ST. MARY'S UNIVERSITY

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DETERMINANTS OF EXPORT PERFORMANCE IN THE ETHIOPIAN LEATHER INDUSTRY: A SUBSECTOR ANALYSIS

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DETERMINANTS OF EXPORT PERFORMANCE IN THE ETHIOPIAN LEATHER INDUSTRY: A PANEL DATA ANALYSIS

A THESIS SUBMITTED TO THE INSTITUTE OF AGRICULTURAL AND DEVELOPMENT STUDIES IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE DEGREE OF MASTERS OF ARTS IN DEVELOPMENT ECONOMICS

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DECLARATION

I hereby declare that this thesis is my own work and has never been presented in any other university. All sources of materials used for this thesis has been appropriately acknowledged.

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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APPROVAL OF BOARD OF EXAMINERS

As a member of the Board of Examiners of the Master Thesis open defense examination, we testify that we have read and evaluated the thesis prepared by Ifa Abdi Robi under the title "Determinants of Ethiopian Leather Industry Export Performance: A Panel Data Analysis". We recommended that this thesis to be accepted as fulfilling the thesis requirement for Degree of Master of Arts in Development Economics.

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ACRONYMS

AACCSA	Addis Ababa Chamber of Commerce & Sectoral Associations
AAFA	American Apparel and Footwear Association
ACC	Addis Ababa Chamber of Commerce
CLE	Council for Leather Exports, India
COMESA	Common Market for Eastern and Southern Africa
EEA	Ethiopian Economic Association
ELIDI	Ethiopian Leather Industry Development Institute
ERCA	Ethiopian Revenue and Customs Authority
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GTP	Growth and transformation plan
ISO	International Organizations For Standards
LEXF	Number of leather and leather products exporting firms
LEXP	Export performance of Ethiopian leather industries
MoFEC	Ministry of Finance and Economic Cooperation
MOST	Ministry of Science and Technology of Ethiopia
NBE	National Bank of Ethiopia
NSEM	Number of sectorial employees
OLS	Ordinary Least Square
PDA	Panel data analysis
QSCC	Number of quality standard certified companies
REER	Real effective exchange rate
TNEV	Total national export value
TVET	Technical and Vocational Training and Education
UNIDO	United Nations Industrial Development Organization

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ABSTRACT

This study aimed at identifying the major determinants of export performance which have been a matter of argument in Ethiopia for a long period of time. The paper empirically examined the export performance and its major determinant factors in the Ethiopian context using panel data for the period 2002-2011(2008/9-2018/19) obtained from LIDI, NBE, MoFEC, and CSA. The analysis employed Random Effect Model. The explanatory variables are jointly significant at 95% level of significance. *From the data analysis, we can clearly realize that number of leather exporting firms and number of sector specific employees have significant positive relationship with leather export performance of Ethiopia; on the other hand, real effective exchange rate, quality standard certification and total national export value have insignificant negative relationship with leather export performance of Ethiopia. Therefore; to improve the export performance of the Ethiopian leather sector; the government and other stakeholders should work to increase skilled human power in the sector so that they manufacture globally competitive leather and leather products. Secondly; the export performance of the sector will increase if number of export firms increases. The data analysis has shown positive and significant relationship between number of firms and export value despite the sectorial investors are blamed of selling their products locally. Therefore; government should work to attract local private investors and FDI toward the sector by reassuring all facilities and preconditions. Besides, the government should invest on skill development continuously through benchmarking programs with different middle income countries, expanding different long-term and short-term training and educations supported by technical facilities in the area of leather and leather products.*

Keywords: Ethiopia; Leather Sector; Export Performance; Random Effect Model; Panel Data.

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CHAPTER 1. INTRODUCTION

1.1 Background of the Study

Leather is one of the most widely traded commodities in the world. The leather and leather products industry plays a prominent role in the world's economy, with an estimated global trade value of approximately US$100 billion per year. The leather industry relies on by-products of the meat and dairy industries for over 95% of its raw materials. Leather raw materials have increasingly become available in the developing world, while in the developed countries, a declining per capita consumption of red meat has reduced the supply of hides and skins and finished leather articles. About 65% of all leather comes from bovine material. Climate and adequate husbandry account for the fact that the best bovine raw material generally comes from the developed countries. The shift in raw material origins has prompted the industry to use more hides with surface defects or other structural deficiencies. It has already led to changes in finishing techniques to disguise defects, and to greater efforts to explain to consumers that some defect types are natural and should be accepted (UNIDO, 2010).

Though the industrial sector is witnessing growth in all arenas, its contribution to GDP and capacity to generate foreign exchange as well as employment creation has fallen short of the expected target. Within this broader framework, the GTP II foresees strong manufacturing export performance as the sector is key to further boosting economic growth, improve terms of trade, and acquiring foreign exchange earnings that is essential to meet import needs of the country and broadly meet the financing requirements of the successive transformative plans. According to the Ethiopian industrial development policy and strategy has seven principles: Motors for the industrial development strategy are the private sectors, Agricultural led industrial development, Export led industrial development, Labor intensive industry, integrated local and foreign investors, