability, conformability, and authenticity of a research (Onwuegbuzie et al. 2016). These factors, according to Bergman (2011), are important to consider when performing qualitative research to ensure rigour in the study.

Credibility

The interview guide was subjected to a rigorous review process by experts in the industry such as top managers of ASIs as well as Botswanan Government's Agricultural Extension Officers. This was done to ensure that questions were suitable for the targeted audience and would be appropriate to achieve the desired outcome. The main aim of the interview guide was to reveal a deeper understanding of the identified research problem.

Dependability

This study followed a clearly laid out research design that described how the research would be carried out. The methodology, data gathering, analysis and interpretation steps were clearly articulated. By following a research design and clearly defined steps, the researcher would ensure make it easier for other future researchers to replicate this study to achieve similar results, allowing them to build on the study.

Conformability

Credibility of a study is usually measured through confirmation (Pearson and Vossler 2016). To ensure that researcher bias was eliminated and that findings of this research were not influenced by the researcher's individual tendencies, the in-depth interviews were analysed through a rigorous, systematic coding process. Concurrently, the transcriber, who is independent of the researcher, performed the same process and several iterations of the codes were conducted before the two parties agreed upon a final set. Furthermore, emerging themes were discussed by the research team members (supervisor and co-supervisor) who have palliative and qualitative research expertise in an open process where assumptions could be challenged, and consensus reached.

Applicability

Applicability, according to Gunawan (2015), refers to the ability of the study to be generalised and transferred to other contexts. This is a form of external validity and conformability, which is largely an issue of presentation. To ensure transferability, the process was clearly, and could be replicated by other researchers in other developing economies. Furthermore, the findings of this research can be used in other settings, other industries, and other countries globally.

Authenticity

Authenticity refers to measuring the trustworthiness and fairness of research (Pearson and Vossler 2016). To minimise bias, all interviews were recorded and transcribed so that the participants' responses could be fairly and accurately described. In addition, coding was performed and compared by both the researcher and an independent resource to ensure reliability.

4.5.1.8 **Ethical considerations in Qualitative Research**

Research is a process of creating knowledge in one form or another to benefit the concerned people, organisations, or society at large (Gunawan 2015). The ethics of science concerns what is wrong and what is right in the conduct of research. According to Creswell (2011), ethics of science refers to morality in the creation of knowledge as determined not only by the scientific society, but also by society at large.

The pursuit of truth and knowledge using qualitative research is known to have some ethical pitfalls because of the close involvement of the researcher and the research participants (Amjad et al. 2020). Considering this, submissions were made to the University of South Africa Graduate School of Business Leadership's Research Ethics Review Committee (RERC), who, after an extensive review, approved the researcher's Ethical Clearance application and issued an Ethical Clearance certificate (see ANNEXURE A).

Since the main aim of this research is to develop an adapted SERVQUAL framework for ASIs in Botswana and other developing economies, the original authors of the SERVQUAL model, Professors Parasuraman, Berry and Zeithaml were consulted first. Permission to adapt the SERVQUAL model was requested, and it was granted by Prof. Parasuraman (see ANNEXURE B). Furthermore, the developed adapted SERVQUAL questionnaire for the poultry farming industry was sent to the original authors of SERVQUAL for review to ensure its suitability in the agricultural industry before being used in the field. Data collection only commenced after the ethical clearance certificate had been issued. To comply with ethical considerations in this study, the researcher ensured the following:

Informed consent

Informed consent is essential to ensure that individuals being studied are aware of what the research entails, as well as their involvement in the study. Prior to the interviews, the researcher secured consent from all respondents (see ANNEXURE C), starting with the gatekeeper's or institutional permission from all participating ASIs. Furthermore, the researcher ensured that all participants were made aware of the purpose of the research, what is expected of them, the approximate amount of time it could take to complete the interview, and the risks and benefits of the research. The participants were also informed that participation in the interviews was voluntary and

that participants could opt out at any stage of the interview process. In addition, the participants' permission was requested to audio-record the interviews so that their responses could be accurately documented and described.

No harm

Qualitative researchers are guests in the private space of the world; their manners should be good and their code of ethics strict (Gunawan 2015). Those whose lives and expressions are portrayed may risk exposure and embarrassment, as well as loss of standing, employment, and esteem (Pearson and Vossler 2016). It is therefore the researcher's responsibility to ensure that the respondents clearly understand the limits of access initially agreed on (Jacobs & Cornelius 2022).

According to the researcher, there is no anticipated harm that could occur because of anonymous participation in this research.

Privacy and anonymity

It is the researcher's responsibility to ensure and maintain participants' privacy, confidentiality, and anonymity during the research process (Amjad et al 2020). At the beginning of each interview, the researcher assured the participants of his commitment to confidentiality, privacy as well as anonymity. Furthermore, the researcher clearly explained that only summarised, aggregated results of the study would be provided which should in no way link any participant to a particular response. This was done to protect the identity of the participants. The researcher also anonymised the transcriptions by removing all content that could identify the research participants.

Data Interpretation

To avoid researcher bias when interpreting the data, a systematic coding process was followed. Furthermore, the transcriber, who is independent from the researcher, was requested to code the data concurrently to ensure the codes are consistent and valid. After comparing and matching the two sets of codes, those that did not match were isolated and further examined by both the researcher and transcriber until a final set of codes was agreed on. Several iterations were carried out during this rigorous coding process until the final codes were transferred into key themes. The key themes are further examined in the findings chapter.

4.5.1.8: Bias during the qualitative phase

Bias is defined as an error during the design or conduct of a researcher, which could be intentional or unintentional (Smith and Noble 2014). Zamzam et al. (2022) define bias as any error in the design or conduct of research that could lead to a conclusion which is different from the truth. Therefore, bias affects the validity and reliability of a research study.

During the qualitative phase of this study, reporting bias could occur during the in-depth interviews carried out with top managers of ASIs. To avoid bias when interpreting the data, a systematic coding process was followed, and the coding was done by a professional, independent transcriber. In addition, premature closure of the selection of participants before data analysis finishes could affect the validity of the qualitative phase of this study. This was avoided by continuing to recruit participants until no new information was obtained and data saturation was achieved. Data saturation in this phase was achieved after having interviewed 12 research participants. This research also used purposeful sampling of top managers of ASIs to be interviewed, thereby reducing bias as the sample is consistent to meet the aims of the study.

4.5.2 **Quantitative research phase**

Quantitative research aims at explaining phenomena by gathering numerical data and analysing those data using statistics (Onwuegbuzie et al. 2016). The major characteristics of the traditional quantitative research are a focus on deduction, confirmation, hypothesis testing, explanation, prediction, standardised data collection and statistical analysis (Bergman 2011).

In this phase of the study, responses were solicited from customers of ASIs (small-scale poultry farmers) selected from four districts of Botswana using an electronic adapted SERVQUAL questionnaire administered through the Dooblo Survey to go Application which is compatible with android, IOS and other operating systems. This method was adopted instead of paper-based questionnaires because of COVID-19 travel and social-distancing restrictions. Most poultry farming SMMEs are mainly located on the outskirts of cities and in rural communities. Though this method was anticipated to be costly owing to travelling and lodging costs for the field workers during the completion of the questionnaire, it enabled the results to be generalised since data

was collected from a sizeable group (Noble and Smith 2015). Furthermore, this approach is more reliable since a standard questionnaire was used and digitally completed by the customers. The questionnaire collated the responses from multiple respondents and allowed for integration of the raw data into a statistical tool called Statistical Package for the Social Sciences (SPSS) for analysis.

4.5.2.1 : The quantitative research process.

Appraisal of the seven service quality dimensions as well as preliminary analysis of the qualitative data from the interviews contributed to drawing up appropriate questions during the quantitative questionnaire development. This questionnaire was sent to the statistician for review and validity checking for statistical analysis purposes. The statistician further checked the survey questionnaire to ensure that it was well aligned with the interview guide for triangulation purposes. The statistician also checked the survey questionnaire for internal consistency, progression, overlaps and gaps in the instruments.

The draft questionnaire was also sent to the original authors of the SERVQUAL model, professors Parasuraman, Berry and Zeithaml, to check the adapted SERVQUAL questionnaire's fit in the poultry farming industry. After review, Prof. Parasuraman issued positive feedback that the adaptation of the SERVQUAL dimensions and scale items to the poultry-farming context was appropriate (see Annexure J). Having received all feedback and after further scrutiny and corrections, the final questionnaire was then converted into the electronic format and uploaded on to the Dooblo Survey to go Application. This was done with extra care, ensuring that the questionnaire would not lose its originality before being used in the field to collect data from ASIs' customers, namely the poultry farmers. This process is shown in Figure 4.5 :

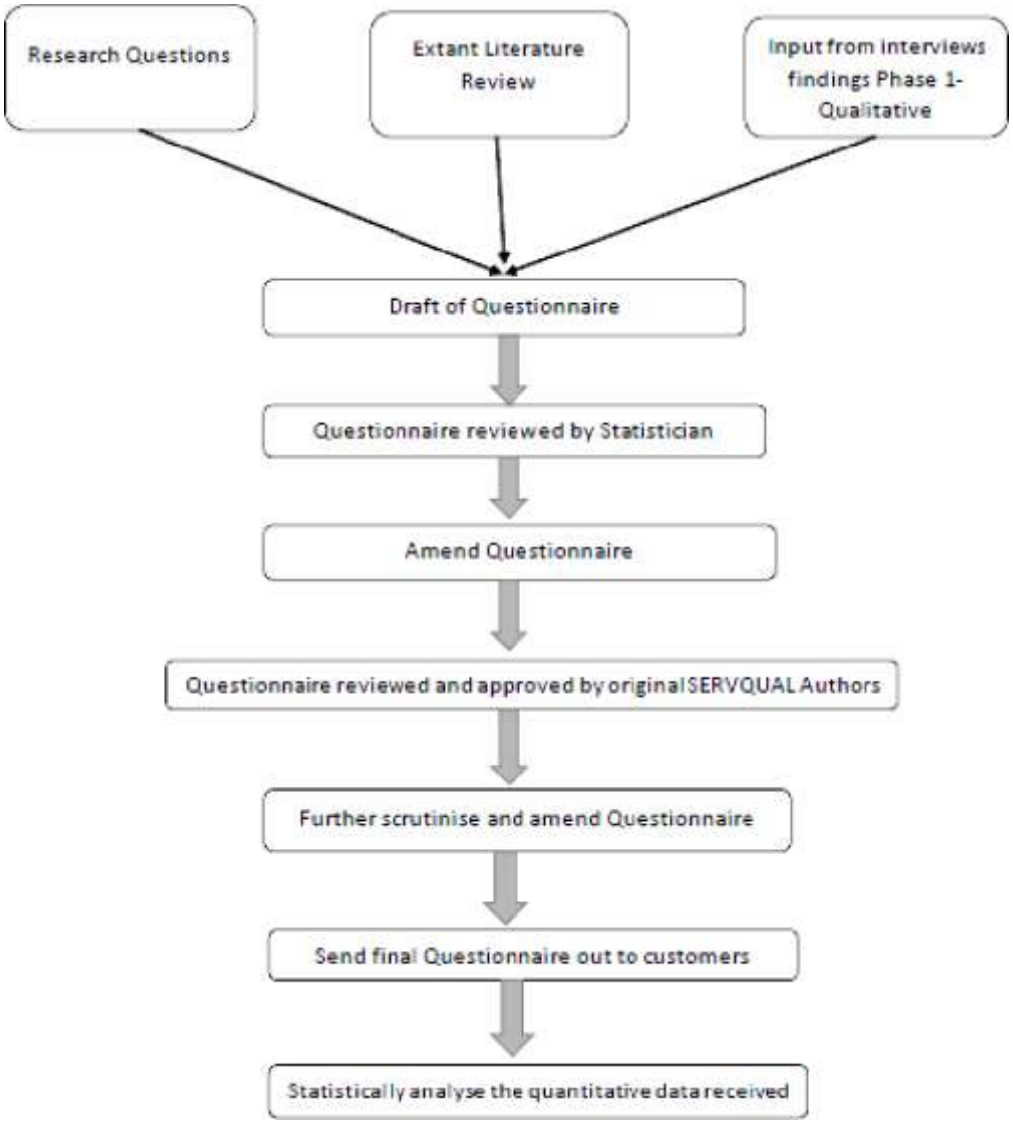

Figure 4.5: Outlines the quantitative process of this research

Source: Researcher's construct (2019)

The collected data from the questionnaires was statistically analysed using the SPSS tool. This strategy allowed the researcher to establish small-scale poultry farmers' expectations and perceptions of ASIs' service quality, and the impact this service quality has on the customers' business performance. Additionally, the questionnaire provided information regarding which ASIs' service quality dimensions are lacking and which service quality dimensions are more important to the Botswana ASIs' customers. Preliminary analysis of the ASI managers' interviews in the qualitative phase, where all the seven service quality dimensions were appraised also played an

important role regarding the order of importance of the service quality dimensions. This process led to the refinement of the draft adapted SERVQUAL questionnaire and dropping of the dimension 'timeliness' from the quantitative research. Through this SERVQUAL questionnaire, clarity was obtained on the relationship between ASIs' service quality and the poultry farmers' business performance as indicated in the business performance determinants of growth, sales, profitability, product quality and market share.

4.5.3.2 : The study population

The quantitative research focused on the small-scale poultry farmers (customers) in four of the nine administrative districts of Botswana. This is where the developed SERVQUAL instrument was used to collect quantitative data. The researcher is based in the capital city of Botswana, Gaborone, which is geographically positioned in such a way that there was easy access to all surrounding districts, towns, villages, and rural communities where the poultry farming SMMEs exist.

The following districts were covered: South-East, Sothern, Kweneng and Kgatleng. These districts are well spread out in such a way that the study ultimately covered the entire southern part of the country. This required the researcher and field workers to travel extensively in these districts and this phase was relatively time- consuming and costly. It was for this reason that the qualitative---QUANTITATIVE strategy of the mixed methodology was adopted, whereby the quantitative phase was given high priority over the qualitative phase.

4.5.2.2 : Sample and sampling procedure for the quantitative phase

A population is defined as a collection of all people a research study is designed to represent to generalise the results, whereas a sample is the actual portion of the population selected to represent the population in the study (Shannon-Baker 2016). A target population, according to De Lisle (2011) refers to the entire group of individuals or objects in which researchers are interested in generating their conclusions.

This case study involved small-scale poultry farmers in four districts of Botswana as its target population. For the selection of poultry farming SMMEs, the four districts in question are the South-East District, Southern District, Kweneng District and Kgatleng District. These have a common binding characteristic in that they belong to the same

cluster, which is the entire Southern Region of Botswana (Figure 4.6). The researcher is based in the city of Gaborone, which is in South-East District and there is easy access to the other four neighbouring districts in the Southern Region of Botswana.

Figure 4.6**:** Map of Botswana by administrative districts

Source: https://www.ontheworldmap.com%2Fbotswana%2Fadministrative-map-of-botswana

Information on the current and updated numbers of poultry farming SMMEs in each district was obtained from each district poultry production office through the principal veterinary officers in these districts. Lists with names, contact numbers, physical business locations and business sizes of poultry farmers were obtained. It was established that there is a total of between 400 and 650 active poultry farming SMMEs in all four districts. Based on the lists obtained, the numbers of farmers in each cluster/district were not evenly distributed, hence proportional cluster sampling was employed. Southern District contributed 35%, Kweneng District 20%, Katleng District 10% and South-East District 35%. Using the sample calculation formula, for a population of 400 farmers, assuming a .05 margin of error and an alpha level .05, the minimum required sample is 196. On the other hand, for a population of 650, assuming a margin of error of .05 and alpha level .05, the minimum required sample would be

242. Based on the above information and calculation, and with consultation with the statistician, a target sample of 200 participants for all four clusters was reached.

A proportional-cluster sampling technique was then followed to determine the number of the target sample to be obtained from each cluster. Snowballing then followed as the field workers obtained referrals and directions to the physical locations of neighbouring farmers in their locality from the participants they had already visited. This process was carried out until the desired total number of questionnaires (200) were completed as follows: South-East District -70 participants (35%), Kweneng District - 40 participants (20%), Katleng District - 20 participants (10%) and Southern District - 70 (35%).

4.5.2.3 **Data collection**

The researcher selected the questionnaire method to gather and store the necessary information required to answer the research questions and to satisfy the objectives of the study. This section addresses the data collection instrument, the research procedure, and the structure of the instrument.

The SERVQUAL instrument

Questionnaires can be viewed as a written version of an interview that contains a list of questions that a respondent can either answer in text or select from a list of responses provided to answer the question (Gunawan, 2015). Questionnaires can survey a wider audience within a short space of time and contribute towards the validity and representation of the sample (Terrell 2012). However, some of the disadvantages of using the questionnaire are that the participants can easily misinterpret the questions and the response rate could be low if there is no thorough follow-up or if the questionnaires are not immediately collected (Ebneyamini 2022).

This research made use of a modified SERVQUAL questionnaire with closed-ended questions, which were amended to ensure suitability for the agricultural industry. The questionnaires were administered in English and the research team was readily available in the field for any clarity needed by research participants. SERVQUAL is an already validated model; however, owing to the amendments to suit the agricultural industry, the Cronbach alpha was used to test for validity of the research instrument

and internal consistency of the items in each dimension, that is if the items measured the same construct. More details are provided on this in the quantitative findings, Chapter, section 6.

The modified SERVQUAL questionnaire was sent to the original authors, Profs. Parasuraman, Berry and Zeithaml for them to check its fit in the poultry farming sector before being sent to research participants. They also determined whether the adaptation of the SERVQUAL dimensions and scale items to the poultry-farming context was appropriate. The statistician also reviewed both the interview guide and SERVQUAL instrument to check for progression, internal consistency, overlaps and gaps. The statistician also checked the instruments to ensure that they were well aligned for the purpose of triangulation of results. The statistician further performed a validity check on the questionnaire for statistical analysis purposes.

A seven-point Likert scale was used to measure poultry farmers' expectations and perceptions of ASIs' service quality, and the impact this has on farmer's business performance. The Likert scale was used on six service quality dimensions or determinants drawn from the seven considered in the qualitative phase. The choice of dimensions to be included was motivated by the dimension appraisal done during the qualitative phase. Appraisal of the service quality dimension was carried out using one-sample t-test as well as the Wilcoxon signed ranks test. These two tests yielded the same results (see section 6.3). Timeliness was perceived by ASI managers to have no significant impact on customers' business performance; hence it was excluded from the adapted SERVQUAL questionnaire during the quantitative research. The Likert scale was selected since previous literature provided empirical evidence that confirmed that this scale is a prime measurement scale of opinions, attitudes, and beliefs in SERVQUAL studies globally (Karnstedt and Winter 2015).

The Structure of the Questionnaire

To achieve the objectives of the study, a questionnaire was developed with the following layout:

Section 1- Demographic questions

Section 2 - Expectations questions

Section 3 - Perceptions questions

Section 4 - Weighting of service quality dimensions
Section 5 - Impact of ASIs' service quality on customers' business performance.

Parasuraman et al. (1985) originally developed sections 2, 3 and 4 and these were modified to suit the agricultural industry, whereas the researcher developed sections 1 and 5.

4.5.3.5 **Data analysis procedures**

Specific statistical data analysis techniques were employed for the various sections of the research instrument to analyse the collected quantitative data. The Statistical Package for the Social Sciences (SPSS) software was used as the main data analysis tool for quantitative data. Further details on which statistical test was used for each section of the SERVQUAL instrument can be obtained in the introduction section of the quantitative analysis in Chapter 6.

SERVQUAL Data analysis

A modified version of the SERVQUAL instrument was used, consisting of two sets of 27 statements based on the six service quality dimensions selected from the seven, namely responsiveness, timeliness, reliability, assurance, empathy, access, and competence. Since this SERVQUAL scale was a modification and adaptation of the original developed to suit the poultry farming sector in developing economies, the statements differ in number from the 22 in the original SERVQUAL model by PBZ (1985). The seven dimensions used are also different from the five applied in the original model. The inclusion of service quality determinants used in the modified SERVQUAL questionnaire for the poultry farming sector was motivated by the findings from the in-depth interviews with ASIs' managers in the qualitative phase. This appraisal of service quality dimensions was applied to sections 2, 3 and 4 of the instruments and this led to the exclusion of timeliness (see section 5.7.5.1). The 27 statements were repeated, having been slightly modified to suit the poultry farming sector and to measure both expectations (E) and perceptions (P). This allowed for comparisons, gap calculations and analysis.

A seven-point Likert scale was used for both sets of statements, which range from 'Strongly disagree' to 'Strongly agree' to measure participants' responses. Gaps between expectations and perceptions (P-E) were then measured for the 27

statements, and the value of the gap could be in the range -6 to +6. A positive gap score indicates that the customer's expectation is higher than the service quality currently being experienced, whereas a negative gap score indicates that the current service quality surpasses what the customer expects.

Furthermore, PBZ (1991) concluded that service quality dimensions may carry different levels of importance. Hence participants should weight them by dividing 100 points among the various dimensions, assigning more points to dimensions deemed more important and fewer points to those deemed less important. For this study, the weighting of service quality dimensions was done by measuring the average importance of each dimension using a scale of 1-5, where 1 = 'Not at all important' whereas 5 = 'Extremely important'.

Satisfactory thresholds

Some previous researchers (Chiguvi et al. 2017; Singh et al. 2010; Handrinos et al. 2015) have used an 80% threshold to measure minimum customer satisfaction in each dimension of the SERVQUAL model. For sections 2, 3 and 4 of the research instruments, a seven-point Likert scale was used, hence the 80% threshold equates to a minimum score of 5.6 out of 7 for each service quality dimension. Any service quality dimension scoring 5.6 and above would be deemed satisfactory and all dimensions scoring below 5.6 would be classified as unsatisfactory.

Statistical tests for quantitative data-analysis

In collaboration with the appointed statistician, a list of statistical tests was compiled that are required to analyse the quantitative data. The services of qualified statistician were engaged to conduct the statistical tests using the SPSS software to ensure accuracy. Though the researcher also has extensive knowledge of statistics, it is a common practice for doctoral researchers to engage the services of an independent and qualified statistician to ensure accuracy and avoid possible bias during quantitative data analysis.

In this study, various descriptive and statistical tests (means, SD's, frequencies and tables, bar charts, and percentages) as well as inferential statistics (ANOVA, regression analysis, Mann Whitney U-test, Wilcoxon signed ranks test, Friedman's

Test, Cronbach's Alpha, and One-Sample t-tests) were used to analyse quantitative data. The list of statistical tests used for each section of the instrument and their function are further outlined in detail in the quantitative analysis in chapter 6, section 6.1.

4.5.3.6 : Issues of validity and reliability in quantitative research

In quantitative research, validity is defined as the precision with which the findings accurately reflect the data (Noble and Smith 2015). According to Gunawan (2015), validity tests whether the instrument measured what it is supposed to measure. On the other hand, reliability is when the research instrument produces the same results every time it is used (Bergman 2011). Bergman (2011) further asserts that reliability is the consistency of the analytic procedures, including accounting for personal and research methods biases that may have influenced the findings. In research, it is important for researchers to ensure that the research design has good reliability and validity (De Lisle 2011).

Validity of the research

The aim of this research is to establish any relationship between the predictor variable (ASIs' service quality as defined by the six service quality determinants: assurance, responsiveness, empathy, competence, access, and reliability) and the dependant variable (poultry farming SMMEs' business performance as defined by the five business perform ace determinants: growth, profitability, sales, product quality and market share). This would be a test of the internal validity of the research design. If the research findings indicate that the changes in customers' business performance (dependent variable) were because of ASIs' service quality (independent variable), then the research is deemed valid.

On the other hand, external validity of the research is concerned with how useful the findings are to more than one sample (Creswell et al. 2006). This is also seen as generalizability, which is the transferability of the findings to other settings and their applicability in other contexts (Onwuegbuzie et al. 2016). The questionnaire was sent out to small-scale farmers from different backgrounds, varying demographic locations and different economic settings. This diverse representation makes it possible for the research results to be generalised to poultry farming SMMEs in other developing economies. On the other hand, SERVQUAL is an already validated scale. Moreover,

data was collected using a modified SERVQUAL scale, a scale adapted from the already validated SERVQUAL Model by PBZ (1985).

Reliability of the data gathering instrument

To ensure reliability of the modified SERVQUAL instrument, the statistician cross-checked the questionnaire to determine whether there were any problems, gaps or overlaps and to ensure that the questions adequately covered the objectives of this research. The instrument was also reviewed by the original authors of the SERVQUAL model, Profs. Parasuraman, Berry and Zeithaml to check/verify? the scale's suitability for the poultry farming sector. The research team also checked the questionnaire and highlighted and corrected any grammatical errors, inconsistent content, incorrect interpretation of questions and possible repetitions (Gunawan, 2015).

Internal consistency of items in each service quality dimension

Internal consistency of items in each service quality dimension was tested using the Cronbach alpha coefficient. This test established whether the items in each dimension measured the same construct. In this regard, an alpha level of at least 0.7 implied that by combining the items, the averaging of scores across the items yielded a reliable composite measure.

Validity of the data gathering Instrument

Validity tests whether the instrument measures what it is supposed to measure (Gunawan, 2015). Sections 2, 3 and 4 are part of an already established and validated SERVQUAL model; however, after the modifications, the validity of all other constructs was confirmed through exploratory factor analysis (EFA). For the rest of the data gathering instrument, subject matter experts in the field were engaged as well as the original authors of the SERVQUAL model to verify the content validity of the questionnaire.

4.5.3.7 **Ethical considerations**

Ethics are concerned with the wellbeing of the research participants and the impact of the research on these participants (Terrell 2012). It is required of researchers to abide by the code of ethics of the institutions with which they are associated (Zamzam 2022). Considering this, the researcher is familiar with the Code of Ethics prescribed by the University of South Africa (UNISA). Doctoral students are required to perform their

research honestly and with integrity, ensuring issues of confidentiality, anonymity, informed consent, and disclosure are addressed as part of the research process.
The researcher completed the Ethical Clearance document and submitted it to the University Research Ethics Committee. This document was submitted together with all supporting documentation such as proof of consent from gatekeepers, participants, permission from original authors of the SERVQUAL model and other relevant bodies involved in this research.

Institutional approval

The researcher requested permission from various institutions as indicated below, and all permission letters were attached as supporting documents to the Ethical Clearance Application.

1. Gatekeepers at five ASIs, namely CEDA, BAMB, MoA, NDB and the Agri- Shop Botswana (see ANNEXURE C).
2. A research permit from the Government of Botswana. This permission was obtained from the Permanent Secretary, Ministry of Agricultural Development and Food Security (see ANNEXURE B).
3. Parasuraman, Zeithaml and Berry as founders of the SERVQUAL model. This permission letter was obtained (see ANNEXURE G).

Informed consent

Informed consent is when participants give their permission to participate in the research (Shannon-Baker, 2016). The researcher ensured that consent is obtained prior to the participants' completing the questionnaire by including a consent section at the beginning of the questionnaire. An information letter was also sent to the participants prior to the administration of the questionnaire to assure participants that they would not incur any risks, to outline the purpose and benefits of the research and to indicate that participation is voluntary, and a participant could withdraw from participation at any stage of the research (see ANNEXURE D)

Confidentiality and anonymity

Confidentiality, according to Creswell at al. (2011), entails a researcher' assuring the participants that their information will not be disclosed directly to third parties. On the other hand, anonymity ensures that information in the results cannot be traced back

to the participant. The researcher assured the participants' confidentiality and anonymity in the letter that was issued prior to the research instrument.

All research materials and responses are kept under lock and key, with access strictly limited to the researcher and the statistician to further ensure confidentiality. The statistician signed a confidentiality clause and should fully adhere to the code of ethics as prescribed by UNISA (see ANNEXURE H). The results are only presented in aggregated and summarised form and no participant or ASI would be named to uphold anonymity as promised. Only tables, graphs and texts are used to describe the results.

Compensation

Compensation is when a researcher offers participants cash or other reimbursement in exchange for participation in research (Gunawan 2015). In this study, the research team travelled to all the research sites and completed the questionnaires on the Dooblo Survey to Go application, ensuring that participants did not incur any costs whatsoever by participating in this research. For this and other ethical reasons, research participants were not compensated and a clause of 'No compensation' was included and clearly explained at the beginning of the questionnaire.

4.5.3.8 : Bias during the quantitative phase

During the quantitative phase of this research, measurement bias would occur if the modified SERVQUAL questionnaire has not been tested for validity and reliability. To ensure reliability of the SERVQUAL instrument, the statistician cross-checked the questionnaire to determine whether there were any problems, gaps or overlaps and to ensure that the questions adequately cover the objectives of this research. The instrument was also reviewed by the original authors of the SERVQUAL model Profs. Parasuraman, Berry and Zeithaml to check the scale's suitability for the poultry farming sector.

Selection bias could also occur during the quantitative phase of this study. This was mitigated by randomisation when selecting research participants from poultry farming SMMEs. This study followed a well-designed research protocol with an explicitly outlined data collection and analysis process to reduce bias.

4.6 **TRIANGULATION OF RESULTS.**

Triangulation refers to the practice of using multiple sources of data or approaches to data analysis to enhance the credibility and validity of the research findings through cross verification (Creswell and Clark 2011). Onwuegbuzie et al. (2016) assert that triangulation helps in testing the consistency of results obtained through the various instruments used in a research study. In this study, the interview guide was used to gather qualitative data from ASI managers and the adapted SERVQUAL questionnaire was used to collect data from small-scale poultry farmers (customers). Triangulation of findings from the two phases was done to ensure their validity and credibility (Perner, 2016).

4.7 **PANEL OF EXPERTS-CRITIQUE OF RESEARCH PROCESS AND FINDINGS**

A panel of experts comprising top officials in the Ministry of Agricultural Development and food security and senior academics from the Botswana University of Agriculture and Natural Resources convened to review and critique the research process and findings. The panel's findings and recommendations are incorporated in Chapter 6 to improve clarity of the research findings. The formation of the panel of experts involved recruiting the panel members and a facilitator, providing each panel member with the research project outline, and obtaining the feedback from the panel.

4.8 **CONCLUSION**

This chapter commenced by outlining the philosophical assumptions underpinning this study. The mixed–methods approach was selected to address the research questions and solve the research problem. The research followed the sequential exploratory mixed-methods strategy, which commenced with a qualitative part (phase 1), followed by a quantitative part (phase 2). The chapter further discussed the qualitative and quantitative research processes in detail, focusing on population and sampling, data collection, proposed instruments, data analysis, data and design quality, bias, and ethical considerations of each phase.

The next chapter presents the findings of the qualitative phase of the research, as well as a discussion of these findings. Furthermore, how findings from the qualitative phase are used to develop and refine the modified SERVQUAL instrument for the quantitative phase are discussed in this chapter. Triangulation and integration of qualitative and quantitative results lead to the development of the envisaged adapted Poultry Farming SERVQUAL Framework (PFSQF) for ASIs in developing countries.

CHAPTER 5

QUALITATIVE RESEARCH ANALYSIS

5.1 **INTRODUCTION**

The previous chapter provided a clear and detailed description of the research design, methodology, analysis, limitations, and ethical considerations. The chapter commenced with the research design and philosophical assumptions that underpin this study. The mixed methods approach was chosen to develop an ASI service quality measurement instrument in Botswana and to understand the impact of service quality on small-scale poultry farmer's business performance. Furthermore, the gap between the service quality expected by poultry farming SMMEs and the actual quality of service they receive from ASIs was established. As such, the study entails phase 1 (qualitative) and phase 2 (quantitative).

This chapter therefore reports on the content and narrative analysis of the qualitative interviews (phase 1) that were conducted with ASIs managers in Botswana.

5.2 **RESTATEMENT OF RESEARCH QUESTIONS**

To remain focused on the research problem being solved, the researcher used the research questions were used as a guide on the specific approach to data analysis. The link between research questions and data sources is presented in the research design and methodology chapter 4, section 4.4.1.

The key research questions are: **What is the impact of Botswana ASIs' quality of service on the small-scale poultry farmers' business performance, and what is the gap between poultry farming SMMEs' perceptions and expectations of service quality they receive from ASIs?**
Building on this key research question, the following sub-questions guided the study:

Q1. What is the impact of ASIs' service quality on small-scale poultry farmers' business performance in Botswana?

Q2**.** To what extent do challenges faced by ASIs as they render services to small-scale poultry farmers affect the farmers' business performance?

Q3. How do business customers appraise ASIs' service quality in Botswana?

Q4. What is the gap between small-scale poultry farmers' expected service quality and the actual quality of service they receive from ASIs?

5.3 **PREPARATION OF QUALITATIVE INTERVIEWS FOR ANALYSIS**

To perform the qualitative analysis, the interviews were transcribed from the audio-recordings and were stored in Microsoft Word format. Before analysis could be done, several procedures were undertaken:

Coding – The process of coding in the confines of qualitative research refers to assigning tags, names, or labels against data units in an interpretative manner. According to Saldana (2009), a code is a word or brief phrase that assigns symbolically an attribute for a portion of the transcribed interview. Coding entailed several steps which are highlighted below:

- Reviewing transcripts to familiarize with their content and diversity.
- Extracting themes and refinement of codes through an iterative process; and
- Final coding through carefully reading the transcripts and assigning codes in the margins and highlighting themes in the transcripts.

Further to this, word clouds were generated from specific themes that were aligned to the study objectives. Word clouds are a visual representation of an aggregated word count that is generated from the responses provided by the interviewees (Al Kabir et al. 2018). In addition, a word cloud visualises text in a way where the more frequently used words are highlighted through greater textual emphasis in the cloud. This process has been done through an online tool available on https://www.wordclouds.com/. The merits of using word clouds include quicker understanding of key themes and validation of the findings (Heimerl et al. 2014).

5.4 **CODEBOOK DEVELOPMENT**

A separate document, the codebook, was developed to facilitate better observation of the themes emerging from the interviews conducted as derived from the coding process. Saldaña (2016) posits that codes can be combined to construct more abstract concepts that are termed 'themes' because they are more evocative. As

such a codebook is not meant to be an exhaustive list of all topics that a researcher will ultimately write about in their analysis.

Grbich (2007) adds that when codes are applied and reapplied to qualitative data, codifying takes place which allows data to be “segregated, grouped, regrouped and relinked in order to consolidate meaning and explanation”. Applying codes to textual segments is thus a way of focusing one’s attention on condensed topics most relevant to the study’s research questions (Saldaña 2016).

5.5 **Description of Agricultural Service Institutions**

The qualitative phase of this research was carried out through in-depth interviews with a target of top managers from five selected ASIs. These are Ministry of Agricultural Development and Food Security (MoA), Citizen Entrepreneurial Development Agency (CEDA), Botswana Agricultural Marketing Board (BAMB), National Development Bank (NDB) and The Agri-shop Botswana Pty (Ltd). While the target was five5 ASIs, interviews were successful with three of them, namely the MoA, CEDA and BAMB. Multiple attempts were made over three months to secure appointments with the NDB and The Agri Shop; however, none were successful as the contacts kept on re-scheduling in the case of the NDB. Pertaining to The Agri Shop, several attempts to obtain authorization from the Director did not yield interviews owing to the busy schedules of the assigned personnel. The three successful ASIs yielded twelve (12) interviews where data saturation was reached, thus allowing the researcher to proceed with analysis. Pseudonyms were assigned to each of the ASIs and participants to eliminate any identifiers. These are as found below in Table 5.1 which shows their profiles:

5.6 : Profiles of respondents

The participants for the interviews consisted mainly of managers who provide services to small-scale poultry farmers in their organisations.

5.6.1 : Profile of the ASIs

Table 5.1: Participants profiles for qualitative interviews

Participant Code	ASI Code	Qualification	Years of experience	Designation
P1	ASI1	BSc. Animal production	4 years	Poultry Manager
P2		Higher National Diploma in Animal Health Production	8 years	Head of Strategy
P3		Doctor of Veterinary medicine	5 years	Head of Poultry Division
P4		Higher Diploma in Animal Production	4 years	Technical Advisor
P5	ASI2	Master's in business administration	13 years	Assistant Branch Manager
P6		-	5 years	Portfolio Executives
P7		B Com General	11 years	Supervisor
P8		BSc in Agriculture	5 years	Operations
P9	ASI3	Diploma in Animal Health Production	7 years	Scientific Poultry Officer
P10		Diploma in Poultry Science and Food Formulation Diploma in Animal Health Production	Above/Over? 20 years	Poultry Extension officer
P11		Diploma in Animal Health Production International Diploma in Poultry Science and Food Formulation	Above 20 years	District Poultry Production officer
P12		PhD in Animal Science	Above 20 years	Lecturer

5.6.1.1 : Case 1: ASI 1

ASI 1 has its headquarters in the capital in Gaborone and has its footprint around the country with a total of 44 branches with a staff complement of 310. Their main functions are to provide services for farmers throughout the country. These include small-scale poultry farmers. Specifically, their services include the supply of day-old chicks, training on poultry management, business management and marketing and educating the small-scale farmers on the environment and poultry housing. Their services are also extended to poultry feeds, equipment, veterinary services, and poultry medicine as well as stock management.

5.6.1.2 : Case 2: ASI 2

ASI 2 is responsible for the financing and funding of poultry farming SMMEs in Botswana. They have branches across the country that offer business financing through loans, mentoring, implementation support as well as monitoring and evaluation of small-scale poultry projects. Their services also include training services for their customers, business advisory services and aid with business expansion. They also have a staff complement of over 300 across the country. Pertaining to the services that are for small-scale poultry farmers, ASI2 offers them financing for their operations, financing for the purchase of feeds as well as financing for cash injections to enable them to apply for tenders. Other services mentioned include setting up financial systems as well as resources systems.

5.6.1.3 : Case 3: ASI 3

According to BIDPA (2011), ASI 3 is responsible for commercial poultry production at all scales in Botswana. It is responsible for the Young Farmers' Fund and the Youth Fund, which are responsible for promoting entrepreneurial and SME growth and development (Moreki 2011). ASI 3 is also tasked with entrepreneurial skills training and development (Grynberg and Motswapong 2011). These assertions were verified by the participants who indicated that their functions include technical advice on poultry farming from the set-up, monitoring of the poultry projects and data collection to monitor their performance. The functions of ASI 3 also extend to the development of standards for livestock feeds, including poultry, driving the process of the development and the roll out of the policy framework relating to the agricultural value chain in general.

5.7 : NARRATIVE AND CONTENT ANALYSIS

5.7.1 : Botswana Poultry industry overview

Participants were asked to describe the agricultural service quality in Botswana, as compared to some developed countries and the rest of Africa. Recently the government of Botswana introduced a 35% subsidy to assist poultry farmers, resulting in an increase in small-scale poultry farmers (Masole et al. 2015). A comparison of the agricultural service quality in Botswana with other developing countries yielded the following responses:

> *"it is still at an infancy stage but it is upcoming…. we are far from calling ourselves advanced"* P4-ASI1.

P2-ASI1 added that

> "*I have picked up that most of the developed countries have established facilities for manufacturing inputs in poultry compared to here in Botswana and all those countries have their value chain in one country and they import that very chain compared to Botswana where we import from our neighbouring countries. We are still lagging as well in terms of meeting the demand here in Botswana- we are still lagging. The reason being, that our value chain is not complete, and our supplies are failing to meet the demand because of the facilities that we have here."*

The assertions made suggest gaps that exist in the current value chain in Botswana as compared to other developing countries. This compromises the agricultural service quality. Comparisons were made with Australia, Europe, Netherlands, Poland, and South Africa. Examples were provided; for instance, the Polish market structure is that of a cooperative where there is specialization of functions. In this scenario, one produces day-old chicks or feeds, and then others take over with roles that are clearly defined, and players focus on their designated role. South Africa was also cited as another example that follows this cooperative market structure of specialization on specific functions. Australia was also reported to operate in a similar manner where there is specialization of roles, this a clearer value chain.

In agreement, all participants indicated that the poultry industry in Botswana as well as the agricultural service quality is still lagging. Specifically, the following areas were highlighted:

- The variety of breeds of chicks
- Knowledge of feeds
- Quality of feeds
- Knowledge of poultry farmers on issues of raising poultry in the different seasons, especially summer and winter with extremes of temperatures and food safety (Processing and storage)
- Knowledge on economies of scale.

5.7.2 **Understanding of service quality**

The participants were probed on their understanding of service quality. Several views were expressed regarding service quality as found below:

- Adequate technical advice - providing quality information that is easy to understand.
- Performance of the SMME following the service rendered as measured through the production output of the poultry farmer.
- Client servicing and monitoring of the poultry farmers' progress after the sale of day-old chicks.
- Adherence to pre-qualified parameters that are executed consistently every time in a timely manner.
- Precision in providing the best service consistently with a complete value chain.
- Service delivered in a timely manner.
- Quality assurance that yields the highest quality produce because of the human resources, extension services and all the inputs provided; and
- Competence – where customers are provided with all the information, they require without being "*tossed around not knowing where to go*".

Further to this, the researcher sought to determine the current perceptions on excellent agricultural service quality and the participants defined these as follows:

- Availability of all stock required (one-stop shop) in the production cycle, such as the day-old chicks, treatments, feeds, vaccines, cleaning chemicals as well as all necessary equipment required.
- Knowledge that is passed to the poultry farmers regarding the poultry business in general.
- Customer centricity – service provision that is delivered with the end user in mind to ensure that the customer needs are met to their satisfaction.
- Timelines in terms of the speed at which the customers receive their service as well as timely delivery of inputs.
- Competence of service providers regarding the welfare of the animals in terms of stocking in summer and in winter.
- Quality of the feeds and other products in general; and
- Producing a conducive environment for the farmers where their projects can thrive. This environment includes access to funding, controls on the market environment to create favourable conditions for the small-scale poultry farmer, technical support and monitoring throughout to a point where the project is sustainable.

When probed on the words that describe excellent agricultural services, the participants highlighted the following:

- Advanced technology.
- Equitable distribution of resources at the level of the farmers so that the smallest farmer or player does not have to pay a great deal of money as compared to the largest farmer; and
- Cognizance of what is happening on the ground, namely what the farmers need and what they are going through to tailor make products that meet customer needs.

ASI 1 perceived themselves to be above average regarding their service quality which they attributed to their ability to provide multiple services and products to their customers as they perceived themselves to be one-stop-shop. On the other hand, ASI 3 perceived themselves to be below average owing to their limited mandate as well as lack of adequate resources to provide training, extension services and other services such as marketing which are beyond their scope.

In general, the perceptions of the participants are indicative of their awareness of service quality dimensions. For instance, *timeliness* emerged as a parameter that signifies service quality and was mentioned by almost all the participants. In addition, *reliability* and *competence* also emerged as being important when considering service quality.

A word cloud analysis was performed on the responses provided by the respondents in relation to their perceptions about service quality. Specifically, they were asked: ***What is your understanding of service quality? (Interview guide Section C:Q2)*** Key themes that emerged from the wordle analysis are highlighted in the word cloud depicted in Figure 5.1.

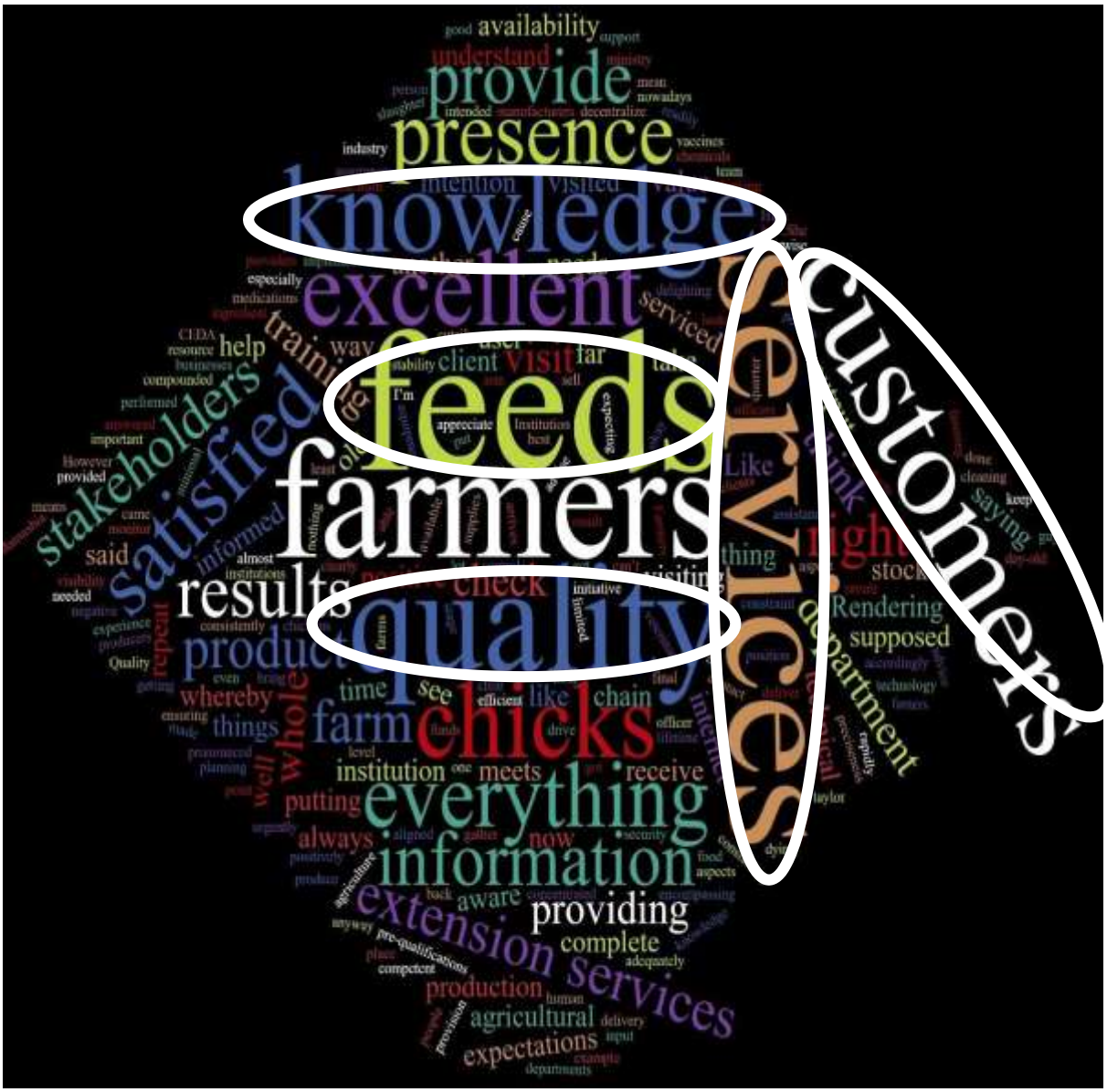

Figure 5.1**:** Wordle analysis on interview question pertaining to perceptions on understanding of service quality.

Central to the understanding of service quality were issues of adequate supplies of feeds and chicks, other support services provided as well as the adequate knowledge by the ASIs as shown in Figure 5.1 above. The wordle analysis also highlighted the satisfaction of the farmers or customers as a key aspect of service quality.

5.7.3 : Challenges faced by ASIs when rendering service to poultry farming SMMEs

Several challenges were cited by the ASIs that constrain optimum service delivery as exhibited in Table 5.1below

Table 5.2: Challenges faced by ASIs

Code	Challenge	Frequency
1	Inconsistent and unreliable supply of feed from suppliers, resulting in limited stock of day-old chicks due to low capacity of suppliers	4
2	Lack of knowledge of poultry farmers resulting in compromised poultry management	3
3	Lack of adequate resources such as up-to-date technology and even ICT services	3
4	Inadequate resources for expansion to meet the needs of the farmers beyond feed	3
5	Access to farmers – there are limitations such as transportation that impede regular visits to the farmers for assessment and correct diagnosis of reported problems	3
6	Inadequate financial resources thus affecting number of trainings that can be provided for the farmers	2
7	Absence of abattoirs, therefore small-scale farmers cannot penetrate the organized market as they do not meet the set standards	1
8	Fragmentation of the market where small-scale farmers work in isolation and in competition as opposed to cooperatives	4
	where more growth can be achieved	

9	Lack of infrastructure such as electricity and potable water which results in increased set-up costs for the customer	2
10	Exorbitant cost of feeds	2
11	Diseases that affect the poultry	2
12	Multiple government schemes: thus, farmers have several other options and safety nets. This reduces their commitment levels as it is not a matter of life and death for them	2

A word cloud was generated from the responses provided regarding the challenges faced by the ASIs when rendering services to the farmers.

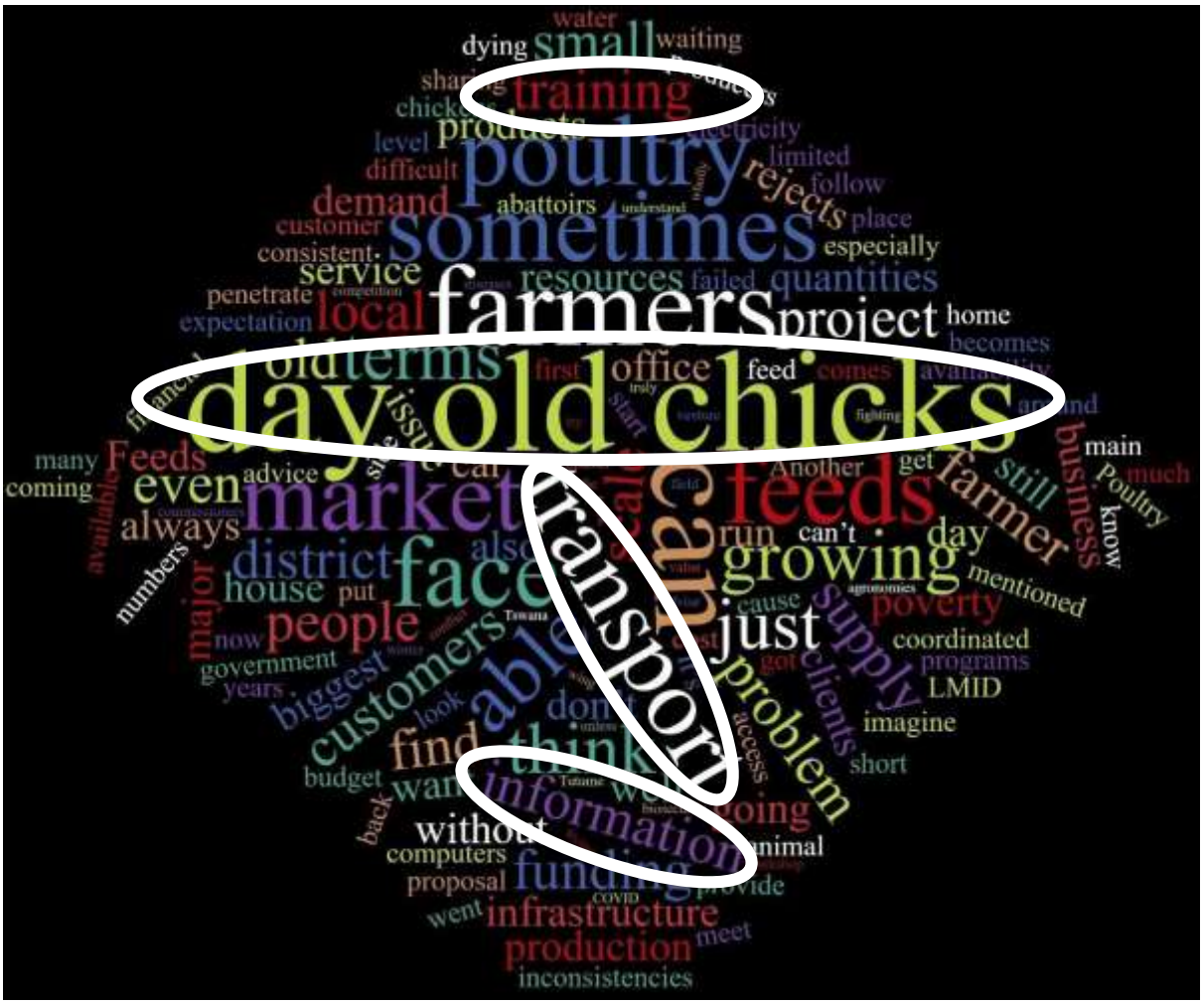

Figure 5.2: Wordle analysis on interview question pertaining to challenges faced by ASIs in rendering services to farmers.

The visual presentation of the responses is shown in Figure 5.2. The wordle analysis highlights the challenges that emerged from the interviews. The supply of day-old chicks, feeds and services were highlighted as challenges. Other issues include lack of transport to visit farmers and the need for more training and information for the poultry farmers. These challenges were also indicated during the interviews with ASIs.

5.7.4 : Impact of challenges faced by ASIs on poultry farming SMMEs.

The impact of the challenges faced by the ASI was reported to affect the poultry farmers significantly in the following ways:

- Reduced productivity and profitability due to limitations with supply of day-old chicks.
- Compromising the service quality for the ASIs on several aspects such as reliability and timeliness; and
- The challenges faced by the ASIs affect the poultry farmers' ability to function as small-scale commercial businesses, as indicated by P6-ASI:

> *"if I have a challenge with my loans system for example which is the one I use to issue money to the clients to go and buy chicks, feeds or medicines I will not be able to give them money by the time they asked for that money to be able to get their feeds or whatever input they need for their business so it's my problem but it's affecting how I serve my customer because I have turnaround times that I promised them but if I have problems this side I will not be able to help them in the time that we had agreed on."*

5.7.5 : Service quality tools and appraisal

Pertaining to service quality measurement tools, almost all participants were unable to confirm their existence conclusively. The various ASIs were cognizant of the need to measure and monitor service quality; however, their methods varied with different approaches being utilised as a proxy for service quality. For instance, one of the participants commented:

"Sales *can be one of them because when the sales improve, its shows that you are doing a good job!"*

In addition to sales, performance reviews by management were also regarded as one form of measurement tool for service quality and this was highlighted by ASI1 and ASI3. Specifically, they measure the production versus the mortality rates and the overall output of the farmers. Participants also mentioned other variables that could be used to measure service quality, such as the feed rotation and weight of the birds. However, these were not being used owing to poor record keeping by the small-scale poultry farmers. ASI 2 reported that they measure their service quality through a business systems software, SAP, whereby turnover, costs and challenges are measured and reported on.

Other means highlighted include customer satisfaction surveys and dipstick surveys where customers are requested to complete a questionnaire that rates the services provided by the ASI using parameters such as turnaround time as well as the impact of the services they are receiving.

While there was no clear indication of service quality measurement, the Botswana Bureau of Standards was reported to have tools and standards for animal feeds and standards for meat. However, their application and implementation on small-scale poultry farming enterprises was not perceived as being feasible.

5.7.5.1 : ASI service quality appraisal

The ASIs were requested to rate themselves regarding the services they are providing to the small-scale poultry farmers using a five-point scale with 1 being the lowest and 5 as the highest rating.

Table 5.3: Service quality appraisal matrix

		Service Quality Dimension						
ASI	Participant Code	Access	Timeliness	ess	Reliability	Assurance	Empathy	Competence
ASI1	P1	4	3	5	3	4	5	4
	P2	5	4	4	3	5	5	5
	P3	4	3	4	4	4,5	4	5
	P4	5	3	4	4	5	5	4
ASI2	P5	3,5	3	4	4	4	4,5	3
	P6	3	4	2,5	3,5	4	4	5
	P7	4	3	5	4	5	4	5
	P8	4	4	3	4	5	5	4
ASI3	P9	3	2	2	3	3	4	4
	P10	4	3	4	4	4	3	5
	P11	3	2	1	4	3	4	3
	P12							
	Totals	42,5	34	38,5	40,5	46,5	47,5	47
	Mean Rating	3,86	3,09	3,50	3,68	4,23	4,32	4,27

Table 5.2 presents the aggregated ratings provided by the participants pertaining to how they perceive their service quality. The seven dimensions, namely access, timeliness, responsiveness, reliability, assurance, empathy, and competence were presented to the participants for the own appraisal. Timeliness (3.09) and

responsiveness (3.50) were rated as low by the ASIs. While these parameters were rated low, they were also identified as factors that can lead to the failure of the poultry SMMEs.

The low ratings given by the ASIs on these two dimensions can be attributed to the challenges faced by the ASIs that affect their ability to deliver services to poultry farmers in a timely manner (see further representation in Figure 5.3).

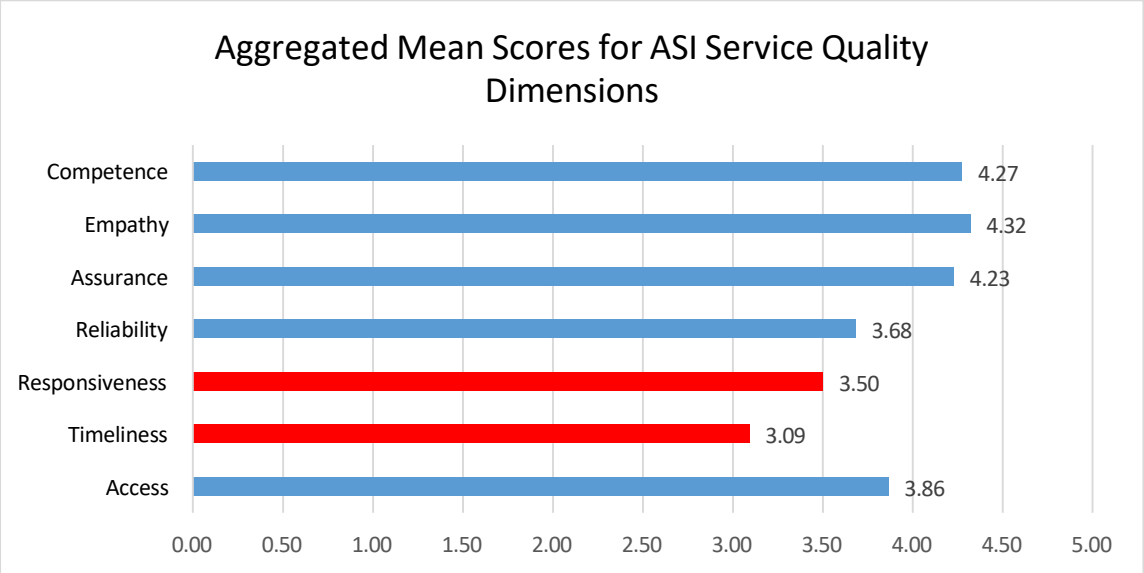

Figure 5.3: Aggregated mean scores for ASI service quality dimensions

Source: Researcher's construct

The service quality dimensions that the participants considered to be the most crucial ones were further determined. There were mixed feelings regarding the most important dimension as they were all deemed almost equally important. Upon further probing, participants rated the dimensions as indicated in Table 5.3. Reliability the most important service quality supported by four out of the 12 ASIs (about 33%).

Table 5.3: **Most important service quality dimension**

Dimension	Frequency
Accessibility	2
Timeliness	3
Responsiveness	2
Reliability	4
Assurance	2
Empathy	2
Competence	2

5.7.6 : Impact of small-scale poultry farmers on communities

The impact of small-scale poultry farmers on the communities in which they operate was sought. The researcher aimed to obtain insights on how failure on the part of poultry farming SMMEs would negatively impact the communities around them. The responses from the interviews revealed that small-scale poultry farmers contribute towards poverty alleviation for the farmers. One the respondents stated that:

"Normally farmers will hire some people to come and plant their trees, look after their birds. Some may assist here and there. By so doing, the locality is impacted in a positive way. Some people will have something for that particular day, at least buy a bag of mealie-meal which maybe if it was not because of that, they wouldn't have that money" ASI1-P1

In addition, it was indicated that the small-scale poultry farmers impact the communities around them immensely through their contribution to the food chain, thus achieving food and nutrition security for the local communities.

Another theme that emerged was the creation of employment for the local community as the farmers hire extra hands to assist in the business, especially during slaughtering of the chickens. In addition, it was mentioned that as the farmers gain experience and grow as an SMME, they ultimately contribute to the growth of SMMEs in the country

at large. The reduction of rural to urban migration was cited as a positive result of small-scale poultry farming. As people have sources of livelihoods within the rural areas, they therefore do not need to migrate to urban areas in search of employment opportunities.

5.7.7 : Impact of ASIs' service quality on poultry SMMEs productivity

The researcher sought to understand the ASIs perceptions with reference to the impact of their service quality on poultry farmers. Overall, the interviews revealed that the ASIs' service quality impacts the poultry farmers through minimising loss in their business by instilling good poultry management practices that would lead to lowered mortality rates. For instance, P2-ASI1 pointed out that:

"….*We are trying to make sure that we are helping to the extent that they do not run with high mortality rates where the birds are dying and there is no production."*

P4-ASI1 added that the growth trajectory and success of the small-scale poultry farmers are hinged on the ability of the ASIs to provide quality service in its entirety throughout the production process of the small-scale poultry farmers. He remarked that:

"*the deliberate decision that we take to provide quality above everything is the one that is going to really direct the path of the small-scale poultry farmers compared to large scale farmers who have the resources to afford or hire experts to take care of their farms."*

In support of this P6-ASI 2 emphasized that:

"Since we are the ones holding the funds to the project our service quality is the major determinant of the success of failure or success to their businesses because without money, they can't do anything so the way we serve them or the quality of the service that we offer them is the one that will determine whether they fail, or they are successful at the end of the day."

Thus, the impact of the service quality rendered by the ASIs is significant as it determines the outcomes of the farmers who rely on them for the much-needed knowledge and capacity building. Some of the farmers are completely new to poultry farming; thus, they rely totally on the ASIs for guidance and technical support. P8- ASI

2 added that:

"*First of all, I think they bring hope in the poultry industry that had eroded overtime so now there are more players in the locality in poultry which I think the service that we have offered them we were able to uplift their lives and their projects like I mentioned some projects have grown beyond operating from the home to a bigger scale. We have brought hope because they had already given up on poultry farming."*

A word cloud was generated from the responses given by the respondents in relation to the impact of the service quality of the ASIs on the poultry farmers' business performance. Key themes that emerged include impact on the poultry farmers' mortality rates and the scale of the farmers' activities in relation to their growth. The success and the growth of the poultry farmers was generally perceived to be impacted by the service quality provided by the ASIs.

Figure 5.4: Wordle analysis on the interview question pertaining to the impact of the ASIs' service quality on the farmer's productivity.

5.7.8 : Factors contributing to the failure of small-scale poultry farming in developing countries.

The ASIs were probed on the factors that contribute to the failure of small-scale poultry farming industry in developing countries. Several themes emerged from the interviews and these factors can be viewed from both the customers' side and the service providers' (ASIs) side. The interaction of all these factors contribute significantly to the performance of the poultry farmers and the industry.

Factors perceived by participants in relation to the customers' side (farmers) include the following:

- *Limited knowledge of the poultry farmers* in relation to the business aspects of poultry farming as well as the poultry production cycle.
- *Lack for resources* such as land and equipment for the poultry farmers. In most instances the farmers are running their business in their backyards. However, it was indicated that this limits their growth and expansion because of limited space.
- *Lack of commitment from some farmers* where they do not follow guidelines as they should, thus compromising on their poultry business and in other instances, the mismanagement of funds.
- *Low production by the small-scale farmers;* thus, the growth of the industry is limited; and
- *Mismanagement of funds* which affects the business continuity as the poultry farmers run out of working capital.

Factors highlighted by the participants relating to the service providers (ASIs) include the following:

- *Inability to meet the market demands*. The absence of local hatcheries was indicated as a major hindrance that negatively affects the poultry industry as a whole and significantly reduces productivity. Specifically, the absence of local hatcheries necessitates heavy reliance on external suppliers of day-old chicks, thus lengthening the value chain. As such, any delays encountered by

the ASIs' suppliers ultimately affect their ability to meet the demands of their customers. P4-ASI1 illustratively said that:

"we have a lot of customers especially small-scale farmers, but we are failing sometimes to help all of them because we don't have our own hatchery, we buy from someone who has many customers too…."

- *Lack of adequate resources for expansion* such as technology that would enhance the efficiency of poultry farming as well as assisting farmers in the winter season when higher mortality rates are recorded due to the extreme cold. P3-ASI1 elaborated that:

  "… we have realised that there is so much more that farmers need and some of these things are not available in the market especially during the winter months, most of them give up on the business."

- *Lack of extension services in Botswana and developing countries* for the farmers. Extension services are crucial in that they provide timely, on the ground support for the farmers, thus quickly diagnosing any problems reported. Reliability and timeliness in providing these services are crucial as any delay by just a day can result in high mortality rates.

Other factors that emerged relate to the market dynamics in Botswana caused by the interplay of multiple stakeholders such as the large-scale poultry farmers versus the small-scale poultry farmers. While large scale poultry farmers possess the technology, knowledge, and resources to run their business, small-scale farmers are limited by lack of resources and knowledge. This therefore suggest a higher level of support for the poultry farming SMMEs by the ASIs. While the government has intervened through the 35% subsidy on inputs, it is necessary to ensure that adequate support is provided so that they receive the necessary inputs they require to function and grow. P2-ASI1 provided more insight into this and pointed out that:

"*small scale farmers are experiencing the controls that are found within the private and government entities cause remember these people are solely on the mercy of those that are supplying them with inputs. If those institutions cannot really*

put focus on providing the cheapest of whatever that will in turn jeopardize the existence of the small-scale farmers"

Another factor highlighted by research participants pertains to the market focus. Over the past years, the market has been engrossed in the production of feed for ruminants as compared to poultry. Therefore, it was completely unprepared for the unprecedented escalation in the demand for poultry feed. As a result, the suppliers could not adequately meet the demands of the market.

In addition, the participants alluded to the market complexity which is characterised by monopolization by large-scale poultry farmers who have a ready market for their products as they are also stakeholders of chain supermarkets. The whole poultry farming value chain is in the hands of the few large-scale producers who control it from hatcheries all the way up to marketing. This is coupled with the fragmentation of the small-scale poultry industry where they are working and producing on their own in isolation and competing instead of collaborating in cooperatives to achieve more in terms of production and growth.

The interviews also revealed another factor that leads to failure in small-scale poultry farming. This is related to the undeveloped value chain which results in higher costs for feeds. The direct result is a higher cost of production per chicken. On the other hand, poultry farming SMMEs (large-scale farmers) produce their own feed and own the hatcheries, thus reducing their production cost per chicken. This is coupled with the fact that the competitors who are large-scale farmers are players in most aspects of the value chain; thus, they can sell their products at a lower cost to a ready market. This in some way cripples the small-scale farmers.

Moreover, participants highlighted that access to funding and subsequent responsible management of these funds have an impact on the success or failure of a business. Where the farmer is fully committed and uses the funds to sustain the business, success can be realised.

Figure 5.4 depicts the word cloud generated from the responses provided in response to the factors that contribute to the failure of small-scale poultry farmers. The wordle analysis affirms the emerging themes which include lack of knowledge, commitment, and funding. Another key issue is the scale of production, which was

reported to be relatively low, thus affecting the profitability of the small-scale farming businesses.

Figure 5.5: Wordle Analysis on the factors contributing to the failure of the small- scale poultry farmers.

5.7.9 : Strategies for enhancing productivity and profitability for poultry SMMEs

Cognizant of their current market limitations and challenges, the participants reported various strategies that could be employed to enhance the productivity and profitability of the small-scale poultry farmers. Themes that emerged were geared towards mitigating these limitations and challenges. They include the following:

- Building capacity of poultry farmers through training workshops. Training workshops were perceived as an effective channel of imparting knowledge to the poultry farmers.

- Keeping farmers well informed about new technologies as the agricultural sector is evolving.
- Adequate support to customers through providing assurance and reliable services to gain their trust and confidence. This assurance gives the customers (farmers) confidence to pursue the business with the full knowledge that expert assistance is at their disposal through their production process. Ultimately, this will minimize losses and enhance productivity and profitability.
- Working in clusters such as cooperatives to give small-scale poultry farmers bargaining power as they will be purchasing supplies in large quantities, thus reducing the costs. Working in clusters will also assist in building numbers that would warrant the establishment of slaughtering facilities. It would further allow them to increase their production, leading to the ability to meet large supply volumes and service bigger tenders. This would also enable the farmers to brand their products, thus making them more appealing to the market.
- Improved record keeping of their production cycle as well as their costs to have a clear picture of their business performance.
- More protection of the small-scale farmers by the government through controls on pricing, dedicated slaughter facilities for small-scale farmers. Currently, there is no distinction between larger players and small-scale farmers; therefore, the small-scale farmers incur excessive costs that they are unable to absorb as compared to the large-scale players who are in control of the value chain. For instance, large scale poultry farmers "*are the supplier of the feeds, day old chicks and also running retail shops so they are running and own everything*"

5.7.10 : Strategies for enhancing service quality and customer satisfaction within the ASIs.

5.7.11

Participants were questioned on the strategies that enhance service quality and customer satisfaction. Several themes emerged from the responses provided. The participants mentioned the following:

- Identifying service quality bottlenecks and areas where service provision is impaired and address them. These bottlenecks can be exposed through customer satisfaction enquiries.
- Boosting local capacity internally for services such as hatcheries to ensure that supply meets the market demand and chicks are affordable.
- Widening the scope of products and services provided (one-stop shop concept) for the convenience of the farmers. An example includes building a dedicated team to deliver extension services for the farmers for early diagnosis of production bottlenecks.
- Refresher training for the ASI personnel to keep abreast with the dynamic technology and be well informed about poultry farming techniques; and
- Structured networking of farmers and leveraging on the power of technology to share useful information so that the farmers have adequate guidance and are not misled by the information already there on social media.

5.8 : Discussion of the qualitative research findings: Propositions

The main findings from the extensive literature review were combined and propositions and hypothesis were formulated. Propositions for the qualitative research were derived from research gaps identified in the literature (sections 3.15 and 3.16) and guided by the stated research question and sub-questions from the introduction chapter (sections 1.4 and 1.4.1). The main research questions are whether Botswana ASIs' service quality has an impact on small-scale poultry farmers' business performance and whether there is a gap between poultry farming SMMEs' expected service quality and the quality of service they receive from ASIs. The propositions formulated for the study are thus stipulated below:

Proposition 1

Agricultural services institutions' service quality has an impact on poultry farming small, micro and medium enterprises' business performance in Botswana and other developing economies.

Proposition 2

There are challenges faced by ASIs as they render services to small-scale poultry farmers, and these challenges negatively affect the poultry farming enterprises' business performance.

Proposition 3

Poultry farming SMMEs in Botswana has a way of effectively appraising the quality of service they receive from their ASIs.

5.8.1 ' Proposition One

Agricultural services institutions' service quality has an impact on poultry farming small, micro, and medium enterprises' business performance in Botswana and other developing economies*.*

The participants from the various ASIs were probed on their perceptions regarding the impact of their service quality on the business performance of the poultry SMMEs. The participants affirmed that their service quality has a direct impact on the business performance of the poultry SMMEs. The findings of the study revealed that the role of the ASIs is crucial for the poultry farming SMMEs' survival as most of them venture into the poultry farming business without any prior qualifications or previous experience. To fully underscore the role of the ASIs in the poultry farming SMME's journey, it is important to summarize the various services provided by the ASIs. Specifically, ASI1 reported to supply day old chicks, training on poultry management, business management and marketing as well as educating the small- scale farmers on the production environment and housing. ASI1 further indicated that their services also include the supply of poultry feeds, equipment, veterinary services, and poultry medicines as well as stock management.

On the other hand, ASI2 highlighted that their services include funding in terms loans, mentoring of poultry farmers, implementation support as well as monitoring ad evaluation of projects. Additionally, they also provide training services and business advisory services with the inclusion of business expansion. Relating to poultry farming SMMEs, they provide financing for the purchase of feeds as well as other inputs they may require. Throughout the project, ASI2 provides mentoring and monitoring to build capacity for the poultry farmers to enable them to reach a point of sustainability for their businesses.

Lastly, ASI3's functions include technical advice on poultry farming from the set-up, monitoring of the poultry projects and data collection to monitor their performance. The function of ASI3 also extends to the development of standards for livestock feed, including poultry and driving the process of the development and roll out of the policy framework relating to agriculture in general.

A review of the services and the functions of the ASIs underscores their importance throughout the journey of the poultry SMMEs. Furthermore, the various ASIs provide support to the poultry farmers in different capacities; without them the farmers would not successfully operate. Cognizant of their critical role, it is important that the ASIs do not only fulfil their mandate but do so in terms of quality, hence the importance of service quality.

The findings of the study revealed that the service quality of the ASIs was perceived to have an impact on the poultry farming SMMEs' business performance. The ASIs' service quality was also perceived to have a direct impact on the failure or success of the poultry farmers. Funding, technical assistance, formulation, and implementation of a favourable operating environment as well as the supply of the inputs needed for production delivered in a timely manner positively impact the business performance for the farmers. On the contrary, lack in the same service areas leads to low production on the side of poultry farmers as they experience delays as well as possible loss of stock. The participants also highlighted that some of the farmers are completely new to the poultry business and as such rely on the ASIs for capacity building and the technical knowledge required to run the poultry business.

5.8.1.1 : Analysis

The findings of the study affirm the relationship between the ASIs' service quality and the poultry farmers' business performance. The findings of the study are consistent with extant literature. Similarities can be observed with the assertions made by Mwobobia (2012) who posits that the quality of service provided by agricultural services institutions to farmers has a direct impact on the farmers' productivity, profitability, business growth and existence. In addition, in Botswana, there have been recent reports that indicate lack of business performance in small- scale poultry farming enterprises (Baliyan & Marumo 2016). The findings of the study are also in agreement with several scholars (Farayola et al. 2013; Mappigau et al., 2012; Ncube et al. 2016; Moreki 2011; Masole et al. 2015) who have traced the root cause of poultry

farming SMMEs' challenges and subsequent failure as being directly linked to the quality of service these enterprises receive from ASIs that support them. Congruently, the findings of the study confirm the assertion made by Mappigau (2012) who posits that the growth and business performance of the poultry farming SMMEs in Botswana is anchored upon the existence of several ASIs that support poultry farmers in one way or another. Correspondingly, the relationship between ASIs' service quality and the customers' business performance is acknowledged by several other scholars in Greece (Kontogeorgos et al. 2014), India (Reddy et al. 2013) and Ghana (James et al. 2012). It was hypothesized that ***ASIs' service quality has an impact on poultry farming small, micro, and medium enterprises' business performance in Botswana and other developing economies***. The findings of this study thus affirm this proposition.

5.8.2 **Proposition Two**

***There are challenges faced by ASIs as they render services to small-scale poultry farmers, and these challenges negatively affect the poultry farming enterprises' business performance*.**

The study sought to understand the challenges faced by the ASIs as they render services to the poultry SMMEs. Furthermore, the effects these challenges have on the small-scale poultry farmer's business performance were investigated. The findings of the study suggest that the ASIs do face several challenges as they render their services to the poultry farmers. These challenges faced are multifaceted and are compounded by the market conditions as well as the structure of the value chain of the poultry industry in Botswana. Specifically, the challenges indicated related to the supply of inputs to the small-scale poultry farmers. These challenges, though beyond the control of some of the ASIs, have a significant effect on the poultry farmers' business operations.

For instance, it was reported that the current supply of the day-old chicks does not meet the demand of the small-scale farmers. In addition, feed was also reported to be in short supply and at a cost that is unfavourable for the small-scale poultry producers, thus affecting their return on the investment. It was reported though that the government has mitigated this through introducing a 35% subsidy on the poultry farming inputs. While this has been perceived to be helpful, the shortage remains a

highly disruptive challenge for the ASIs and subsequently on the poultry farming SMMEs, thus affecting their business performance.

The findings of the study further reflect the impact of the challenges faced by the ASIs on the poultry farmers' business performance. It was stated the challenges faced by ASIs such as delays in supplies or high costs of feeds result in reduced productivity and profitability due to limitations with the supply of day-old chicks as well as failure to afford feed, which is a basic input for the farmer. In addition, other challenges reported that are faced by ASIs include lack of adequate resources such as ICT, the latest technology in poultry farming as well as transport. These challenges were highlighted as being impediments for the ASIs and affect their ability to provide quality service. As such, the inability of ASIs to provide quality services because of internal challenges has direct negative effects on the poultry farming SMMEs' business performance.

5.8.2.1 : Analysis

There is a paucity of studies that have been conducted to investigate the link between the challenges faced by the ASIs and their effect on the business performance on the poultry farmers. As such, this study sought to fill the gap in literature by highlighting the challenges faced by ASIs and how these affect the small-scale poultry farmers. The findings from this study revealed that one of the main challenges experienced by the ASIs is of lack of resources such as transport and proper ICT that impede regular visits to farmers; inadequate financial resources to conduct the required training of farmers on poultry management; and lack of infrastructure such as abattoirs that are easily accessible to farmers. These findings have similarly been noted by Yusuf (2014) who asserts that the availability and affordability of basic inputs such as feed, day-old chicks, equipment and proper infrastructure are some of the main factors that lead to sustainable growth of poultry farming SMMEs.

The findings of this study further reflected the structure of poultry farming value chain in Botswana where small-scale farmers are fragmented and work in isolation from production to the marketing of their birds. These farmers work in competition to one another instead of in collaboration through cooperatives where more business growth can be realised. The same findings were similarly echoed in a study by Rendy et al. (2013)' in India that compared challenges faced by private and public agricultural

service providers in rendering services to small-scale farmers. Lack of infrastructure such as electricity and clean water resulting in high set-up costs, exorbitant costs of feed and other basic inputs were also cited in this study as factors that are detrimental to ASIs' effectively providing quality service to small-scale poultry farmers. It was hypothesized that ***there are challenges faced by ASIs as they render services to small-scale poultry farmers, and these challenges negatively affect the poultry farming enterprise's business performance.*** The findings of the study affirm this proposition.

5.8.3 : Proposition Three

Poultry farming SMMEs in Botswana have a way of effectively appraising the quality of service they receive from ASIs.

The study investigated the perceptions of participants in relation to tools the ASIs utilise to measure service quality. Several assertions were made by the participants in this regard. There was no definite tool that was cited by the ASI participants that suggested that ASIs effectively appraise the quality of service they receive from them by poultry farming SMMEs. Several approaches were mentioned which include monitoring of sales performance, production and mortality rates and business systems applications that served as proxies for service quality appraisal.

Other approaches include customer satisfaction surveys and dipstick surveys whereby customers are requested to complete a questionnaire that rates the services provided by the ASI using parameters such as turnaround time as well as the impact of the services they are receiving. In this instance, the surveys mentioned related to the customer experience with ASI2. While ASI2 was cognizant of the need to measure the service provided, ASI1 and ASI3 were not actively pursuing this endeavour. Additionally, although ASI2 conducted customer satisfaction surveys, these were rather on a general note in relation to their organisation as a whole and were not specific to poultry farmers only.

5.8.3.1 : Analysis

The measurement of service quality is not a new phenomenon in Botswana. Service quality studies have been conducted in Botswana using the SERVQUAL model in several industries such as the banking industry (Chiguvi et al. 2017), the Hotel Industry (Musikavanhu, 2017), the Higher Education Sector (Makambe, 2016), Retail Shops

(Prithivirajh, 2013), Information Technology (Chiguvi, 2016) and the Food Industry (Manwa, 2011). These studies undertaken in these various industries suggest that there is a negative gap between perceived service quality and expected service quality along most service dimensions under investigation. This finding has also been observed in studies conducted in Greece's Ministry of Agriculture (Kontogeorgos et al. 2014), India's private and public agricultural services providers (Reddy et al. 2013) and Ghana's agronomic services (James et al. 2012). Given the gaps observed between the perceived and expected service quality in other industries in Botswana and the agricultural industry in other developing economies, it is crucial to measure service quality in the poultry industry to ensure that service bottlenecks are identified and dealt with to improve the quality of service. It was hypothesized that ***poultry farming SMMEs in Botswana have a way to appraise the quality of service effectively they receive from ASIs***. The findings for the study do not support this hypothesis and as such, this proposition is rejected.

5.9 : DEVELOPMENT OF THE SERVICE QUALITYSERVICE QUALITY QUANTITAVE INSTRUMENT

The findings of the qualitative study, in conjunction with the research questions and the extant literature, have been consolidated to develop the quantitative questionnaire. Section D of the qualitative discussion guide covered an in-depth review of the service quality dimensions by the ASI managers.

Table 5.5: Mean ratings for each service quality dimension

Service Quality Dimension	Mean Ratings
Empathy	4,32
Competence	4,27
Assurance	4,23
Access	3,86
Reliability	3,68
Responsiveness	3,5
Timeliness	3,09

Table 5.5 shows a summary of the mean ratings for each of the service quality dimensions as given by the ASI managers.

Cognizant of the findings of the service quality dimension appraisal, timelines received the lowest rating. Consequently, this dimension was eliminated from the quantitative tool during the design phase.

5.10 : CONCLUSION

This chapter presented the findings from the qualitative research conducted amongst ASIs in Botswana. The findings were presented through narratives and direct quotations from the participants. A description of the current poultry farming value chain in Botswana was presented as perceived by the ASI participants. Furthermore, the perceptions of the participants were sought in relation to their current understanding of service quality as applied to the small-scale poultry farmer as a customer. Thereafter the challenges faced by the ASIs as they render services to the poultry farmers in Botswana were discussed as well as how this impacts the poultry farmers' business performance.

Given the focus of the study, the measurement of ASIs' service quality was investigated to determine any methods or tools being used for its appraisal. The current methods were discussed in detail and conclusions were drawn. In this chapter, the impact of small-scale poultry farmers on their local communities was discussed as well as the impact of ASI service quality on the business performance of the small-scale poultry farmers. In addition, factors contributing to the failure of poultry SMMEs were deliberated as well as the strategies that can be employed to enhance the ASI service quality and the farmers' productivity. Lastly, the propositions for this study formulated because of the rigorous review of extant literature and research questions were presented and discussed in relation to the study findings. Conclusions were thus drawn on affirming or rejecting the propositions in view of the study findings.

The findings presented in this section were crucial in the formulation of the adapted SERVQUAL questionnaire which was modified to suit the poultry farming sector in Botswana. The findings of the qualitative interviews were used to design the quantitative tool that was administered to the small-scale poultry farmers during phase 2 of this research, namely the quantitative phase.

CHAPTER 6

QUANTITATIVE DATA ANALYSIS

6.1 **INTRODUCTION**

This chapter focuses on findings from the survey that was carried out with poultry farming SMMEs in Botswana. To analyse the statistical data, the researcher utilised SPSS to perform various statistical tests.

The following tests were performed:

- Descriptive statistics: Means, standard deviations, frequencies, and percentages.
- Wilcoxon signed ranks test: A non-parametric test used to test, in this study, whether the average value is significantly different from a value of 4 (the central score). This is applied to the Likert-scale questions. It is also used in the comparison of the distributions of paired variables.
- One sample t-test: This tests whether a mean score is significantly different from a scalar value. In this study, this test was used to test for significance on expectations, experiences, service quality gaps and gap-analysis.
- Regression analysis: Linear regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. In this study, ANOVA was used to determine whether service quality gaps in any of the dimensions significantly affect performance.
- Mann Whitney U-Test: This is a nonparametric test equivalent to the independent samples t-test.
- Friedman's test: This tests whether there are differences across several dependent variables.

Cronbach's alpha: This tests for internal consistency or scale reliability, which is how closely related a set of items are as a group. In this study, the Cronbach's alpha was used to test consistency of items in each service quality dimension.

The questionnaire comprised five sections as follows:

Section 1- Demographic profiles

Section 2 - Expectations

Section 3 - Experiences

Section 4 - Weighting of service quality dimension

Section 5 - Measures of business performance

The findings of the questionnaire are presented under the relevant sections as indicated above.

6.2 : SECTION 1- DEMOGRAPHIC PROFILES

This section provides an overview of the general characteristics of the research participants, in this case small-scale poultry farmers. In this section, frequencies, percentages, and bar chats were used to present information on the respondents' age, gender, nationality, education level, position in poultry farming SMME, training in poultry production, SMME production level and period for which the SMME has been operating.

6.2.1 : Gender, nationality, and age of the respondents

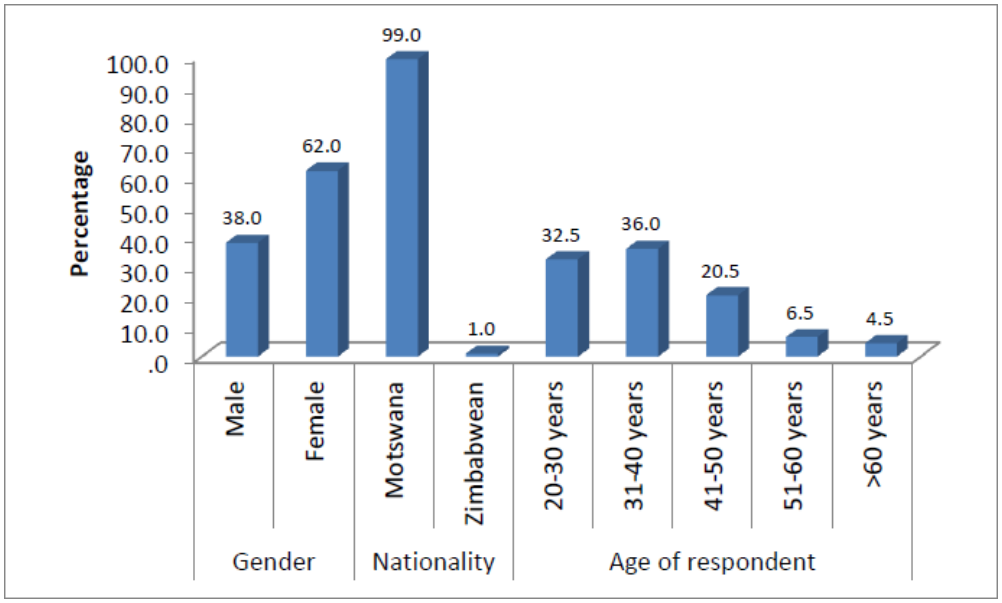

Figure 6.1: Gender, nationality, and age of the respondents in this study

The graph shows that more females (62%) than males are involved in small-scale poultry farming in Botswana. The graph also shows that almost all poultry farming SMMEs are owned by Botswana citizens and that most of these farmers, about 69%, are relatively young people, with ages in the range 20-40 years. It is, however, noteworthy that about 33% of small-scale poultry farmers are youths aged between 20-30 years.

6.2.2 : Position in SMME, education level and poultry farming training status

Figure 6.2 illustrates that most participants (about 46%) did not have any tertiary qualifications; these are school leavers who went as far as "O" level. About 20% of the respondents, however, have professional qualifications ranging from diplomas to postgraduate degrees. The graph also shows that most of the respondents were poultry owners (96.5%) and about 68.5% of them have never received any training on poultry production and management.

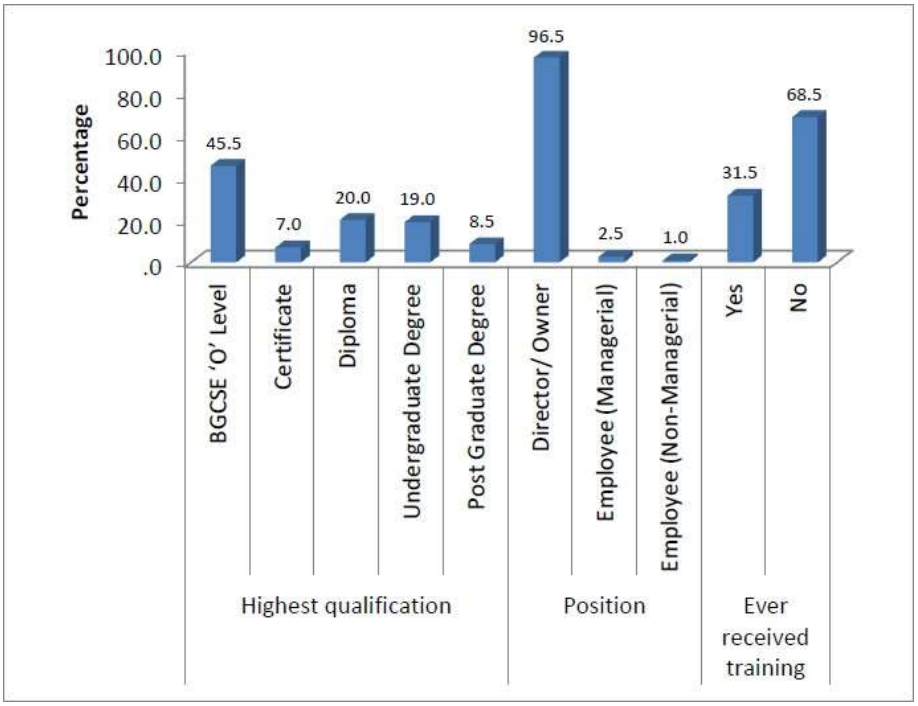

Figure 6.2: Position in SMME, education level and poultry farming training status.

6.2.3 : Age and size of the business.

Figure 6.3 shows that most respondents (about 71%) are relatively new in the poultry farming business, having been operating for 0-4 years. This suggests that poultry farming SMMEs do not survive for long, considering the background from extant literature that indicates that poultry farming as a business in Botswana dates to 1975 (Moreki 2011). The graph also illustrates that only 8% of the small-scale poultry farmers have been operating for more than eight years.

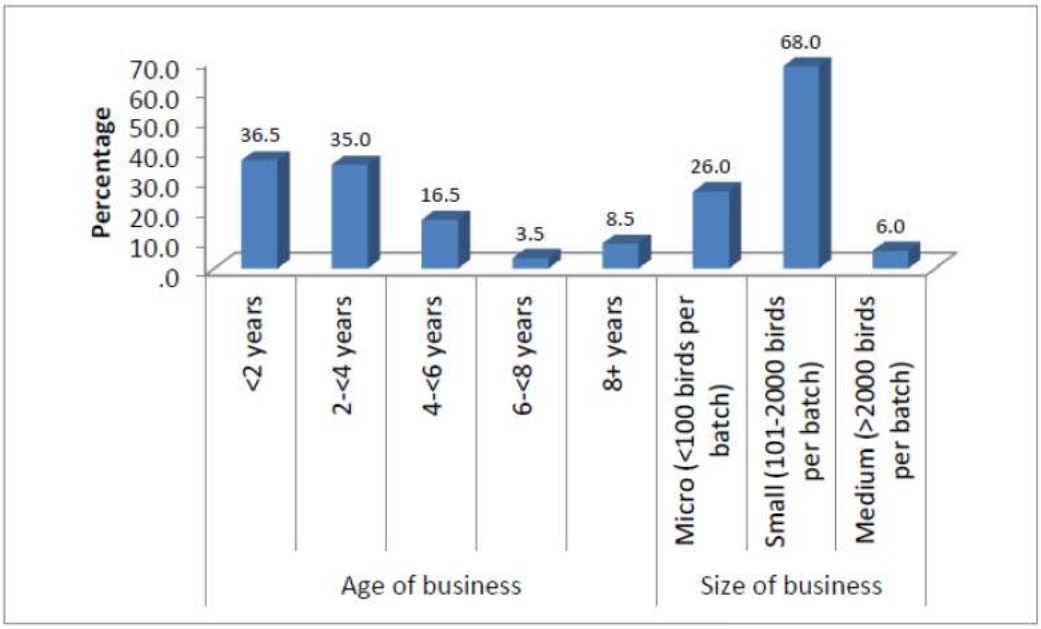

Figure 6.3: Age and size of the business

Figure 6.3 illustrates that in terms of the size of business according to production, most respondents are classified as small-scale poultry farmers (68%) with a production of 101-2000 birds per batch. A significant number of the respondents are micro farmers (26%) with a production of less than 100 birds per batch and only 6% are medium-scale farmers with a production of more than 2000 birds per batch.

6.3 : SECTION 2 - SERVICE QUALITY SERVICE QUALITY EXPECTATIONS

This section presents findings from the expectations section of the questionnaire. Six SERVQUAL dimensions (Access, Assurance, Empathy, Competence, Reliability and Responsiveness) are presented in the findings in this section. The expectations

section comprises 27 questions, with each service quality dimension attached to some questions as shown in the table 6.1. These statements were used to determine Botswanan small-scale poultry farmers' expectation of service quality from their ASIs.

Further in this section, frequencies, percentages, and average scores are displayed for each statement. The one-sample t-test is used to test for significant agreement or disagreement for each question in this section. Expectation questions numbers and the associated SERVQUAL dimensions are illustrated in Table 6.1:

Table 6.1: Linking Expectation questions to SERVQUAL dimensions.

SERVQUAL DIMENSION	EXPECTATION QUESTIONS
Access	EXP_ACC (1,2,3,4)
Responsiveness	EXP_RES (5,6,7,8)
Reliability	EXP_REL (9,10,11,12)
Assurance	EXP_ASS (13,14,15,16)
Empathy	EXP_EMP (17,18,19,20,21,22,23)
Competence	EXP_COMP (24,25,26,27)

6.3.1 : Expectation statements and their definitions

To provide insight on the statements used and to simplify the statistics used further in this section, expectation statement numbers and their associated expectation statement definitions are shown in Tables 6.2 and 6.3:

Table 6.2: Expectation statements (1-16)

Expectation	Statements
EXP_ACC 1	I expect excellent ASIs to be physically accessible to me
EXP_ACC 2	I expect excellent ASIs to be accessible to me by telephone
EXP_ACC 3	I expect excellent ASIs to have an active website and other digital communication platforms to enhance their accessibility to me

EXP_ACC 4	I expect excellent ASIs to have branches strategically located near poultry farming SMMEs
EXP_RES 5	I expect excellent ASIs to respond to all my farming needs promptly
EXP_RES 6	I expect excellent ASIs to 'never be too busy' to respond to my farming requests
EXP_RES 7	I expect excellent ASIs to always be willing to assist me with farming needs
EXP_RES 8	When I have a problem, I expect an excellent ASI to show sincere interest in solving it
EXP_REL 9	I expect excellent ASIs to provide their services (e.g. supplying day-old chicks) within the promised time frame
EXP_REL 10	I expect excellent ASIs to perform their service right the first time
EXP_REL 11	I expect excellent ASIs to keep accurate records
EXP_REL 12	I expect that excellent ASIs can be relied upon to provide me with good quality basic inputs such as feed, day-old chicks, vaccines, equipment, and other basic inputs.
EXP_ASS 13	I expect personnel from excellent ASIs to instil trust in me as they render their service
EXP_ASS 14	I expect to feel safe/secure in my transactions with excellent ASIs
EXP_ASS 15	I expect to have confidence in the service received from excellent ASIs
EXP_ASS 16	I expect employees from excellent ASIs to be approachable

Table 6.3: Expectation Statements (17-27)

Expectation	Statements
EXP_EMP 17	I expect excellent ASIs to provide caring, individualised attention to my needs
EXP_EMP 18	I expect excellent ASIs take time to pay routine site visits to their poultry farmers whether there is a problem or not

EXP_EMP 19	I expect excellent ASIs to give me relevant individualised advice

EXP_EMP 20	I expect excellent ASIs to have my best interests at heart
EXP_EMP 21	I expect an excellent ASI to understand my specific farming needs
EXP_EMP 22	I expect an excellent ASI to provide a service to me at a time suitable to me
EXP_EMP 23	I expect excellent ASIs to have convenient office operating hours
EXP_COMP 24	I expect personnel from excellent ASIs to be able to display relevant knowledge and skills pertaining to their job
EXP_COMP 25	I expect personnel from excellent ASIs to be knowledgeable about poultry farming
EXP_COMP 26	I expect excellent ASIs to be able to provide relevant training to me on best poultry farming practices
EXP_COMP 27	I expect excellent ASIs to have the skills to be able to provide efficient extension services to me

6.3.2 : Analysis for each expectation question

Each expectation statement was tested for significant agreement or disagreement and the results are displayed in Table 6.4. A one-sample t-test was conducted to establish whether the average or mean agreement score differs significantly from the central score of 4.

Results for each dimension as summarised in Table 6.4 are as follows:

Access: From Table 6.4, all the four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension

Analysis- Small scale poultry farmers generally agree that ASIs must be accessible to them by telephone, email, through the service providers' website and farmers physically visiting the ASIs to obtain services. Small-scale farmers usually obtain basic services such as procuring basic inputs such as day-old chicks, feed, vaccines, securing finance funding and obtaining the much-needed skills training in poultry production. Proximity and easy access of ASIs to small-scale farmers is key to these enterprises' success.

Responsiveness: From Table 6.4, all four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Analysis - The customers (poultry farmers) generally agree that ASIs should be more responsive to their needs by attending to individual farmers' problems either by telephone/email communication or through site visits at their poultry farms. Such physical presence of ASI officials at the farms will enable them to get first-hand information on the small-scale farmers' needs and challenges.

Reliability: From Table 6.4, all the four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Analysis - Small-scale poultry farmers in Botswana generally agree that they expect ASIs to provide services the correct way the first time, within the promised time and with basic inputs of good quality.

Assurance: From Table 6.4, all the four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Analysis - Small-scale poultry farmers generally agree that they expect personnel from ASIs to instil trust in them as they render service and to be approachable. Furthermore, it is the poultry farmers' expectation to feel confident and secure as they transact with ASIs.

Empathy: From Table 6.4, all the seven statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Analysis - ASIs' customers generally expect ASIs to provide them with individualised attention and attend to their individual farming needs. Additionally, customers expect personnel from ASIs to render personalised service through routine site visits to their farms where they can have first-hand information about the farmers' challenges.

Competence: From Table 6.4, all the four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Analysis - Small-scale poultry farmers generally expect ASI personnel to be knowledgeable about poultry farming and to render effective extension services.

Table 6.4: One-Sample t-test results for each expectation statement

Service quality dimension	Responses as frequency (%)							n	Mean (SD)	t	df	p-value
	Strongly Disagre	Disagre e	Slightly Disagre	Neither Agree	Slightly Agree	Agree	Strongly Agree					
ACCESS												
1. I expect excellent ASIs to be physically accessible to me	3 (1.5)	4 (2.0)	4 (2.0)	1 (0.5)	5 (2.5)	87 (43.5)	96 (48)	200	6.23 (1.164)	27.104	199	<.0005
2. I expect excellent ASIs to be accessible to me by telephone	3 (1.5)	8 (4.0)	1 (0.5)	5 (2.5)	8 (4.0)	86 (43.0)	89 (44.5)	200	6.11 (1.281)	23.230	199	<.0005
3. I expect excellent ASIs to have an active website and other digital communication platforms to enhance their accessibility to me	8 (4.0)	9 (4.5)	1 (0.5)	8 (4.0)	9 (4.5)	60 (30.0)	105 (52.5)	200	6.01 (1.584)	17.906	199	<.0005
4. I expect excellent ASIs to have branches strategically located near poultry farming SMMEs	1 (0.5)	5 (2.5)	3 (1.5)	2 (1.0)	9 (4.5)	70 (35.0)	110 (55.0)	200	6.32 (1.096)	29.864	199	<.0005
RESPONSIVENESS												
5.I expect excellent ASIs to respond to all my farming needs promptly	1 (.5)	4 (2.0)	2 (1.0)	5 (2.5)	8 (4.0)	76 (38.0)	104 (52.0)	200	6.30 (1.055)	30.757	199	<.0005
6. I expect excellent ASIs to 'never be too busy' to respond to my farming requests	1 (.5)	5 (2.5)	2 (1.0)	7 (3.5)	14 (7.0)	75 (37.5)	96 (48.0)	200	6.19 (1.130)	27.343	199	<.0005
7. I expect excellent ASIs to always be willing to assist me with farming needs	1 (.5)	3 (1.5)	2 (1.0)	2 (1.0)	6 (3.0)	78 (39.0)	108 (54.0)	200	6.38 (.964)	34.847	199	<.0005
8. When I have a problem, I expect an excellent ASI to show sincere interest in solving it	2	3	2	5	6	77	105	200	6.31	30.428	199	<.0005

	(1.0)	(1.5)	(1.0)	(2.5)	(3.0)	(38.5)	(52.5)		(1.071)			
RELIABILITY												
9.When I have a problem, I expect an excellent ASI to show sincere interest in solving it	4 (2.0)	7 (3.5)	-	5 (2.5)	8 (4.0)	66 (33.0)	110 (55.0)	200	6.22 (1.308)	24.008	199	<.0005
10. I expect excellent ASIs to provide their services (e.g. supplying day-old chicks) within the promised time frame	2 (1.0)	3 (1.5)	1 (.5)	2 (1.0)	6 (3.0)	85 (42.5)	101 (50.5)	200	6.33 (1.003)	32.851	199	<.0005
11.I expect excellent ASIs to perform their service right the first time	2 (1.0)	5 (2.5)	1 (.5)	3 (1.5)	5 (2.5)	70 (35.0)	114 (57.0)	200	6.35 (1.111)	29.922	199	<.0005
12. I expect excellent ASIs to keep accurate records	3 (1.5)	4 (2.0)	4 (2.0)	4 (2.0)	5 (2.5)	59 (29.5)	121 (60.5)	200	6.33 (1.219)	26.966	199	<.0005
ASSURANCE												
13. I expect personnel from excellent ASIs' to instil trust in me as they render their service	2 (1.0)	5 (2.5)	1 (.5)	4 (2.0)	6 (3.0)	78 (39.0)	104 (52.0)	200	6.29 (1.118)	28.903	199	<.0005
14. I expect to feel safe/secure in my transactions with excellent ASIs	1 (.5)	8 (4.0)	2 (1.0)	4 (2.0)	2 (1.0)	75 (37.5)	108 (54.0)	200	6.28 (1.190)	27.033	199	<.0005
15. I expect to have confidence in the service received from excellent ASIs	2 (1.0)	4 (2.0)	-	4 (2.0)	3 (1.5)	86 (43.0)	101 (54.0)	200	6.32 (1.036)	31.675	199	<.0005
16. I expect employees from excellent ASIs to be approachable	-	2 (1.0)	1 (.5)	1 (.5)	5 (2.5)	70 (35.0)	121 (60.5)	200	6.52 (.770)	46.198	199	<.0005
EMPATHY												
17.I expect excellent ASIs to provide caring, individualised attention to my needs	3	5	2	3	11	85	91	200	6.17	25.741	199	<.0005

	(1.5)	(2.5)	(1.0)	(1.5)	(5.5)	(42.5)	(45.5)		(1.189)			
18. I expect excellent ASIs take time to pay routine site visits to their poultry farmers whether there is a problem or not	-	8 (4.0)	3 (1.5)	6 (3.0)	18 (9.0)	68 (34.0)	97 (48.5)	200	6.13 (1.208)	24.926	199	<.0005
19. I expect excellent ASIs to give relevant individualised advice to me	1 (.0)	4 (2.0)	1 (.5)	1 (.5)	6 (3.0)	84 (42.0)	103 (51.5)	200	6.36 (.966)	34.468	199	<.0005
20. I expect excellent ASIs to have my best interest at heart	-	4 (2)	-	2 (1.0)	4 (2.0)	75 (37.5)	115 (57.5)	200	6.46 (.867)	40.044	199	<.0005
21. I expect an excellent ASI to understand my specific farming needs	-	2 (1.0)	1 (.5)	3 (1.3)	5 (2.5)	90 (45.0)	99 (49.5)	200	6.39 (.800)	42.162	199	<.0005
22. I expect an excellent ASI to provide a service to me at a time suitable to me	1 (.5)	10 (5.0)	2 (1.0)	2 (1.0)	9 (4.5)	91 (45.5)	85 (42.5)	200	6.11 (1.234)	24.133	199	<.0005
23. I expect excellent ASIs to have convenient office operating hours	-	2 (1.0)	3 (1.5)	3 (1.5)	5 (1.5)	77 (38.5)	110 (55.0)	200	6.41 (.875)	38.949	199	<.0005
COMPETENCE												
24. I expect personnel from excellent ASIs' to be able to display relevant knowledge and skills pertaining to their job	1 (.5)	-	5 (2.5)	1 (.5)	2 (1.0)	78 (39.0)	113 (56.5)	200	6.42 (.974)	35.144	199	<.0005
25. I expect personnel from excellent ASIs' to be knowledgeable about poultry farming	-	4 (2.0)	2 (1.0)	-	2 (1.0)	72 (36)	120 (6.0)	200	6.48 (.891)	39.371	199	<.0005
26.I expect excellent ASIs to be able to provide relevant training to me on best poultry farming practices	2 (1.0)	5 (2.5)	-	-	3 (1.5)	74 (37.0)	116 (58.8)	200	6.42 (1.038)	32.892	199	<.0005
27. I expect excellent ASIs to have the skills to be able to provide efficient extension services to me	-	2 (1.0)	-	3 (1.5)	4 (2.0)	87 (43.5)	104 (52.0)	200	6.43 (.760)	45.202	199	<.0005

Mean score results for individual dimensions are further displayed in Figure 6.4:

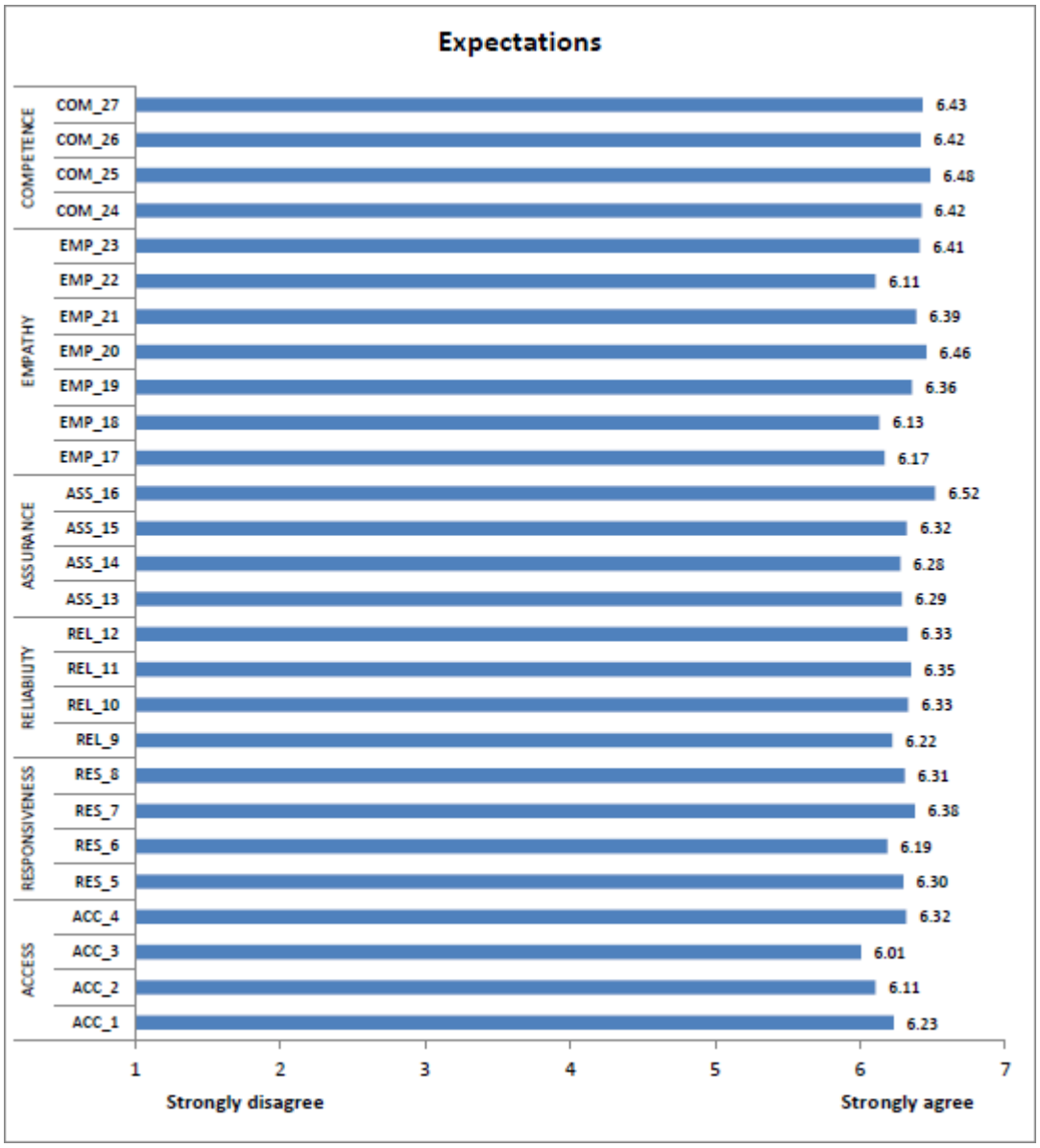

Figure 6.4: Botswana poultry farming SMMEs' service quality expectations from ASIs

The bar chart displayed in Figure 6.1 shows the means scores for individual dimensions range from a minimum of 6.01 for statement ACC_3 to a maximum of 6.52 for statement ASS_16. The mean score is deemed significant if the average agreement score differs significantly from and is also greater than the central score of '4'. It is therefore concluded that all the 27 expectation statements in this SERVQUAL instrument are significant. This shows that the customer (small-scale) poultry farmers generally strongly agree with the expectation statements in this instrument. These statements give a clear picture of the quality-of-service poultry farming SMMEs in Botswana expect to receive from their ASIs.

6.4 : SECTION 3: SERVICE QUALITY EXPERIENCES

This section presents findings from the service quality experiences section of the questionnaire. Six SERVQUAL dimensions (Access, Assurance, Empathy, Competence, Reliability and Responsiveness) are presented in the findings in this section. The experiences section comprises 27 questions, with each service quality dimensions attached to questions as shown in the Table 6.5. These statements were used to determine Botswanan small-scale poultry farmers' expectation of service quality from their ASIs.

Furthermore, in this section, frequencies, percentages, and average scores are displayed for each statement. The one-sample t-test is used to test for significant agreement or disagreement for each question in this section. Experience questions numbers and the associated SERVQUAL dimensions are illustrated in Table 6.5:

Table 6.5: Linking Experience questions to SERVQUAL dimensions.

SERVQUAL DIMENSION	EXPERIENCE QUESTIONS
Access	EXPER_ACC (1,2,3,4)
Responsiveness	EXPER_RES (5,6,7,8)
Reliability	EXPER_REL (9,10,11,12)
Assurance	EXPER_ASS (13,14,15,16)
Empathy	EXPER_EMP (17,18,19,20,21,22,23)
Competence	EXPER_COMP (24,25,26,27)

6.4.1 : Experience statements and their definitions.

To provide insight into the statements used and to simplify the statistics used further in this section, expectation statement numbers and their associated expectation statement definitions are shown in Tables 6.2 and 6.3:

Table 6.6: Experience statements (1-27)

Experience	Statements
EXPER_ACC 1	My ASIs are physically accessible to me
EXPER_ACC 2	I can easily reach my ASIs by telephone
EXPER_ACC 3	My ASIs have active websites and other digital communication platforms through which I can access them
EXPER_ACC 4	My ASIs have branches strategically located near my poultry farm
EXPER_RES 5	My ASIs respond to all my farming needs promptly
EXPER_RES 6	My ASIs are 'never be too busy' to respond to my farming requests
EXPER_RES 7	My ASIs are always willing to assist me with farming needs
EXPER_RES 8	When I have a problem, my ASIs show sincere interest in solving it
EXPER_REL 9	My ASIs provide their services (e.g., supplying day-old chicks; vaccines; etc.) within the promised time frame
EXPER_REL 10	My ASIs perform their service right the first time
EXPER_REL 11	My ASIs keep accurate records
EXPER_REL 12	My ASIs can be relied upon to provide me with good quality basic inputs like feeds, day-old chicks, vaccines, equipment and other basic inputs.
EXPER_ASS 13	Personnel from my ASIs instil trust in me as they render their service
EXPER_ASS 14	I feel safe/secure in my transactions with my ASIs
EXPER_ASS 15	I have confidence in the services received from my ASIs
EXPER_ASS 16	Employees from my ASIs are approachable
EXPER_EMP 17	My ASIs provide caring, individualised attention to my needs
EXPER_EMP 18	My ASIs take time to pay routine site visits to my poultry farm whether there is a problem or not

EXPER_EMP 19	My ASIs give me relevant individualised advice
EXPER_EMP 20	My ASIs have my best interest at heart
EXPER_EMP 21	My ASI understands my specific farming needs
EXPER_EMP 22	My ASI provide me with services at a time suitable to me
EXPER_EMP 23	My ASIs have convenient office operating hours
EXPER_COM 24	Personnel from my ASIs can display relevant knowledge and skills pertaining to their job
EXPER_COM 25	Personnel from my ASIs are knowledgeable about poultry farming
EXPER_COM 26	My ASIs can provide relevant training to me on best poultry farming practices
EXPER_COM 27	My ASIs have the skills to be able to provide efficient extension services to me

6.4.2 : Analysis for each experience question

Each experience statement was tested for significant agreement or disagreement and the results are displayed in Table 6.7. The one-sample t-test was conducted to establish whether the average or mean agreement score differs significantly from the central score of 4.

Results for each dimension as summarised in Table 6.7 are as follows:

Access (item 1-4): From Table 6.7, all four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Responsiveness (item 5-8): From Table 6.7, all four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Reliability (item 9-12): From Table 6.7, all four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Assurance (item 13-16): From Table 6.7, all four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Empathy (item 17-23): From Table 6.7, statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension. Only item 18 yielded neither significant agreement nor significant disagreement with a mean score of 4.20.

Competence (item 24-27): From Table 6.7, all four statements under this dimension yielded a mean score > 4, hence there is significant agreement for this dimension.

Table 6.7: One-Sample t-test results for individual experience statements

Service quality dimension	Responses as frequency (%)							n	Mean (SD)	t	df	p-value
	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree	Slightly Agree	Agree	Strongly Agree					
ACCESS												
1. My ASIs are physically accessible to me	6 (3.0)	23 (11.5)	7 (3.5)	8 (4.0)	28 (14.0)	87 (43.5)	41 (20.5)	200	5.27 (1.700)	10.562	199	<.0005
2. I can easily reach my ASIs by telephone	7 (3.5)	20 (10.0)	6 (3.0)	6 (3.0)	15 (7.5)	101 (50.5)	45 (22.5)	200	5.43 (1.688)	11.940	199	<.0005
3. My ASIs have active websites and other digital communication platforms through which I can access them	9 (4.5)	27 (13.5)	9 (4.5)	20 (10.0)	16 (8.0)	87 (43.5)	32 (16.0)	200	4.98 (1.818)	7.622	199	<.0005
4. My ASIs have branches strategically located near my poultry farm	10 (5.0)	43 (21.5)	3 (1.5)	5 (2.5)	20 (10.0)	82 (41.0)	37 (18.5)	200	4.88 (1.994)	6.242	199	<.0005
RESPONSIVENESS												
5. My ASIs respond to all my farming needs promptly	14 (7.0)	44 (22.0)	3 (1.5)	11 (5.5)	31 (15.5)	67 (33.5)	30 (15.0)	200	4.61 (2.004)	4.304	199	<.0005
6. My ASIs are 'never be too busy' to respond to my farming requests	8 (4.0)	42 (21.0)	2 (1.0)	16 (8.0)	27 (13.5)	77 (38.5)	28 (14.0)	200	4.78 (1.887)	5.807	199	<.0005
7. My ASIs are always willing to assist me with farming needs	8 (4.0)	24 (12.0)	2 (1.0)	9 (4.5)	23 (11.5)	105 (52.5)	29 (14.5)	200	5.23 (1.695)	10.265	199	<.0005
8. When I have a problem, my ASIs show sincere interest in solving it	9	33	5	16	21	79	37	200	4.96	7.220	199	<.0005

	(4.5)	(16.5)	(2.5)	(8.0)	(10.5)	(39.5)	(18.5)		(1.880)			
RELIABILITY												
9. My ASIs provide their services (e.g. supplying day-old chicks; vaccines; etc) within the promised time frame	10 (5.0)	43 (21.5)	5 (2.5)	18 (9.0)	23 (11.5)	78 (39.0)	23 (11.5)	200	4.64 (1.913)	4.694	199	<.0005
10. My ASIs perform their service right the first time	6 (3.0)	26 (13.0)	5 (2.5)	11 (5.5)	24 (12.0)	94 (47.0)	34 (17.0)	200	5.20 (1.712)	9.870	199	<.0005
11. My ASIs keep accurate records	5 (2.5)	23 (11.5)	6 (3.0)	17 (8.5)	14 (7.0)	101 (50.5)	34 (17.0)	200	5.26 (1.665)	10.657	199	<.0005
12. My ASIs can be relied upon to provide me with good quality basic inputs like feeds, day-old chicks, vaccines, equipment, and other basic inputs.	8 (4.0)	27 (13.5)	3 (1.5)	12 (6.0)	18 (9.0)	95 (47.5)	37 (18.5)	200	5.19 (1.780)	9.453	199	<.0005
ASSURANCE												
13. Personnel from my ASIs instil trust in me as they render their service	4 (2.0)	11 (5.5)	1 (.05)	12 (6.0)	12 (6.0)	126 (63.0)	34 (17.0)	200	5.66 (1.336)	17.519	199	<.0005
14. I feel safe/secure in my transactions with my ASIs	4 (2.0)	-	15 (7.5)	7 (3.5)	18 (9.0)	118 (59.0)	38 (19.0)	200	5.63 (1.412)	16.328	199	<.0005
15. I have confidence in the services received from my ASIs	5 (2.5)	16 (8.0)	-	12 (6.0)	16 (8.0)	110 (55.0)	41 (20.5)	200	5.56 (1.499)	14.716	199	<.0005
16. Employees from my ASIs are approachable	2 (1.0)	13 (6.5)	3 (1.5)	7 (3.5)	26 (13.0)	100 (50.0)	49 (24.5)	200	5.69 (1.361)	17.557	199	<.0005
EMPATHY												
17. My ASIs provide caring, individualised attention to my needs	2	28	4	10	30	91	35	200	5.26	10.896	199	<.0005

	(1.0)	(14.0)	(2.0)	(5.0)	(15.0)	(45.5)	(17.5)		(1.629)			
18. My ASIs take time to pay routine site visits to my poultry farm whether there is a problem or not	25 (12.5)	50 (25.0)	6 (3.0)	13 (6.5)	14 (7.0)	69 (34.5)	23 (11.5)	200	4.20 (2.150)	1.315	199	<.190
19. My ASIs give me relevant individualised advice	9 (4.5)	30 (15.0)	5 (2.5)	9 (4.5)	23 (11.5)	94 (47.0)	30 (15.0)	200	5.05 (1.816)	8.136	199	<.0005
20. My ASIs have my best interest at heart	6 (3.0)	26 (13.0)	4 (2.0)	12 (6.0)	28 (14.0)	95 (47.5)	29 (14.5)	200	5.16 (1.684)	9.701	199	<.0005
21. My ASI understands my specific farming needs	5 (2.5)	28 (14.0)	5 (2.5)	11 (5.5)	32 (16.0)	89 (44.5)	30 (15.0)	200	5.12 (1.691)	9.366	199	<.0005
22. My ASI provide me with services at a time suitable to me	5 (2.5)	35 (17.5)	7 (3.5)	19 (9.5)	28 (14.0)	83 (41.5)	23 (11.5)	200	4.86 (1.755)	6.890	199	<.0005
23. My ASIs have convenient office operating hours	2 (1.0)	26 (13.0)	2 (1.0)	5 (2.5)	14 (7.0)	114 (57.0)	37 (18.5)	200	5.47 (1.582)	13.100	199	<.0005
COMPETENCE												
24. Personnel from my ASIs can display relevant knowledge and skills pertaining to their job	6 (3.0)	23 (11.5)	2 (1.0)	6 (3.0)	22 (11.0)	107 (53.5)	34 (17.0)	200	5.36 (1.638)	11.740	199	<.0005
25. Personnel from my ASIs are knowledgeable about poultry farming	3 (1.5)	14 (7)	3 (1.5)	9 (4.5)	18 (9.0)	122 (61.0)	31 (15.5)	200	5.58 (1.373)	16.229	199	<.0005
26. My ASIs can provide relevant training to me on best poultry farming practices	6 (3.0)	53 (26.5)	6 (3.0)	11 (5.5)	17 (8.5)	76 (38.0)	31 (15.5)	200	4.66 (1.986)	4.700	199	<.0005
27. My ASIs have the skills to be able to provide efficient extension services to me	5 (2.5)	28 (14.0)	4 (2.0)	8 (4.0)	19 (9.5)	105 (52.5)	31 (15.5)	200	5.24 (1.698)	10.284	199	<.0005

The mean score results for individual dimensions are further displayed in Figure 6.5:

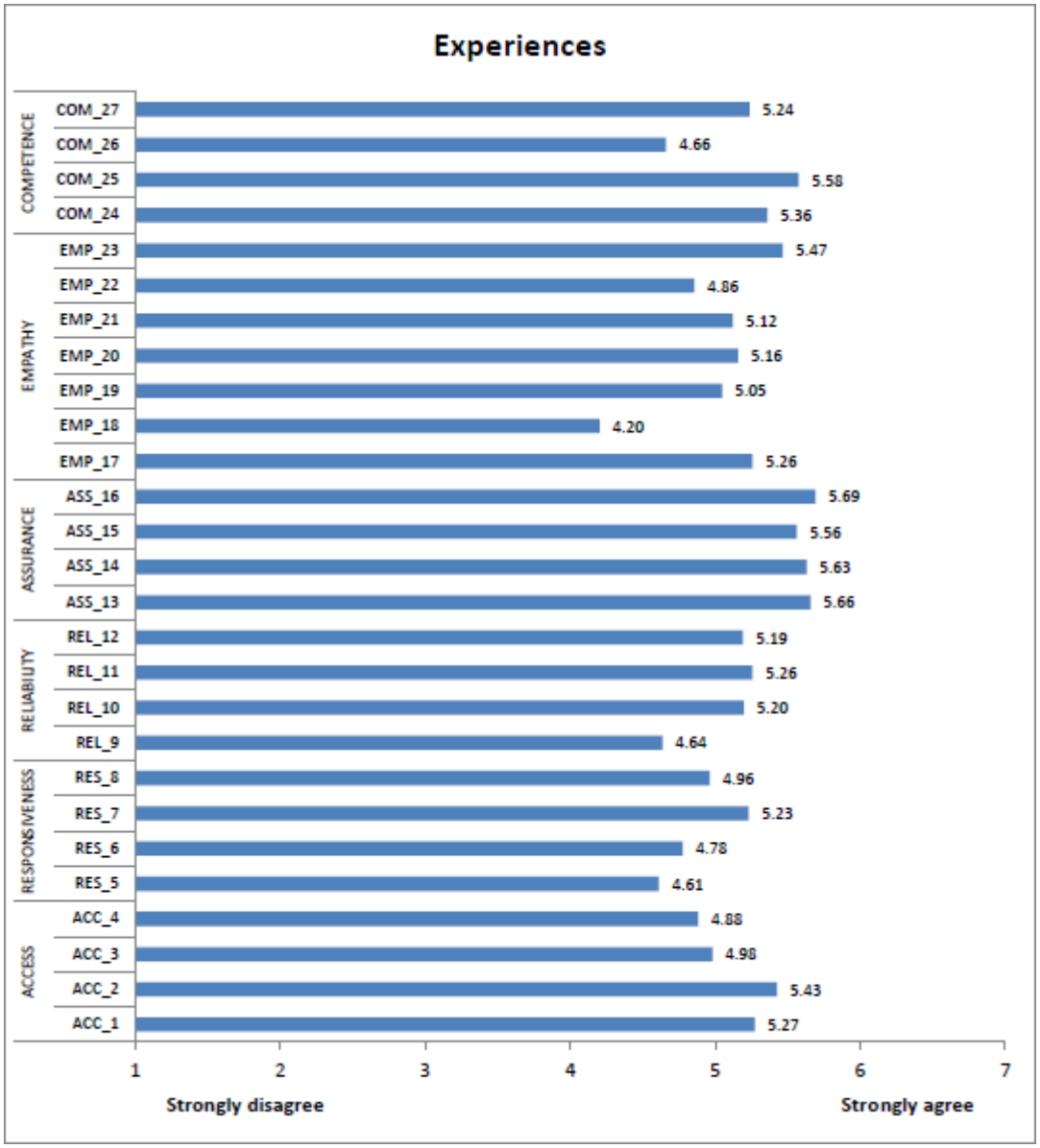

Figure 6.5: Botswana poultry farming SMMEs' service quality experiences from ASIs.

The bar chart displayed in Figure 6.5 shows that the mean scores for individual dimensions range from a minimum of 4.20 for statement EMP_18 to a maximum of 5.69 for statement ASS_16. The mean score is deemed significant if the average agreement score differs significantly from and is also greater than the central score of "4". It is therefore concluded that 26 of the expectation statements in this SERVQUAL instrument are significant and one (EMP_18) is inconclusive. This shows that the customer (small-scale) poultry farmers generally slightly agree with the experience statements in this instrument. These statements give a picture of the quality-of-service

poultry farming SMMEs in Botswana receive from their ASIs.

6.4.3 : Comparative view of expectation and experience mean scores

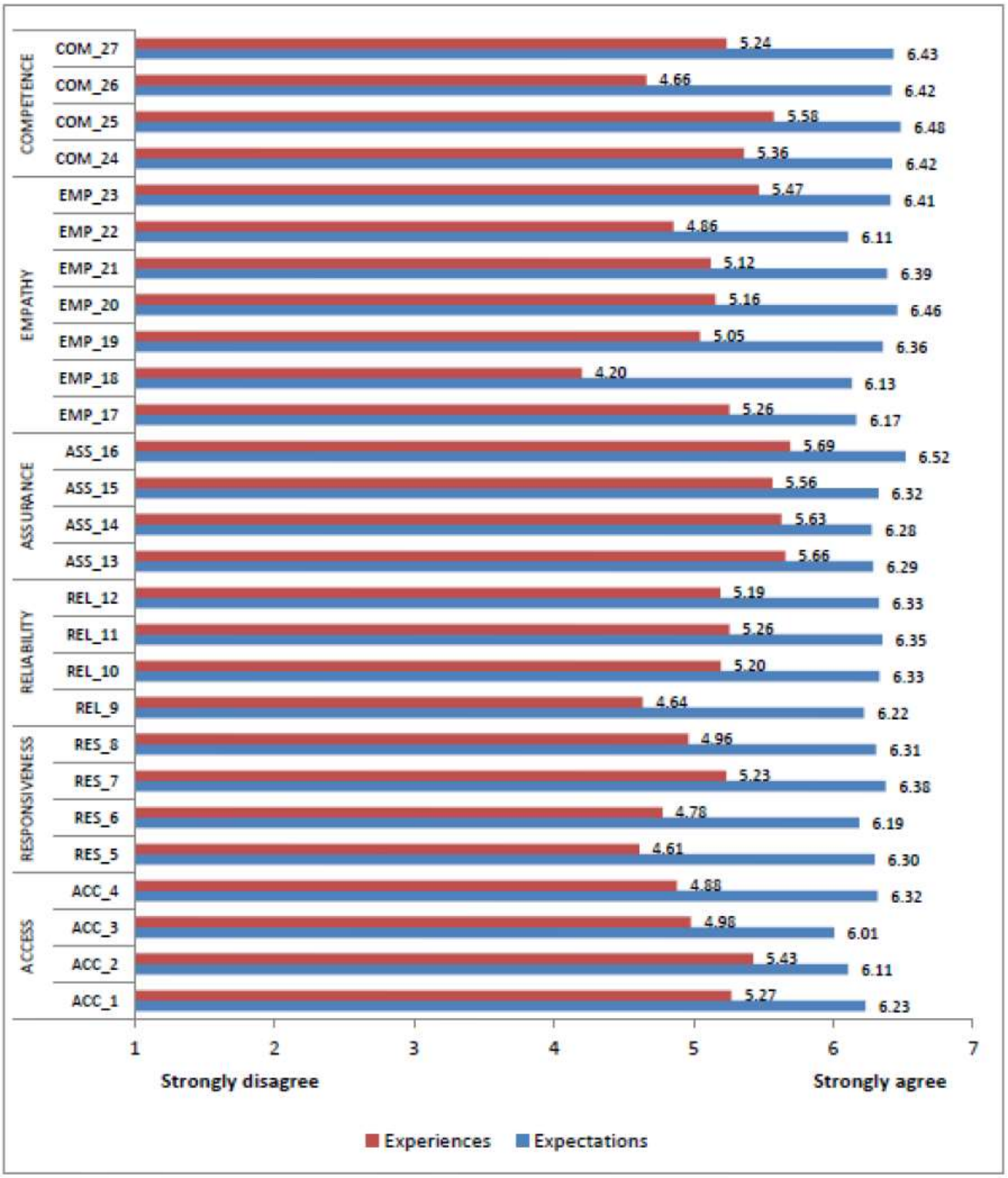

Figure 6.6**:** A comparative view of expectation and experience mean scores

The comparative display of expectation and experience mean scores shows that the mean scores for expectations (6.01-6.52) are significantly higher than the mean scores for experiences (4.20-5.69) across all t 27 items.

6.5 **GAP ANALYSIS**

This section presents the gap analysis for each item in the questionnaire. This provides insights on the difference between the quality of service that small-scale poultry farmers expect from ASIs and the actual quality of service they receive. The larger the gap, the more the service quality poultry farming SMMEs experience falls short of what they expect to receive from ASIs.

Table 6.8: **One-sample t-test on each service quality Item**

GAP	Test Value=0						
						95%Confidence Intervals of the gaps	
	n	p-value	t	df	Mean difference	Lower	Upper
Gap 1	200	<.0005	7.293	199	.960	.70	1.22
Gap 2	200	<.0005	4.798	199	.680	.4	.96
Gap 3	200	<.0005	6.906	199	1.025	.73	1.32
Gap 4	200	<.0005	8.994	199	1.435	1.12	1.75
Gap 5	200	<.0005	10.900	199	1.685	1.38	1.99
Gap 6	200	<.0005	9.448	199	1.410	1.12	1.70
Gap 7	200	<.0005	8.568	199	1.145	.88	1.41
Gap 8	200	<.0005	9.165	199	1.345	1.06	1.63
Gap 9	200	<.0005	10.355	199	1.585	1.28	1.89
Gap 10	200	<.0005	9.158	199	1.135	.89	1.38
Gap 11	200	<.0005	9.205	199	1.095	.86	1.33
Gap 12	200	<.0005	7.760	199	1.135	.85	1.42
Gap 13	200	<.0005	5.606	199	.630	.41	.85
Gap 14	200	<.0005	6.221	199	.645	.44	.85
Gap 15	200	<.0005	6.846	199	.760	.54	.98
Gap 16	200	<.0005	7.985	199	.825	.62	1.03
Gap 17	200	<.0005	7.174	199	.910	.66	1.16
Gap 18	200	<.0005	10.791	199	1.930	1.58	2.28

Gap 19	200	<.0005	9.167	199	1.310	1.03	1.59
Gap 20	200	<.0005	10.677	199	1.300	1.06	1.54
Gap 21	200	<.0005	10.674	199	1.265	1.03	1.50
Gap 22	200	<.0005	8.966	199	1.250	.98	1.52
Gap 23	200	<.0005	8.674	199	.945	.73	1.16
Gap 24	200	<.0005	9.023	199	1.060	.83	1.29
Gap 25	200	<.0005	8.033	199	.905	.68	1.13
Gap 26	200	<.0005	11.402	199	1.755	1.45	2.06
Gap 27	200	<.0005	9.370	199	1.195	.94	1.45

From Table 6.7: GAP = Expected service quality-experienced service quality. The one-sample t-test above was applied to test whether the gap on each dimension was significantly different from '0'. If the gap>0 and is significantly different, then service quality on that dimension falls below customers' expectation. On the contrary, if gap<0 (negative) and is significantly different from "0", then service quality experienced for that dimension exceeds customer expectation. Since all gaps are significantly greater than zero, and all the average gaps are >0, it follows that for each item, service quality experience falls short of the expectation. Therefore, Botswana ASI's service quality fall short of small-scale poultry farmers expectations across the dimensions access, responsiveness, reliability, empathy, assurance, and competence.

6.5.1 : Comparison of gaps in service quality dimensions

Service quality gaps and associated dimensions ordered to identify the worst performers (biggest gap) and best performers (smallest gap).

Table 6.9: Service quality gaps ordered from best to worst.

Dimension	Service Quality Item	Average Gap
ASS_13	Instil trust	.63
ASS_14	Safe/secure transactions	.65
ACC_2	Accessible by phone	.68

ASS_15	Confidence in service	.76
ASS_16	Approachable employees	.83
COM_25	Personnel knowledgeable about poultry farming	.91
EMP_17	Caring, individualised attention	.91
EMP_23	Convenient operating hours	.95
ACC_1	Physically accessible	.96
ACC_3	Digitally accessible	1.03
COM_24	Personnel display knowledge and skills	1.06
REL_11	Keep accurate records	1.10
REL_10	Perform service right first time	1.14
REL_12	Rely on to provide quality inputs	1.14
RES_7	Always willing to assist	1.15
COM_27	Skills to provide extension services	1.20
EMP_22	Provide services at suitable times	1.25
EMP_21	Understand specific needs	1.27
EMP_20	Have my best interest at heart	1.30
EMP_19	Give relevant individualised advice	1.31
RES_8	Show sincere interest in solving problems	1.35
RES_6	Never too busy to respond	1.41
ACC_4	Strategically located branches	1.44
REL_9	Provide services when promised	1.59
RES_5	Prompt response to needs	1.69
COM_26	Provide relevant training	1.76
EMP_18	Pay routine visits	1.93

Findings reveal that gaps on all 27 items are positive, implying that expectations exceed perceptions in all six service quality dimensions. From Table 6.8 above, the gaps are displayed in ascending order with gaps 18, 26 and 5 being the top three. EMP_18 is the worst performer with the largest gap of 1.93. This item is about how often ASIs pay routine visits to check on poultry farming SMMEs in Botswana. Gaps 13, 14 and 2 are the top three best performers and the item Assurance (ASS_13) is the best performer with the smallest gap of .63. This dimension is concerned with how much ASIs employees instil trust in small-scale poultry farmers in Botswana in

the process of rendering service to them.

6.5.2 Analysis on combined items in each dimension

To reduce the 27 items measuring service quality according to the SERVQUAL dimensions to a few meaningful and reliable service quality dimensions applicable to this study sample, factor analysis with Promax rotation was applied to the 27 'gap' items. Items 12 and 23 were dropped because they did not load strongly enough onto any factor; while items 11 and 16 were dropped because they cross loaded onto several factors. Four factors were extracted which account for 48.09% of the variance in the data. A Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) of .910 and a significant Bartlett's test indicates that the data was adequate for successful and reliable extraction. Rotation converged in 6 iterations.

The factor loadings, along with the contribution that each factor makes to the variance in the data and a reliability measure using Cronbach's alpha is summarised in Table 6.9.

Table 6.10: Factor loadings of the Gap variables.

Table 6.10: Factor loadings of the Gap variables

	Factor			
	1	2	3	4
Gap27	.890			
Gap26	.747			
Gap25	.699			
Gap24	.687			
Gap21	.679			
Gap19	.665			
Gap18	.649			
Gap20	.599			
Gap22	.567			

Gap6		.841		
Gap7		.826		
Gap5		.683		
Gap17		.398		
Gap9		.360		
Gap8		.356		
Gap14			.791	
Gap13			.728	
Gap15			.663	
Gap10			.345	
Gap1				.748
Gap3				.469
Gap2				.438
Gap4				.395
Variance extracted	35.90	5.23	4.38	2.59
Cronbach's alpha	.888	.835	.800	.598

From these results, service quality dimensions applicable to this study are:

- Competence and Empathy
- Responsiveness
- Assurance and
- Access

This structure indicates that construct validity (including convergent and discriminant validity) has been achieved. In addition, reliability is good for the first three factors. While it is marginal for the fourth factor, this factor will be retained and interpreted with caution. Composite variables for these dimensions are formed by calculating the average of the agreement scores for all items included in a variable.

6.5.2.1 **One-sample t-test for significance of each gap**.

A one-sample t-test was now conducted to on the service quality dimensions competency and empathy, responsiveness, assurance, and access to determine if the gap in each dimension is significantly different '0'. The results were summarised in Table 6.10 below.

Table 6.11 Summary of results on one-sample t-test for significance of each gap

Construct	n	Mean (SD)	t	df	p-value
GAP Competence and Empathy	200	1.34 (1.423)	13.302	199	<.001*
GAP Responsiveness	200	1.3467 (1.51093)	12.605	199	<.001*
GAP Assurance	200	.7925 (1.26290)	8.875	199	<.001*
GAP Access	200	1.0250 (1.38686)	10.452	199	<.001*

6.5.3 : Gap analysis on composite measures

Gap analysis was carried out on the composite measures. This was done to determine whether there were significant differences between gaps on the composite service quality dimensions under consideration. A one-sample t-test was carried out as shown in Table 6.12:

Table 6.12: One-sample t-test on service quality gaps in composite dimensions

GAP	Test Value=0						
						95%Confidence Intervals of the gaps	
	n	p-value	t	df	Mean difference	Lower	Upper
GAP_ACC	200	<.0005	10.452	199	1.02500	.8316	1.2184

GAP_RES	200	<.0005	11.953	199	1.39625	1.1659	1.6266
GAP_REL	200	<.0005	11.797	199	1.23750	1.0306	1.4444
GAP_ASS	200	<.0005	8.435	199	.71500	.5478	.8822
GAP_EMP	200	<.0005	13.261	199	1.27286	1.0836	1.4621
GAP_COMP	200	<.0005	11.895	199	1.22875	1.0250	1.4325

Results of the one-sample t-test in Table 6.12 are displayed in Figure 6.7 for analysis:

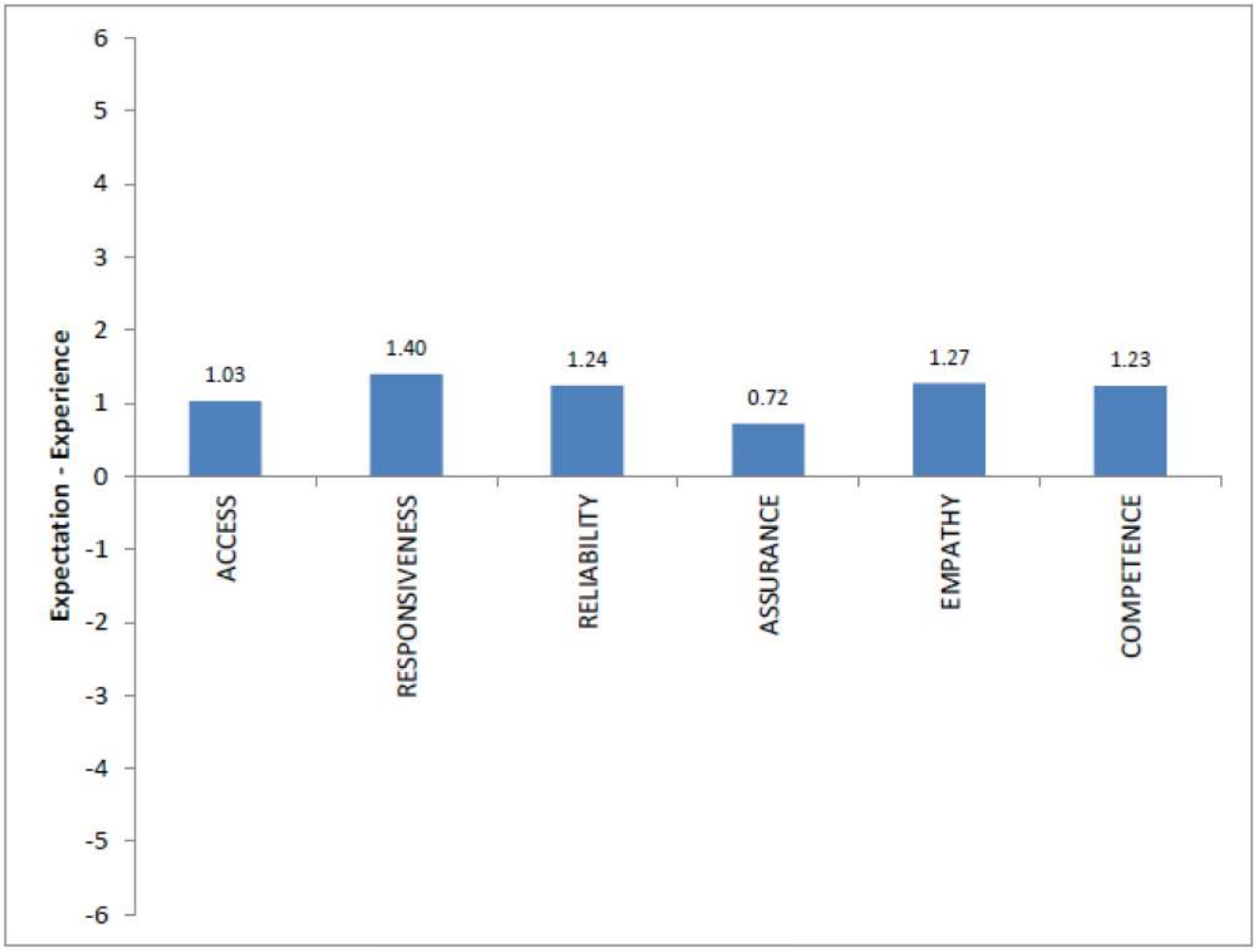

Figure 6.7: Gaps in composite dimensions

Findings from Table 6.11show that all six composite dimensions have positive mean gaps between expected service quality and the actual quality of service experienced by poultry farming SMMEs, where gap = experienced service quality - expected service quality. This affirms that ASIs' actual service quality in Botswana falls short of small-scale poultry farmers' expected quality of service across all dimensions. Figure

6.5 shows that responsiveness has the biggest mean gap (1.40), hence is the worst performer. On the other hand, assurance is the best performer with a mean gap of 0.72.

6.5.3.1 : Tests for significant differences in mean gaps

A Friedman test was carried out to test for significant differences in the mean gaps. This was done to identify which dimensions are worse (bigger gaps) than others for recommendation purposes. There was found to be a significant difference between the dimensions p<.0005. Specific differences, as found using the Wilcoxon signed ranks test on each pair with a Bonferroni adjustment, are as follows: The gap in assurance is significantly smaller than the gaps in access (.032); responsiveness (p<.0005); reliability (<.0005); empathy (<.0005) and competence (<.0005). In addition, the gap in access is significantly smaller than the gap in responsiveness (.013).

6.6 Weighting of service quality dimension

Analysis was done to determine whether there is a significance difference in the importance of each service quality dimension. A scale from 1 = 'Not at all important' to 5 = 'Extremely important' was used to determine the average importance for each dimension. The findings are shown in Table 6.12:

Table 6.13: Average importance of each dimension

Dimension	n	Mean	SD
4.1 The accessibility of the ASI to you/your SMME	200	4.34	1.004
4.2 The willingness of ASIs to help you/ your SMME and provide service promptly	200	4.23	.984
4.3 The ability of ASIs to perform the promised service dependably and accurately.	200	4.20	.982
4.4 The ability of ASI employees to instil trust and confidence in you as they render services	200	4.18	1.069
4.5 The ability of ASI personnel to provide you/your SMME with caring, individualised attention.	200	4.18	1.034
4.6 ASI employees' possession of the skills and knowledge required to perform the service.	200	4.26	.992

The weighting of service quality dimensions is further displayed in Figure 6.8:

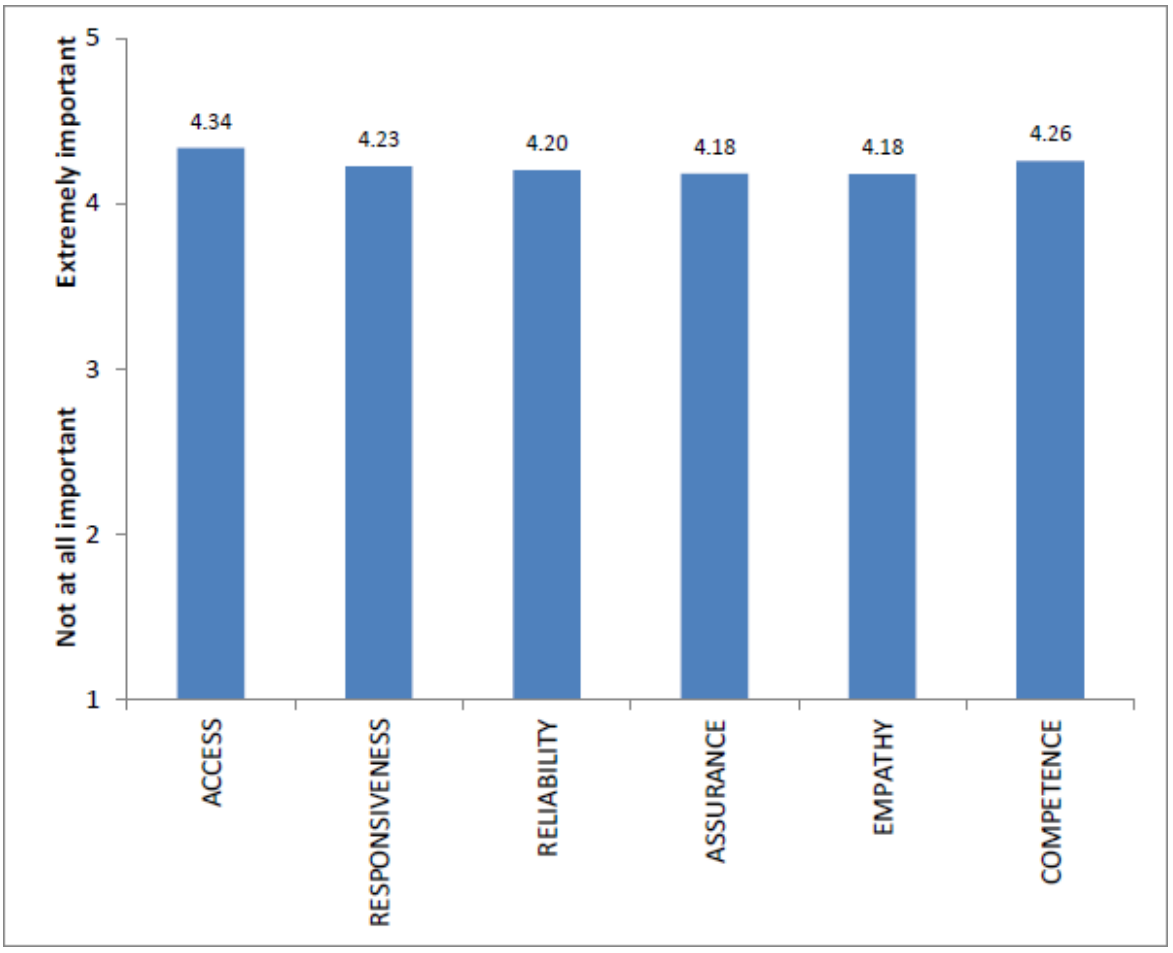

Figure 6.8**:** Weighting of service quality dimensions

Analysis shows that the average importance of each dimension indicates that they are all considered important. This shows that there are no significant differences in the importance assigned to each service quality dimension.

6.7 : Measures of business performance

This section presents findings from the business performance section of the questionnaire. The performance measures profitability, sales growth, market share, business growth and product quality were analysed in this section. A scale of 1 = 'Very poor' to 5 = 'Excellent' was used. This yielded the results shown in Table 6.14:

Table 6.14: Measures of business performance

Performance Measure	n	Mean	SD
5.1 Your poultry farm's Profitability	200	3.22	1.043
5.2 Your poultry farm's Sales Growth	200	3.29	1.059
5.3 Your poultry farm's Market Share	200	3.36	1.143
5.4 Your Poultry farm's Business Growth	200	3.28	1.070
5.5 Your poultry farm's Product Quality	200	4.31	.859

Findings as shown on Table 6.14 indicates that performance is rated significantly higher than 3 for each performance measure, $p<.05$ in each case. For comparison purposes between the five different performance measures, the results are further displayed in Figure 6.9:

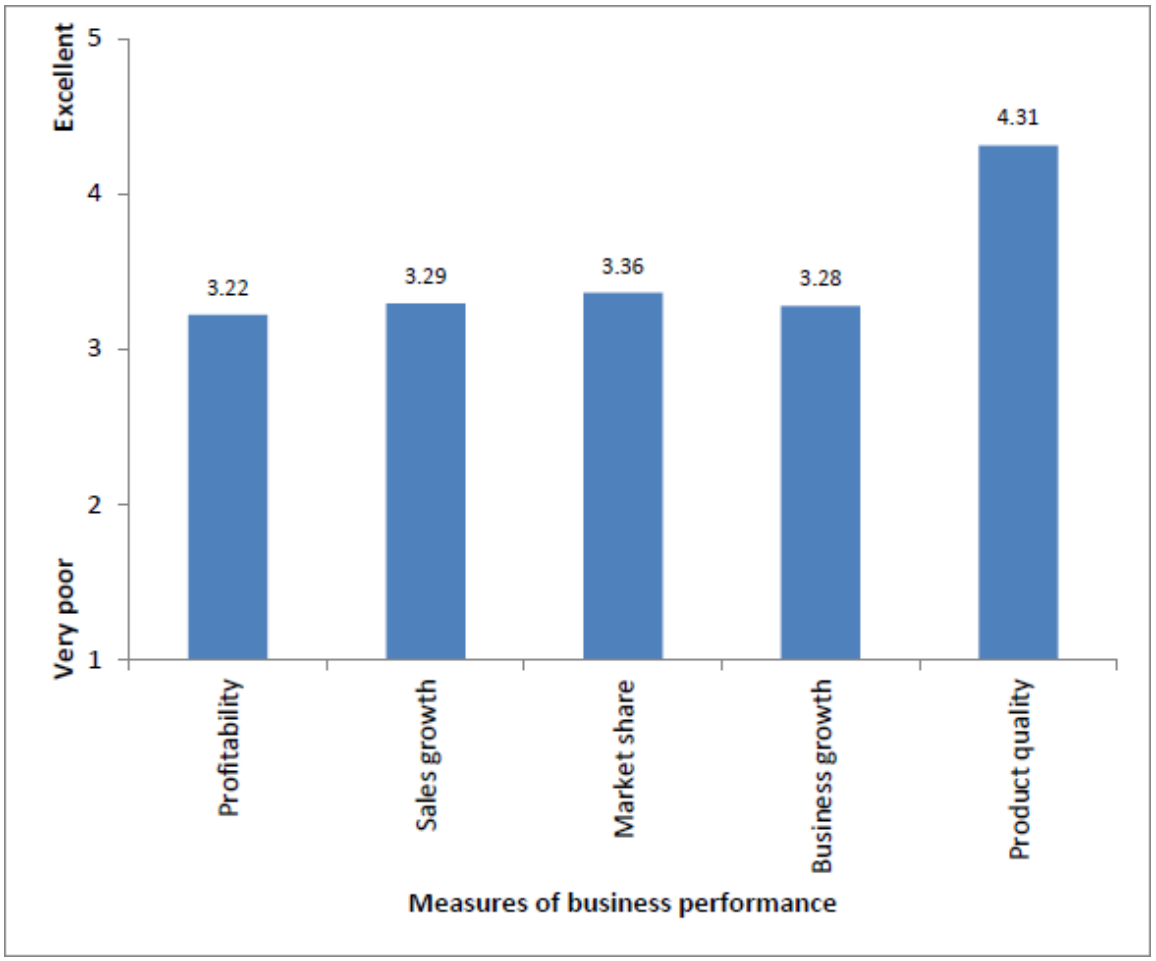

Figure 6.9: Measures of business performance

Further analysis shows that performance in product quality is significantly better than in the other areas of performance, namely p<.0005 in each case.

6.7.1 : Impact of Service quality on business growth and performance

In this section, findings on the analysis of impact of service quality on business growth and performance are presented. The impact of service quality on the performance areas profitability, sales growth, market share, business growth and product quality were analysed. Regression analyses was done for each performance measure: profitability, sales growth, market share, business growth and product quality, the Dependent Variables (DVs). Analysis was done to see if one combined measure could be used, and this was tested using PERF (an average of 5.1-5.5; alpha=.728).

Independent Variables (IVs) were the GAPs for each dimension as extracted from section 6.5.2 and these are Gap Competence and Empathy, Gap Responsiveness, Gap Assurance, and Gap Access. Analysis was done to determine if these dimensions could be combined into a single reliable measuring GAP in service quality. This was achieved using GAPSQ, a single measure formed by averaging the scores from the 4 individual dimensions. Reliability was determined as Cronbach's alpha=8.15. Factor analysis was applied in section 6.5.2 and the 4 items all loaded onto a single factor with and successful factor analysis was carried out. Additionally, the demographics training (section 1.6), age of business (section 1.7) and size of business (section 1.8) were also included as IVs and tested if they could moderate the relationship between the service quality dimensions and performance.

6.7.1.1 Test of between -subjects effects

This section shows finding from tests of between-subjects effects. The dependent variables profitability, sales growth, market share, business growth were taken one at a time and the independent variables are GAP_CompEmp; GAP_ Resp; GAP_Assur; GAP_Access.

Table 6.15: Your poultry farm's Profitability

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	17.333[a]	11	1.576	1.489	.138	.080
Intercept	551.406	1	551.406	520.961	.000	.735
ZGAP_CompEmp	.002	1	.002	.002	.964	.000
ZGAP_Resp	1.909	1	1.909	1.803	.181	.010
ZGAP_Assur	.986	1	.986	.931	.336	.005
ZGAP_Access	.759	1	.759	.717	.398	.004
Training	7.396	1	7.396	6.988	.009	.036
OperatingTime	7.337	4	1.834	1.733	.144	.036
Size	2.665	2	1.333	1.259	.286	.013
Error	198.987	188	1.058			
Total	2290.000	200				
Corrected Total	216.320	199				

a. R Squared = .080 (Adjusted R Squared = .026)

The significant predictor of 5.1 is training. In this case, the coefficient for training (yes) = .385 Indicating that a unit increase in training will cause a .385 increase in the small-scale poultry farmer's performance.

Table 6.16: Your poultry farm's Sales Growth

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	16.246[a]	11	1.477	1.342	.204	.073
Intercept	610.571	1	610.571	554.705	.000	.747
ZGAP_CompEmp	2.908	1	2.908	2.642	.106	.014

ZGAP_Resp	1.438	1	1.438	1.306	.255	.007
ZGAP_Assur	1.305	1	1.305	1.185	.278	.006
ZGAP_Access	3.413	1	3.413	3.100	.080	.016
Training	5.869	1	5.869	5.332	.22	.028
OperatingTime	4.365	4	1.091	.992	.413	.021
Size	.131	2	.066	.060	.942	.001
Error	206.934	188	1.101			
Total	2388.000	200				
Corrected Total	223.180	199				

R Squared = .073 (Adjusted R Squared = .019)

Training is a significant predictor. In addition, GAP_Access is marginally significant at (p=.080). The coefficient for GAP_Access = -.156 indicating that as the gap (Access) increases, the sales growth decreases, p=.080. So, while this is not significant at 5% level, it is however significant at 10% level. This indicates that skills training of small-scale poultry farmer and accessibility of their ASIs leads to increased sales.

Table 6.17: Your Poultry farm's Business Growth

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9.901[a]	11	.900	.776	.663	.043
Intercept	585.049	1	585.049	504.598	.000	.729
ZGAP_CompEmp	.007	1	.007	.006	.940	.000
ZGAP_Resp	3.740	1	3.740	3.226	.074	.017
ZGAP_Assur	.607	1	.607	.524	.470	.003
ZGAP_Access	1.688	1	1.688	1.456	.229	.008
Training	.030	1	.030	.026	.873	.000
OperatingTime	4.421	4	1.105	.953	.434	.020
Size	1.332	2	.666	.575	.564	.006

Error	217.974	188	1.159			
Total	2373.000	200				
Corrected Total	227.875	199				

a. R Squared = .043 (Adjusted R Squared = -.013)

There is marginal significance for GAP_Resp with coefficient = .207. This shows that an increase in the in ASIs responsiveness leads to an increase in small-scale poultry farmer's business growth (p=.074).

6.7.1.2 Interactions between the covariates and performance variables

This section presents findings to determine if the covariates training, size of business and age of business moderated the relationships of GAP variables competence and empathy, responsiveness, assurance and access the performance measures profitability, market share, business growth, product quality and sales growth. Only market share yielded significant results as indicated in Figure 6.10 and Figure 6.11 below.

The graph below shows findings on dependent variable (Market share), covariate (training) and independent variable (Gap Competence and Empathy).

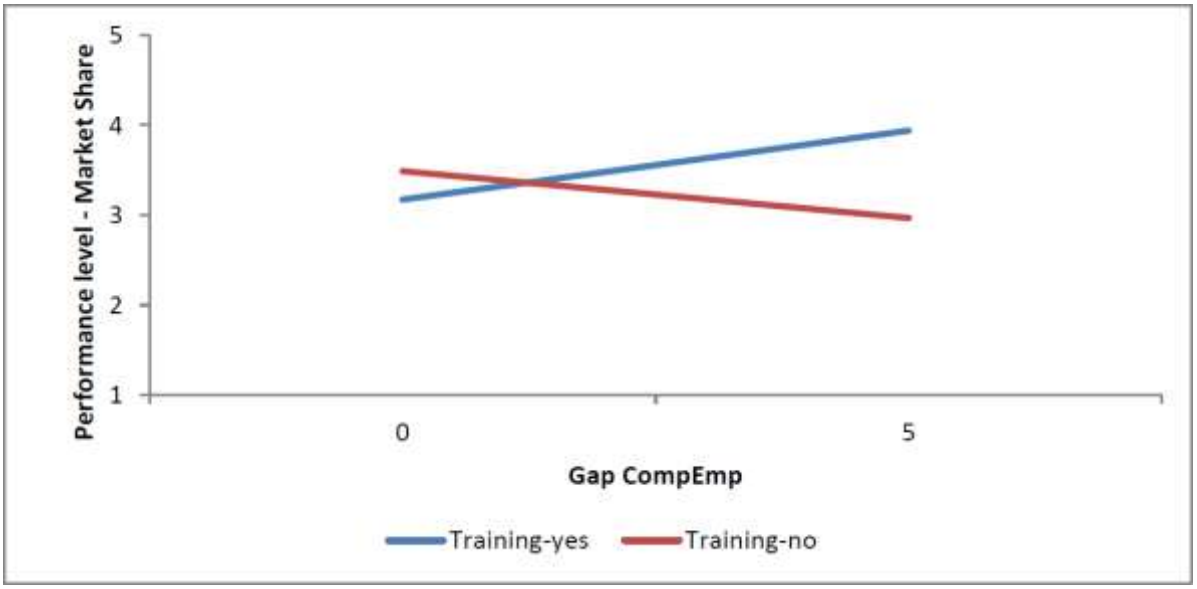

Figure 6.10 Market share and competence and empathy with training as covariate.

The graph shows a gap of 5 indicating that small-scale poultry farmer's expectations in terms of ASI's empathy and competence as they render service is 5 units higher than what they currently getting. The gap of 5 is significantly big and those with training (blue line) shows a higher perceived market share performance than those without training.

Figure 6.11 below shows findings on dependent variable (Market share), covariate (training) and independent variable (Gap Assurance).

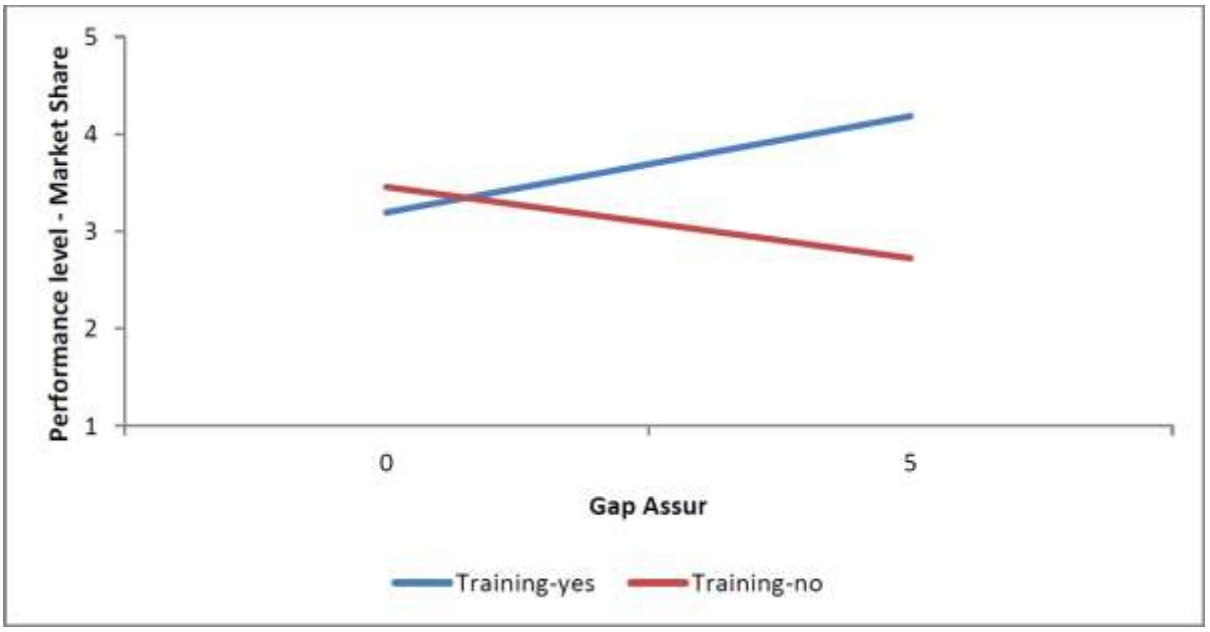

Figure 6.11 Market share and assurance with training as covariate

The graph in Figure 6.12 shows a gap of 5 indicating that small-scale poultry farmer's expectations in terms of ASI's Assurance as they render service is 5 units higher than what they currently getting. The gap of 5 is significantly big and those with training (blue line) perform better at market share than those without training.

6.8 : Discussion of quantitative research findings: Hypotheses

This section discusses quantitative research findings from phase 2 of the research. The findings are discussed under relevant research questions and hypotheses stated in the methodology chapter (section 4.4.2.2). Hypotheses for the quantitative research were derived from research gaps identified in extant literature (sections 3.15 and 3.16) and guided by the stated research question and sub-questions from the introduction chapter (sections 1.4 and 1.4.1). The main research questions are whether there is a gap between poultry farming SMMEs' expected service quality and the actual quality of service they receive from ASIs, and whether Botswana ASIs' service quality has an

impact on small-scale poultry farmers' business performance. The hypotheses formulated for the study are as follows:

6.8.1 Research Question 4- ***What gap exists between small-scale poultry farmers' expected service quality and the actual quality of service they receive from ASIs***?

Gap analysis was performed for each item in the questionnaire. Findings reveal that gaps on all 27 items on the questionnaire are positive where gap=expected service quality-perceived service quality. A gap>0 indicates that small-scale poultry farmers are getting less service quality than expected whereas a gap<0 indicates that ASIs exceeds poultry farming SMME's expected service quality. The positive gaps in all dimensions implies ASI's service quality falls short of small-scale poultry farmer's expected service quality in all six service quality dimensions.

After further comparisons, Empathy (EMP_18) is the worst performer with the largest gap of 1.93. This item is about how often ASIs pay routine visits to the farms to check on poultry farming SMMEs in Botswana. Gaps 13, 14 and 2 are the top three best performers and the item Assurance (ASS_13) is the best performer with the smallest gap of .63. This dimension is concerned with how much ASIs employees instil trust in small-scale poultry farmers in Botswana in the process of rendering service to them.

Combined items in each dimension were analysed. To reduce the 27 items measuring service quality according to the SERVQUAL dimensions to a few meaningful and reliable service quality dimensions applicable to this study sample, factor analysis with Promax rotation was applied to the 27 'gap' items. Items 12 and 23 were dropped because they did not load strongly enough onto any factor; while items 11 and 16 were dropped because they cross loaded onto several factors. Four factors were extracted which account for 48.09% of the variance in the data. A Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) of .910 and a significant Bartlett's test indicates that the data was adequate for successful and reliable extraction. Rotation converged in 6 iterations. The factor loadings, along with the contribution that each factor makes to the variance in the data and a reliability measure using Cronbach's alpha indicated that service quality dimensions applicable to this study are competence and empathy, responsiveness, assurance and access.

Gap analysis was performed on the composite measures to determine whether there

were significant differences between gaps in the composite service quality dimensions under consideration. Findings from a one sample t-test showed that all six composite dimensions had positive mean gaps between expected service quality and the actual quality of service experienced by poultry farming SMMEs, where gap = experienced service quality - expected service quality. This affirms that ASIs' actual service quality in Botswana falls short of small-scale poultry farmers' expected quality of service across all dimensions. Responsiveness had the biggest mean gap (1.40) and thus is the worst performer whilst assurance was the best performer, with a mean gap of 0.72.

Further tests were performed to determine whether there were significant differences in mean gaps. A Friedman test was carried out to identify which dimensions were worse (bigger gaps) than others for recommendation purposes. There was found to be a significant difference between the dimensions, p<.0005. Specific differences, as found using the Wilcoxon signed ranks test on each pair with a Bonferroni adjustment, are the Gap in assurance is significantly smaller than the gaps in access (.032); responsiveness (p<.0005); reliability (<.0005); empathy (<.0005) and competence (<.0005). In addition, the gap in access is significantly smaller than the gap in responsiveness (.013).

6.8.1.1 ***Analysis***

The findings of the study affirmed that for poultry farming SMMEs in Botswana there is an overall positive gap between expected service quality and experienced service quality. This indicates that ASIs' service quality across all dimensions falls short of the quality of service expected by their customers, small-scale poultry farmers. The findings of this study are consistent with extant literature. Similar findings in the agricultural sector can be observed from Rendy (2013) who reported that there were negative gaps in expected and perceived service quality for both private and state owned ASIs in India. Findings from the study conducted by Kontogeorges et al. (2014) on Greece's Ministry of Agriculture's service quality to young farmers also indicated that young farmers' expectations were more than their perceptions or perceived quality of service. Additionally, findings from James et al. (2012) in their study to assess the quality of service delivered to small-scale farmers by agrochemical input dealers in Kumisa Metropolis, Ghana indicated that farmers were highly unsatisfied with services

received from agrochemical input dealers with an overall weighted SERVQUAL score of -0.86.

The findings of this study are also in agreement with several scholars in various Botswana service industries, namely Chiguvi (2017) on the banking sector, Musikavanhu (2017) on the hospitality sector, Makambe (2016) on the education sector, Prithivirajh (2013) on the retail sector and Manwa (2011) on the food industry. Findings in all these studies all affirmed that customer'' expected service quality exceeded the perceived service quality, hence the negative gaps. It was hypothesized that ***there is an overall weighted positive gap (gap>0) between poultry farming SMMEs' expected service quality and the actual quality of service they receive from ASIs in Botswana.*** The findings of this study affirm this hypothesis and as such, this hypothesis is accepted.

6.8.2 : Research Question 1- What is the impact of ASIs' service quality on the growth and business performance of poultry farming SMMEs in Botswana?

The performance measures profitability, sales growth, market share, business growth and product quality were analysed using a scale of 1= 'Very poor' to 5 = 'Excellent'. Results indicated that performance was rated significantly higher than 3 for each performance measure, $p<.05$ in each case. Product quality was rated significantly higher than the rest with 4.31 whereas profitability was rated the lowest with 3.22.

To determine the impact of service quality on business performance areas, regression analyses was done for each performance measure: profitability, sales growth, market share, business growth and product quality, the Dependent Variables (DVs). Analysis was done to see if one combined measure could be used, and this was tested using PERF (an average of 5.1-5.5; alpha=.728).

Independent Variables (IVs) were the GAPs for each dimension as extracted from section 6.5.2 and these are Gap Competence and Empathy, Gap Responsiveness, Gap Assurance, and Gap Access. Analysis was done to determine if these dimensions could be combined into a single reliable measuring GAP in service quality. This was achieved using GAPSQ, a single measure formed by averaging the scores from the 4 individual dimensions. Reliability was determined as Cronbach's alpha=8.15. Factor analysis was applied in section 6.5.2 and the 4 items all loaded onto a single factor with and successful factor analysis was carried out. Additionally, the demographics

training (section 1.6), age of business (section 1.7) and size of business (section 1.8) were also included as IVs and tested if they could moderate the relationship between the service quality dimensions and performance

6.8.2.1 ***Analysis: Test of between-subjects effects***

For the dependant variable profitability, the covariate training is a significant predictor. In this case, the coefficient for training (yes) = .385 indicating that a unit increase in training will cause a .385 increase in the small-scale poultry farmer's performance.

For the dependent variable sales growth, the covariate training is also a significant predictor. In addition, GAP_Access is marginally significant at (p=.080). This indicates that skills training of small-scale poultry farmer and accessibility of their ASIs leads to increased sales.

For the independent variable business growth, there is marginal significance for GAP_Resp with coefficient = .207. This indicates that an increase in the in ASIs responsiveness leads to an increase in small-scale poultry farmer's business growth (p=.074).

6.8.2.2 ***Analysis: Interactions between the covariate and performance variables***

Findings on the dependent variable market share and predictor variable competence and empathy is shown on the graph in Figure 6.11 with a gap of 5. This indicates that small-scale poultry farmer's expectations in terms of ASI's empathy and competence as they render service is 5 units higher than what they currently getting. The gap of 5 is significantly big and those with training (blue line) shows a higher perceived market share performance than those without training. On the other hand, findings on the dependent variable market share and predictor variable assurance with covariate training indicates that that small-scale poultry farmer's expectations in terms of ASI's Assurance as they render service is 5 units higher than what they currently getting. The gap of 5 is significantly big and those with training (blue line) perform better at market share than those without training.

On this research question, findings from the quantitative phase of this study (questionnaire) are consistent with findings from the qualitative phase (interviews- ASI managers). Both the interviews with ASIs and findings from poultry farmers through the questionnaire affirmed the relationship between the ASIs service quality and the

poultry farmers' business performance. They both confirm the assertion that ASIs' service quality has an impact on their business performance in terms of profitability, sales growth, market share and business growth. For the quantitative research, findings were not significant for the dependent variable product quality.

Findings from interviews with ASI managers as well as poultry farmers through the questionnaire were consistent with extant literature. Similarities could be observed with the assertions made by Mwobobia (2012) who posited that the quality of service provided by agricultural services institutions to farmers has a direct impact on the farmers' productivity, profitability, business growth and existence. In addition, in Botswana, there have been recent reports that indicate a lack of business performance in small-scale poultry farming enterprises (Baliyan & Marumo 2016). The findings of the qualitative phase of the study are also in agreement with several scholars (Farayola et al. 2013; Mappigau et al. 2012; Ncube et al. 2016; Moreki 2011; Masole et al. 2015) who have traced the root cause of poultry farming SMMEs challenges and subsequent failure as being directly linked to the quality of service these enterprises receive from ASIs that support them. Congruently, the findings of the qualitative study confirmed the assertion made by Mappigau (2012) who posits that the growth and business performance of the poultry farming SMMEs in Botswana is anchored upon the existence of several ASIs that support poultry farmers in one way or another. Correspondingly, the relationship between ASIs' service quality and the customers' business performance is acknowledged by several other scholars in Greece (Kontogeorgos et al. 2014), India (Reddy et al. 2013) and Ghana (James et al. 2012).

It was hypothesised that ***ASIs' service quality positively impacts poultry farming SMMEs' sales growth, profitability, business growth and market share.*** In agreement with the findings of the qualitative phase of this study (interviews with ASI managers) which affirmed this hypothesis, findings of the quantitative phase of this study support this hypothesis. As such, these findings from the quantitative phase of this study accepted this hypothesis.

6.9 : Expert panel's critique of research process and findings

The main functions of the panel of experts and its contribution to this research project was to provide a constructive and timely review and critique of the research process and findings. The panel also provided insights on areas that could be addressed to

improve this research and bring more clarity to the research findings. The expert panel included a senior scholar in poultry production, senior government employees in the Botswanan MoA, a senior manager of an ASI and a senior member of the Botswana Poultry Farmers Association.

The panel agreed that this study was important and timely to research, being to the best of their knowledge, the first service quality study in the agricultural sector in Botswana. Regarding the findings of Objective 1, most of the panel of expert members concurred with the fact that results from both interviews and the questionnaire affirmed that ASIs' service quality directly affects customers' business performance. After further discussions, the group, however, pointed out that there is a need for further research on this objective, with the questionnaire's findings that are contrary to the interview's findings only on the business performance measure product quality that did not yield significant results in the quantitative research.

There was consensus with the findings of Object 2, which illustrates that ASIs do face challenges as they render service to their customers, namely poultry farming SMMEs, and these challenges affect the customers' business performance. The experts concurred with the main challenges being related to the supply of inputs to small-scale poultry farmers, lack of infrastructure such as electricity and clean water, and the lack of resources for transport for extension officers to pay regular visits to the farms.

Regarding the findings of Objective 3, the expert group agreed with the findings of the empirical study as well as extant literature, indicating that small-scale poultry farmers do not have an effective tool for or way of appraising the quality of service they receive from ASIs. Some of the group members, however, felt that this objective could have also been included in the quantitative phase of the research involving farmers to also obtain their insights and input since they are the ones receiving service from ASIs.

The expert panel was in total agreement with the findings of Objective 4 which illustrated an overall negative gap between poultry farmers' expected quality and the actual quality of service they receive from ASIs. The expert group concurred with the appraisal of service quality dimensions during the qualitative phase of the research and the dropping of 'Timeliness' from the dimensions that were used to come up with

the adapted SERVQUAL questionnaire used for the quantitative phase. After discussion, the group agreed with the findings of the empirical research which show the extent of lack of service quality in the agricultural industry in Botswana.

6.10 : Findings combined with theory.

Chapter 2 discussed several customer service and service quality theories that are related to this research. Theories were discussed that have been utilised to explain the concepts of satisfaction and service quality, such as Oliver (1981)s' Expectancy Disconfirmation Theory (EDT), Holland et al. (1987)s' Contrast Theory, Lewis (2001)s' Assimilation Theory, Michalo (1991)s' Multiple Discrepancies Theory (MDT) and Customer-Based Discrepancy Theory (C-BDT) (Yüksel & Yüksel 2008).
According to the expectation disconfirmation theory (EDT), users' satisfaction level is the difference between expected service and actual service performance as well as expectations and predictions of future performance (Aigbavboa & Thwala 2013). According to Isac and Rusu (2014), positive disconfirmation or satisfaction occurs when a service performs better than expected and negative disconfirmation or dissatisfaction occurs when a service performs less than expected (see Figure 2.2).

Furthermore, Aigbavboa et al. (2013) contend that, according to Oliver 1997's EDT, a customer is either satisfied or dissatisfied because of the positive or negative differences (gaps) between expectations and perceptions. When service performance is greater than what the customer had initially expected, there is disconfirmation between expectation and perceptions leading to satisfaction, whereas the opposite leads to dissatisfaction (Yüksel & Yüksel 2008). This research therefore adopted Oliver 1997's EDT to guide this study since it is aligned with the aim of this research, that is primarily to assess gaps between expected and perceived service quality in ASIs that render service to poultry farming SMMEs and to determine the impact service quality has on the business performance of these small-scale enterprises.

After a critical analysis of several service quality models and following on from the EDT, SERVQUAL was selected as the appropriate model to guide this study in solving the research problem. Despite criticism by some authors, the SERVQUAL model remains the most sought-after instrument for measuring service quality because the five empirical dimensions in the model are generic and thus valid and reliable for any

service industry (Karnstedt & Winter 2015). This makes SERVQUAL a valid and reliable instrument for measuring the quality of service in any service industry.

Although the original SERVQUAL model by Parasuraman et al. (1985) was exploratory by nature and the scale was used across several service industries such as telephone companies, securities brokerage, insurance companies, banks and repair and maintenance companies (Seth et al. 2005), the model in its original state was not suitable to answer the research questions. After extensive consultation with industry experts and the original authors of SERVQUAL, statements in the model were modified to suit the agricultural industry. The results indicated that Botswana small-scale poultry farmers are not satisfied with the quality of service they receive from their ASIs. On the impact of service quality on poultry farming SMMEs' business performance, findings from the adapted SERVQUAL questionnaire and interview with ASI managers affirmed that service quality indeed has an impact of customers' business performance.

6.11 CHAPTER CONCLUSION

This chapter presented findings from the quantitative phase of this study conducted amongst small-scale poultry farmers in four districts in Botswana. An adapted SERVQUAL questionnaire that was developed with motivation from the qualitative findings was used to collect data from small-scale poultry farmers across the four districts. Several descriptive statistics as well as inferential statistics such as one-sample t-test, the Wilcoxon signed ranked test, Factor analysis, Regression analysis, the Mann Whitney U-Test, Friedman's test, and Cronbach's alpha were performed utilising the SPSS software. The questionnaire comprised five sections which demographics, expectations statements, experience statements, weighting of service quality dimensions and business performance questions and the analysis followed the same sequencing.

Findings from the demographic profile section indicated that most small-scale poultry farmers are young female citizens of Botswana who have never received any training in poultry farming and management before. Additionally, results indicate that almost all the poultry farmer participants are owners of their businesses and have been operating for 0-4 years. The chapter further presented the analysis of expectation and

perception questions. One sample t-test results indicated that small- scale poultry farmers strongly agreed with statements in both sections. GAP analysis was carried out on each service quality dimension as well as on composite measures and findings indicated that the quality of service rendered by ASIs fall short of small-scale poultry farmers' expectations.

This chapter ended with the weighting of service quality dimensions as well as regression analysis on measures of business performance based on the performance measures profitability, sales growth, market share, business growth and product quality.

The next chapter presents the proposed SERVQUAL framework for ASIs, the contribution of this study, conclusions, and recommendations.

CHAPTER 7

STUDY CONTRIBUTION, CONCLUSIONS AND RECCOMMEDATIONS

7.1 **INTRODUCTION**

This chapter presents the contribution of the study by way of development of the proposed Adapted Poultry Farming SERVQUAL Framework (APFSQF) for the Botswanan poultry farming sector as well as discussing conclusions and recommendations. The main aim of this research was to develop and use an adapted SERVQUAL instrument on small-scale poultry farmers in Botswana to establish gaps between expected and perceived quality of service offered by five key ASIs. Furthermore, the study aimed to establish the impact of the quality of service rendered to poultry farming SMMEs by ASIs on the business performance of these enterprises, leading to the development of the APFSQF for ASIs in Botswana and other developing countries.

The extent to which empirical results enabled the research questions to be answered is discussed in this chapter. Conclusions drawn from the literature review, this empirical study, phase 1 of the research (qualitative interviews with ASIs) and the phase 2 (SERQUAL questionnaire with poultry farmers) are also discussed in this chapter. The chapter concludes with a discussion of the new or original knowledge developed because of this study as well as recommendations for further study.

7.2 **CONTRIBUTION OF THE STUDY**

This section presents the main contribution of this study which is the development of an Adapted Poultry Farming SERVQUAL Framework for ASIs in Botswana and other developing countries. The propositions and hypothesis stated in Chapter 4 (section 4.4.2) and tested in Chapter 5 (section 5.8) and Chapter 6 (section 6.8) respectively contributed to the development of the proposed APFSQF (see figure 7.1). Figure 7.1 shows which of the propositions and stated tested hypothesis were either affirmed/accepted or denied/rejected.

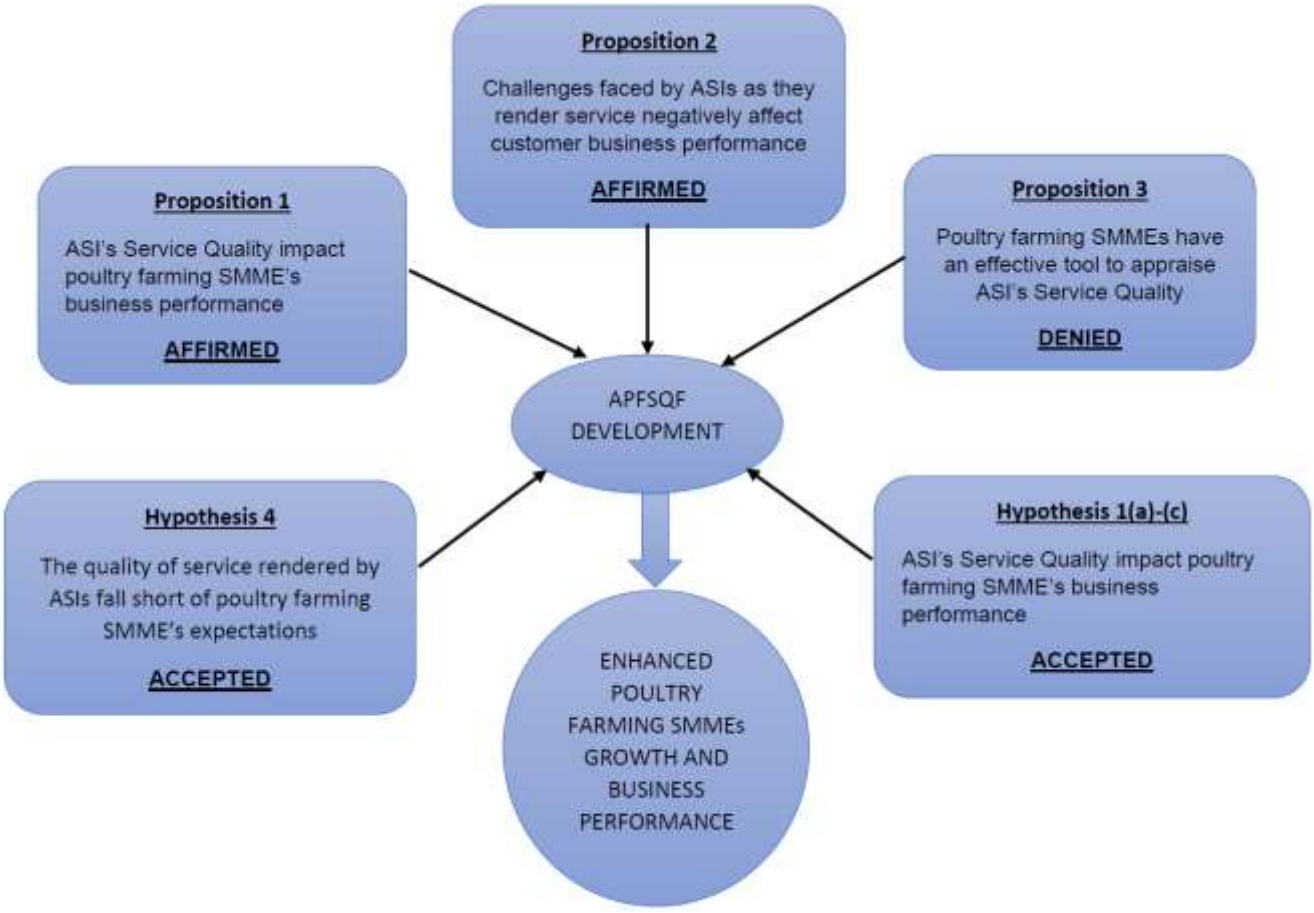

Figure 7.1: Propositions and Hypotheses contribution to APFSQF development

Source: Author's construct

7.2.1 : Proposed adapted poultry farming SERVQUAL framework (APFSQF) for ASIs in developing countries.

The development of the proposed APFSQF for ASIs that render services to poultry farming SMMEs in Botswana is hinged upon four pillars as outlined in the following section.

7.2.1.1 : Pillar 1- Success factors for poultry farming SMMEs

Evidence from extant literature review shows that funding and finance, training and skills development, infrastructural development and an enabling business environment, and operating policies are the key success factors for the small-scale poultry sector in Botswana and beyond. Several authors (Rahman et al. 2021; Syahlani et al. 2022, Nkakwana 2018; Majama et al. 2017, Eskesen et al. 2014; Mmbengwa et al. 2013; Moreki 2015; SAPA 2015; Yusuf 2014) concur that the growth factors have an impact on poultry farming SMME's business performance in

developing economies. The participating ASIs in this study render one or more of the stated success factors as a service to small-scale poultry farmers in Botswana ***(see section 5.6.1: profile of ASIs).***

7.2.1.2 **Pillar 2 - Literature review and empirical study findings and recommendations**

The second pillar for the development of the proposed APFSQF is findings from both literature review and the empirical research. In many instances, findings from both sections of this research concurred and these, coupled with some key recommendations made, were used to develop pillar 2 of this framework.

7.2.1.3 **Pillar 3 - Determinants of excellent service quality from ASIs**

During phase 2 of the study, a modified SERVQUAL questionnaire was developed and used to gather data from poultry farming SMMEs (customers). Findings from gap analysis across all service determinants, namely Access, Reliability, Responsiveness, Empathy, Assurance and Competence indicated negative gaps and expected service quality was more than the perceived service quality. This indicated that the ASIs' service quality falls short of poultry farming SMMEs' expectations. Factor analysis with Promax rotation was carried out to reduce the 27 service quality items to a few meaningful and reliable service quality dimensions applicable to this study. After analysis of the factor loadings, some items were dropped and four service quality determinants were then used to develop pillar 4 of the APFSQF and these are Competence and Empathy, Responsiveness, Assurance and Access. As ASI's utilise this framework, their focus should be on improving service quality around these dimensions, paying more attention to the worst performers (Responsiveness, Empathy and Reliability).

7.2.1.4 **Pillar 4 - Enhance poultry farming SMME growth and business performance.**

One of the main research questions for this study was on the impact of the ASIs' service quality on poultry farming SMMEs' business performance. Findings from the qualitative phase of this study (interviews) affirmed the proposition that ASIs' service quality does affect small-scale poultry farmers' business performance in terms of profitability, sales growth, product quality and business growth. This pillar was the included as an outcome of the understanding of success factors for the small-scale

poultry farming sector (Pillar 1), excellent ASI service quality across all the recommended determinants (Pillar 3) and research findings and recommendations (Pillar 2).

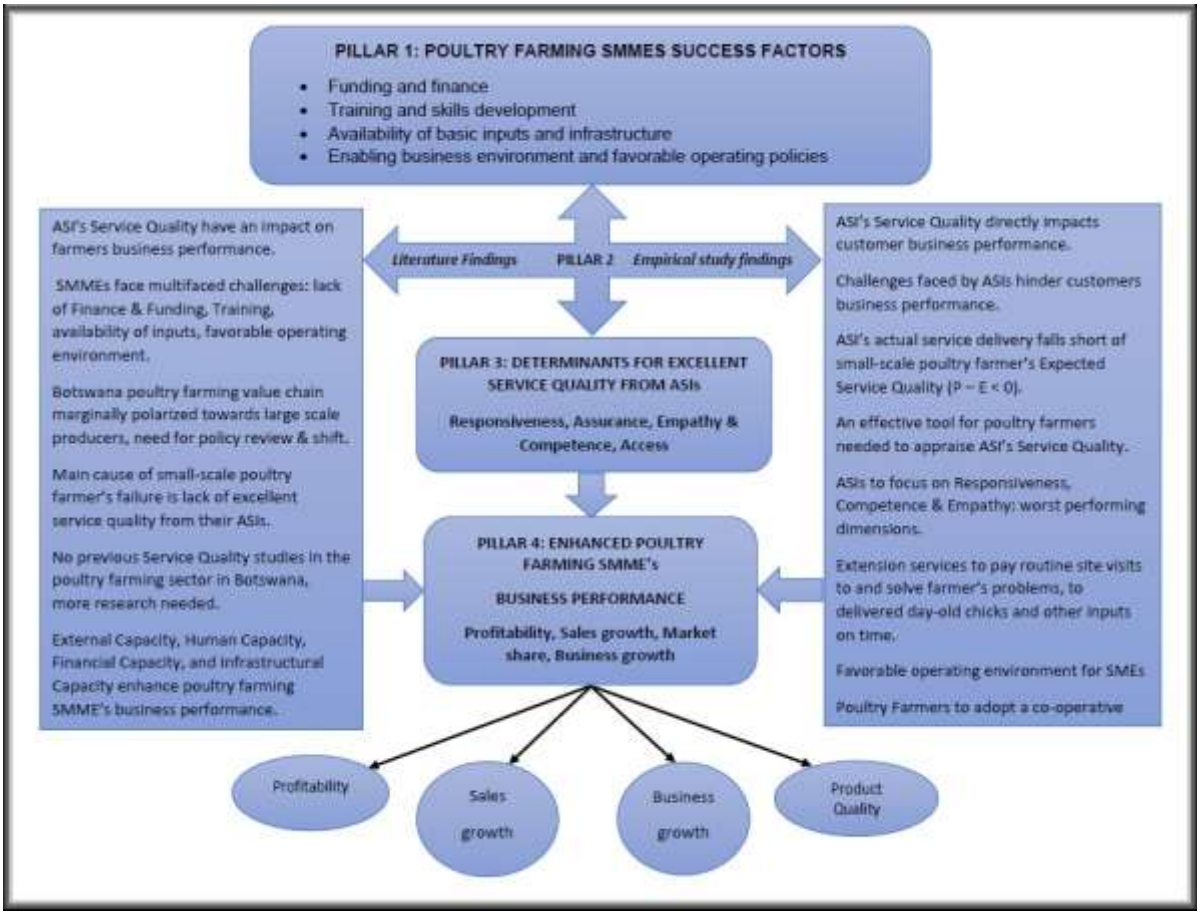

Figure 7.2: Proposed adapted poultry farming SERVQUAL framework (APFSQF)

Source: Author's/Researcher's? construct

7.2.2 Validation of the APFSQF

The developed Adapted Poultry Farming Service Quality Framework (APFSQF) was subjected to review by experts and authors on the SERVQUAL model and service quality in general. The purpose of the review was to confirm the framework's fit in the poultry farming sector and the extent to which it addressed the research questions. There was consensus that a modified SERVQUAL instrument and model/framework were necessary for the agricultural services industry and poultry farming sector in general, and that more research should be conducted in this area. Consistent with the modified research instrument validation by the original authors of the SERVQUAL

model (see section 4.5.2.3), the main outcome this APFSQF review by SERVQUAL experts was that it is suitable for use by ASIs in the poultry farming sector to improve their service quality to poultry farmers.

The review concluded that the developed APFSQF significantly addressed the main aim of the study which was to identify any gaps between poultry farming SMMEs' expected and perceived service quality and to determine the effects of the lack of ASIs' service quality on their customers' business performance. Furthermore, reviewers agreed with the four main components of the framework that are poultry farming success factors, findings from literature and empirical study, identified determinants of excellent service quality and customers' enhanced business performance as the four pillars upon which the framework is hinged.

The reviewers observed that use of the word 'impact' in research question 1 (see section 1.4.1) was not in the scope of this service quality study as suggested by the research title since impact studies are for long-term completed projects. This observation was, however, addressed by section 7.8 (limitations of the study) and section 7.10.5 (recommendations) where it was suggested that further studies like this should be conducted over more than one period or over longer time periods for comparison purposes and to determine the impact effectively of service quality of customer business performance. Therefore, the suggestion to re-word this research question and all sections of the project where the word 'impact' was used was not adopted.

7.3 : EXTENT TO WHICH FINDINGS ENABLED RESEARCHER TO ANSWER RESEARCH QUESTIONS

This study sought to address the main research questions: What is the impact of Botswanan ASIs' quality of service on the small-scale poultry farmers' business performance, and what is the gap between poultry farming SMMEs' perceptions and expectations of service quality they receive from ASIs? This section presents the extent to which this study fulfilled the aim of this research and answered the research questions.

Research Questions

1. What is the impact of ASIs' service quality on the growth and business performance of poultry farming SMMEs in Botswana?

Finding: Findings from qualitative interviews affirmed the proposition that ASIs' quality of service to poultry farming SMMEs in Botswana in terms of the service dimensions Access, Reliability, Empathy, Responsiveness, Competence and Assurance directly affects the farmer's' business performance. On the other hand, findings of the regression analysis of the SERVQUAL questionnaire accepted the same hypothesis on business performance measures profitability, sales growth, business growth and market share. Findings from both research phases concur on addressing this research question.

2. To what extent do challenges faced by ASIs as they render service to poultry farming SMMEs affect the business performance of these small-scale farming enterprises?

Finding: ASIs indeed face multifaceted challenges as they render services to poultry farming SMMEs. These include delays in supplying farmers with basic inputs such as day-old chicks due to shortages, inadequate resources such as transport and ICT that impede regular communication and site visits to farmers, lack of financial resources to train farmers on poultry management, and lack of infrastructure such as abattoirs that are accessible to farmers. These challenges were highlighted as being impediments for the ASIs and affecting their ability to provide excellent quality of service. As such, the inability of ASIs to provide quality services owing to internal challenges has direct negative effects on the poultry farming SMMEs' business performance.

3. How do business customers appraise ASIs' service quality in Botswana, and what strategies exist to improve quality of service delivered to poultry farming SMMEs by ASIs?

Finding: There is no definite tool that was cited by ASIs participants that suggested that poultry farming SMMEs in Botswana effectively assess the quality of service they receive from the ASIs.

4. What is the gap between small-scale poultry farmers' expected service quality and

the actual quality of service they receive from ASIs?

Finding: There is an overall weighted negative gap between poultry farming SMMEs' expected service quality and perceived service quality. As such, the quality of service rendered by ASIs falls short of Botswanan small-scale poultry farmers' expectations.

7.5 **CONCLUSIONS**

This section presents conclusions from this study from extant literature as well as the empirical study.

7.5.1 : Literature review

Principles in Klopper and Lubbe's (2012) guided this literature review. Abstracts and findings of articles were scanned and only those relevant to this study were selected (see the Concept Matrix in section 3.2.2).

7.5.1.1 : Appraisal of service quality models

Several service quality models found in the literature, such as the SERVPERF model, SERVQUAL model, Teas EP&NQ model, Dabholka's attribute and overall effect model, Phillip Haztell's PCP attribute model, GM, ROM, and others were critically revied and compared. Despite its criticism by some researchers and authors, such as Cronin and Tylor (1992), Dabholka et al. (2000) and Buttle (1996), SERVQUAL stood out to be the most suitable model to be adapted for this study.

7.5.1.2 **Challenges faced by SMMEs.**

Several authors concurred that SMMEs in general, regardless of industry, face the same challenges. The challenges are access to finance, markets, skills training, infrastructural development, and government support in terms of operational policy. This concurred with some service quality studies in the poultry farming sector by Rendy et al. (2013) in India, Kontogeorges et al. (2014) in Greece and James et al. (2012) in Ghana.

7.5.1.3 : Botswana poultry farming value chain

The current Botswana poultry farming value chain is marginally polarized towards a few large-scale producers. Several researchers (Moreki 2011; Moreki 2015; Masole et al. 2016; Ncube et al. 2016; Grynberg & Motswapong 2016; Bagopi 2014, Majama et al. 2022) aired the same view that there are a few large-scale producers who control

it from production to the market dominate the industry. This leaves the smallholder farmer vulnerable and finding it difficult to survive. This calls for ASIs to focus their attention more on this ailing sector of the poultry farming industry in Botswana.

7.5.1.4 : Previous SERVQUAL Studies in Botswana

The literature consulted confirmed the SERVQUAL model was previously used in Botswana in industries such as banking industry (Chiguvi et al. 2017); hotel industry (Musikavanhu, 2017); higher education sector (Makambe, 2016); retail shops (Prithivirajh, 2013); information technology (Chiguvi, 2016;), banking sector (Chiguvi 2023) and the food industry (Manwa, 2011). In all the studies, findings indicated a negative gap between expected service quality and perceived service quality, indicating that actual quality of service failed to meet customer expectations in all cases.

All SERVQUAL studies carried out in Botswana focused on establishing the gaps between perceived service quality and expected service quality and making recommendations on service dimensions with negative gaps. A knowledge gap was identified on challenges faced by service providers as they render services to customers and how such challenges affect customer's business performance.

7.5.1.5 : Service quality studies for the Botswana poultry farming sector

The literature failed to reveal, to the best of the researcher's knowledge, evidence of any previous assessment of ASIs' service quality on poultry farming SMMEs in Botswana and the impact of service quality on SMMEs' performance.

7.5.2 Conclusions from empirical study

This section presents conclusions on findings from interviews with ASI managers (qualitative phase) as well as finding from the SERVQUAL questionnaire (quantitative phase).

7.5.2.1 : Conclusions from ASI managers' sample (Interviews)

- ASI service quality directly impacts poultry farming SMMEs' business performance.
- ASIs encounter multifaceted challenges as they render service to small-scale poultry farmers. This leads to poor service quality being rendered to these

SMMEs. This lack of service quality in turn negatively affects the SMMEs' business performance.

- Currently, there is no tool used by Botswanan poultry farming SMMEs to effectively assess the quality of service they receive from ASIs.

7.5.2.2 : Conclusions from poultry farming SMMEs sample (SERVQUAL Questionnaire)

- ASI service quality directly impacts poultry farming SMMEs' business performance in terms of profitability, sales growth, market share and business growth.
- There is a negative gap between small-scale poultry farmers' expected service quality and the actual quality of service they receive from ASIs.
- The quality of service provided rendered by ASIs falls short of poultry farming SMMEs' expectations across all service quality dimensions.

7.6 : WHAT IS NEW / ORIGINAL IN THIS STUDY

- Limited studies have been conducted on service quality in the agricultural industry in general and no previous service quality studies have been conducted in the Botswanan agricultural industry. The findings from this study will contribute literature on service quality in the agricultural sector in Botswana and beyond.
- This study introduces a new dimension to service quality, focusing more on challenges faced by service providers as they render services, and the impact of such challenges on customers' businesses performance. This is also a new contribution to literature on SERVQUAL in the agricultural sector and other service industries.
- This study, which to the best of the researcher's knowledge, is the first SERVQUAL study in the agricultural sector in Botswana which led to the development of a modified SERVQUAL instrument. This could be used to support service quality programmes regionally and in Africa at large.
- The study led to the development of an adapted SERVQUAL framework for the poultry farming sector in Botswana and other developing countries.

7.7 : IMPLICATIONS OF THE STUDY

This section discusses the implications of this study for research on service quality in the agricultural sector, practice for small-scale poultry farmers as well as ASIs that

render service to poultry farmers and the policy that regulates the poultry farming value chain in Botswana.

7.7.1 : Implications for research

This study led to the development of a modified SERVQUAL instrument as well as an adapted SERVQUAL framework for the poultry farming industry in Botswana and other developing countries. There is a need to have a standardised and efficient tool for measuring and assessing service quality rendered by the various ASIs that cater for small-scale farmers in terms of the provision of basic farming inputs such as day- old chicks, feed and equipment, provision of funding and financing, training, and skills development as well as development and implementation of operational policies that foster a conducive business environment for the farmers. Challenges faced by ASIs as they render services to poultry farming SMMEs were addressed, and the findings of this research showed that such challenges negatively impact customer business performance.

7.7.2 : Implications for practice

The poultry farming industry is faced with multifaceted challenges as revealed by findings from extant literature review and this empirical study. Some of the challenges such as lack of transport and ICT resources to access farmers regularly, inadequate supplies of day-old chicks due to the low capacity of suppliers and inadequate funds to train new farmers on poultry production directly affect ASIs' quality of service to poultry farming SMMEs. This affects the farmers' business performance. It is necessary to address those service quality dimensions which are worst performers with the biggest negative gap according to findings from gap analysis, namely Responsiveness, Empathy and Competence. There is a need to provide adequate resources for ASIs such as government extension officers to be able to pay regular site visits to small-scale poultry farmers and address their problems hands-on and monitor their farms.

On the other hand, this study also revealed that farmers are faced with their own challenges such as lack of proper infrastructure such as clean water and electricity leading to exorbitant set-up costs, unreliable market, stiff competition amongst the farmers for the market and prohibitive costs of basic inputs like feeds.

7.7.3 : Implications for policy

Findings from extant literature review and the empirical study revealed that the Botswanan poultry farming value chain is marginally polarized with just a few large-scale players controlling the whole value chain, from the hatcheries to the marketing of the product. This is coupled with the fragmentation of the small-scale poultry industry where they are working and producing in isolation and competing instead of collaborating in cooperatives to achieve more in terms of production and growth.

Findings from the empirical study further alluded to the market complexity which is characterised by the monopolization by a few large-scale poultry farmers who have a ready market for their products as they are also stakeholders of chain supermarkets. This leaves the Botswanan small-scale poultry farmers with no consistent and reliable market to sell their product, thereby compromising their existence and profitability. Results from this study reveal that there is a need for a complete change in government policy governing the poultry farming value chain at large nationwide. Policies should be introduced that promote a conducive environment for small-scale poultry farmers to operate profitably.

7.8 : LIMITATIONS OF THE STUDY

As with any research study, this research faced several limitations, and it is fitting to acknowledge such limitations so that future researchers in this area of study can address them.

The first limitation is that this study was conducted during a period when there was a nationwide lock-down in Botswana and borders were closed owing to the global COVID-19 pandemic. The study was originally intended to cover districts spread over the whole of Botswana; however, owing to travel restrictions, only four districts located in the same COVID-19 zone were covered. Owing to COVID-19 travel restrictions, paper-based questionnaires could not be administered to small-scale poultry farmers. Instead, the modified SERVQUAL questionnaire for the survey was administered using an online platform (the Dooblo Survey to Go application). Traditional paper-based questionnaires could have yielded better responses and catered for any language barriers as field workers would always clarify in local Setswana language where respondents needed clarity.

Additionally, face-to-face interviews were not easy to secure since most of the ASI managers were working from home owing to COVID-19 restrictions. This led to qualitative interviews taking longer than planned to complete.

This research was conducted in one period, whereas expectations and perceptions can change over time. There is a need to carry out the study over a longer period so that findings from the different time periods can be compared to check for improvement in service quality.

This study provided the first view of Botswanan small-scale poultry farmers and ASI managers, as there is currently nothing with which to compare. Additionally, there is no existing literature published on use of the application of SERVQUAL in the agricultural industry in Botswana and literature on the SERVQUAL model in the agricultural industry is limited and outdated (see Annexure N, some renown data bases consulted by the researcher). Additionally, the poultry farming value chain in Botswana is not extensively researched as there is highly limited existing literature on this subject. The researcher therefore resorted to consulting some outdated literature of more than five years ago, whereas most recent literature could have provided a more concise and accurate situation in the poultry farming industry in Botswana leading to development of a more informed adapted SERVQUAL framework.

Findings from ASI interviews and the SERVQUAL questionnaire concurred on the question on the impact of service quality on customer business performance. There may be a need for further research on the impact, with paper-based questionnaires being administered in both English and a translated version in the local Setswana language since most of the small-scale farms operate in rural communities where the English language is hardly used as a medium of communication.

The research was also limited because it only involved small-scale poultry farmers in Botswana, leaving out all other agri-business SMMEs who also obtain services from the same ASIs. If resources had permitted, a broader selection of participants from various agricultural sectors could have yielded a more balanced set of results.

7.9 **RECOMMENDATIONS**

The study considers the following recommendations for ASIs so that they can improve the quality of service they render to small-scale poultry farmers in Botswana and other developing countries. The following recommendations are made based on the findings

of the study:

7.9.1 : The APFSQF and the modified SERVQUAL tool from this study should be used by individual ASIs to assess and improve their service quality.

Findings from this study indicate that poultry farming SMMEs are not satisfied with the quality of service they receive from their ASIs across all service quality dimensions. Service quality dimensions that are worst performers were noted and ASIs should focus on improving on these. This research recommends that for further research, the modified SERVQUAL instrument should be applied by each ASI individually instead of all ASIs collectively as it is in this study. This will enable each ASI to focus on their areas of improvements and find effective ways of overcoming challenges they face when rendering service to poultry arming SMMEs.

7.9.2 : There is need for ASIs to attend to service quality dimensions: Responsiveness, Empathy and Reliability. These were found to be the worst performers after gap analysis of the composite dimensions.

This study recommends that ASIs should find time and allocate adequate resources to be more hands-on with farmers by paying them site visits to solve their problems, check whether best poultry practices are being followed by the farmers and training them on good poultry management skills. Additionally, ASIs should improve on ICTs available for effective and timely communication with farmers. Finally, they should strive to provide an accurate service within the promised period.

7.9.3 : There is a need by government for a policy shift for the poultry farming value chain in Botswana.

Findings from this study reveal that there is a need for a complete change in government policy governing the poultry farming value chain at large nationwide. Policies should be enacted that promote a conducive environment for small-scale poultry farmers to operate profitably and competitively. Currently, the Botswana poultry farming value chain is marginally polarized with only a few large-scale players controlling the entire value chain, from hatcheries to the marketing of the product. The poultry market is also characterised by monopolization by the few large-scale poultry farmers who have a ready market for their products as they are also stakeholders of chain supermarkets, which form the biggest market for poultry products in Botswana.

There is need for a conducive environment for the farmers where their projects can thrive. This environment includes access to funding, controls on the market environment to create favourable conditions for the small-scale poultry farmer, technical support and monitoring throughout to a point where the project is sustainable.

7.9.4 There is a need for poultry farming SMMEs in Botswana to adopt a co-operative structure of operation and work as a united force to compete with the large-scale producers in terms of costs of production, market share and product quality.

Findings from this study revealed that there is fragmentation of the small-scale poultry industry, where they are working and producing in isolation and competing instead of collaborating in cooperatives to achieve more in terms of production and growth. There is a need to adopt this approach of collaboration which has proved to work to the poultry farmers' advantage in other countries such as South Africa, Australia, and Poland where the value chain is that of a cooperative structure with specialization of specific functions such as hatcheries for day-old chicks, feed production, marketing and distribution and the actual poultry production on the farms. In this scenario, one produces day-old chicks or feeds, and then others take over with roles that are clearly defined, and players focus on their designated roles.

7.9.5 There is a need for the government to develop and provide infrastructure such as clean water, electricity, good roads, and abattoirs for the small-scale poultry producers.

More support of the small-scale farmers by the government through the provision of clean water sources, heating and lighting facilities, dedicated slaughter facilities for small-scale farmers and accessible roads. Currently, there is no distinction between larger players and small-scale farmers as such the small-scale farmers incur excessive set-up and running costs which, they are unable to absorb when compared to the large-scale players who are in control of the entire value chain.

7.10 : RECCOMMENDATIONS FOR FURTHER STUDY

The study considers the following recommendations for further research on use of the SERVQUAL model to assess service quality in the poultry farming sector in Botswana and other developing countries. The following recommendations are made from the findings of the study:

7.10.1 : Need for further studies on service quality and its impact on business performance in the Botswanan poultry sector.

Extant literature review in this study revealed that this research is the first on the use of the SERVQUAL model in the agricultural sector in Botswana. Furthermore, the researcher found limited literature on service quality in the poultry farming sector in Africa as a continent. There is therefore a need for more research on this subject in Botswana and other developing countries.

7.10.2 : More research on the impact of ASI service quality on poultry farming SMMEs' business performance needed.

Findings from this study reveal that ASI managers perceive ASI' service quality as having a direct impact on poultry farming SMMEs' business performance. On the other hand, findings from the adapted SERVQUAL questionnaire with small-scale poultry farmers also affirmed that there is a link between ASIs' service quality and their business performance, however, most of the SERVQUAL questionnaire results indicated marginal significance with the business performance measure product quality yielding no significant results. This calls for further research on the impact, especially with poultry farming SMMEs. It is recommended that a questionnaire that is translated to the local language (Setswana) be used to enhance the quality of responses and respondents could choose to complete the questionnaire in a language with which they are most comfortable and with a deeper understanding of the questions being asked.

7.10.3 : Further SERVQUAL studies to be conducted for individual ASIs in Botswana.

There is a need to conduct service quality studies on the various ASIs individually since these ASIs, even if they are serving the same customer (poultry farmers), are providing different levels of services under varied circumstances. Their services vary as follows: Funding and finance, provision of basic inputs, infrastructural development, training and skill development and operating policy development and implementation. It is recommended that these various services be analysed individually to obtain a deeper understanding of the challenges and successes of each ASI. Furthermore, targeted recommendations should be made to each individual ASI on how to improve service quality. In this scenario, separate SERVQUAL questionnaires for employees and customers could be administered to gain insights from both sides.

7.11 : CHAPTER CONCLUSION

This chapter presented the contribution of this study in the form of the proposed adapted SERVQUAL framework for ASIs that render service to poultry farming SMMEs in Botswana and other developing economies. The extent to which findingsfrom this research answered research questions was discussed and conclusions from extant literature review and the empirical study were outlined.

The chapter further discussed the new contributions of this study to service quality studies and the poultry farming industry as well as the implications of this research for research, practice, and policy. Limitations of this study were discussed, and general recommendations were outlined. Additionally, recommendations for further research were discussed in this chapter.

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ANNEXURES

ANNEXURE A: ETHICS CLEARANCE CERTIFICATE

Graduate School of Business Leadership, University of South Africa, PO Box 392, Unisa, 0003, South Africa
Cnr Janadel and Alexandra Avenues, Midrand, 1685, Tel: +27 11 652 0000, Fax: +27 11 652 0299
E-mail: sbl@unisa.ac.za Website: www.unisa.ac.za/sbl

SCHOOL OF BUSINESS LEADERSHIP
RESEARCH ETHICS REVIEW COMMITTEE (GSBL CRERC)

06 April 2020

Ref #: 2019_SBL_DBL_002_FA
Name of applicant: Mr E Nduhle
Student #: 79172105

Dear Mr Nduhle

Decision: Ethics Approval

Student: Mr E Nduhle, enduhle@gmail.com, +2677 286 3777

Supervisor: Prof S Lubbe, sam.lubbe@gmail.com, 031 304 9340

Project Title: A service quality framework for poultry farming agricultural services institutions in Botswana.

Qualification: Doctor of Business Leadership (DBL)

Expiry Date: February 2024

Thank you for applying for research ethics clearance, SBL Research Ethics Review Committee reviewed your application in compliance with the Unisa Policy on Research Ethics.

Outcome of the SBL Research Committee:
Approval is granted for the duration of the Project

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the SBL Research Ethics Review Committee on the 26/03/2020.

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 is relevant to the ethicality of the study, as well as changes in the methodology, should

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SBL GRADUATE SCHOOL OF BUSINESS LEADERSHIP UNISA

Graduate School of Business Leadership, University of South Africa. PO Box 392, Unisa, 0003, South Africa
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be communicated in writing to the SBL Research Ethics Review Committee.

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.

Kind regards,

16 April 2018

Prof R Ramphal
Chairperson: SBL Research Ethics Committee
011 – 652 0363 or ramphrr@unisa.ac.za

Prof CN Mbatha
Executive Dean (Acting): Graduate School of Business Leadership
011- 652 0256/mbathcn@unisa.ac.za

ANNEXURE B: RESEARCH PERMIT-GOVERNMENT OF BOTSWANA

Private Bag 003
Gaborone
Botswana
REFERENCE: MOA 1/15/4 I (33)

Republic Of Botswana

Telephone: 3689211
Fax: No: 3905134
Internet: www.moa.gov.bw

MINISTRY OF AGRICULTURAL DEVELOPMENT AND FOOD SECURITY

27th May 2019

Mr Emmanuel Nduhle
P O Box 121
Francistown

Dear Mr Nduhle

TOWARD A SERVQUAL FRAMEWORK FOR POULTRY FARMING AGRICULTRAL SERVICES INSUTIONS IN DEVELOPING COUNDITRIES: A CASE OF BOTSWANA

Reference is made to the above subject captioned matter.

The Ministry of Agricultural Development and Food Security does not have any objection for you to carry out the abovementioned study provided data collected are used exclusively for this study. As we take keen interest in this study, we would like you to share research findings with both Ministry staff and farmers. In addition, a copy of the thesis must be deposited at the Ministry library. I am therefore happy to inform you that permission has been granted to carry out this invaluable study.

May I take this opportunity to wish you success in your academic pursuits.

Regards

Yours faithfully

John C. Moreki, PhD
For/Permanent Secretary

BOTSWANA

ANNEXURE C: GATEKEEPER'S PERMISSION

UNISA GRADUATE SCHOOL O F BUSINESS LEADERSHIP

Request for Permission to Conduct and Academic Research (ASIs)

Research title- ***A Service Quality Framework for Botswana Agricultural Services Institutions Rendering Services to Small-Scale Poultry Farming Enterprises in the Southern, South-East, Kgatleng and Kweneng Districts.***

Details of contact person

Name: _____ Position_____

Contact No: _____ email: _____

Name of Agricultural Services Institution (ASI) _____

Researcher: Emmanuel Nduhle (00267 2408077/ 72863777, enduhle@gmail.com)

Supervisor: Professor Rembrandt Klopper (0027 218550657, rklopper@gmail.com)

Co-Supervisor: Professor Sam Lubbe (0027 781912722, sam.lubbe@gmail.com)

Dear _____

I, Emmanuel Nduhle, am doing a research under the supervision of Prof Rembrandt Klopper and Prof Sam Lubbe towards a degree of Doctor of Business Leadership in Entrepreneurial Development and Small Business Management at the University of South Africa's Graduate School of Business Leadership. Currently, I have a relationship with this university as a doctorate student.

I am currently engaging in a research thesis with the following specific details;

The aim of this study is to develop an adapted SERVQUAL framework for Agricultural Services Institutions supporting poultry farming SMMEs in Botswana. A SERVQUAL instrument will be developed and used on ASI's management, ASI's employees and small scale poultry farmers to assess the quality of service farmers receive from ASIs. Consequently, an adapted SERVQUAL framework for poultry ASIs in Botswana will be developed and this will contain strategies meant to address the problem of high failure rate in the small-scale poultry industry in developing countries.

This research will entail conducting in-depth interviews with participants from management of ASIs. This make the first phase of this study which will be qualitative in nature. This will lead to the development of SERVQUAL questionnaires that will be used in the second phase of the study to gather data from small-scale poultry farmers and employees of ASIs, leading to the development of an adapted SERVQUAL framework for ASIs in developing countries.

The benefit of this research is that it will unveil factors that hinder growth and sustainability of poultry farming SMMEs in developing economies, leading to the development of a SERVQUAL framework that will address such problems. This may lead to increased productivity and profitability amongst entrepreneurs in this industry, employment creation, poverty eradication and an improvement in the standard of living for the general population in developing economies.

Your company has been selected to participate in my study because it is one of the key supporting institution for small-scale poultry farmers in various ways.

The involvement of the data collection at your company will entail in-depth interviews and completion of a SERVQUAL questionnaire by your branch management at your various branches across the country. Furthermore, selected employees at the same braches will participate in the research by completing a SERVQUAL questionnaire. The researcher will also request for secondary data on small-scale poultry farmers in the North-Eastern district of Botswana.

There is no potential risk anticipated before, during and after data collection processes at your organisation.

The feedback procedure will entail your organisation having access to the finding/results of this research for an agreed time period.

According to the UNISA Research Ethics Policy the following should be noted;

All participation will be on a voluntary basis, with the participant's prior consent and right to exit the process at any time without any recourse,

All information gathered will remain as the property of the researcher and UNISA and will only be used for this research project,

The data will be securely maintained by myself for a period of 5 years after which it will be destroyed,

The researcher will ensure confidentiality and anonymity of the respondents and your organisation

There will be no payment, gifts, rewards or any other incentives to the participants.

We have funding from UNISA student funding for graduate studies. This funding will be used for tuition fees for my studies, costs of data collection, transcription and analysis, thesis typing, language editing and binding as well as buying of equipment and software necessary for this research.

Please note that the letter for granting permission should be written on your company's letterhead

With appreciation

Yours faithfully

Emmanuel Nduhle (Researcher)

ANNEXURE D: INFORMED CONSENT

Graduate School of Business Leadership, University of South Africa PO Box 392 Unisa 0003 South Africa
Cnr Smuts and First Avenue Midrand 1685 Tel: +27 11 652 0000 Fax: +27 11 652 0299
Email: sbl@unisa.ac.za Website: www.sblunisa.ac.za

Informed consent for participation in an academic research project

Research Title: **A Service Quality Framework for Botswana Agricultural Services Institutions Rendering Services to Small-Scale Poultry Farming Enterprises in the Southern, South-East, Kgatleng and Kweneng Districts.**

Dear Respondent

You are herewith invited to participate in an academic research study conducted by Emmanuel Nduhle, a student studying a Doctorate of Business Leadership at UNISA's Graduate School of Business Leadership (SBL) under the supervision of Professor Rembrandt Klopper and Professor Sam Lubbe.

The purpose of the study is to give an insight around the Service Quality provided by Botswana ASIs to their customers, and how this Service Quality affects the customer's business performance. The research will help identify potential gaps between expected Service Quality and the actual quality of service received by poultry farming SMMEs from ASIs. This will help ASIs to improve their service quality and this research may lead to the development of a service quality framework that ASIs may use to improve their Service Quality.

All your answers will be treated as confidential, and you will not be identified in any of the research reports emanating from this research. **Your participation in this study is very important to us**. You may however choose not to participate and you may also withdraw from the study at any time without any negative consequences.

This research will comprise of three sections as follows: a short interview of about 10 minutes followed by completion of a SERVQUAL questionnaire comprising the expectations section and a perceptions section. This questionnaire will take about 20 minutes to complete. Please answer all the questions as completely and honestly as possible.

The results of the study will be used for academic purposes only and may be published research reports, academic journal articles and conference presentations. We will provide you with a summary of our findings on request.

Please contact my supervisors, Professor Sam Lubbe (sam.lubbe@gmail.com) and Professor Rembrandt Klopper (rklopper@gmail.com) if you have any questions or comments regarding the study. Please sign below to indicate your willingness to participate in the study.

Yours sincerely

Emmanuel Nduhle

I, _____, herewith give my consent to participate in the study. I have read the letter and understand my rights with regard to participating in the research.

_____ _____

Respondent's signature **Date**

ANNEXURE E: PARTICIPANT INFORMATION SHEET

Graduate School of Business Leadership, University of South Africa PO Box 392 Unisa 0003 South Africa
Cnr Janadel & Alexandra Avenue Midrand 1685 Tel: +27 11 652 0000 Fax: +27 11 652 0299
Email: sbl@unisa.ac.za Website: www.sblunisa.ac.za

Participant Information Sheet: Customers and Employees of ASIs

Date: September 2020

Research Title: **A Service Quality Framework for Botswana Agricultural Services Institutions Rendering Services to Small-Scale Poultry Farming Enterprises in the Southern, South-East, Kgatleng and Kweneng Districts.**

Dear Participant

My name is Emmanuel Nduhle and I am doing research under the supervision of Professor Rembrandt Klopper and Professor Sam Lubbe, towards a Doctor of Business Leadership Degree at the University of South Africa. We have funding from University of South Africa Post Graduate Bursaries for research activities, equipment, software and tuition fees. **We are inviting you to participate in this study.**

I am researching Agricultural Services Institutions (ASIs) Service Quality in Botswana, and its impact on poultry farming SMMEs business performance. The purpose of this research is to give an insight around the Service Quality provided by Botswana ASIs to their customers, and how this Service Quality affects the customer's business performance.

The research will help identify potential gaps between expected Service Quality and the actual perceived quality of service received by poultry farming SMMEs from ASIs. This will help ASIs to improve their service quality and this may lead to the development of a service quality framework that customers may use to appraise their service providers (ASIs). This research will comprise of three sections as follows: a short interview of about 10 minutes followed by completion of a SERVQUAL questionnaire comprising the expectations section and a perceptions section. This questionnaire will take about 20 minutes to complete.

