THE IMPACT OF INTERNATIONAL STANDARDS ON AGRO-FOOD EXPORTS FROM ZIMBABWE: CASE OF HORTICULTURE SECTOR

BY

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DECLARATION

I, Desire Tinashe Pasipanodya do hereby declare that this dissertation is the result of my own research except to the extent indicated in the acknowledgements, references and by comments included in the body of this report, and that it has not been submitted in part or in full for any other degree to any other university.

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APPROVAL

The undersigned certify that they have read and recommended to Bindura University of Science Education (BUSE) for acceptance, a Dissertation with the title: “The impact of international standards on agro-foods exports from Zimbabwe: Case of the horticulture sector” by Pasipanodya Desire Tinashe in partial fulfilment of the requirements of the Masters in Business Leadership (MBL) Degree Program.

This Dissertation entitled “The impact of international standards on agro-food exports from Zimbabwe: Case of horticulture sector” done by Pasipanodya Desire Tinashe meets the regulations governing the award of the Degree of Masters in Business Leadership of the Bindura University of Science Education (BUSE), and is approved for its contribution to body of knowledge and literal presentation.

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DEDICATION

This dissertation study is dedicated to my one and only wife and better half (Natsai), my entire family and friends who stood by me with support and encouragement during my studies.
ABSTRACT

The international trade and exports of horticultural products have become increasingly global trend characterised by the introduction of international and national regulatory framework, associated with World Trade Organisation (WTO), Food and Agriculture Organisation (FAO), International Monetary Fund (IMF) and the World Bank policies. Horticultural exports from developing countries have become a major growth sector in international trade (Dolan and Humphrey 2000). The European legislation represents the minimum requirements for market access which can constitute obstacles to trade between EU and horticultural exporters.

The ‘private voluntary standards’ have extended the level of control by European retailers back along their supply chain to horticultural producers and exporters. Smallholder farmers meet the cost of compliance per certification and individual farm units, regardless of the size. Smallholders face difficulties in meeting these costs because the standards were developed for large firms in Europe. The expansion of food safety and quality standards in regulations has introduced new complexity in trade policy dialogues and efforts to expand trade in agro-food products. Trade liberalisation and trade facilitation remain important components of development strategy for horticulture exports in developing countries. The loss of competitiveness due to the variable and fixed costs required to comply with international standards is a cause for concern among smallholder horticulture producers and exporting firms, in Zimbabwe.

The aim of this study is to assess the impact of international standards on agro-food (horticultural) exports from Zimbabwe. The researcher explored the factors and challenges faced by agro-food (horticulture) producers and processors and described how international standards have influenced the agro-food (horticulture) exports in Zimbabwe. The researcher conducted a survey and collected data by quota sampling from multiple stakeholder groups in the agro-food (horticulture) value chain. Primary data was then analysed using quantitative statistical methods including SPSS, ANOVA, Correlational analysis, Regression analysis, Hypothesis testing and qualitative descriptive methods or interpretation. The researcher summarises the study by concluding that international standards have a significant impact or influence export performance and costs of agro-food (horticultural) products.
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LIST OF ACCRONYMS AND ABBREVIATIONS

AMA – Agricultural Marketing Authority of Zimbabwe
ANOVA – Analysis of Variance
BRC – British Retail Consortium
BRICS - Brazil, Russia, India, China and South Africa
CAC - Codex Alimentarius Commission
CFU – Commercial Farmers Union of Zimbabwe
COMESA – Common Market for Eastern and Southern Africa
DEC-TI – Development Economic Research Group for Trade and Integration
ECOWAS- Economic Cooperation of West Africa
EPI – Export Potential Indicators
EU - European Union
FAO - Food and Agriculture Organization
FDI – Foreign Direct Investment
FSSC – Food Safety System Certification
GAP - Good Agricultural Practices
GDP – Gross Domestic Product
GMO – Genetically Modified Organism
GMP – Good Manufacturing Practices
HACCP - Hazard Analysis Critical Control Point
HAZ – Horticultural Association of Zimbabwe
IMF – International Monetary Fund
IPPC – International Plant Convention
ISO-International Standards Organisation
ITC – International Trade Centre
MoU - Memorandum of Understanding
NTM’s - Non-Tariff Measures
PDI – Product Diversification Indicator
SADC – Southern African Development Community
SAZ – Standards Association of Zimbabwe
SME – Small to Medium Enterprises
SPS - Sanitary and Phytosanitary
SPSS – Statistical Package for Social Sciences
SQF – Standard for Quality and Food
TBT - Technical Barriers to Trade
TNC – Tesco Nature’s Choice
UAE – United Arab Emirates
UK- United Kingdom
UK DFID – United Kingdom Department of Foreign Affairs and International Development
UNCTAD – United Nations Conference on Trade and Development
UNIDO – United Nation Industrial Development Organisation
USA – United States of America
US FDA – United States Food and Drug Administration
WHO- World Health Organization
WTO - World Trade Organization
ZFU – Zimbabwe Farmers Union
CHAPTER I
INTRODUCTION

1. Introduction
This chapter introduces the study and its contribution to the body of knowledge. The researcher gives a brief background of the study, states objectives of the study and hypothesis. The researcher relates the purpose of the study to the problem at hand in order to expound importance of the study. This chapter further explores key pertinent issues relating to the study and discusses the assumptions, delimitations and limitations of the study. The chapter then closes with definition of some key terms as used in the research and summarises the whole chapter.

1.2 Background of the Study
Zimbabwe experienced its highest horticulture sector growth peak in the 1999/2000 season with exports earnings amounting to US$143 million, from 59 200 tonnes of fresh produce, 18 400 tonnes of cut flowers, 14 200 tonnes of vegetables and 45 000 metric tonnes of fruits and (Zimtrade, 2017). Horticultural exports play a significant role in Zimbabwe, by promoting gross domestic product (GDP) in generating the much needed foreign currency, thus contributing to economic growth, social development and improving livelihoods. Zimbabwe, often fail to utilise its full export potential because of international standards requirements, export procedures and foreign market technical regulations (Zimtrade, 2016). A study of the export potential and diversification opportunities in emerging and regional markets has revealed difficulties in conforming to export procedures, market regulations or consumer preferences as factors that create a gap between what a country could export and what it actually does export (ITC, 2015).

Citrus was the leading horticulture export product in 2015, making up 32% of total volumes, followed by flowers at 25%, peas at 19%, dried leguminous vegetables at 11%, berries at 7% while an assortment of other produce made up the remaining 6% (Zimtrade, 2016). Citrus exports peaked in 2001 at 45,000 tonnes, but has since declined to about 30,000 tonnes, (Citrus Export Growers Association, 2017). Fruit and vegetable exports have similarly come off their peak from 15,000 tonnes to about 5,000 tonnes (Fresh Produce Producers Association, 2016).
Flower production has also followed the trend, with output plummeting from 142,000 tonnes to about 40,000 tonnes by 2010 (Zimtrade, 2016). Zimbabwe mainly exports horticultural produce to EU markets, with exports receipts of over US$54 million in 2015 (Zimtrade, 2017). The European market is the largest economy in the world with a GDP per capita of £25 000 for its 500 million consumers, and accounts for 16.4% of global imports (Zimtrade, 2015). Zimbabwe’s share in European Union (EU) global market was 1.3% compared to other African countries such as Kenya with 10% market share and Egypt with 4%. There is a huge scope to increase Zimbabwe’s market share in the EU market (Zimtrade, 2015).

The EU consumes the bulk of Zimbabwe’s exports with Netherlands, accounting for $32.6 million (45%), while the United Kingdom ($13.5 million), Germany ($5.3 million), France ($3.2 million) and Poland ($2.9 million) taking up a combined $57.5 million worth of horticultural produce (Zimtrade, 2016). Zimbabwe’s exports of fresh leguminous vegetables to the EU increased to $20 million by 269% in 2014 from $5.4 million of 2010, (Newsday, 2015). The EU global imports of fresh leguminous vegetables grew to $1 billion by 35% in 2014 from $780 million in 2010.

Significant export markets for horticultural have opened up peas and macadamia nuts in South East Asia particularly in Malaysia, Hong Kong, Vietnam and China. Malaysian imports of fresh peas increased by 29% to US$7.6 million in 2016. Zimbabwe exported macadamia nuts worth US$9,186 million to Hong Kong, South Africa and China, in 2016 (Zimtrade, 2017). Germany has keen interest to import 15 horticultural crops from Zimbabwe, as the demand for organic crops increases on the international market (HPP Exhibitions, 2018). The demand for fresh fruits in Mauritius may provide a reprieve to Zimbabwe’s under-performing horticulture sector with exports to Mauritius having grown by 30% to US$31 million (Zimtrade, 2015).

The global exports of fruits (citrus, apples, nuts, grapes and peaches apricots, strawberries and nuts) to Mauritius stood at US$23.9 million in 2010, rising to US$25.6 million in 2011, US$27 million in 2012 and US$28 million in 2013, (Zimtrade, 2015). However, a sharp decline in citrus output came after government acquired 46% of Mazoe Citrus Estates in 2013. Zimbabwe supplies European retailers (Tesco Natures) in Malaysian market (Zimtrade, 2017). Hong Kong is the world’s second largest importer of macadamia nuts, with Zimbabwe being the fifth largest contributor to their imports of nuts worth US$9,186 million in 2016 (Financial Gazette, 2017).
Horticulture export income from flowers alone was $86 million in 2000, when Zimbabwe was the second largest exporter of flowers in Africa after Kenya and the third largest worldwide (HPP Exhibitions, 2018). Zimbabwe and PUM-Netherlands have signed a Memorandum of Understanding (MoU) to support agriculture and revive the horticultural sector in Zimbabwe and help revive Zimbabwe’s exports which had remained subdued in past 18 years since 2000 (Financial Gazette, 2016). The EU donated High Performance Liquid Chromatographic (HPLC) Laboratory equipment to assist horticultural producers, to meet international Sanitary and Phyto-Sanitary (SPS) standards requirements to facilitate trade with export markets and to promote market access (Financial Gazette, 2016).

Zimbabwe targets to surpass the $143 million peak mark of 1999/2000 season, from horticultural export proceeds in 2019 after extending the sector to Command Agriculture Scheme, as one of the strategies to revive horticulture, in generating the much needed foreign currency and creating employment opportunities down the value chain (HPP Exhibitions, 2018). Horticulture sector as a foreign currency earner, is now a top priority for access to foreign markets, setting up of irrigation and mechanisation structures to revive the sector. Zimbabwe has also participated in the Africa’s Big Seven (AB7) of 2015, held at the Gallagher Convention Centre of South Africa, a specialised, annual agro-food value chain (farm-to-fork approach) showcase (Zimtrade, 2015).

The horticultural production in Zimbabwe, is now predominantly composed of small to medium enterprises, who have been struggling to meet the international food safety and quality requirements (Financial Gazette, 2016). Local horticultural produce for the export market includes temperate fruits (apple, pear, peach, plum, apricot, nectarine and grape), tropical fruits and vegetables (baby corn, butternut, citrus, chilly, gem squash, kiwi, lychee, mango, passion fruit, pineapple and tamarillo), out of season fruit and vegetables (asparagus, baby carrots, fine beans, cherry tomatoes, courgettes, mange tout peas, melon, strawberries and sweet corn), as well as flowers (ITC, 2016). The small holder horticulture farmers in Zimbabwe are saddled with technological and skills challenges, inadequate credit lines to finance production. To successfully penetrate the export markets, horticultural producers must comply with international standards such as Global GAP and British Retail Consortium (BRC) certifications (Zimtrade, 2017). However, these small scale horticulture producers in Zimbabwe, have been
inundated with a plethora of viability and operational challenges ranging from high fixed and variable cost of production.

Horticulture producers in Zimbabwe have been urged to explore opportunities in export markets to boost the country’s foreign currency reserves as the EU market offers great opportunities for *mange tout* peas variety, and an increasing demand for organic produce has also offered a niche market for exporters (Zimtrade, 2017). Producers can form clusters to take advantage of economies of scale when purchasing inputs, negotiating selling prices and costs of logistics and this model has been successful in the Netherlands and Costa Rica (ITC, 2017).

Zimtrade and PUM-Netherlands signed a MOU in April 2016 aimed at enhancing the horticulture industry in Zimbabwe and help in addressing challenges prevalent within the horticulture value chain (Zimtrade, 2016). The intervention was aimed at assisting small to medium sized (SME) horticulture farmers, to become key drivers in the growth of exports, through knowledge transfer in planting, production, post-harvest management, processing as well as linkages to strategic markets (HPP Exhibitions, 2018). The MOU helps to address challenges along the horticultural value chain such as: agricultural input management; processing; packaging and labelling as well as production efficiencies in the horticulture sector. The MOU sought to improve production and promoting exports of fresh produce, aimed at enhancing productivity and export competitiveness through on-farm training (Zimtrade, 2016). This has seen Zimbabwean horticultural and manufacturing sectors benefiting from technical assistance across the horticultural value chain.

Other initiatives being done in the horticulture sector by Zimtrade, a trade promotion body include a learning visit to Fruit Logistica in Germany, for the fruit and vegetable industry that runs every year in February. Fruit Logistic recorded over 75,000 trade visitors from over 130 countries who attended the event in 2017 and 3,077 company representatives from 84 countries were also present. Orders worth US$1.3 million have been recorded by the Zimbabwean companies who participated in the 2017 event (Zimtrade, 2018). The overall aim of this study is to promote and highlight the importance of capacitate local production of horticulture produce by small-scale producers for export market, and look for opportunities for value addition through further processing of fruits and vegetables. Local horticulture production represents an important potential source of foreign currency generation.
Small holder farmers, are being excluded from the export markets due to the high compliance costs associated with food standards and increasing levels of vertical coordination in food supply chains (Gibbon, 2003). The gains from international standards in agricultural trade are exploited by foreign investors, large food companies that lead to a more unequal distribution of the gains from trade (Dolan and Humphrey, 2000). The consolidation of the export supply base and vertical coordination in the supply chains amplify the bargaining power of large international firms, and displace decision-making authority from small holder farmers, hence strengthens the capacity of foreign multinational firms these companies to the disadvantage of local farmers and households (Warning and Key, 2002).

Further studies have demonstrated that standards are not necessarily non-tariff barriers to trade as standards can benefit smallholder farmers and rural households in developing countries. The use of international standards in agro-food trade typically creates high-value trade, hence allows better returns. This in itself gives incentives for exporting firms to develop extensive, vertically coordinated contracting schemes with developing country producers associated with technology transfer. In addition, smallholder farmers and households in developing countries can benefit through employment opportunities.

A study has shown that the likelihood of certification is largely determined by the sector, the firm's awareness of standards, the level to which the firm's markets are diversified, external pressure for certification and the firm's primary export market (Masakure et al, 2009). The results further revealed that the number of standards to which a firm is certified is influenced by firm size. This suggests that certification to international standards can be enhanced through increased private and institutional incentives in agro-food processing sectors, and increased regulatory enforcements in supply chains and support for raising the technical capacity of the sector.

International standards can act as barriers to trade, but can also act as catalysts for the upgrading of management capacity as basis for competitive positioning in high-value markets (Henson and Jaffee, 2007). The application of international standards facilitates contracting and ordering of goods and the assessment of their quality, hence reduces disputes over specifications and quality. International standards provide governments the technological and scientific bases that underpin health, safety and environmental legislations. Many agro food products face high tariffs and non-tariff barriers as foreign markets agricultural subsidies undermining the competitiveness of developing country products by $1 billion a day (UNCTAD, 2001).
Developing country shares of agricultural commodity exports have slumped, from 31.7% in 1972 to 26.4% in 1999 due to export constraints and obstacles (ITC, 2015).

SPS measures and international standards have dramatically changed the dynamics of international trade, as it now refers to the way in which a food commodity is produced, processed and transported. Moreover, agro-food importers in developed country markets apply more stringent standards and technical regulations. The world market for organic products is US $17.5 billion, and major world markets are expected to grow at an average rate of 20% in the medium term (UNCTAD, 2001). However, to explore these opportunities, developing countries must contend with a plethora of international standards and high certification costs.

The United Nations Conference on Trade and Development (UNCTAD) has a number of activities for promoting trade including Capacity-Building Task Force on Trade, Environment and Development (UNCTAD, 2001). The task force is intended to further strengthen country capacities to promote trade expansion and develop economies in an environmentally friendly and sustainable manner and respond to the need for adapting government policies and civil society in developing countries to rapid changes in the trading environment, focusing on horizontal and vertical diversification of agriculture i.e. horticulture (UNCTAD, 2001).

Export potential assessments helps in export promotion decision-making to provide insights into trade policy measures, missing production facilities or measures that hamper the export development, from which potential exports are divided into a supply and a demand (market access) component. Export Potential Indicators (EPI) measures supply capacity through existing export performance and combines it with (trends in) market demand and trade costs to estimate a typical trade flow between an exporting country and a target market (ITC, 2015).

The highest export market potential for Zimbabwe is in the European market on fresh and processed fruits and vegetables, nuts, fishery products, apparel, and cocoa sectors because these products provide a high export value, and have a high market demand in Europe. (Zimtrade, 2017). However, there are other several sectors with untapped export potential in regional trade, including fruits and vegetables, grains and pulses, each worth more than US$ 1 billion (ITC, 2015). Market access conditions hinder potential with the BRICS (Brazil, Russia, India, China, South Africa) and other emerging markets. Diversification opportunities for exists in regional and south to south trade in the honey and sweeteners sector (ICT, 2015).
The Product Diversification Indicator (PDI) measures supply capacity using the product space approach, which suggests new products that require similar capacities to the ones required for the country’s current export basket (ITC, 2015). Zimbabwe and other developing countries suffer from a narrow set of export products and underutilised potential, hence they need opportunities that help them develop stable, value-added exports inclusive to small and medium-sized enterprises (ICT, 2015). Zimbabwe can diversify into processed fruits, vegetables and nuts, natural ingredients of cosmetics and pharmaceuticals, spices and herbs that feature more advanced technologies that helps to move up the value chain (ITC, 2015).

The World Bank estimated that horticulture exports of fruit and vegetables from developing countries reached $70 billion by 2004, and since then, multinational investor and retailer-supervised supply chains have become, multi-billion dollar industries that have transformed the structure of agribusiness exports (Moran, 2018). The increased international trade in horticultural exports from developing countries to high-income countries has been associated with; increased foreign direct investment (FDI); increased coordination in horticultural export chains and increase in public food safety regulations and private food standards (Reardon, 2015). Horticultural exports contribute positively to foreign exchange earnings and a country’s trade balance, because of the high intrinsic value of horticultural produce.

The horticultural produce is a high-value export product due to higher and less variable foreign exchange earnings than other traditional exports commodities (McCullough et al., 2008). The FDI in horticultural trade has expanded rapidly in developing countries but the value chain is usually dominated by incapacitated smallholder farmers, limited number of export companies and stringent standards and technical regulations in export markets (Beghin et al., 2015). Horticultural exports from most developing countries remains subdued by private standards on

![Figure 1.1 Value of horticulture exports from developing countries; 1995-2014 (Source: Van den Broeck and Maertens, 2016)](image-url)
food quality and safety, or ethical and environmental aspects and trade have spread in horticultural sectors, dominated by the Global GAP (Van den Broeck and Maertens, 2016).

The supply chains in the fruit and vegetables sector exhibits stronger buyer-driven forces in meeting international standards. International standards are used in the procurement and importation of horticultural products by international retailers from the USA, UK, EU and Middle East, and have played a role in the evolution of international supply chains. In Europe, fresh produce importers and retailers use the Global GAP standards to govern the quality, size, pesticide-use, residue limits, as well as hygiene requirements for post-harvest handling, all requiring precise traceability (Moran, 2018). Retailers in the USA adopted HACCP regulations promulgated by the US Department of Agriculture and the US Food and Drug Administration (US-FDA), to ensure hygiene food safety (Moran, 2018).

The requirement to provide consistent high-quality supply, offer traceability, and meet demanding public and private standards for production and storage has implications for certification of small holder producers in developing countries. However, the cost of certification for international food safety standards adds up to about 50% of annual costs for a small-scale farmer (World Bank, 2013). Moreover, the rising concentration of horticulture exports by larger firms can be traced to the challenges of smallholders in meeting international standards requirements, and the difficulty in gaining access to capital (Moran, 2018).

1.3 Statement of the problem
Exports of agro-food products is an important source of foreign direct investment (FDI) that reduces the burden on the balance of payments, facilitates global trade, brings economic and social development (Abou-stait, 2005). Horticulture exports can help Zimbabwe, integrate in world economy, reduce the impact of external shocks on the domestic economy by improving the Gross Domestic Product (GDP). This ultimately increases total factor productivity because of the exports impact on economies of scale, technology transfer, improving skills of workers, managerial skills, and increasing productive capacity of the economy (Bonga et al., 2015).

Zimbabwe was once a major exporter of horticultural produce to the EU, generating export revenue of $143 million, but this declined to $83 million in 2016 due to various reasons including international standards requirements, lack of access to finance and technical expertise (Financial Gazette, 2017). Although, exports from the horticulture sector have played an
important role in Zimbabwe’s economic development, the economy has struggled to improve since the 1999/2000 land reform programme, despite abundance of natural resources in agriculture and opportunities in the horticulture sector. The major horticultural producers such as Kondozi Estate and Mitchell and Mitchell, which had a combined $50 million annual export revenue, were taken over by government, leading to years of lack of productivity and loss of markets.

Since the peak of $143 million in 1999, horticulture exports fell to about $72 million in 2005 and $40 million in 2009 (HPP Exhibitions, 2018). The principal markets for Zimbabwe’s horticultural produce includes the Netherlands, South Africa, Australia, China, Germany, United Kingdom and the United States and the most important requirement for horticultural exporters is complying with the EU food quality and safety standards such as Global GAP (Zimtrade, 2015). Zimbabwe currently supplies 3% only, of the EU market demand for exotic fruits (Zimtrade, 2016). Zimbabwe’s Citrus exports of 45,000 tonnes in 2001 has declined to about 30,000 tonnes (Citrus Export Growers Association, 2016). Fruit and vegetable exports have similarly come off their peak of 15,000 tonnes in 2001 to about 5,000 tonnes (Fresh Produce Producers Association, 2016). Flower production has also followed the trend, with output plummeting from 142,000 tonnes in 1999 to about 40,000 tonnes by 2010 (Southern Times, 2016).

Little research has been carried out to determine the exact impact of international standards on agro-food exports in Zimbabwe, particularly in the horticulture sector. This study aims at identifying the constraints that face small holder producers, farmers and processors of horticultural products, and to suggest ways of overcoming these constraints. The researcher will explore problems relating to challenges in implanting international standards and other technical requirements in the horticulture sector. The study will also address issues related to costs associated with implementing international standards, technical barriers to trade, import bans and export market access on horticultural products.

1.4 Objectives of the Study
Although a lot has been published on the economic theory of international standards, little is known about how they impact of international standard on trade of agro-food products from developing countries. This study review and evaluate theoretical concepts and empirical evidence and investigates the following research objectives and questions.
1.4.1 Main Objective
To evaluate the impact of international standards on agro-food (horticultural) exports in Zimbabwe.

1.4.2 Specific Objectives
a) To explore the factors and challenges faced by agro-food (horticulture) producers and processors in Zimbabwe, on implementing international standards
b) To describe how the international standards have influenced the agro-food (horticulture) exports in in Zimbabwe
c) To recommend interventions or solutions for agro-food (horticulture) export trade policies to enhance productivity, efficiency and improved compliance to international standards.

1.4.3 Research Questions:
a) What factors and challenges are affecting producers in the agro-food valued chain of Zimbabwe, in meeting international standards or impeding growth in exports?
b) How have the international standards impacted on agro-foods (horticultural) exports from Zimbabwe?
c) What strategic measure or interventions, can be adopted to enhance competitiveness of agro-food (horticultural) exports in Zimbabwe to increase compliance to international standards and spur growth in exports performance of horticulture sector in Zimbabwe?

1.5 Statement of the Hypotheses
- H₁: There is a significant impact of international standards on performance of agro-foods (horticulture) exports from Zimbabwe.
- H₂: There is a significant impact of international standards on fixed and variable costs of agro-foods (horticultural) exports from Zimbabwe

1.6 Significance of the study
The results from this study will benefit various stakeholders participating in international trade of agro foods, especially horticultural producers in Zimbabwe and other horticulture exporting firms. It is intended and anticipated that results of this study will stimulate further research to explore other areas with objective of enhancing free-fair and liberal international trade, as well as increased productivity and efficiency of agri-food sector value chain. Horticulture is currently the fastest growing agribusiness in developing countries as a major source of foreign currency generation strategy. The contribution of fresh produce in horticulture sector to the
economy of developing countries and GDP accounts for over 50% of the total agro-food trade exports (CTA, 2009).

Most researchers have cited the importance of standards on trade in agri-food commodities, but some studies have argued that standards imposed by high-income countries diminish the export potential of developing countries, thereby casting doubt on the development impact of standards on international trade. In this study, the researcher will critically review published literature and analyse the arguments based on empirical evidence on the relationship between international standards and developing country exports potential. The researcher provided new insights from survey-based empirical studies to ascertain whether standards are a catalyst or barrier for trade and economic development in developing countries.

Standards have been viewed as new non-tariff barriers to trade, diminishing especially the export opportunities of developing countries (Ferrantino, 2006). Standards and technical regulations can potentially be used as protectionist tools to bar imports and protect domestic farmers and companies (Maertens and Swinnen, 2007). It has been postulated that several countries effectively discriminate on imports from developing countries, which has contributed to disputes raised at the WTO (Mathews et al. 2003). Australia prohibited imports of sauces from the Philippines due benzoic acid contamination but permitted imports from New Zealand of similar products containing the same preservative (Jaffee and Henson, 2005). The EU Food Safety Law, precautionary principle results in effective discrimination against imports of products from East Africa (Desta, 2008). However, when developing countries are confronted with discrimination, often lack the scientific and institutional capacity for WTO dispute settlement.

Standards can act as barriers to trade due to the high costs of compliance and certification, as developing countries generally lack the infrastructure, institutional, technical and scientific capacity and face challenges and constraints to meet international standards and best practices. The inability of developing countries to comply with standards can be costly and trade distorting as it leads to border detentions and result in trade restrictions such as import bans for by importing countries. The USA - Food and Drug Administration (FDA) reported about 3,000 border detentions of imported fruits and vegetables and over 1,500 of fishery products, mostly from developing countries in 1999, on the basis of contamination, pesticide residue violation and failure to meet labelling requirements (Henson et al., 2000).
Standards can act as catalysts to facilitate international trade, as they are most often in the interest of public health. International standards and certification schemes can help to reduce transaction costs, promote consumer confidence in food product safety and increase developing countries’ access to international markets (Henson and Jaffee, 2008). They close the gaps and provide a bridge between producers in developing countries and consumers in high-income markets and could be used as catalysts for upgrading and modernisation of developing countries’ agro-food supply chain and improve competitive capacity. Some developing countries have successfully complied with international standards and upgraded their export sectors as a basis for long term export growth by using quality and safety standards to position themselves in competitive global markets and facilitate business strategic responses (Henson and Humphrey, 2008).

1.7 Assumptions of the study
The researcher assumes that all variables functions are normal without any interference during the course of the study and the responses given by participants or respondents are factually, truthful to the best of available information.

1.8 Delimitations and scope of the study
This study will focus on impact of international standards on volume of exports on agri-food products in horticulture sector of Zimbabwe. The study will address a number of key issues affecting horticulture players in international trade participation and gives credence to the concerns that Zimbabwe producers have expressed about the impact of international standards on exports of horticultural products international markets.

1.9 Limitations and constrains
There are weaknesses associated with the sampling and collection of data, in particular the level of quantification of respondents, which should be taken into account when interpreting the results. The scope of this study is only applicable to the agro-food (horticultural) value chain for exports in Zimbabwe. The data collected for this study is cross-sectional, therefore it is difficult to draw accurate causal relationships between the sets of variables. The sample size used in the study may be too small (n=70) to be representative of the population, therefore the result may not be generalisable. It is possible that some respondents sampled in the study may be providing data on all variables, which may lead to potential same source bias. There is also
the possibility of common method bias that accounts for considerable variance among self-report measures and which can inflate relationships among variables.

1.10 Definition of Key Terms

a) **International standards** - all trade related requirements or specifications for quality, food safety, environmental concerns and social aspects such as the sanitary and phytosanitary (SPS) measures, technical barriers to trade (TBT) principles, governmental technical regulations, public standards, private or commercial standards used for export and import of goods in cross border trade (FAO, 2013).

b) **Codex Alimentarius Commission (CAC)** - a subsidiary body of the Food and Agriculture Organization of the United Nations and the World Health Organization, entrusted with the elaboration of international standards of food to protect the health of consumers and interested parties to ensure fair practices in the food trade (CAC, 2012).

c) **Conformity assessment** - the demonstration that specified requirements relating to a product, process, system, body are fulfilled and involves sampling, inspection, testing and certification as a means of giving assurance to the parties of a transaction that the product, process, system, body or person conforms to the requirements of a standard (FAO, 2013).

d) **Equivalence** - the process of recognition that enables sanitary and phytosanitary measures employed in one country to be deemed equivalent to those of a second country, trading in the same product, although different control measures are being practised (WTO, 2015).

e) **BRICS** - an acronym for combined economies of Brazil, Russia, India, China and South Africa, in a political union, among the fastest growing emerging markets (ITC, 2015).

f) **European Union (EU)** - The economic association of over twenty-eight European countries was established in 1993 by the Treaty of Maastricht, to create a unified, barrier-free market for products and a common currency with a unified authority (EU, 2016).

g) **Food Control** – a mandatory activity of enforcement by national or competent authorities to provide consumer protection and ensure that all foods during production, handling, storage, processing and distribution are safe, wholesome and fit for human consumption; conform to quality or safety requirements; and are honestly and accurately labelled as prescribed by law (FAO, 2013).

h) **Good Agricultural Practices (GAP)** – are practices of primary food producers (such as farmers and fishermen) that are necessary to produce safe and wholesome agricultural food products conforming to food laws and regulations (FAO, 2013).
1) **Good Manufacturing Practices (GMP)** - conformance with codes of practice, industry standards, regulations and laws concerning production, processing, handling, labelling and sale of foods decreed by industry, local, state, national and international bodies with the intention of protecting the public from illness, product adulteration and fraud (FAO, 2013).

j) **Hazard analysis critical control point system (HACCP)** - a scientific and systematic way of enhancing the safety of foods from primary production to final consumption through the identification and evaluation of specific hazards and measures for their control to ensure the safety of food. It is a tool to assess hazards and establish control systems that focus on prevention rather than relying mainly on end-product testing (FAO, 2013).

k) **World Trade Organization (WTO)** - the international organization that establishes rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world’s trading nations and ratified in their parliaments. The goal is to help producers, exporters, and importers to effectively conduct their business (WTO, 2015).

l) **Non-Tariff Measures (NTM’s)** - technical specifications or requirements imposed by the importing country on imported goods from a particular country of origin (WTO, 2015)

1.11 Chapter Summary
This chapter outlined the introduction of the study with clear outline of the background of the study, statement of the problem, justification of the study, delimitations, assumptions and definition of terms. The next chapter explores theoretical and empirical literature relating to role of international standards in international trade, key concepts in international trade relating to imports and exports of agro-foods in horticulture subsector. The next chapter will also discuss pertinent information with regards to international trade agreements, regional trade agreements, bilateral cooperation.
CHAPTER II
LITERATURE REVIEW

2. Introduction
This chapter explores the conceptual framework and review pertinent theoretical and empirical evidence relating to role of international standards in international trade, key concepts in international trade relating to imports and exports of agro-foods in horticulture subsector. The chapter will also discuss pertinent information with regards to international trade agreements, regional trade agreements, bilateral cooperation. The chapter summarises the general overview of factors influencing exports of agro-foods in developing countries and the state of affairs on horticulture sector in Zimbabwe. The purpose of this literature review is to evaluate and relate this study to available published theoretical literature and compare this study to empirical evidence from past research done by other researchers, thus contributing to the body of knowledge.

2.1. Theoretical Literature Review
2.1.1 International Standards
International standards are increasingly dominating world trade and production, particularly in food and agricultural exports (Jaffee and Henson, 2005). Standards on the trade of agro-foods have been on exponential increase with new technical regulations and requirements from national or international governments and private actors and with standards focussing on product quality, food safety, ethical and environmental concerns. The increasing prevalence of private standards governing food safety, food quality and environmental and social impacts of agro-food systems has raised concerns about the effects on developing countries, as well as the governance of agri-food value chains (Henson and Humphrey, 2010).

With the expanding world economy, liberalisation of food trade, the growing international consumer demand, developments in novel food science and technology, and improvements in information and communication technology (ICT), international trade in agro-foods have increased (FAO, 2009). The economic contribution of agro-food sector to export growth in developing countries plays a significant role and the relationship between international standards and agro-foods exports has been illustrated as a conceptual framework diagram in Figure 2.1 (Conceptual Framework of the Impact of international standards in horticulture exports, 2018).
As a result of the advent of globalisation in world economy and the changes in the world geopolitical environment, international standards have taken a central role in the international trade. Certification to international standards is a key required by many agro-foods importers in developing countries, including requirements for meeting industrial, public safety, and regulatory needs (FAO, 2009). Governments and national standards bodies of developing countries have an obligation to ensure participation of domestic goods in world trade, but most developing countries are often faced with challenges including the lack of adequate funding to implement international standards or finance standard development programs. International standards are used today as the basis for the technical regulations imposed by each country to protect the health and safety of its population (ASTM, 2002). It is however, debated that these technical regulations and standards could become either barriers or facilitators to world trade.
The increasing demand for international standards and technical regulations on trade in agro-food products has created complexities in trade policy dialogues worldwide. The need for competitiveness for access to international markets and the costs associated with standards has raised concern among exporting firms in developing countries (Keiichiro et al., 2015). Zimbabwe as a developing country, is constrained in its ability to export agro-food products to developed countries due to restrictions imposed by international standards, particularly the World Trade Organisation (WTO) - Sanitary and Phytosanitary (SPS) measures. It is argued that SPS requirements is one of the greatest impediments to trade in agricultural and food products, particularly with the European Union (Henson and Humphrey, 2010).

Developed countries technically apply stricter SPS measures than developing countries while SPS controls in developing countries are weak or fragmented (Henson et al., 2000). Furthermore, SPS requirements are incompatible with prevailing systems of production and marketing in developing countries, hence structural and organisational change may be required, and the associated costs can restrict free trade. The problems faced by Zimbabwe with international standards is further compounded by wider resource and infrastructure constraints that limit its ability to comply with SPS requirements and limited access to relevant scientific and technical expertise.

Developing countries have raised concerns about the manner in which the SPS Agreement have been implemented (Henson et al., 2000). Most developing countries have not actively participated in the SPS Agreement and many are not represented at SPS Committee meetings or the international standards organisations, hence, may fail to utilise the provisions and mechanisms laid down by the SPS Agreement for their benefit. On the other hand, trade liberalisation has caused growth and increased income in developing countries through lower prices of foreign inputs, firm-level efficiency and improved market access, but the global economic crisis has aggregated the gains from free trade. While protectionism has been cited in recent reports as higher trade barriers have so far appeared in relatively limited forms and through relatively more transparent trade measures allowed by WTO (Pavcnik, 2009).

2.1.2 WTO -SPS and TBT Agreements on International Trade
The conclusion of the Uruguay Round of Multilateral Trade Negotiations in Marrakech led to the establishment of the World Trade Organisation (WTO) on 1 January 1995. This resulted in two major agreements in world trade; on the Application of Sanitary and Phytosanitary
Measures (SPS) and the Agreement on Technical Barriers to Trade (TBT), (World Bank, 2009). Both the SPS and TBT Agreements are important in understanding the requirements for food protection measures at national level, and the rules of international trade on food and agricultural products. The TBT and SPS, outlines the rules under which standards and technical regulations can be formulated and how disputes are resolved (WTO, 2009). Under these agreements, member states have the right to adapt or deviate from international standards as long as it is in the interest of human, plant and animal health, based on scientific principles and not in a manner which may constitute a disguised restriction on international trade.

The SPS Agreement confirms the right of WTO members to apply measures to protect human, animal and plant life and health. The SPS Agreement covers all relevant laws, decrees, regulations; testing, inspection, certification and approval procedures; and packaging and labelling requirements directly related to food safety. They encourage use of international standards, guidelines or recommendations. The TBT Agreement encourages use of international standards and requires that technical regulations on traditional quality factors, fraudulent practices, packaging and labelling imposed by countries will not be more restrictive on imported products than on products produced domestically.

Developing countries have gaps in national standards infrastructure, and technical regulations applied in developing countries are often incompatible with international standards. The generic national quality infrastructure must broadly include a national standards body; testing laboratories; national metrology institute; and national accreditation certification capacity (UNIDO, 2010). Voluntary technical standards are usually developed by national government standards institutions in developing countries, that lack funds, technical capabilities and the ability to participate in the international standards setting bodies (ASTM, 2002). Developing countries, generally use international standards to help their own agro-food products compete in world trade. This is partly due to the fact that international standards are accepted worldwide, thus plays an important role in world trade.

The WTO has adopted international standards as basis to be acceptable in technical regulations under the TBT Agreement such that, any organisation that wishes to obtain that recognition must strive to meet these TBT requirements and comply with principles of transparency, openness, coherence, impartiality and consensus, and effectiveness and relevance (World Bank, 2002). The WTO trade facilitation agreements and adoption of international standards
by member states, has resulted increased awareness on the importance of getting involved in the active commitment of developing countries in the standardisation process. However, the participation of developing countries in the international standardisation process is almost negligible.

Most industrialised countries are imposing their technical standards on developing countries, regardless of the application and usefulness of those standards in those countries (ASTM, 2002). Developed countries like European Union (EU) and the United States of America (USA) impose their standards without any consideration to the needs of developing countries (ASTM, 2002). The USA standards system differs from the E.U standards approach in that the EU have embraced the International Organisation for Standardisation (ISO) and International Electro-Technical Commission (IEC) system. The ISO/IEC standards participation is based on representation from national standards bodies in a system of one-country/ one-vote approach (WTO, 2009). Contrary, the USA standards system is mainly based on individual participation of experts worldwide that can offer their expertise in writing the standards.

There is need for commitment and willingness on the part of governments of developing countries to participate in setting and implementation of international standards. International standards bodies must be more proactive in establishing standardisation programs that fit the needs of developing countries. It is important to note that developing countries need to contribute in the development, implementation and application of international standards to have a free and fair trade.

2.1.3 FAO (Codex, IPPC and OIE) International Standards

The public international food safety standards are set by the Codex Alimentarius Commission (CAC), the International Plant Protection Convention (IPPC) and the World Organization for Animal Health (OIE). The CAC is an intergovernmental body that coordinates international food standards with the objectives of protecting the health of consumers and ensure fair practices in food trade (FAO, 2014). It has been successful in achieving international harmonisation of food quality and food safety standards by formulating international standards and specific requirements covering for pesticides residue, food additives, veterinary drug residues, personnel hygiene, food contaminants and food labelling, and are being used by governments for national food control system policies and programmes (FAO, 2014). The Codex sets out principles for governments policy and guidelines or Codex standard that often serve as basis for national legislation (Codex, 2017).
CAC conducts a series of risk assessments on microbiological hazards in foods, and has created worldwide awareness of food safety, quality and consumer protection issues, and has achieved international consensus on scientific or risk-based food safety management. There has been a continuous appraisal of the international principles of food safety and quality and increasing pressure for the adoption of these principles worldwide. The Codex codes of hygienic practice, define requirements for the production, processing, manufacturing, transport and storage practices for foods to ensure suitability for consumption (Codex, 2017).

2.1.4 Private Standards and Certification Schemes

In addition to the publicly available international standards of the and national technical regulations, companies in agro-food processing have engaged in private food standards, that are often stricter than public standards. Examples of these includes the Global GAP, British Retail Consortium (BRC), International Featured Standard (IFS), Standard for Quality and Food (SQF), Food Safety System Certification (FSSC), Tesco Nature's Choice, Save Quality Food (SQV) Program, International Organisation for Standardisation (ISO) and others (World Bank 2009). Although private standards are not legally mandatory, they have become de facto mandatory because of commercial pressure as buyers in international markets require conformance with such private standards (Henson and Humphrey, 2008). Private standards often go beyond food quality and safety standards and include ethical and environmental considerations as well, such as Ethical Trading Initiative, Fair Trade, Labour Standards, Environmental Management System etc.

As countries grow wealthier, they increase the intensity of their standards for imports and this has a statistically significant and negative impact on the probability that two countries will trade in goods. This suggests that meeting more stringent standards increases the fixed costs of exporting, but once firms enter that market, the standards do not have a negative impact on the level of exports. There is a greater marginal effect of increased standards restrictiveness in the developed economies such as the European Union (EU) and Brazil, Russia, India, China and South Africa (BRICS) on the exports of other countries into those markets (Ferro, 2010). Exports from developing countries are vulnerable to stricter standards because their domestic standards are less strict than the standards in their export markets, thus increasing the cost of compliance for exporting firms. For example, the EU banned fish exports from Kenya and Bangladesh in 1997 due to food safety risks and non-compliance with hygiene norms in
processing plants, hence decreased export earnings by 37% (Henson et al., 2000). The trade restrictions and import bans are costly particularly to exporting nations in developing countries due to the loss in export earnings and hence damaging a country’s reputation and its export competitiveness. US-FDA border detentions of vegetable shipments from Guatemala resulted a loss of $35 million annually in the period 1995-1997 (Julian et al., 2000).

Exporters of agro foods in developing countries risk losing foreign markets when importing countries impose stricter standards on imported commodities. The lack of capacity in developing countries to meet international standards may significantly impact on their export competitiveness and disadvantage local firms looking to expand into overseas markets (Ferro, 2010). Governments of developing nations should focus on supporting production or processing methods, building technical and institutional capacity and harmonising domestic standards with international standards (Ferro, 2010). This helps agro food producers to produce products that meet international standards. National standards bodies in developing countries must build institutional and technical capacity or quality infrastructure (accredited laboratories, inspection bodies, certification bodies and metrology) to verify compliance with international standards. Harmonising domestic standards to international best practice can significantly help exporters from the developing countries to access foreign markets.

Food safety standards are becoming more stringent and specifying stricter requirements for phytosanitary and hygiene requirements such as maximum residue levels and levels of contamination in global agri-food trade (Henson, 2006). These have mainly emerged from high-income countries, such as the EU and USA. Consumers are increasingly becoming aware of ethical and environmental aspects related to food production and trade, which has increased the need for international standards. More so, the increased trade in fresh agro foods; have increased the need to regulate trade through standards (World Bank, 2009). In addition, the increased dependence on supermarkets in food chains contributes to the increased importance of international food standards. Large retail chains put much emphasis on freshness, product quality and food safety to reduce food safety risks and the costs related to the risk of selling unsafe food.

The increased dominance of international standards in world trade has cast doubt on the benefits of trade liberalisation for developing countries with concerns that standards act as new non-tariff barriers diminishing the export opportunities of the poorest countries who face multiple constraints in complying with stringent standards and upgrading their supply chains.
Moreover, smallholder suppliers are excluded from high-standards of agro food supply chains because of their inability to comply with high standards. Consequently, these farmers are exploited in the agro food chains because stringent standards decrease their bargaining power vis-à-vis large food exporters and multinational food companies. International standards are therefore viewed as barriers to trade and development in some developing countries.

However, this view is subject to debate and other studies have been carried out to further discuss these arguments and present some empirical evidence on the implications of increasing agro food standards for developing country food exports and economic growth. Most developing countries are not adequately equipped to exploit the opportunities provided by international trade agreements due to weak infrastructure, lack of capacity and the inability to meet technical product specifications and requirements in terms of quality, safety, health and the environment impede their integration into global markets (UNIDO, 2010). There is need to enhance compliance with technical standards to increase consumer confidence and gain access to regional and global value chains.

The agro food sector provides many opportunities for developing countries as they have good climatic conditions, available arable land and a sufficient labour to expand agricultural production. However, the globalisation of production, supply and retailer chains, the recent health concerns in the food chain have led to stringent standards and conformity procedures, with agro food exports in which exporting countries must conform to international standard in terms of quality, safety, health and the environment for global market access. Unfortunately, the resources available from national budgets, are insufficient to meet all the demands, especially when prevailing export-oriented SPS capacity is weak. This requires making choices between competing investments in export performance, agricultural productivity and health protection.

The Standards and Trade Development Facility (STDF), a global partnership that acts as a coordinating and financing mechanism to supports developing countries in implementing international standards, guidelines and recommendations, and helps maintain access to markets, has developed a framework called “Prioritizing SPS Investments for Market Access” (P-IMA), to help inform and improve SPS planning and decision-making processes (WTO-
Committee on SPS Measures, 2016). STDF increases awareness, identifies and disseminates good practice and strengthens collaboration in SPS capacity building.

2.1.5 None Trade Measures (NTM’s) in Developing Countries
There is a growing trend and advocacy for the importance of non-tariff measures (NTM’s) on international trade facilitation. NTM’s on agri-food products are generally technical, sanitary and quality standards such as protected designations of origin and specification of genetically modified foods (GMOs), intended to regulate imports into a given country. International standards are playing an increasing role, since tariff measures are constantly being cut under multilateral and regional agreements. Standards contributes to export competitiveness and economic development, hence important in integration of developing countries in global markets for sustainable socio-economic growth (Dollar and Kraay, 2004).

2.1.6 Increased use of International Standards
The proliferation of stringent private and public standards has caused unprecedented changes in the international trade organised and governed with important implications for producers and rural households (McCullough et al., 2008). Hence, the costs associated with standards compliance may cause significant redistribution of welfare along supply chains and in rural societies (World Bank, 2005). The main changes in food supply chains caused by the increased use of international standards includes the increasing levels of vertical coordination (VC) in global supply chains, and the ongoing consolidation of the supply base with large food companies dominating the chains.

Studies have shown an increase in the development of comprehensive VC schemes with extensive monitoring and complex contracting between large food companies and developing country producers as a result of increasing food standards (Gulati et al., 2007). Other case-studies have demonstrated evidence of a shift towards vertical integration in high-standards export production (Maertens and Swinnen, 2009). Moreover, food standards pose challenges, arising from financial, technical and institutional constraints particularly small scale agro-food businesses and exporters in developing countries. The cost of implementing standards is high, leading to the market exit of small and less capitalized firms (Reardon et al., 1999).

On the other hand, multinational firms seek vertical integration through establishing subsidiaries in developing countries, resulting foreign direct investment in food processing and
exports in developing countries (Colen et al., 2009). This helps smaller firms to have access to capital, new technologies and access to global markets. Vertical coordination schemes provide a basis for farmers to access the credit, inputs, and technology they need for upgrading their production in terms of productivity and quality and to increase their incomes. Standards are instruments for harmonising products and processes in food supply chains, and can reduce transaction costs in dealing with a large volume of small suppliers. Moreover, well-specified contracts and assistance programs help eliminate financial and technical constraints small farmers face in meeting stringent international standards requirements. Hence, contract-farming and intensified assistance programs could provide a basis for small holder farmers to participate in high-value export markets. Studies in agricultural and horticulture sectors of African and transitional countries shows increased smallholder involvement in high-standards production (Swinnen, 2005).

### 2.1.7 High costs and Barriers to Entry in Horticulture Sector

The international market for horticulture business is highly profitable, especially for cut flowers, with mark-ups for roses, carnations and chrysanthemums ranging from 100% to 500% even after including transportation costs (Moran, 2018). However, substantial up-front capital and a lot of technical expertise is required to launch horticultural exports into world markets. Pre-harvest investment is required in form of green houses, reservoirs and pump stations for irrigation, overhead drip irrigation systems, electricity (back-up generators) and other agricultural equipment for temperature controls. Post-harvest expenditures require investment in warehouses, cold rooms, packing units, storage buildings, refrigerated trucks, and road maintenance (Moran, 2018).

Exporters in developing countries recorded fixed costs of at least $2.4 million at start-up for each export farm (World Bank, 2004). These expenses are directed with considerable technical expertise and begins with original selection and subsequent trials of varieties, propagation of varieties, planting cuttings in greenhouse, application of chemical inputs and irrigation, disease control, and harvesting in the greenhouse. Other costs in logistical arrangements (e.g. cooling, grading, sorting, packing in specialised cartons, loading to refrigerated truck, rapid customs clearance, airport handling, and air shipment) are indispensable, leading to a tightly-constrained three-day or four-day period from harvest to arrival in the destination market abroad (Moran, 2018). The spread of international standards for traceability to determine
pesticide and insecticide use, hygiene in processing and packaging, and other quality-control measures complicates the management of the farm-to-overseas-market chain.

2.2 Empirical Literature Review

Empirical evidence is the data and information obtained by creating assumptions over a specific topic, observing the collected data and experimenting to prove or disprove a theory. Analysts collect the relevant, analyse and observe how data can prove or disprove their theory through a qualitative or quantitative empirical research. Qualitative data investigate the human behavior and try to explain, for instance, investor or consumer psychology. Quantitative data quantify the observations of qualitative data by using statistical methods, aiming to refine the research, and this requires accuracy and integrity of the data so that the research is considered valid and unbiased.

There is a growing body of empirical literature that analyses the relationship between standards, both public and private, and trade flows at the import and export level, and feeds the debate on “standards-as-barriers” and “standards-as-catalysts” (Schuster and Maertens, 2014). The largest part of the evidence comes from macro-economic trade models, usually gravity models, that estimate the impact of increasing standards, usually public standards, on international trade flows. This literature generally points to a trade enhancing impact of standards, even if overall results remain ambiguous. Some authors find that standards are a significant source of trade restrictiveness for middle- and low-income countries (Wilson and Anders, 2012)

2.2.1 The Impact of Private Food Standards on Developing Countries’ Export Performance: An Analysis of Asparagus Firms in Peru (Schuster and Maertens, 2014)

Schuster and Maertens (2014), conducted a study on; The Impact of Private Food Standards on Developing Countries’ Export Performance: An Analysis of Asparagus Firms in Peru. In this study, they analysed the impact of private food standards on the export performance of asparagus export firms in Peru. They used 18-year panel data from 87 firms and apply fixed effects and GMM models. They did not find any evidence that certification to private standards in general and to specific individual private standards, has an effect on firms’ export performance, neither at the extensive margin nor at the intensive margin, and neither on export volumes nor on export values. Their case-study results imply that private standards do not act as a catalyst to trade (Schuster and Maertens, 2014).
2.2.2 Implications for developing countries when the export markets impose more restrictive standards on agro foods (Ferro et.al, 2010)

The World Bank Development Economics Research Group for Trade and International Integration (DEC-TI) conducted a research to address the implications for developing countries when their export markets impose more restrictive standards on agro foods (Ferro et.al, 2010). The findings suggest that more restrictive standards in export markets have a significant impact on a country exporting to that market, due to higher fixed costs of standards compliance (Ferro, 2010). This helped in advising governments and policymakers of developing countries to develop trade and export competitiveness strategies. The conclusion showed that there is a positive correlation between a country’s income and the restrictiveness of its import standards on agriculture goods (Ferro, 2010).

2.2.3 The Impact of Food Safety and Quality Standards on Developing Countries Agricultural Producers and Exports (Chemnitz, 2011)

Another study was conducted by Chemnitz (2011) on The Impact of Food Safety and Quality Standards on Developing Countries Agricultural Producers and Exports. This study aims were to evaluate the concern that food safety and quality standards establish a particular burden for exports from developing countries, for the small producers. The research objectives were to establish: a) how developing countries’ export shares are affected differently by food safety and quality standards, b) the particular impact of food safety and quality standards on small producers and c) the compliance decision process standards at the producer level. The results of the study show that developing countries are a heterogeneous group that shows various different tendencies regarding market share development under the impact of strengthening food standards. In addition, the analysis showed that “being small” in terms of export quantity at the country level does not necessarily lead to a negative impact of food safety and quality standards on the export share (Chemnitz, 2011). Results of this analysis point to the fact that a stronger involvement of the government and the private sector in SPS activities as well as a better communication structure within the country increase SPS capacity of a country have a positive effect on a successful export performance.

2.2.4 Globalization and Economic Growth: Empirical Evidence on the Role of Complementarities (Samimi and Jenatabadi, 2014)
A study on Globalization and Economic Growth: Empirical Evidence on the Role of Complementarities, by Samimi and Jenatabadi (2014) was carried out to investigate the effect of economic globalization on economic growth in OIC countries. Furthermore, the study examined the effect of complementary policies on the growth effect of globalization. They investigated whether the growth effect of globalization depends on the income level of countries. Utilizing the generalized method of moments (GMM) estimator within the framework of a dynamic panel data approach, they provided evidence which suggests that economic globalization has statistically significant impact on economic growth in OIC countries. The results indicate that this positive effect is increased in countries with well-developed financial systems. Their finding shows that the effect of economic globalization also depends on the country’s level of income. High and middle-income countries benefit from globalization whereas low-income countries do not gain from it. In fact, the countries should receive the appropriate income level to be benefited from globalization. Economic globalisation not only directly promotes growth but also via complementary reforms.

2.2.5 Product Standards and Africa’s Agricultural Exports (Kareem, 2014)
The Africa Development Policy (AGRODEP) Working Papers contains research results on the preponderance and stringency of product standards implications for global trade, for developing countries. The study objective, was to investigate the impact of EU standards on Africa’s exports in relation to the Comprehensive Africa Agricultural Development (CAAD) Programme. A two-step Heckman model was adopted using mostly unexploited standards data from Perinorm. Two high-value commodities were selected, including vegetable and a traditional cash crop (coffee), at HS-6-digit level. The findings show that at the extensive margins of export, standards are trade-inhibiting on coffee, while enhancing the export of the vegetables (Kareem, 2014). Overall, at the intensive margin, standards are trade-inhibiting in vegetable and coffee exports.

2.2.6 A Case Study of Food Safety Standards and African Exports (Otsuki et.al, 2011)
Otsuki et.al, (2011) conducted a Case study of Food Safety Standards and African Exports, in order to quantify the impact of aflatoxins standards implemented by the EU on food import from African countries. The authors estimate the impact of changes in differing levels of protection based on the EU standard and those suggested by international standards, for 15 European countries and 9 African countries between 1989-1998. The results suggest that the implementation of the new aflatoxin standard in the EU has a significant negative impact on
African exports of cereals, dried fruits and nuts to Europe. The EU standard, which would reduce health risk by approximately 1.4 deaths per billion a year, would decrease these African exports by 64 percent or US$ 670 million in contrast to regulation set at an international standard.

2.2.7 An Assessment of the Impact of Export Horticulture Farming on Food Security of Smallholder Farmers in Mbooni, Kirinyanga and Buuri, in Kenya (Chege, 2014)
Chege (2014), conducted a study that sought to assess the factors influencing food security situation in Kenya, and the impact of export horticulture on food security situation. The researcher used the Per capita calorie intake (7-day recall) and Household Dietary Diversity Index (HDDI) methods to measure food security. Ordinary Least Squares (OLS) and Poisson regressions were estimated to assess the factors affecting food security. To assess impact of export horticultural farming on food security, a propensity score matching method was employed on per capita calorie intake. There was no significant difference in the diet quality in Kenyan districts as indicated by the HDDI. Household head education, water source, wealth and the household head years of farming experience were positively influencing per capita calorie intake. Growing export horticulture was generally found not to have any significant effect on diet quality.

2.2.8 Horticultural exports and food security in developing countries (Van den Broek and Maertens, 2016)
Van den Broek and Maertens (2016), evaluated the channels through which horticultural exports affect food security in developing countries. They described the trends in horticultural export chains and investigated the macro- and micro-level effects on the different components of food security, including availability, access, utilisation and stability. The available evidence suggests that horticultural exports contribute to food security in developing countries, particularly through the development of rural labour markets and female wage employment in companies. Important challenges remain; most notably the provision of secure employment at remunerative conditions and the sustainable use of water resources. Private food standards may contribute to overcoming these challenges. Empirical evidence that directly measures the implications of horticultural exports on food security is highly needed.
2.2.9 Standards, Reputation and Trade: Evidence from US Horticultural Import Refusals, (Jounjean, 2012)

By disentangling productivity from quality sorting in horticultural exports, Jounjean (2012) investigates the impact of food safety standards and consumers’ preference for quality on developing countries’ capacity to export high care and differentiated agricultural products (HCAs). Using a new database on US import refusals, the empirical analysis shows that a shock to reputation has a downgrading effect, reducing the capacity to participate and benefit from trade in HCAs. The occurrence of at least one refusal in a particular year reduces HS 6-digit average unit export price by over 8% and the long-run propensity suggest a 25% cut.

2.2.10 Food Standards and Exports: evidence from China, (Mangelsdorf et. al, 2012)

Using a new database on Chinese food standards, Mangelsdorf et. al, (2012) estimate the impact of voluntary and mandatory standards on its agricultural and food exports. The dataset covers seven Chinese products from 1992 to 2008. The findings indicate that standards have a positive effect on China’s export performance. Standards signal to customers that products meet certain quality measures and promote information exchange. The benefits of increased exports outweigh compliance costs. The evidence from China shows that an increase in the number of standards in an exporting country is positively associated to exports, as information and signalling benefits seem to offset compliance costs (Mangelsdorf et. al, 2012). International standards applied by producers have a positive impact on exports because compliance with international standards can be a strong signal that producers meet safety and quality criteria that are widely recognised.

Empirical evidence clearly demonstrates that the increasing demand and use of international standards in agro food sector may present both barriers and catalysts for the participation of developing countries in international agro food trade. Recent studies have demonstrated a beneficial effect of smallholders participating in high-standards contract production including increased productivity, reduced volatility, technology spill overs, and stable household incomes (Maertens and Swinnen, 2009). Vegetable exports from Madagascar to the EU are based on smallholder contract production, leading to income stability for local households and technology spill overs on rice production (Minten et al, 2006). The welfare impact analysis of international standards on trade demonstrates that it creates employment opportunities in processing and handling of produce on vertically integrated estate farms and large contracted farms (Maertens and Swinnen, 2009).
Several other studies have also shown that increased demand for standards in international trade creates substantial employment, leading to increased rural incomes and reduced poverty rates (Maertens et al., 2008). On the other hand, increasing global markets demand for standards in the agro-food sectors could lead to weaker players exiting the export markets, due to consolidation at the export node of the supply chains. The ongoing consolidation in agricultural export production has resulted in less number of exporting companies with smaller exporters leaving the market, resulting in an increased market share for the bigger companies (Dedehouanou and Swinnen, 2007).

2.3 Chapter Summary
This chapter explained the conceptual and theoretical framework in literature and reviewed pertinent empirical evidence relating to role of international standards in international trade, key concepts in international trade relating to imports and exports of agro-foods in horticulture subsector. The chapter discussed pertinent information with regards to international trade agreements, regional trade agreements, bilateral cooperation. The chapter summarised the general overview of factors influencing exports of agro-foods in developing countries and its relevance to this study.
CHAPTER III

RESEARCH METHODOLOGY

3. Introduction

Research methodology refers to the combination of different techniques that are used by the researcher to investigate different situations (Smith et. al, 2006). The way in which research is conducted may be conceived of in terms of the research philosophy adopted, the research strategy employed and the research instruments developed or utilised in pursuit of the research objective(s) and the research question, as outlined in Chapter One of this study. The purpose of this chapter is discuss the research philosophy employed in relation to other philosophies; expound the research strategy, including the research methodology adopted; introduce the research instruments that have been developed and utilised to collect primary data. This chapter outlines the research methodology and the criteria for use of particular methods. It examines and explains the research philosophy and research design used in this study. The chapter also describes the study population and sample size used in the study. The chapter further outlines data collection instruments and data collection methods used in the study. The chapter highlights validity and reliability of this study and the ethical considerations which were observed in this study. The chapter rounds off by giving a chapter summary.

3.1 Research Philosophy

Research philosophy is the development of the research background, research knowledge, nature and its associated paradigm (Saunders, et.al 2012). Research paradigm is the broad framework, which comprises perception, beliefs and understanding of several theories and practices that are used to conduct a research (Cohen, et. al, 2000). It is characterised as a precise procedure, which involves various steps through which a researcher creates a relationship between the research objectives and questions. Research paradigm and philosophy comprises various factors such as individual’s mental model, his way of seeing things, different perceptions, variety of beliefs towards reality, etc. This concept influences the beliefs and value of the researchers, so that he can provide valid arguments and terminology to give reliable results (Smith et. al, 2006). It is a belief about the ways in which data about a phenomenon should be collected, analysed and used, and deals with the source, nature and development of knowledge (Bajpai, 2011).
The term epistemology (what is known to be true) as opposed to doxology (what is believed to be true) encompasses the various philosophies of research approach. The purpose of science, then, is the process of transforming things believed into things known: doxa to episteme. The researcher will be involved in creating new knowledge by answering the research question through collecting secondary and primary data and engage in data analysis. The research philosophy reflects the author’s important assumptions and these assumptions serve as base for the research strategy. It is necessary for the researcher to understand the philosophical position of research issues to understand the different combination of research methods. There are two major paradigms to research philosophies that have been identified, namely positivism (scientific) and interpretivism (antipositivist), (Galliers, 1991).

3.1.1 Positivism Approach
Positivism concept is a kind of philosophical approach, in which the researchers gives their viewpoint with objectivity instead of subjectivity (Cooper and Schindler 2006). According to the Positivism paradigm, the researcher is interested to collect general information and data from a large sample instead of focusing details of research, hence the researcher’s own beliefs have no value to influence the research study. This positivism philosophical approach is associated with the observations and experiments to collect numeric data (Smith et al., 2006). Positivists believe that reality is stable and can be observed and described from an objective viewpoint (Levin, 1988), i.e. without interfering with the phenomena being studied. They contend that phenomena should be isolated and that observations should be repeatable. This often involves manipulation of reality with variations in only a single independent variable so as to identify regularities in, and to form relationships between, some of the constituent elements of the social world. Predictions can be made on the basis of the previously observed and explained realities and their inter-relationships. The positivism philosophy is in accordance with the empiricist view that knowledge stems from human experience. It has an atomistic, ontological view of the world as comprising discrete, observable elements and events that interest in an observable, determined and regular manner.

3.1.2 Interpretivism Approach
Interpretivism also referred as the Social Constructionism in the field of management research, is a philosophical approach research in which the researchers give importance to their beliefs and value. thus give adequate justification for a research problem (Smith et al., 2006). According to this philosophical approach, researchers focus to highlight the real facts and
figures in relation to the research problem. In this kind of philosophical approach, researchers understand specific business situation and researchers use small sample and evaluate them in detail to understand the views of large population (Kasi 2009). Interpretivists contend that only through the subjective interpretation of and intervention in reality can that reality be fully understood (Levin, 1988). The study of phenomena in their natural environment is key to the Interpretivism philosophy, together with the acknowledgement that scientists cannot avoid affecting those phenomena they study. They admit that there may be many interpretations of reality, but maintain that these interpretations are in themselves a part of the scientific knowledge they are pursuing.

3.1.3 Rationale and Justification for Choice of Philosophical Approach

Both Positivism and Interpretivism research traditions start in Classical Greek times with Plato and Aristotle (positivists) on the one hand, and the Sophists (anti-positivists) on the other. It has often been observed very accurately that no single research methodology is intrinsically better than any other methodology (Benbasat et al., 1987), with many authors calling for a combination of research methods in order to improve the quality of research (Kaplan and Duchon, 1988). However, in this study, the research decided between the various merits and demerits of the various alternatives and has tried to avoid methodological monism, i.e. the insistence on using a single research method. The researcher believes that all methods are valuable if used appropriately, that research can include elements of both the positivist and Interpretivism approaches. The over-riding concern is that this research should be both relevant to the research question, as set out in Chapter One, and rigorous in its operationalisation.

Overall, the researcher believes that Interpretivism philosophy is required for this purpose, i.e. the understanding of how the international standards have impacted on performance of agro-foods (horticultural) exports from Zimbabwe. However, the researcher recognises the lack of objectivity sometimes associated with Interpretivism research methods, hence he adopted a positivist, quantitative approach to the development of key research instruments. These various elements of the research approach are further elaborated in the following sections on; research strategy, research design, research instruments and research methodology. The researcher employed the positivism philosophy because it depends on quantifiable observations that can lead to statistical analysis and ensures that the researcher is independent from the study and that there are no provisions for human interests within the study. Positivist philosophy ensures
that human interests are irrelevant to the study and research progresses through hypothesis and
deductions.

3.2 Research Design
Paradigm is the key term relating to the way of looking at the world, in which Kuhn (1970) introduced the concept of the existence of quantitative and qualitative different paradigms in research. A paradigm is a pre-requisite of perception itself – what you see depends on what you look at, your previous visual/conceptual experience (the way you have been taught to think) and how you look (Long (2007). In relation to research, there are only two major ways of ‘looking at the world’, usually referred to as the quantitative and the qualitative paradigms, respectively. This study takes the model of a mixed quantitative and quantitative design. The study adopted cross-sectional surveys and formal interviews with key informants using mixed methods methodology, both quantitative and qualitative approaches. Research design refers to a detailed outline of how the overall strategy integrates the different components of the study in a coherent and logical way to effectively address the research problem and a plan on how to answer research questions (Saunders, Lewis and Thornhill, 2007).

Quantitative approach emphasises the measurement and analysis of data in a numerical form to give precise description. Quantitative approach or scientific method has traditionally been considered as the traditional mode of inquiry in both research and evaluation (Mugenda, 2008). Quantitative approach was adopted for this study because it places emphasis on methodology, procedure and statistical measures to test hypothesis and make predictions. Moreover, following quantitative analysis, the research design on this study was explanatory in nature because the researcher sought to explain the relationship between the independent variables which are international standards and dependent variables which are export in agro foods in horticulture subsector of Zimbabwe.

Qualitative research was also considered for this study because it helps in analysing information in a systematic way in order to come to some useful conclusions and recommendations on the impact of international standards on exports of agro foods in horticulture subsector of Zimbabwe (Kothari, 2004). A cross-sectional survey design was adopted for this study because it helps in hypothesis formulation and testing the analysis of the relationship between variables, namely the international standards and the exports of agro foods in horticulture subsector.
3.3 Research Strategy

A number of research methodologies have been identified, using a hierarchical taxonomy with three levels and eighteen categories in Table 3.1, below (Alavi and Carlson (1992), indicating whether they typically conform to the Positivism or Interpretivism paradigms. The key features of the main methodologies are summarised in the table, identifying their respective strengths and weaknesses.

<table>
<thead>
<tr>
<th>Scientific/Positivist</th>
<th>Choice</th>
<th>Interpretivists/Anti-positivist</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Experiments</td>
<td></td>
<td>Subjective/Argumentative</td>
<td>✓</td>
</tr>
<tr>
<td>Field Experiments</td>
<td></td>
<td>Reviews</td>
<td>✓</td>
</tr>
<tr>
<td>Surveys</td>
<td>✓</td>
<td>Action Research</td>
<td></td>
</tr>
<tr>
<td>Case Studies</td>
<td>✓</td>
<td>Case Studies</td>
<td></td>
</tr>
<tr>
<td>Theorem Proof</td>
<td>✓</td>
<td>Descriptive/Interpretive</td>
<td>✓</td>
</tr>
<tr>
<td>Forecasting</td>
<td></td>
<td>Futures Research</td>
<td></td>
</tr>
<tr>
<td>Simulation</td>
<td></td>
<td>Role/Game Playing</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.1 A Taxonomy of Research Methodologies for the Scientific/Positivist and Interpretivists/Anti-positivist (Source: Alavi and Carlson,1992)

3.3.1 Research Approaches

The links between the important concepts of ontology, epistemology and methodology are neatly summarised by Taylor and Edgar (1999): ‘the belief about the nature of the world (ontology) adopted by an enquirer will affect their belief about the nature of knowledge in that world (epistemology) which in turn will influence the enquirer’s belief as to how that knowledge can be uncovered (axiology or methodology). Paradigm is the key term relating to the way of looking at the world, in which Kuhn (1970) introduced the concept of the existence of quantitative and qualitative different paradigms in research. A paradigm is a pre-requisite of perception itself – what you see depends on what you look at, your previous visual/conceptual experience (the way you have been taught to think) and how you look (Long (2007).

Although each individual has a different view of the world to other individuals, there are not an infinite number of different views. In relation to research, it has become clear, that there are really only two major ways of ‘looking at the world’. One view regards the world as largely objective (there is only one truth or a limited number of universal truths) and measurable in
terms of the use of numbers. The other view suggests that the world is largely subjective (open to several interpretations) and numeric measurement is not always possible, or desirable and hence words are able to indicate nuances more accurately. In summary, these are usually referred to as the quantitative and the qualitative paradigms, respectively.

In the quantitative approach, the relationship between ‘the knower and the known’ i.e. the researcher and what the researcher is researching, are viewed as independent of each other, while in the qualitative approach, they are interactive and inseparable (Teddlie and Tashakkori, 2009). Quantitative researchers believe that reality is single and tangible while qualitative researchers view reality as constructed and hence multiple. These differences in ontology and epistemology mean that different research methods have been employed, with quantitative researchers using deductive approaches, whereas, in contrast, qualitative researchers have tended to use inductive approaches. Following that the study used the mixed methods, qualitative and quantitative designs, a deductive and inductive approaches were used in this study. Deductive approach tests the validity of assumptions (theories/hypotheses) in hand, whereas inductive approach contributes to the emergence of new theories and generalizations. Thus this study adopted deductive approach to validate the hypothesis for the study and accept or reject the hypotheses. It also adopted inductive study so that the study could be able to contribute to development of new theories in furthers research or future studies.

3.3.2 Case Study Research
Case study research method is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1997). Case study research excels at bringing out an understanding of a complex issue or object and can extend experience or add strength to what is already known through previous research and emphasizes detailed contextual analysis of a limited number of events or conditions and their relationships (Yin, 2009). All case study research starts from the same compelling feature: the desire to derive an up-close or otherwise in-depth understanding of a single or small number of “cases,” set in their real-world contexts (Bromley, 1986). However, critics of the case study method believe that the study of a small number of cases can offer no grounds for establishing reliability or generality of findings while others feel that the intense exposure to study of the case biases the findings (Yin, 2009). Some dismiss case study research as useful only as an exploratory tool. None the less, researchers continue to use the case study research method
with success in carefully planned and crafted studies of real-life situations, issues, and problems. This, case study research assumes that examining the context and other complex conditions related to the case being studied are integral to understanding the case of horticulture sector in Zimbabwe. The case study goes beyond the study of isolated variables but the researcher gathered relevant case study data from multiple and not singular sources of evidence.

A case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities (people, groups or organizations) (Benbasat et al., 1987). The boundaries of the phenomenon are not clearly evident at the outset of the research and no experimental control or manipulation is used. The case study is relevant and viable for this study because, it is necessary to study the phenomenon in its natural setting; the researcher can ask "how" and "why" questions in order to understand the nature and complexity of the processes taking place; and the research is being conducted in an area where few, previous studies have been undertaken. Moreover, this study is a theory building research project, as it is postulated that, "A rich and natural setting can be fertile ground for generating theories" (Benbasat et al., 1987).

A key feature of the design of case study research is that, exploratory studies are generally better served by single cases, i.e. where there is no previous theory, to test an existing and well-formed theory. In this study, it was realised that case studies require multiple data collection methods, whose results converge, in order to establish and construct validity (Yin, 1994). The sites or locations were chosen with great care using an opportunistic approach, direct observation of activities and phenomena and their environment; indirect observation of process related phenomena; interviews; documentation review (written, printed or electronic information about the organisations and their operations; newspaper cuttings); records and charts about previous issues relevant to the case. Survey were also conducted about participant attitudes through a questionnaire, as explained in detail separately in Section 3.5 of this study.

3.4 Research Model and Instruments

The research theoretical and conceptual framework of this study is fully explained in Chapter Two. The research framework is invaluable in that it guides researchers in the development of an instrument to measure participants' perceptions of processes. The most well-known and frequently cited of these is the Dennis et al. (1988) research model. The framework itself is too
large to be researched in a single project and therefore this study concentrates on particular objectives of the study and the scope of the study as highlighted in Chapter One.

### 3.4.1 Study Population

Research population refers to any group of participants that is a subject of interest in a research (Sekaran and Bourgie, 2010). It refers to a group of individuals that have one or more characteristics in common that are of interest to the researcher, and each element has an equal chance of being chosen. In this research the target population consists of key stakeholders directly involved in the exports of agro foods products under the horticultural subsector value chain, including horticultural producers and their associations, trade promotion bodies, international standards setting bodies, NGO’s and foreign buyers or embassies of export market with a total population of N=700. This population on that basis, covers all the relevant stakeholders who have valuable information on the topic under study.

### 3.4.2 Sample Size Determination

A sample is “a part of a larger population” (Haralambos and Holborn (2013, p219). This implies that a sample is a sub-set of a population drawn to represent the whole population (Larson and Farber 2006). A sample that represents the population fairly and accurately should be about 10% to 20% of the population (Babbie and Mouton, 2005). In this study, the sample size would be 10/100 x 700 = 70. Therefore, the sample was comprised of 70 key stakeholders involved in international standards and those directly affected by export of agro foods in horticulture subsector value chain. The study used 70 as sample size because a sample of 10% of the population will represent the population fairly and accurately (Babbie and Mouton, 2005). The population framework and sampling metrics have been illustrated in Figure 3.1 (Population framework and sampling metrics).

<table>
<thead>
<tr>
<th>RESPONDENT</th>
<th>POPULATION</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Key stakeholders from agro food producers in horticulture subsector value chain -Producers, Processors, Regulators, Associations (Farmers, Exporters, AMA, CFU, ZFU, HAZ)</td>
<td>500</td>
<td>50</td>
</tr>
<tr>
<td>b. Key stakeholders from international standards bodies, agencies and trade promotion bodies (SAZ, Zimtrade, Banks)</td>
<td>90</td>
<td>9</td>
</tr>
</tbody>
</table>
c. Key stakeholders representing export markets, foreign buyers, exporting agencies, regional blocks and embassies (SADC, COMESA, EU, USA, Australia, BRICS and Asia/Pacific)  
60 6

d. Other key stakeholders, interested parties and NGO’s (FAO, ITC, UNIDO, OECD, UNCTAD, World Bank, UK-DFID)  
50 5

| TOTAL     | 700  | 70 |

Figure 3.2 Population framework and sampling metrics (Source: Primary Data, 2018)

3.4.3 Sampling Procedure

This research study used a stratified sampling methods which were deemed more appropriate by the researcher to develop new concepts and interpret meaning of issues relating to impact of international standards on agro foods exports in agro foods sector, under horticulture subsector. The researcher used purposive sampling techniques in drawing the 70 participants (size n=70) from four stratum or subgroups of the research entire population (size N=700).

Stratified sampling technique was used to select respondents for the survey in that respondents were first divided into four strata or quadrants representing producers, standards bodies, trade promotions and export buyers. Each stratum was further divided into three levels of top management, middle management and lower management. This was to ensure that respondents have equal chances of being selected from the whole population of stakeholders in the export of agro foods in horticulture subsector. Purposive sampling was then later used to select respondents within each stratum of different key stakeholders to ensure quality of feedback from respondents selected.

3.4.4 Data Collection Methods

Data sources can be primary or secondary and both are important part of the research. Systematic collection of data in sufficient quality and quantity is very important in order to conduct data analysis following identification of data sources (Hart, 2005). If a researcher does not collect and gather the appropriate data, the results will not meet the research aims and objectives sufficiently enough to produce credible and thorough research findings (Yin, 2009).

3.4.5 Secondary Data Collection

Secondary data in this research consisted of a critical review of current published literature, to give a better understanding of the topic in question. Secondary data provided for comparative
and theoretical information resulted in other discoveries and clarification on impact of international standards in on exports of agro foods, particularly in horticulture sector. Information from academic print and electronic books, e-journals, presentation papers, newspapers, and relevant articles were used. However, it is postulated that researchers avoid doing research based on secondary data only as it can be more intellectual exercises rather than providing real practical hypotheses (Cameron et al, 2014). This does not necessarily rubberstamp the impractical implications of secondary data based research. In mixing the data collection methods between primary and secondary data collection, the current researcher hopes the endeavour is not overly theoretical and that the primary data in this research helps to facilitate some balance.

3.4.6. Primary Data
Primary research is considered to yield greater truth-value as it gives the researchers the opportunity to observe the phenomena with their own eyes (Saunders et al, 2009). It is a higher form of data collection as the researcher will have formed a system of data collection very specific to the research being undertaken. Primary data collection was done through questionnaires and key informant interviews.

3.4.7 Data Collection Instruments
In this study the main media of data collection for primary data were questionnaires and key informant interviews. The data was obtained through various sources of available information, employing various methods and techniques including literature desk review, formal interviews, and surveys. The researcher developed a Questionnaire in Appendix 3.2 for collecting or gathering data from a case study research of through the sapling metrics identified earlier in Figure 3.2.

3.5. Questionnaire Design and Administration
A questionnaire is a formulated instrument for asking information directly from respondents concerning behaviour, demographic characteristics and level of knowledge, attitude, beliefs and feelings (Tull, 2000). Questionnaires were used as they correspond with the correlation design and allows an extensive amount of information to be collected across a large number of respondents in a limited amount of time. Questionnaires were administered to collect relevant data from a wide range of stakeholders including management and other experts who have first-hand knowledge about international standards and their impact on exports in the agro foods
sector. This target population can provide invaluable insight on the nature of problems, opportunities and can recommend or implement sustainable solutions.

The typed Questionnaires were administered personally by hand and email to the participants then followed up by telephone calls to gain the highest possible response rate. Questions were minimised so as to avoid frustration and also to minimize uncompleted questionnaires. Respondents had to mark with either a tick (✓), an ex (X) or a circle (○) on their answers which were provided according to the Likert scale of 1 to 4, as 1. strongly agree, 2. agree, 3. disagree or 4. strongly disagree, in order to gauge the respondent’s perceptions on the international standards and its impact on agro foods exports in Zimbabwe. Another Likert scale of 1 to 5, as 1. very low, 2. low, 3. medium, 4. high or 5. very high was used to gauge the respondent’s perceptions on the effect of international standards and agro food exports in Zimbabwe.

3.6 Reliability Tests
Reliability tests refers to the quality of a measurement procedure that provides repeatability and accuracy (Kumar, 2005). The researcher conducted reliability tests to ensure that questionnaires and interview guide were of good quality in answering the research questions. In this regard, Cronbach’s alpha was used to measure reliability. In business research, a Cronbach’s alpha coefficient that is greater than 0.70 is usually preferred and considered “good reliability (Zikkum, 2012).

3.7 Pilot Study
A pilot study was conducted using 10 stakeholders from the agro food sector, specifically those in horticulture subsector. The basic purpose of the pilot survey was to verify the completeness of the survey questionnaire in capturing the factors relevant to the research in the agro foods sector under the horticulture subsector in Zimbabwe. The pilot test was done to make sure that language used for the questions was simple for clarity and that there was ease of understanding.

3.8 Validity
Validity refers to the application of correct procedure to find answers to a question (Kumar, 2005). The researcher ensured validity of the instruments by doing a thorough review of literature before designing the instruments and aligning questions to the objectives. This assisted in the collection of relevant data.
3.9 Data Presentation and Analysis

Data needs to be presented in a manner which communicates the information and enables conclusions to be drawn after data collection (Bruce, 2000). It is necessary to select a way of presenting data which is clear and appropriate since the main aim of presenting data is to report back on the research results to aid decision making. The results of this study, collected through literature review, interviews and surveys was then presented in form of graphs, tables and pie charts and analysed using statistical packages for interpretation by the researcher. The results of the analysis were presented in an exploratory analysis of the impact of international standards on the exports of agro foods in horticulture subsector of Zimbabwe.

The data analysis was largely informed by Creswell (2014) who describes it as working with, organising as well as breaking data into manageable units that involves synthesising data, searching for patterns, discovering vital aspects and aspects to be learned as well as deciding what one can tell others. This is in line with Cooper and Schindler (2011) who indicates that data analysis includes interpreting findings from the research in the light of the research questions, and determining if the results are consistent with the research hypotheses along with the views of prior researchers. Overall, thematic analysis was followed so that data presentation and analysis was made in relation to the research objectives. Data was presented in tabular and graphic form, while analysis made use of frequencies, percentages, means and standard deviations, and regression analysis to ascertain significant factors and their impact on agro-food (horticulture) exports performance.

Data was captured, analysed and presented using different statistical tests to calculate the results of research. For quantitative data the analysis was done using the Statistical Package for the Social Sciences (SPSS V25) Software. Qualitative data was presented using thematic analysis. Reliability tests were done and measured using Cronbach’s alpha that is a measure of the internal consistency of an instrument to determine if all areas within the subscales correlate with each other. Pearson Correlation Analysis and Multiple regression analysis or matrix enabled the researcher to test the hypotheses to see if there is a relationship between international standards and volume agro foods exports in from Zimbabwe’s horticulture sector.

3.10 Study Variables and Model Specification

Agro Foods (Horticulture) Exports was the dependent variable used in this study. Independent variables included the factors influencing agro foods (horticulture) exports such as Import bans,
Technical specifications, International standards and Information remedies. Following the advice of Brooks (2008), it was recognised that including more than one explanatory variable in the model does not indicate the absence of missed variables from the model. Consequently, a disturbance term was included in the model to minimize the effect of missed variables from the model as shown in the general model or equation below:

\[ Y = \alpha + \beta_1 X + \varepsilon, \quad \text{where } Y = \text{agro foods exports} \]

\[ X = \text{vector component of independent variables (agro foods exports factors)} \]

\[ \varepsilon = \text{is the error term} \]

The regression analysis for agro-food (horticulture) exports performance \((Y)\) as the dependent variable and Independent variables \((X)\), as the factors influencing agro foods (horticulture) exports such as international standards \((\text{IS})\), import bans \((\text{IB})\), technical specifications \((\text{TS})\), and Information remedies \((\text{IR})\), was to give an expression;

\[ \text{Exp Perf (Y)} = \beta_0 + \beta_1 \text{Int Stanards} + \beta_2 \text{Import Bans} + \beta_3 \text{Tech Spec} + \beta_4 \text{Infor Remed} + \varepsilon \]

### 3.11 Tests of Significance

The study performed a multivariate linear regression analysis. The Analysis of Variance (ANOVA) and F-Test showed the fitness of the model and the coefficients showed the degree of impact and direction of influence of each of the independent variables on Agro Foods (Horticulture) Exports. Preliminary tests conducted include the serial correlation test performed using the correlational matrix. This was intended to check whether there is a relationship between the dependent variables and independent variables. It also helped to check incidences of multi-collinearity using the threshold of 0.7. Independent variables with a correlation coefficient of more than 0.7 would not be included in the same regression model due to multi-collinearity. The results of significance were interpreted at the 5% significance level. The Adjusted R squared helped to ascertain the degree of changes in the dependent variable as a result of changes in the independent variables. The p-values helped to determine the level of significance of the relevant variables by comparing with the significance level at 5% (0.05).

### 3.12 Ethical Consideration

Ethics in the context of research refers to how appropriate the behaviour of the researcher is in relation to the rights of those who become the subject of their work or the manner in which they are affected by it (Saunders et al., 2013). Research ethics encompasses how researchers formulate and clarify the research topic, design the research, gain access collect data process
and store data and write the research findings in a moral and responsible way. “Ethics in research, as in everyday life, are a combination of socialization, instinct, discretion and being able to put yourself in the position of others to reflect on and see actions as others may do” (Hart 2015, p. 307).

The researcher and followed observed ethical principles in carrying out this study, and rights of the study participants or respondents were respected. Consent was sought from study participants before collection of information and the issues of privacy and confidentiality was observed throughout the research. Individual results of the data collected will not be disclosed to the public but aggregated for analysis and used for academic purpose only. The researcher disclosed in full the reasons for the study, the procedure in investigating the results of the interview as well as obtain consent for publishing the findings as part of this study and clarified that all individual feedback would be kept confidential. A confidentiality agreement was presented and signed prior to each interview guide delivered. The researcher retained honesty, integrity, and objectivity throughout the process of this research study, hence all previous works that have been cited in this research study have been duly acknowledged.

3.13 Chapter Summary
In the preceding chapter, the researcher discussed the research design and methodology, origin of the research, design of the research, variable of the research, population and sample of the research, tools for data collection, procedure for data collection, statistical analysis done in research work. The research methodology undertaken by the researcher to bring to light the study at hand took a mixed quantitative and quantitative design. The next Chapter will discuss the results and findings.
CHAPTER IV
DATA PRESENTATION, ANALYSIS AND DISCUSSION

4. Introduction
This chapter comprises the analysis, presentation and interpretation of the findings from the research. The raw data collected during study was sifted, analysed and interpreted to test the hypothesis and answer the research questions. The analysis and interpretation of data is based on data collected from the questionnaires, covers quantitative analysis of data and qualitative nature of the data. Data analysis and interpretation of data are important elements of any empirical research. In the beginning the data is raw in nature but after inferential statistical analysis, the data becomes meaningful information. The most important aspects of the research are the analysis and the interpretation of the data. Interpretation of the data enables the researcher to reach a logical conclusion from the raw data collected from sample of the target population. The purpose of interpreting the data is to establish continuity in the research by relating results of the study to empirical studies and evaluating the relationships of variables in the data collected.

4.2.1 Response Rate Analysis
A total of seventy (70) questionnaires were distributed and only fifty-seven (57) were returned by respondents. The four (4) questionnaires which had a lot of mistakes and three (3) questionnaires which had missing data were subtracted from the sample size, hence completely discarded from the analysis. This means that only fifty (50) out of a total of seventy (70) distributed questionnaires were correctly and fully completed, hence used as the basis for computing, analysis and interpretation of the data. Table 4.1 presents the results on the success rates that were obtained for the questionnaire administered.

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Sent</th>
<th>Returned</th>
<th>Correctly filled in</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>70</td>
<td>57</td>
<td>50</td>
<td>71%</td>
</tr>
</tbody>
</table>

Table 4.1 Response Rate (Source: Primary data from Questionnaire in Appendix A3.2)
A total of seventy (70) questionnaires were distributed and only fifty-seven (57) were returned by respondents. Of the returned, four (4) questionnaires had a lot of mistakes and three (3) questionnaires had missing data. These were subtracted from the sample size, hence completely discarded from the analysis. This means that only fifty (50) out of a total of seventy (70) distributed questionnaires were correctly and fully completed, hence used as the basis for computing, analysis and interpretation of the data. Consequently, a success rate of 71% was obtained. The attained response rates were considered to validate the research in line with what was suggested by Saunders et al. (2016) that a 30% response rate validates a research.

4.2.2 Reliability Test
Before applying any statistical tools to the collected data, it was important to test the reliability of the scale as that would show the extent to which the measurement scales produce consistent results if done repeatedly. In this regard, Cronbach’s alpha was used to measure reliability. In business research, a Cronbach’s alpha coefficient that is greater than 0.70 is usually preferred and considered “good reliability (Zikmund, 2012). The following Table 4.2 shows the Cronbach's Alpha for all the study’s items.

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.858</td>
<td>29</td>
</tr>
</tbody>
</table>

Table 4.2 Cronbach’s Alpha Reliability Test (Source: Primary Data, 2018)
From the above table, it can be seen that the reliability value for the study’s items was estimated to be 0.858. Since the Cronbach value is beyond 0.7, this signifies acceptable reliability. This implies that the suggested method would give the same results when the same test is applied under the same condition again and again.

4.2.3 Coding and interpretation for the questionnaire
Data analysed was collected with the aid of a questionnaire and the results were presented using means and standard deviations for variables. Likert scale questions helped to ascertain means for coded numbers to obtain an average of the respondents’ view. Table 4.3 below shows the coding of Likert scale data along with the interpretation. Responses were coded as follows: 1 to 1.49 denotes very low impact; 1.50 to 2.49 low impact; 2.50 to 3.49 denotes moderate; 3.50 to 4.49 denotes high and 4.50 to 5.00 denotes very high. Table 4.3 below shows the coding of Likert scale data along with the interpretation.
Table 4. 3 Coding and Interpretation of Questionnaire (Source Primary Data Appendix A3.2)

4.3 Demographic Information
This section focuses on the demographic information of the respondents. Focus is given to the respondents’ gender, age, highest academic qualifications and Length of service.

4.3.1 Gender
Figure 4.1 shows results on the gender of the respondents.

![Gender](image)

Figure 4.1 Gender (Source: Primary data from Questionnaire in Appendix 3.2)
As shown in Figure 4.1, 71% of the respondents were male whilst 29% were female. This highlights the dominance of males within the sample and the population of the study. These findings have been explained by such researchers as Brint (2006). Despite that, the presence of both male and female in the sample helped to obtain views of both gender on the impact of international standards on agro-foods (horticulture) exports from Zimbabwe.

4.3.2 Age Group for the respondents

Figure 4.2 shows the results on the age group of the respondents.

![Age Group](image)

Figure 4.2 Age Group (Source: Primary data from Questionnaire in Appendix 3.2)

The results show that 46% of the respondents were in the age group 30 to 40 years, 29% in the age group 40 to 50 years and 19% in the age group 20 to 30 years. 6% were found in the age range more than 50 years. All age ranges for the active population, capable of working in the horticulture sector were represented, hence it was possible to obtain views from all the ages engaged in the horticulture sector in Zimbabwe.

4.3.3 Nature of current position

Figure 4.4 shows the results on the nature of current position of the participants.
Figure 4.3 Nature of current position (Source: Primary data in Appendix 3.2)

Figure 4.4 shows that most of the participants were from the Lower Level Management (50%), followed by Middle Level Management (36%), while 14% were from the senior level of management. All the management levels were represented. This helped to obtain an objective view, which was possible through obtaining information across all managerial levels.

4.3.4 Highest attained level of education

Figure 4.3 shows results on the highest academic qualifications of the participants in this study.

Figure 4.4 Highest Academic Qualifications (Source: Primary data in Appendix A3.2)

Figure 4.3 shows that most of the participants held a Diploma as their highest qualification. This was followed by participants with an Undergraduate Degree (36%) and Master’s Degree (21%). The respondents had attained recommendable tertiary education, this would assist them
in interpreting and addressing the demands of the questionnaire. Therefore, it was possible to obtain reliable data from the members of the sample.

4.3.5 Length of service

Table 4.5 shows the results on the length of service of the participants.

<table>
<thead>
<tr>
<th>Length of service</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 5 years</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>6 – 10 years</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>11 – 25 years</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>26 – 35 years</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>36 – 45 years</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>46 – 55 years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.4 Length of Service (Source: Primary data in Appendix A3.2)

The results indicate that most of the participants had been in the horticulture industry for between 11 to 25 years (48%). This was followed by those having 6 to 10 years (26%); 0 to 5 years (12%); 26 to 35 years (10%) and 36 to 45 years (4%). The respondents had been with the entity for a considerable period, such that they were better placed to comment on issues pertaining to standards and their implications on exports in the horticulture industry.

4.4 Organizational Information

This section focus on the information pertaining to the various organizations under consideration that are participating in export markets in the horticulture industry.

4.4.1 Established presence in Horticulture Sector

The participants were required to indicate whether their organizations had an established presence in horticulture sector (agro-food value chain) in Zimbabwe. Table 4.5 shows results.

<table>
<thead>
<tr>
<th>The firm is:</th>
<th>Valid response</th>
<th>N</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well known</td>
<td>Yes</td>
<td>50</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>Somewhat known</td>
<td>Yes</td>
<td>50</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>Not well known</td>
<td>Yes</td>
<td>50</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.5 Established Presence in Horticulture Sector (Source: Primary data Appendix A3.2)
The results show that most of the firms in the horticulture sector of Zimbabwe are well known (48%); others are somewhat known (34%) while some were not well known (18%). The reputation of a firm is of much concern when considering participation in international markets. There are chances that well known firms in the local country are likely to perform better in international markets, which increases chances of more exports.

4.4.2 Current status of Export Activity

The current status of export activities was examined to determine whether the firms were participating very well or whether their performance was declining. Table 4.6 shows the results that were obtained.

<table>
<thead>
<tr>
<th>Improved</th>
<th>Constant</th>
<th>Declining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td>Export to usual markets</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>Export to new markets</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>Average</td>
<td>7</td>
<td>14%</td>
</tr>
</tbody>
</table>

Table 4.6 Status of Export Activity in the past 5 years (Source: Primary Data, 2018)

The results show that most of the participants indicated that their exports to usual markets were declining (56%). 24% indicated that exports to usual markets were constant whilst a paltry 20% noted that they were improving. On average, the firms in the horticulture sector in Zimbabwe are experiencing a decline in exports in the usual markets. Such a scenario calls for concern, given that usual markets are a field through which firms maintain or enhance growth of their competitive edge. Declining performance in such markets is an indication that the products are losing favour with the client customers.

Most of the respondents indicated that their exports to new markets were declining (62%). 28% noted that the exports to new markets were constant while only 14% indicated that they were improving. On average, agro-foods exports are declining for the horticulture sector in Zimbabwe. These results are an indication of the horticulture sector’s failure to effectively penetrate new markets.
4.5 Impact of international standards

This section focus on the impact of international standards on exports. Table 4.7 shows the results that were obtained.

<table>
<thead>
<tr>
<th>Costs that have resulted from standards on exports in the firms</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards affect the willingness of consumers or firms to pay for foreign products</td>
<td>3.03</td>
<td>0.960</td>
<td>Moderate</td>
</tr>
<tr>
<td>Standards increases foreign producers’ fixed and variable costs.</td>
<td>4.23</td>
<td>0.972</td>
<td>High</td>
</tr>
<tr>
<td>Necessitates investment in new technologies or inputs</td>
<td>3.67</td>
<td>1.261</td>
<td>High</td>
</tr>
<tr>
<td>Necessitate generating economies of scale</td>
<td>2.96</td>
<td>1.344</td>
<td>Moderate</td>
</tr>
<tr>
<td>Increases border detentions and rejections of agro-food or horticultural products</td>
<td>4.05</td>
<td>1.396</td>
<td>High</td>
</tr>
<tr>
<td>Increases WTO disputes and complaints</td>
<td>3.74</td>
<td>0.768</td>
<td>High</td>
</tr>
<tr>
<td>Overall</td>
<td>3.61</td>
<td>1.117</td>
<td>High</td>
</tr>
</tbody>
</table>

Table 4.7 Impact of International Standards on Agro-foods Exports (Source: Primary Data, 2018)

The results show an average figure of 3.61 on the impact of international standards on exports of the horticulture sector. This indicates that international standards have a high impact on agro-food exports. This is explained by a high effect of standards on foreign producers’ fixed and variable costs (mean of 4.23), need for investment in new technologies or inputs (mean of 3.67); increasing border detentions and rejections of agro-food or horticultural products (mean of 4.05) and increasing WTO disputes and complaints (mean of 3.74).

4.6 Benefits and limitations of international standards

This section sought information relating to what the international standards are capable of doing. Table 4.8 shows the results obtained using SPSS.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.8 Benefits and Limitations of International Standards (Source: Primary Data-SPPS, 2018)

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Address information asymmetries on product compatibility, safety/quality and environmental impact</td>
<td>3.32</td>
<td>0.587</td>
<td>Moderate</td>
</tr>
<tr>
<td>2. Facilitate international trade, in a fair and transparent manner</td>
<td>3.18</td>
<td>0.573</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Limitations

<table>
<thead>
<tr>
<th>Limitations</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Discriminate against exports of developing and least developed countries</td>
<td>4.07</td>
<td>1.454</td>
<td>High</td>
</tr>
<tr>
<td>2. Are complex and lack harmonization</td>
<td>3.91</td>
<td>1.187</td>
<td>High</td>
</tr>
<tr>
<td>3. Are beyond the administrative, technical and scientific capacity of developing countries</td>
<td>4.25</td>
<td>0.950</td>
<td>High</td>
</tr>
</tbody>
</table>

The results in Table 4.8 shows that international standards are thought to generate moderate benefits regarding addressing information asymmetries on product compatibility, safety/quality and environmental impact (mean of 3.32) and facilitating international trade, in a fair and transparent manner (mean of 3.18). This suggests that the participants felt that the international standards are not effectively addressing the aspects they were intended for. For instance, the focus of these international standards is attributed to the need to promote fair trade, yet the results of this study reveals that, it has just been moderately possible. This contradicts the FAO (2014), which indicates that establishment of certain bodies like the CAC is to promote the coordination of international food standards with the objectives of protecting the health of consumers and ensure fair practices in food trade. This imply that while the objective is to ensure fairness in international trade, little has been realised in this respect by participants in the horticulture sector of Zimbabwe.

Some limitations were noted on the application of international standards to developing countries. The participants felt that the international standards are complex and lack harmonization (mean of 3.91). Complexity of the international standards emerges from the efforts to consider every aspect in a certain field, to incorporate the differing circumstances in which the countries exists. The lack of harmonization could be attributed to competing aspects of both public and private standards, leaving an option for entities to consider some aspects deemed ‘appropriate’ in their circumstance. This is evident in the disparities between the USA standards system which marginally differs from the EU standards approach as the EU standards
are aligned to the International Organisation for Standardisation (ISO) and International Electro-Technical Commission (IEC) system (WTO, 2009). Contrary, the USA standards system is mainly based on individual participation of experts worldwide that can offer their expertise in writing the standards.

International standards limitations were also noted as encompassing their discrimination against exports of developing and least developed countries (mean of 4.07). Most of the international standards originate from the developed countries, hence it is probable that they are developed with the mind set of advancing the interests of the developed countries, while jeopardising those of developing countries who are expected to adopt and implement these standards. This idea is supported by the ASTM (2002) which indicates that developed countries like European Union (EU) and the United States of America (USA) impose their standards without any consideration to the needs of developing countries. Consequently, developing countries have raised concerns about the manner in which the SPS Agreement have been implemented (Henson et al., 2000). Most developing countries have not actively participated in the SPS Agreement and many are not represented at SPS Committee meetings or the international standards organisations, hence, may fail to utilise the provisions and mechanisms laid down by the SPS Agreement for their benefit.

Further, the international standards were said to be highly beyond the administrative, technical and scientific capacity of developing countries (mean of 4.25). Developed countries are ahead in terms of technological development and governance frameworks, hence standards developed basing on their circumstances prove to be costly for developing countries that have less developed governance systems. Therefore, enforcement, monitoring and evaluation of standard implementation is difficult. Henson et al. (2000) further highlights that often international standards requirements are incompatible with prevailing systems of production and marketing in developing countries, hence structural and organisational change may be required, and the associated costs can restrict free trade. This is worsened wider resource and infrastructure constraints and limited access to relevant scientific and technical expertise that limits developing countries’ ability to comply with laid down requirements.

4.7 Pearson’s Correlational Analysis

The study sought to explore the correlation between agro-food (horticulture) exports and the factors influencing exports, including Full or partial Import bans (IB); Technical specifications
The relationship between the constructs of this study, expressed by means of Pearson correlations are reported in Table 4.9.

<table>
<thead>
<tr>
<th>Variable Factor</th>
<th>Agro-Food (Horticulture) Exports</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import bans</td>
<td></td>
<td>-0.55</td>
<td>0.000</td>
</tr>
<tr>
<td>Technical specifications</td>
<td></td>
<td>-0.62</td>
<td>0.001</td>
</tr>
<tr>
<td>International standards</td>
<td></td>
<td>-0.57</td>
<td>0.004</td>
</tr>
<tr>
<td>Information remedies</td>
<td></td>
<td>-0.38</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 4.9 Correlation Matrix (Source: Primary Data SPSS Output, 2018)

The results in Table 4.9 show that Technical Specifications had a higher correlation with agro-food (horticulture) exports \((r = -0.62)\). This was followed by International Standards \((r = -0.57)\); Import Bans \((r = -0.55)\) and Information Remedies \((r = -0.38)\). This imply that all the selected factors were negatively correlated to Agro-Food (Horticulture) Exports. The results also show that there were very low correlations among the independent variables used in the study \((r < 0.7)\). These low correlations suggest the absence of autocorrelation in the dataset and, therefore, the variables can be entered in the regression model for analysis as they are.

### 4.8 Multiple Regression Analysis

The study sought to establish the relationship between Agro-Food (Horticulture) Exports and selected factors that include full or partial import bans; technical specifications; international standards and information remedies. A regression analysis was performed and the results of the regression analysis was reported in Table 4.10.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.723(^a)</td>
<td>0.651</td>
<td>0.629</td>
<td>0.689</td>
</tr>
</tbody>
</table>

\(^a\) Predictors (Constant): import bans; technical specifications; international standards and information remedies

Table 4.10 Multiple Regression Analysis Model Summary (Source: Primary Data-SPPS, 2018)

Table 4.10 shows a multiple correlation coefficient of \((R = 0.723)\), which indicates a good level of prediction for the model. An R Square of 0.651 indicates that 65.1% of the changes in the dependent variable are explained by the movements in the independent variables.
4.8.1 Analysis of Variance (ANOVA)

The ANOVA, presented in Table 4.11 is the basis for determining the fitness of the model applied to the data set.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df.</th>
<th>Mean Square</th>
<th>F</th>
<th>p-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>74.960</td>
<td>3</td>
<td>24.987</td>
<td>52.603</td>
<td>.000&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>45.600</td>
<td>45</td>
<td>.475</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>120.560</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Agro-Food (Horticultural) Exports performance
b. Predictors (Constant): import bans; technical specifications; international standards and information remedies

Table 4.11 Analysis of Variance –ANOVA (Source: Primary Data-SPSS, 2018)

Table 4.11 shows that a p-value of 0.000 was obtained using a significance level of 5%. Since the p-value (0.000) is less than the significance level, we can conclude that the model selected is valid. Therefore, the regression model is a good fit for the current data. The regression coefficients in shown in Table 4.12 demonstrates that information remedies with a p-value=0.376 is insignificant.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>p-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>2.631</td>
<td>0.402</td>
<td></td>
</tr>
<tr>
<td>Import bans</td>
<td>-0.188</td>
<td>0.070</td>
<td>-0.365</td>
</tr>
<tr>
<td>Technical specs</td>
<td>-0.387</td>
<td>0.033</td>
<td>-0.564</td>
</tr>
<tr>
<td>International standards</td>
<td>-0.238</td>
<td>0.033</td>
<td>-0.147</td>
</tr>
<tr>
<td>Information remedies</td>
<td>0.191</td>
<td>0.213</td>
<td>0.130</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Agro-Food (Horticulture) Exports performance

Table 4.12 Regression Coefficients (Source: Primary Data SPSS Output, 2018)

The regression coefficients in Table 4.11 shows that information remedies (p-value=0.376) is insignificant. Therefore, this factor is omitted from the final regression model as, basing on current data, its effect on agro-food exports is negligible (insignificant). The final regression model is presented as:
Agro-Food (Horticulture) Exports = 2.631 -0.188\text{IB} - 0.387\text{TS} -0.238\text{IS} + \varepsilon

4.8.2 Interpretation of Significant Variables.

The results show a regression constant of 2.631 which is significant at the 5% significance level (p-value= 0.000). This indicates that, in the absence of the selected variables, Agro-Food Exports in horticulture sector, take a certain value. Therefore, while the selected factors explain a significant portion of changes in agro-foods (horticulture) exports, there are other factors which could not be captured in this model which explain changes in the agro-foods (horticulture) exports performance. The effect of these factors is captured in the error term (\varepsilon). This implies that while addressing the effect of selected factors, firms should understand that these are not a panacea to the issue of Agro-Food (Horticulture) Exports.

Import bans had a negative regression coefficient of 0.188. This indicates that, \textit{ceteris paribus}, one-unit increase in import bans is likely to result in 0.188 reduction in agro-foods (horticulture) exports. Changes in import bans results in changes in agro-food (horticulture) exports, howbeit, in an opposite direction. This suggest a negative relationship between import bans and agro-food (horticulture) exports as changes in these variables moves in opposite directions. Similar results were obtained by Henson et al. (2000) who established that trade restrictions and import bans are costly particularly to exporting nations in developing countries due to the loss in export earnings and hence damaging a country’s reputation and its export competitiveness. The inability of developing countries to comply with standards can be costly and trade distorting as it leads to border detentions and result in trade restrictions such as import bans for by importing countries (Julian et al., 2000).

Technical Specifications had a negative regression coefficient of 0.387. This indicates that, \textit{ceteris paribus}, one-unit increase in the requirement for technical specifications is likely to result in a reduction of agro-foods (horticulture) exports by 0.387 units. Such a relationship suggests a negative association between technical specifications and agro-foods (horticulture) exports, whereby an increase in requirement for technical specifications results in a reduction in agro-food (horticulture) exports. Similar results were obtained by UNCTAD (2001) and UNIDO (2010) which found out that developing countries have challenges in meeting the technical specifications, including operating procedures, product standards and process standards required to participate in some international markets. The result is an inhibition of such countries’ exports as their products are said to be outside the range of quality products.
International standards had a negative regression coefficient of 0.238. This indicates that, ceteris paribus, increasing requirements of international standards is likely to result in a reduction in the volumes of agro-food (horticulture) exports. Changes in these variables move in opposite direction, indicating a negative relationship international standards and agro-foods (horticulture) exports. This is in line with results obtained by Henson and Humphrey (2010) who indicated that the increasing prevalence of private standards governing agro-food systems has further complicated the plight of developing countries that have been struggling to establish a presence in international markets.

4.9 Hypothesis Testing

The study sought to confirm or disprove the null hypothesis that there is no impact of international standards on performance of agro-food (horticultural) exports in Zimbabwe. The study established that the level of agro-foods (horticulture) exports from Zimbabwe is influenced by import bans (regression coefficient = -0.188); technical specifications (regression coefficient = -0.387) and International standards (regression coefficient = -0.238). Table 4.13 shows that a p-value of 0.000 was obtained using a significance level of 5% (0.05) and the regression coefficients (B) for each of the factors.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Std. Error</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>p-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>2.631</td>
<td>0.402</td>
<td></td>
<td>7.097</td>
<td>0.000</td>
</tr>
<tr>
<td>Import bans</td>
<td>-0.188</td>
<td>0.070</td>
<td>-0.365</td>
<td>-5.500</td>
<td>0.000</td>
</tr>
<tr>
<td>Technical specifications</td>
<td>-0.387</td>
<td>0.033</td>
<td>-0.564</td>
<td>-12.26</td>
<td>0.000</td>
</tr>
<tr>
<td>International standards</td>
<td>-0.238</td>
<td>0.033</td>
<td>-0.147</td>
<td>-4.709</td>
<td>0.000</td>
</tr>
<tr>
<td>Information remedies</td>
<td>0.191</td>
<td>0.213</td>
<td>0.130</td>
<td>0.896</td>
<td>0.376</td>
</tr>
</tbody>
</table>

**a.** Dependent Variable: agro-foods (horticulture) exports performance

Table 4. 13 Regression Coefficients (Source: Primary Data SPSS Output, 2018)

The results indicate that international standards are amongst the factors that impact or influence agro-foods (horticulture) exports from Zimbabwe. Therefore, the study rejects the null hypothesis that there is no impact of international standards on performance of agro-food (horticultural subsector) exports in Zimbabwe. It accepts the alternative hypothesis that: There is significant impact of international standards on performance of agro-food (horticulture subsector) exports from Zimbabwe.
4.10 Chapter Summary

The chapter presented the results using descriptive statistics like means and standard deviations, along with the correlational and regression analysis. The results obtained revealed that the Zimbabwean horticulture sector is having challenges in enhancing growth in exports. This has been largely attributed to technical specifications required for enterprises participating in international markets. Such specifications lay the basis for international standards promulgated by both public bodies and private entities. The costly nature of complying with the standards makes it difficult for developing nations to fully comply and competitively participate in the international markets. The next chapter presents the summary of the study, conclusions and recommendations.
CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

5. Introduction
This Chapter presents a summary of the major findings, conclusions drawn and recommendations made in this study based on the data analysed in the preceding chapter. The researcher revisited the objectives of the study, discussed the research questions and commented on results of the hypothesis testing. The researcher concludes by highlighting salient findings from the study and recommended further areas for research or change and policy framework measures that can help to enhance productivity, efficiency and improved compliance to international standard by horticultural producers in Zimbabwe in order to spur growth or improved performance of agro-foods (horticultural exports) from Zimbabwe

5.1 Summary of Major Findings
The results of the study show an average figure of 3.61 on the impact of international standards on exports of the horticulture sector. This indicates that international standards have a high impact on agro-food exports. This is explained by a high effect of standards on foreign producers’ fixed and variable costs (mean of 4.23), need for investment in new technologies or inputs (mean of 3.67); increasing border detentions and rejections of agro-food or horticultural products (mean of 4.05) and increasing WTO disputes and complaints (mean of 3.74).

International standards had a negative regression coefficient of 0.238 from this study, to indicate that, increasing requirements of international standards is likely to result in a reduction in the agro-food (horticulture) export performance. Changes in these variables move in opposite direction, indicating a negative relationship between international standards and agro-food (horticulture) exports and results concurs with Henson and Humphrey (2010). There is a correlation between agro-food (horticulture) exports and the factors influencing exports, including Full or partial Import bans (IB); Technical specifications (TS); International standards (IS) and Information remedies (IR).

5.1.1 Revisiting the Research Objectives
The main objective of the study was to evaluate the impact of international standards on agro-food (horticultural) exports in Zimbabwe. The researcher achieved this objective by reviewing theoretical concepts and empirical evidence in chapter 2. The researcher investigated specific
research objectives by exploring the factors and challenges faced by agro-food (horticulture) producers and processors and described how the international standards have impacted or influenced the agro-food (horticulture) exports from Zimbabwe, in chapter 4. The researcher further recommended interventions or solutions for agro-food (horticulture) export trade policies to enhance productivity, efficiency and improved compliance to international standards.

5.1.2 Reviewing the Research Questions
The researcher gave a solution to the research questions stated in the introduction of the study by highlighting the factors and challenges are affecting horticultural producers in the agro-food value chain in chapter 2 and described how the international standards have impacted on agro-foods (horticultural) exports from Zimbabwe in chapter 3. The researcher further expounded on strategic measure or interventions to enhance competitiveness of agro-food (horticultural) exports in Zimbabwe, in order to increase compliance to international standards and spur growth in exports performance of horticulture exports from Zimbabwe.

5.1.3 Discussion of the Hypothesis
The researchers analysed the primary data collected in the study and tested the hypothesis and came up with a conclusion to accept the both of the alternative hypothesis (H₁ and H₂). The researcher postulated from the alternative hypothesis that; international standards can significantly implant or influence the performance of agro-foods (horticulture) exports from Zimbabwe and second alternative hypothesis that international standards have an impact or influence on fixed and variable costs of agro-foods (horticultural) exports from Zimbabwe. The study sought to confirm or disprove the null hypothesis that there is no impact of international standards on performance of agro-food (horticultural subsector) exports in Zimbabwe. The study established that the level of Agro-Foods Exports from Zimbabwe horticulture sector is influenced by import bans (regression coefficient = -0.188); technical specifications (regression coefficient = -0.387) and International standards (regression coefficient = -0.238).

5.2 Implications of the Study
Some concept used to develop the research instruments used for this study was adopted and further modified from the methodological guidelines for assessment of SPS requirements proposed by Henson et al. (2002). The research instruments have passed the validity and
reliability tests indicating the appropriateness of the proposed conceptual model. The findings from the study shows that, although other factors can affect the performance of agro-foods (horticulture exports from Zimbabwe, the international standards contribute a significant influence, both on costs and volume of exports. The variables or other factor cited in the study play a critical role in support of the theoretical framework, which can be used and applied in a practical context. The results demonstrate an important relationship (by correlation and regression analysis) that exists between international standards and variable or fixed costs on performance of agro-foods (horticulture) exports from Zimbabwe.

5.3 Conclusion of the Study
The results indicate that international standards are amongst the factors that impact or influence agro-foods (horticulture) exports from Zimbabwe. Therefore, the study rejects the null hypothesis that there is no impact of international standards on performance of agro-food (horticultural subsector) exports in Zimbabwe. It accepts the alternative hypothesis that: There is significant impact of international standards on performance of agro-food (horticulture subsector) exports from Zimbabwe. It is very evident and factually objective from the findings of the study the proposed alternative hypothesis was successfully accepted by testing at 5% significance level. Table 4. 14, below shows the Overall Hypothesis Conclusion

<table>
<thead>
<tr>
<th>Hypothesis at 5% (0.00) Significance Level</th>
<th>Result (p-value)</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: There is a significant impact of international standards on performance of agro-foods (horticulture) exports from Zimbabwe.</td>
<td>0.00</td>
<td>Accept H1</td>
</tr>
<tr>
<td>H2: There is a significant impact of international standards on fixed and variable costs of agro-foods (horticultural) exports from Zimbabwe</td>
<td>0.00</td>
<td>Accept H2</td>
</tr>
</tbody>
</table>

Table 4. 15 Overall Hypothesis Conclusion (Source: Primary Data, 2018)

In conclusion, the research was successful because the research objectives have been achieved and research questions are answered. Therefore, the study is successfully completed and findings could be used for further research and recommendations used for Policy framework in promoting international trade, multilateral cooperation, accelerate access to global markets and capacitate horticultural player in agro-food value chain in meeting international standard,
This will in turn spur economic growth, reduce foreign exchange bill or trade balance, promote GDP and FDI through agro-foods (horticultural) exports from Zimbabwe.

5.4 Recommendations
The findings from this study is recommended for further research International Trade Policy framework in promoting international trade, multilateral cooperation, accelerate access to global markets and capacitate horticultural player in agro-food value chain in meeting international standard. This will in turn spur economic growth, reduce foreign exchange bill or trade balance, promote GDP and FDI through agro-foods (horticultural) exports from Zimbabwe. Small holder horticulture producers in Zimbabwe will benefit from this study if government develops a national quality and food safety policy in conjunction with international trade policy. Therefore, Zimbabwe government need to develop supportive policies for encouraging agro-food products, both for exports and to enhance local food security.

Zimbabwe needs to adopt a strategic perspective in addressing opportunities and challenges presented by high-value markets in context of evolving international standards. Conformity to international standards provides assurance to consumers on the quality, safety and reliability of horticultural products. Adoption of international standards by businesses, ensures that suppliers can conduct the development of their products on the basis of specifications that have world-wide acceptance, hence businesses that use international standards are free to compete in global markets.

The findings from this study can provide solutions to some of these constraints and assist in the adoption of public and private standards by smallholder farmers in horticulture sector. Zimbabwe needs to raise exports potential of agro-food produce as it plays a very critical contribution to economic growth. The most successful government policies to launch the domestic economy into international horticulture markets are those which attract and support large international firms and foreign investors. Improving the easy of doing-business conditions in the domestic economy is necessary for success of horticulture export business. Supporting and promoting indigenous smallholders can also help to propel domestic output into international markets. Kenya has earned more than US$1 billion dollars in 2015 from horticulture exports. North Africa and Middle East have followed suit, particularly Morocco, Algeria, Egypt, Djibouti, Lebanon, Jordan, and the West Bank.
The researcher recommends for the harmonisation of national, regional and international standards and technical specifications to reduce costs of implementing standards and eliminate bureaucracy, customs bottlenecks and delays at border caused by TBS’s and NTM’s. There is also need for capacity building and training of stakeholders and players in horticulture sector. The international trade and exports in fresh horticultural products has become increasingly global trend characterised by the liberalisation of international and national regulatory framework, associated with World Trade Organisation (WTO), Food and Agriculture Organisation (FAO), International Monetary Fund (IMF) and the World Bank policies. Horticultural exports from developing countries in Africa have become a major growth sector in international trade.

The evolution of horticulture production generates a lot of interest and benefits that affect rural agricultural communities in many ways. Trade liberalisation and trade facilitation remain important components of development strategy for horticulture sector in developing countries. Government must go beyond improvement in easy of doing-business indicators, but to initiate deliberate effort to attract international investors and retailers, and develop efficient infrastructure that speeds farm output to pack houses or processing-facilities. Participation in export-oriented horticulture production allows local farms to receive training and assistance.

In addition, foreign firms and investors provides foreign currency, stability, job opportunities and other socio-economic developments. The spread of horticulture supply chains has a multiplier effect that comes from injecting income into rural communities, raising demand in sectors that produce goods and services purchased by those engaged in exports. Public-private partnerships for skill-building in farming and agribusiness can be a good signal to attract foreign investors in horticulture, a dimension sometimes neglected by developing countries that are more focused on educating urban populations for industries in urban areas.

5.5 Study Limitations

The data used in this study was collected the constrains of limited time and resources with very little room for triangulation or modification in order to satisfactorily answer the research question. There are weaknesses associated with the sampling and collection of data, in particular the level of quantification of respondents, which should be taken into account when interpreting the results. The scope of this study is only applicable to the agro-food (horticultural) value chain for exports in Zimbabwe. The data collected for this study is cross-
sectional, therefore it is difficult to draw accurate causal relationships between the sets of variables.

The sample size used in the study may be too small (n=70) to be representative of the population, therefore the result may not be generalisable. It is possible that some respondents sampled in the study may be providing data on all variables, which may lead to potential same source bias. There is also the possibility of common method bias that accounts for considerable variance among self-report measures and which can inflate relationships among variables.

5.6 Suggestions for Further Studies
Propositions for further studies largely stem from the perceived limitations of the study mentioned in Section 5.4, above. Further research and more data or information on cost of production would help evaluate the net annual revenue or income. There is also need to assess and compare the level of profitability for the different enterprises participating in horticulture exports in Zimbabwe. The use of income resulting from export horticulture farming, need to be investigated to explain the observed trend of results. Reasons behind the low level of intensification in export crop participation in the study areas are not well understood. Given the evidence that specialisation in high value export crops has high financial and economic benefit. An assessment of the factors affecting the level of participation in export horticulture need to be undertaken in order to inform policy makers on the factors hindering higher degree of specialization and those factors that promote the same.

5.7 Chapter Summary
The chapter concludes the research study by summarising the research work completed in this study and reporting the major findings, hypotheses testing, answering the research questions and the extend for achievement of the research objectives. The researcher goes further to discuss implications and validity of the findings. The chapter finally outlines some recommendations for further study and application in real life situations.
REFERENCES:


Cheminitz, C. (2011). The Impact of Food Safety and Quality Standards on Developing Countries Agricultural Producers and Exports. Germany: Humboldt-Universität zu Berlin


Henson, S and Jeffee, S. (2007). Food Safety Standards and Trade: Enhancing Competitiveness and Avoiding Exclusion of Developing Countries. University of Guelph, Ontario, Canada in conjunction with International Trade Department, World Bank, Washington, DC, USA.


APPENDICES:

APPENDICE
APPENDIX A 3.1 INTRODUCTORY LETTER

Cell: 0772 241 401 0772 154 882/887
Fax: 263 – 271 – 7620
Email : denmara@buse.ac.zw

BINDURA UNIVERSITY OF SCIENCE EDUCATION
GRADUATE BUSINESS SCHOOL

30 May 2018

TO WHOM IT MAY CONCERN

RE: INTRODUCTION OF PART 2.2 MBL STUDENT:

This letter serves to confirm that Desire Pasipanodya, Reg B1027927, is an MBL student at Bindura University of Science Education.

He is now studying the final stage of the MBL Programme which requires him to carry out a research. The topic of his research is entitled; “The Impact of International Standards on Agro-Foods Exports from Zimbabwe: Case of the Horticulture Sector.”

Please give him any assistance he may require.

For more details, please do not hesitate to contact us.

Yours faithfully

_________________________
DR. D. MARAVANYIKA
PROGRAM COORDINATOR
APPENDIX A 3.2 A QUESTIONNAIRE INTRODUCTION

Dear Respondent

RE: REQUEST FOR CONTRIBUTION TO RESEARCH

My name is Desire Pasipanodya, I am a student at Bindura University of Science Education studying for the Master of Business Leadership (MBL) Degree.

I am carrying out a research project entitled: “The Impact of International Standards on Agro-Foods Exports from Zimbabwe: Case of the Horticulture Sector”

I kindly request your assistance in this study by completing the attached questionnaire. Please note that you are not required to provide your name. To save on your precious time, I have included only short questions that do not require long written responses and the questionnaire will take at most 10 minutes to complete.

The data collected from the survey will be used for academic purposes only and not for commercial purposes. The researcher pledges to observe ethical principles, human rights and confidentiality, in before, during and after conducting this research.

For further details or questions about this study, do not hesitate to contact the researcher on;

   Mobile: 0773 928 457 or E-mail: desirepasipanodya@gmail.com

Thank you!
APPENDIX A 3.2B RESEARCH QUESTIONNAIRE

SECTION A: GENERAL INFORMATION
Please tick the relevant box, as applicable to you

A1. Age. Below 30 [ ] 31-40 [ ] 41-50 [ ] + 50 [ ]

A2. Gender. Male [ ] Female [ ]

A3. Position. Senior Manager/Director [ ] Middle Level Manger [ ] Junior Manager [ ] Overseer/Supervisor [ ]

A4. What is your highest attained level of education?

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary School certificate</td>
<td></td>
</tr>
<tr>
<td>College Diploma</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Degree</td>
<td></td>
</tr>
<tr>
<td>Postgraduate or Master’s Degree</td>
<td></td>
</tr>
<tr>
<td>Postgraduate Doctorate Degree</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>If Other, please specify</td>
<td></td>
</tr>
</tbody>
</table>

A5. Length of service:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
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<tr>
<td>0 – 5 years</td>
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<tr>
<td>6 – 10 years</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11 – 25 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 – 35 years</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>36 – 45 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46 – 55 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION B: ORRGANISATIONAL INFORMATION
Below are statements about factors impacting performance of your organisation, you can indicate the extent to which you agree by circling around (○) the corresponding box numbered 1 to 5

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B1. Do you have an established presence in Horticulture Sector (Agro-Food value chain) in Zimbabwe? Our enterprise is:

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.1.1 Well known</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>B.1.2 Somewhat known</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>B.1.3 Not well known</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

B2. What is the current status of your export activity? Our enterprise:

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.2.1 Export to many markets</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>B.2.2 Export to some markets</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>B.2.3 Export occasionally</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>B.2.4 No export activity</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>
**B3. Which has had the most impact on your Organisation’s exports?**

| B.2.1 Full or partial Import bans including consignment based conformity assessments | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| B.2.2 Technical specifications, including operating procedures, product standards and process standards | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| B.2.3 International standards including technical regulations, SPS requirements and certification standards (Global GAP, BRC, ISO, HACCP, etc) | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| B.2.4 Information remedies, including packaging and labelling requirements and controls on health and other claims. | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |

Any other factor that has affected your exports……………………………………………………

**SECTION C: IMPACT OF INTERNATIONAL STANDARDS**

Below are statements about international standards, you can indicate the extent to which you agree by circling around (○) the corresponding box numbered 1 to 5

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Moderately Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

**C.1 Which of the following costs has been a result of standards on exports in your firm?**

| C.1. Standards affect the willingness of consumers or firms to pay for foreign products | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.1.2 Standards increases foreign producers’ fixed and variable costs. | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.1.3 Necessitates investment in new technologies or inputs | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.1.4 Necessitate generating economies of scale | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.1.5 Increases border detentions and rejections of agro-food or horticultural products | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.1.7 Increases WTO disputes and complaints | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |

Other causes …………………………………………………………………………………………………

**C2 In your own opinion, international standards:**

| C.3.1 Address information asymmetries on product compatibility, safety/quality and environmental impact | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.3.2 Discriminate against exports of developing and Least developed countries | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.3.3 Are complex and lack harmonisation | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.3.4 Are beyond the administrative, technical and scientific capacity of developing countries | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
| C.3.5 Facilitate international trade, in a fair and transparent manner | Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
### APPENDIX A4.1: SPSS OUTPUT

<table>
<thead>
<tr>
<th></th>
<th>Ago –Foods (Horticulture) Exports</th>
<th>Import Bans</th>
<th>Technical Specifications</th>
<th>International Standards</th>
<th>Information Remedies</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Import Bans</td>
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<td></td>
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