Due to ethical reasons, the identity of the participants will be kept confidential and participation is voluntary and can be stopped at any stage in the research without the participant suffering any prejudice. Furthermore, responses will never be linked back to the participants and participants will not be remunerated in any way for participation. The anonymous data from participants may however be used for other purposes like research reports, journal articles and conference presentations. The data collected from the study will be store for 5 years on an online storage portal, and will not be accessible to anyone other than the researcher and supervisors. Results of this study will be made available to ASIs and the Government of Botswana through the relevant Ministry of Agriculture and Food Security.

Thanking you in advance

Yours Sincerely

Emmanuel Nduhle

ANNEXURE F: REQUEST FOR PERMISSION TO ADAPT SERVQUAL MODEL

14 November 2018

Dear Professor Parasuraman

RE: Permission to adapt SERVQUAL

I am a Doctoral student at UNISA Graduate School of Business Leadership (SBL), pursuing a Doctor of Business Leadership degree under the supervision of Professor Rembrandt Klopper and Professor Sam Lubbe.

I am researching Agricultural service quality in Botswana and its impact of on performance of poultry farming SMMEs. The purpose this study is to give an insight around the quality of service rendered to small-scale poultry farmers by Agricultural Services Institutions (ASIs) in Botswana. The study will further look at the impact of this Service Quality on growth and sustainability, as well as business performance of poultry farming SMMEs in developing countries, taking Botswana as a case study. The study will help identify gaps between expected and perceived Service Quality, which will aid ASIs to identify service dimensions that need improvement. The research will possibly result in the development of a service quality tool that customers (poultry farmers) can use to appraise ASIs, as well as ASIs carrying out self-evaluations of their quality of service.

It was after careful researching and a thorough review of several service quality models that I selected SERVQUAL as the best instrument to use to elicit information around expected and perceived Agricultural service quality in Botswana, which may be extrapolated to other developing countries. The envisaged SERVQUAL questionnaire will also include sections that will gather information on impact of Agricultural service quality on business performance of poultry farming SMMEs.

I therefore would like to humbly request for your permission to adapt the SERVQUAL model for my study.

Thanking you in advance.

Yours faithfully

Emmanuel Nduhle

ANNEXURE G: PERMISSION TO ADAPT SERVQUAL-Prof Parasuraman

Gmail EMMANUEL NDUHLE <enduhle@gmail.com>

Permission to adapt SERVQUAL

Parasuraman, A <aparasur@bus.miami.edu> Wed, Nov 14, 2018 at 5:12 PM
To: EMMANUEL NDUHLE <enduhle@gmail.com>
Cc: "Berry, Leonard (lberry@mays.tamu.edu)" <lberry@mays.tamu.edu>, "Zeithaml, Valarie" <Valarie_Zeithaml@kenan-flagler.unc.edu>

Hi Emmanuel,

Thanks for your request for permission to adapt and use SERVQUAL in your dissertation study as outlined in your attached letter. On behalf of my co-authors Drs. Berry and Zeithaml, and myself, I am pleased to grant you that permission with the understanding that you will appropriately cite our work in all written and oral presentations of your findings.

Best wishes for success with your study!

Sincerely,

A. "Parsu" Parasuraman

Professor of Marketing & Holder of the James W. McLamore Chair

University of Miami

Coral Gables, FL 33124-6554

Tel: 305-284-5743/Fax: 305-284-5326

parsu@miami.edu

http://www.bus.miami.edu/thought-leadership/faculty/marketing/parasuraman.html

ANNEXURE H: STATISTICIAN CONFIDENTIALITY AGREEMENT

Statistician Services Agreement

I, Gill Hendry, statistician, agree as follows with regards to the statistical services ("Services") to be performed by me for the student named below ("Student") related to his/her doctoral/masters study ("Study") at the university named below ("University"). The Services are not performed on a 'work for hire' basis.

The Services to be performed utilizing data, information and materials provided by you are as follows: Questionnaire validation; statistical data analysis and a brief report of results

Subject to the Student complying in full with his/her acknowledgements and obligations as set out below, I agree:

1. to maintain full confidentiality in regards to any and all data and documentation received relating to the Study, which shall be further subject to (a) below;
2. to notify you electronically when I complete the Services, after which time I will retain the materials only as stated in point 3 below;
3. upon the Student's written request, to store in my possession all data, work product and study-related materials for no more than 12 months after completion of my Services, after which they shall be deleted by me without notice to you or any other party and, at that time, I shall have no further obligations whatsoever with regards to such data, work product and study related materials;
4. that the Student has a non-exclusive license to use work product developed by me solely in support of his/her Study and to the extent permitted by the University;
5. to participate (as reasonably requested) in any University ethical audit of the statistical tests performed by me on behalf of the Student for so long as I have access to original data, work product and materials (as referred to in 3 above), which participation will be at the sole cost of the Student.

The performance of the Services is subject to the following, which you acknowledge and agree:

(a) any separate confidentiality agreement signed by me shall be strictly subject to the provisions of this agreement;

(b) I am under no obligation to verify the accuracy or correctness of the data and documentation submitted to me with regards to the Study and performance of the Services;

(c) It is your responsibility to check my work product prior to using it;

(d) the use of, interpretation and reporting of my work product in your Study is for you to determine;

(e) we may communicate and transmit information, materials, documents and work product electronically, which shall be at the your risk;

(f) my undertakings contained herein are for the personal non-assignable benefit of the Student; no other person or party may rely on any or all of my undertakings given herein;

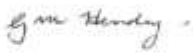
(g) no person or party (including you) shall acquire any intellectual property rights whatsoever to the programs, methods and/or tools utilized by me in performing the Services;

(h) my use of third-party programs affords you no right or license with regards to such programs;

(i) to make payments to me as set out below and that I may advise the University in the event of non-payment; and

(j) to indemnify and hold me harmless from and against all costs, expenses and fees claimed by any third party as a result of my performance of the Services.

My fees are R300 per hour. I require that a deposit of R1000 be paid to me in advance and the balance within 10 days of my completing the Services. Any services thereafter shall be charged on an hourly fee basis.

Statistician's signature: 

Date: 2 September 2020

I hereby agree to the above, undertake to make payments as above and acknowledge that all of your rights in 1, 3, 4 and 5 above shall cease forthwith upon my failing to comply with all or any of my obligations and/or undertakings:

Student's name and ID number (printed): EMMANUEL NDUHLE, PASSPORT NUMBER: EN506452

Student's number (printed):791772105

University (printed): UNISA GRADUATE SCHOOL OF BUSINESS LEADERSHIP

Student's signature  Date (printed): 02 September 2020

Hendry Statistician Services and Confidentiality Agreement © 2014

ANNEXURE I: FIELD WORKER'S CONFIDENTIALITY UNDERTAKING

Graduate School of Business Leadership, University of South Africa PO Box 392 Unisa 0003 South Africa

Cnr Smuts and First Avenue Midrand 1685 Tel: +27 11 652 0000 Fax: +27 11 652 0299

Email: sbl@unisa.ac.za Website: www.sblunisa.ac.za

FIELD WORKERS CODE OF CONDUCT

Research: A Service Quality Framework for Poultry Farming Agricultural Services Institutions in Botswana

Statement

Committed to the principle that the confidentiality of individual data obtained through questionnaires and interviews must be protected. This principle holds whether or not any specific guarantee of confidentiality was given at time of interview or self-response, or whether or not there are specific contractual obligations. When guarantees have been given or contractual obligations regarding confidentiality have been entered into, they may impose additional requirements which are to be adhered to strictly.

Procedures for Maintaining Confidentiality

1. All field workers shall sign this assurance of confidentiality and upholding ethical standards.

2. Field workers shall keep completely confidential the names of respondents, all

information or opinions collected in the course of interviews, and any information about respondents learned incidentally during field work.

3. Field workers shall exercise reasonable caution to prevent access by others to questionnaire data in their possession.

4. Field worker, upon encountering a respondent or information pertaining to a respondent that s/he knows personally, shall immediately terminate the activity and contact the researcher for instructions.

5. Reasonable caution shall be exercised in limiting access to questionnaire data to only those persons who are working on the research and who have been instructed in the applicable confidentiality requirements.

6. Where questionnaire data have been determined to be particularly sensitive by the researcher or supervisor, such questionnaire data shall be kept in locked containers or in a locked room except when actually being used.

7. When records with identifiers are to be transmitted to another party, such as for Key punching or key taping, the other party shall be informed of these procedures and shall sign an Assurance of Confidentiality form.

8. Fieldworker shall be responsible for ensuring that all confidentiality and ethical standards are upheld and maintained.

9. Fieldworkers involved in handling questionnaire data during the research are instructed in these procedures throughout the period of questionnaire performance.

10. When there are specific ethical obligations regarding confidentiality or other, the researcher shall develop additional procedures to comply with these obligations and shall instruct field staff and any other persons who work on the research in

these additional procedures.

11. At the end of the period, the researcher shall arrange for proper storage of questionnaire data including any particular contractual requirements for storage.

12. The researcher shall ensure that questionnaire practices adhere to the provisions of the law, confidentiality and ethical standards of universities and organizations.

13. The researcher and field researchers must ensure that procedures are established in each questionnaire to inform each respondent of the authority for the questionnaire, the purpose and use of the questionnaire, the voluntary nature of the questionnaire.

I hereby certify that I have carefully read and will cooperate fully with the above procedures. I will keep completely confidential all information arising from questionnaires concerning individual respondents to which I gain access.

I will not discuss, disclose, disseminate, or provide access to questionnaire data and identifiers except as authorized by the researcher or supervisor. I will comply with any additional procedures established.

I will devote my best efforts to ensure that there is compliance with the required procedures. I give my personal pledge that I shall abide by this assurance of confidentiality.

Rumbidzai Madzudzo — SN026134

Name and Surname — **Identity Number**

Madzudzo — 06/03/2020

Signature — **Date**

ANNEXURE J: ADAPTED SERVQUAL QUESTIONNAIRE REVIEW-Prof Parasuraman

Gmail

EMMANUEL NDUHLE <enduhle@gmail.com>

Permission to adapt SERVQUAL

Parasuraman, A <aparasur@bus.miami.edu>
To: EMMANUEL NDUHLE <enduhle@gmail.com>

Tue, Mar 30, 2021 at 6:34 PM

Dear Emmanuel,

Glad to note that you are well and once again making progress on your doctoral thesis after some delays due to the pandemic and your move to the ME.

I have reviewed your questionnaire draft. It looks good overall. In particular, the adaptation of the SERVQUAL dimensions and scale items to your poultry-farming context are appropriate in my opinion. I noticed an apparent typo in question 1.2 in the demographic profile section: Shouldn't "Motswana" be "Botswana"?

Regarding your request to be an expert panelist on your thesis committee, I regret that I will be unable to play that role. I retired from the University of Miami in 2019 and am now involved in some post-retirement administrative responsibilities in India that are very demanding. As such, with sincere apologies, I request your understanding my inability to serve as a panelist.

Continued best wishes for the successful completion of your doctoral studies.

Sincerely,

A. "Parsu" Parasuraman

Emeritus Professor of Marketing & James W. McLamore Chair Emeritus, University of Miami

Mentor, AIM-Parasuraman Center for Service Excellence, Jagdish Sheth School of Management (JAGSOM), India

ANNEXURE K: INTERVIEW GUIDE FOR ASI MANAGERS

INTERVIEW GUIDE FOR MANAGERS OF ASIs

Institution: UNISA Graduate School of Business Leadership

A Service Quality Framework for Botswana Agricultural Services Institutions Rendering Services to Small-Scale Poultry Farming Enterprises in the Southern, South-East, Kgatleng and Kweneng Districts.

Researcher: Emmanuel Nduhle (79172105)

Supervisors: Professor Sam Lubbe and Professor Rembrandt Klopper.

Degree: Doctorate in Business Leadership (DBL)

Opening:

1. Good morning/ good afternoon, my name is Emmanuel Nduhle. I am currently carrying out research on the quality of service rendered to small-scale poultry farmers by ASIs and its impact on business performance of the poultry farming SMMEs.
2. The main aim of this research is to develop an adapted SERVQUAL instrument and use it on small-scale poultry farmers to assess the quality of service these farmers receive from their key supporting institutions (ASIs.
3. The purpose of this interview is to identify relevant dimensions that can be used in the SERVQUAL instrument and to get your insight on the effect of Botswana ASIs' Service Quality on small-scale poultry farming enterprises performance as well as any challenges you face in rendering the service.
4. The Interview will be confidential, and you or your company will not be mentioned or identified in the results. Only aggregated and summarised data will be displayed.
5. The interview should take about 25 minutes. Your participation in this study is very important to us. You may however choose not to participate and you may choose to end the interview at any stage without any negative consequences.
6. You have been chosen to participate in this research because of your expertise and position as a manager, specifically responsible for agribusiness in one of the key Agricultural Services Institutions that provide service to small-scale poultry farmers in Botswana.
7. I would like to get your permission to audio-record this interview to ensure that I capture all the information correctly.

Before we start, I would like to remind you that there are no right or wrong answers in this discussion. We are interested in knowing what you think, so please feel free to be frank in sharing your point of view. It is important that we hear your opinions.

A. Preliminary information about the organisation

1. What service(s) does your organisation offer?
2. Which areas in Botswana does your branch cover?

B. Personal & Professional Characteristics of the manager

1. What are your academic and professional qualificatic
2. How long have you been working for this organis
3. How long have you been in your current posit

C. General questions about service quality

I would like to get your views on general se
your company)

1. What is your understandin
2. What words can you u
would you descried an
3. How would you
it compare to s
both within
4. What
they
5

D. Dimensions of SERVQUAL

I would now like to get your perceptions on the impact of service quality, delivered by you as an ASI, on your customers' business performance. I will look at this from the perspective of seven (7) dimensions.

1 ACCESS

1.1 How easy is it for your customers to access your company either telephonically or in person?

1.2 Do you think your company's accessibility impacts your customers' business performance?

1.3 Rate this perceived impact on a scale of 1 to 5 where 1 = large negative impact and 5 = large positive impact.

2 TIMELINESS

2.1 Is your company able to deliver a promised service at the appropriate, most suitable time and within the promised time frame?

2.2 Do you think your company's timeliness impacts your customers' business performance?

2.3 Rate this perceived impact on a scale of 1 to 5 where 1 = large negative impact and 5 = large positive impact.

3 RESPONSIVENESS

3.1 Is your company able to provide service promptly?

3.2 Do you think your company's responsiveness impacts your customers' business performance?

3.3 Rate this perceived impact on a scale of 1 to 5 where 1 = large negative impact and 5 = large positive impact.

4 RELIABILITY

4.1 Does your company provide a promised service on time and accurately?

4.2 Do you think your company's reliability impacts your customers' business performance?

4.3 Rate this perceived impact on a scale of 1 to 5 where 1 = large negative impact and 5 = large positive impact.

5 ASSURANCE

5.1 Are your company's personnel knowledgeable and able to instil trust and confidence in your customers?

5.2 Do you think your company's assurance impacts your customers' business performance?

5.3 Rate this perceived impact on a scale of 1 to 5 where 1 = large negative impact and 5 = large positive impact.

6 EMPATHY

6.1 Do your company's personnel provide caring, individualised attention to your customers?

6.2 Do you think your company's empathy impacts your customers' business performance?

6.3 Rate this perceived impact on a scale of 1 to 5 where 1 = large negative impact and 5 = large positive impact.

7 COMPETENCE

7.1 Are your company's personnel able to display possession of skills and knowledge required to perform the service?

7.2 Do you think your company's ability to display competence impacts your customers' business performance?

7.3 Rate this perceived impact on a scale of 1 to 5 where 1 = large negative impact and 5 = large positive impact.

E. Importance of the dimensions

I would like to get your opinion on the order of importance of each of the seven (7) dimensions we have just been talking about.

Please order these seven (7) dimensions in order of their importance regarding their impact they have on a customer's business performance, from the most important to the least important.

Dimension	Order (most important to least important)
ACCESS	
TIMELINESS	
RESPONSIVENESS	
RELIABILITY	
ASSURANCE	
EMPATHY	
COMPETENCE	

F. Your company's service provision and challenges experienced

I would now like to get your perceptions/opinions on the service delivery you provide to your customers and challenges you face in this task.

1. How would you generally rate the quality of service your company renders to small-scale poultry famers in your territory?
2. On a scale of 1-5, where 1 = not at all able and 5 = extremely able, how would you rate your staff's ability to render **excellent service quality** to your customers?
3. In your opinion, what impact do you think the quality of service rendered to small-scale poultry farmers by your organisation has on the farmer's business performance and productivity?
4. What challenges does your company experience in delivering services to poultry farming SMMEs?
5. Does your organisation measure Agricultural Service Quality against any benchmarks targets? If yes, please describe how your company measures Agricultural Service Quality and what tools it uses to do so?
6. Are there any strategies that your company could adopt to:
    - Enhance service quality and customer satisfaction
    - Improve productivity and profitability of small-scale poultry farmers in Botswana?

Closing

I would like to sincerely thank you for your time. Is there any more information you would like to share, or is there anything that I have not covered in the interview that you would like to chat about?

Thank you once again for taking your time to talk to me and for your contribution towards my research.

ANNEXURE L: ADPTED SERVQUAL QUESTIONNAIRE FOR POULTRY FARMING SMMEs

CUSTOMER QUESTIONNAIRE

Institution: UNISA, Graduate School of Business Leadership

Degree: Doctorate in Business Leadership (DBL)

Researcher: Emmanuel Nduhle (79172105)

Supervisor: Professor Sam Lubbe

The purpose of this survey is to understand the impact of Botswana Agricultural Services Institutions' (ASIs) Service Quality on poultry farming SMMEs' business performance and to develop and adapted SERVQUAL Framework for Agricultural Service Institutions in Botswana and other developing economies. Participation in this survey is voluntary and you may choose to withdraw at any stage of the survey. Your responses will be kept anonymous and will not in any way be linked to you personally. In order for your responses to be used in this research, we require your consent. Kindly read and sign the informed consent attached before completing this survey.

SECTION 1: DEMOGRAPHIC PROFILE

For each question, select the ONE option that best applies to you

1.1 Gender

Male	Female

1.2 Nationality

Motswana	Other (Specify)

1.3 Your age

<20	20-30	31-40	41-50	51-60	>60

1.4 Your highest educational qualification is

BGCSE 'O' Level	Certificate	Diploma	Undergraduate Degree	Post Graduate Degree

1.5 Your position in the poultry farming SMME is

Director/ Owner	Employee (Managerial)	Employee (Non-Managerial)

1.6 Have you ever received training in poultry production and management?

YES	NO

1.7 How long has this small-scale poultry farm been operating?

<2 years	2-<4 years	4-<6 years	6-<8 years	8+ years

1.8 Size of this SMME by production

Micro (<100 birds per batch)	Small (101-2000 birds per batch)	Medium (>2000 birds per batch)

SECTION 2: SERVICE QUALITY <u>EXPECTATIONS</u> FROM THE ASIs

Indicate what you, the poultry farmer, **EXPECT** from an excellent ASI in terms of service delivery by rating your level of agreement with the following statements:

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
ACCESS							
1. I expect excellent ASIs to be physically accessible to me							
2. I expect excellent ASIs to be accessible to me by telephone							
3. I expect excellent ASIs to have an active website and other digital communication							

platforms to enhance their accessibility to me							
4. I expect excellent ASIs to have branches strategically located near poultry farming SMMEs							
RESPONSIVENESS							
5. I expect excellent ASIs to respond to all my farming needs promptly							
6. I expect excellent ASIs to 'never be too busy' to respond to my farming requests							
7. I expect excellent ASIs to always be willing to assist me with farming needs							
8. When I have a problem, I expect an excellent ASI to show sincere interest in solving it							
RELIABILITY							
9. I expect excellent ASIs to provide their services (e.g. supplying day-old chicks; vaccines; etc) within the promised time frame							
10. I expect excellent ASIs to perform their service right the first time							
11. I expect excellent ASIs to keep accurate records							
12. I expect that excellent ASIs can be relied upon to provide me with good quality basic inputs like feeds, day-old chicks, vaccines, equipment and other basic inputs.							
ASSURANCE							
13. I expect personnel from excellent ASIs to instil trust in me as they render their service							
14. I expect to feel safe/secure in my transactions with excellent ASIs							
15. I expect to have confidence in the service received from excellent ASIs							
16. I expect employees from excellent ASIs to be approachable							
EMPATHY							
17. I expect excellent ASIs to provide caring, individualised attention to my needs							
18. I expect excellent ASIs to take time to pay routine site visits to my poultry farm whether there is a problem or not							
19. I expect excellent ASIs to give relevant individualised advice to me							
20. I expect excellent ASIs to have my best interest at heart							
21. I expect an excellent ASI to understand my specific farming needs							

22. I expect an excellent ASI to provide a service to the me at a time suitable to me							
23. I expect excellent ASIs to have convenient office operating hours							
COMPETENCE							
24. I expect personnel from excellent ASIs to be able to display relevant knowledge and skills pertaining to their job							
25. I expect personnel from excellent ASIs to be knowledgeable about poultry farming							
26. I expect excellent ASIs to be able to provide relevant training to me on best poultry farming practices							
27. I expect excellent ASIs to have the skills to be able to provide efficient extension services to me							

SECTION 3: SERVICE QUALITY EXPERIENCES FROM THE ASIs

Indicate what you, the poultry farmer, have **EXPERIENCED** from your ASI in terms of service delivery by rating your level of agreement with the following statements:

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
ACCESS							
1. My ASIs are physically accessible to me							
2. I can easily reach my ASIs by telephone							
3. My ASIs have active websites and other digital communication platforms through which I can access them							
4. My ASIs have branches strategically located near my poultry farm							
RESPONSIVENESS							
5. My ASIs respond to all my farming needs promptly							
6. My ASIs are 'never be too busy' to respond to my farming requests							
7. My ASIs are always willing to assist me with farming needs							
8. When I have a problem, my ASIs show sincere interest in solving it							

RELIABILITY							
9. My ASIs provide their services (e.g. supplying day-old chicks; vaccines; etc) within the promised time frame							
10. My ASIs perform their service right the first time							
11. My ASIs keep accurate records							
12. My ASIs can be relied upon to provide me with good quality basic inputs like feeds, day-old chicks, vaccines, equipment and other basic inputs.							
ASSURANCE							
13. Personnel from my ASIs instil trust in me as they render their service							
14. I feel safe/secure in my transactions with my ASIs							
15. I have confidence in the services received from my ASIs							
16. Employees from my ASIs are approachable							
EMPATHY							
17. My ASIs provide caring, individualised attention to my needs							
18. My ASIs take time to pay routine site visits to my poultry farm whether there is a problem or not							
19. My ASIs give me relevant individualised advice							
20. My ASIs have my best interest at heart							
21. My ASI understands my specific farming needs							
22. My ASI provide me with services at a time suitable to me							
23. My ASIs have convenient office operating hours							
COMPETENCE							
24. Personnel from my ASIs are able to display relevant knowledge and skills pertaining to their job							
25. Personnel from my ASIs are knowledgeable about poultry farming							
26. My ASIs are able to provide relevant training to me on best poultry farming practices							
27. My ASIs have the skills to be able to provide efficient extension services to me							

SECTION 4: WEIGHTING OF SERVICE QUALITY DIMENSIONS

Rate **(from 1=not at all important to 5=extremely important)**, the importance to you, the SMME, of the following six service features.

	Not at all important 1	**2**	**3**	**4**	**Extremely important 5**
4.1 The accessibility of the ASI to you/your SMME					
4.2 The willingness of ASIs to help you/ your SMME and provide service promptly					
4.3 The ability of ASIs to perform the promised service dependably and accurately.					
4.4 The ability of ASI employees to instil trust and confidence in you as they render services					
4.5 The ability of ASI personnel to provide you/your SMME with caring, individualised attention.					
4.6 ASI employees' possession of the skills and knowledge required to perform the service.					

SECTION 5: MEAUSRES OF BUSINESS PERFORMANCE

Rate **(from 1=very poor to 5=excellent)**, the performance of your business in the following areas using the given scale

	Very Poor 1	**2**	**3**	**4**	**Excellent 5**
5.1 Your poultry farm's **Profitability**					
5.2 Your poultry farm's **Sales Growth**					
5.3 Your poultry farm's **Market Share**					
5.4 Your Poultry farm's **Business Growth**					
5.5 Your poultry farm's **Product Quality**					

THANK YOU FOR YOUR TIME

ANNEXURE M: LANGUAGE EDITING CERTIFICATE

Language Editing Services

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Renée van der Merwe

BA Hons (Applied Linguistics)

SATI Accredited (1998)

23 October 2022

Dear Prof. Lubbe

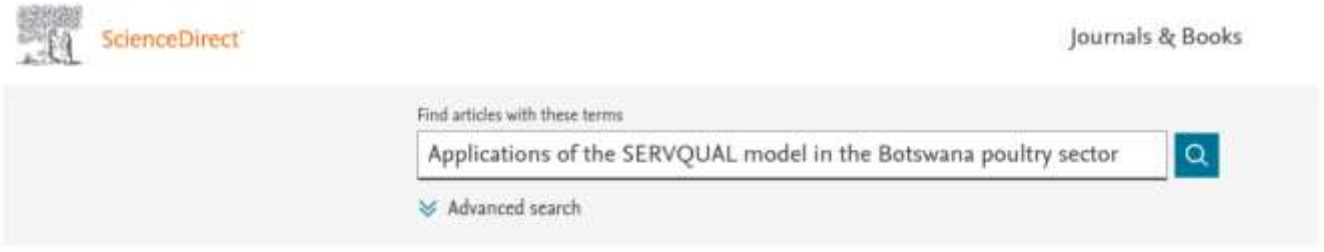
This serves to confirm that the doctoral thesis by Emmanuel Nduhle has been submitted to me for language editing.

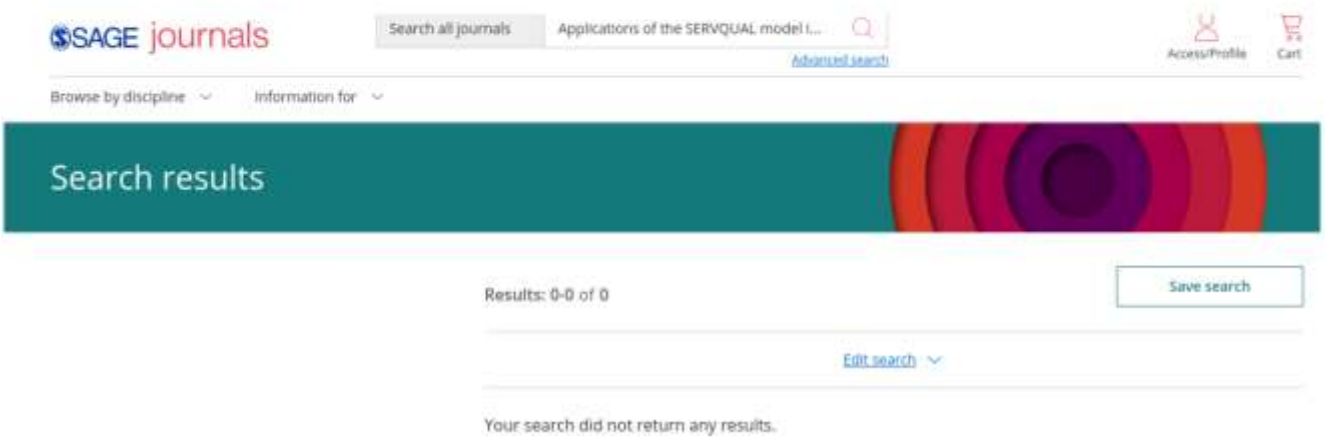
While I have suggested various changes, I cannot guarantee that these have been implemented nor can I take responsibility for any other subsequent changes or additions that may have been made.

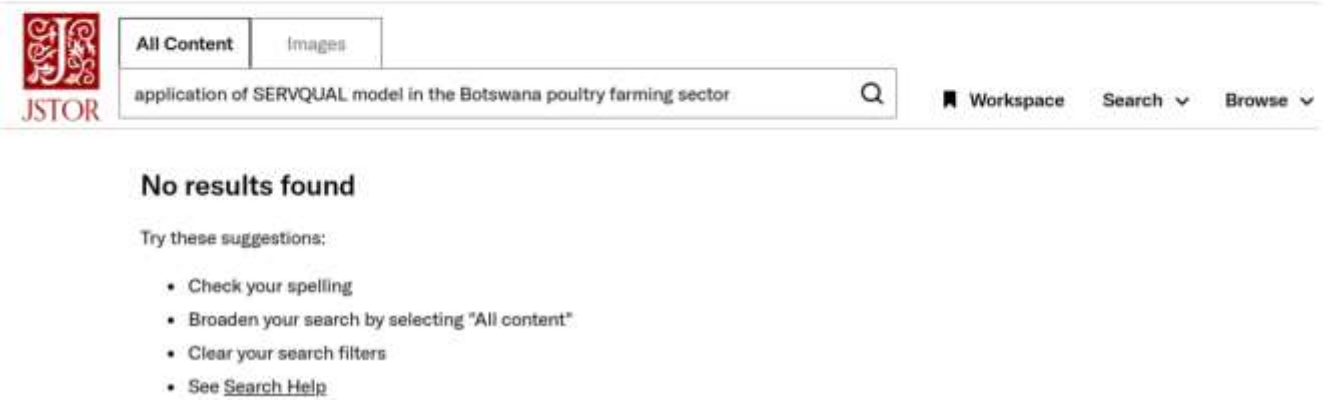
Yours faithfully

R van der Merwe

ANNEXURE N: SNAPSHOT OF SOME DATA BASES OF LITERATURE CONSULTED







ANNEXURE O: SNAPSHOT OF THE CONCEPT MATRIX FOR LITERATURE REVIEW

Concepts / References	Total relevant concepts per source	Finance and funding	Training and skills development	Favourable market environment	Infrastructural development	External capacity & government policies	Success factors for poultry farming SMMEs	Use of SERVQUAL in Botswana	The SERVQUAL model: some case studies	Service quality models: a critical review	Poultry farming SMMEs service providers	Impact of SMMEs in developing economies	Botswana poultry farming value chain	Poultry production: a historical background
Total sources per concept		13	5	2	7	5	10	8	6	7	2	4	5	5
Acharya and Kaphle (2015)	4	1			1				1	1				
Amestoso et al. (2020)	4						1				1	1		1
Baliyan and Marumo (2016)	2		1				1					1		1
Chatterjee et al. (2023)														
Chiguvi (2023)	2							1		1				
Chimucheka *et al.*(2011)	1	1												
Ebringa (2012)	1				1								1	
Eshun et al (2014)	3	1	1			1								
Eskeem (2014)	2	1						1						
Farayola et al (2013)	3		1	1					1					
Gynberg *et al.* (2016)	2							1	1		1		1	
Henuk (2014)	2	1						1						
Kelly (2012)	2				1	1								
Klopper (2009)	1									1				
Krepl *et al.* (2016)	1					1								
Mapiye et al. (2008)	1							1						
Mappigau *et al.* (2012)	5	1	1		1	1			1					
Marumoagae & Pansiri (2019	2							1	1					
Masole (2015)	2	1						1						
Mmbengwa et al. (2009)	2	1								1				
Mmbengwa *et al.* (2013)	2	1			1									
Moreki (2011)	1							1				1	1	1
Moreki (2013)	1			1									1	1
Mwobobia (2012)	2	1				1						1		
Ncube *et al.* (2016)	2	1							1				1	1
Shemi and Procter (2013)	1									1				
Syahlani et al. (2022)	2		1				1							
Sveinung et al (2010)	2	1			1									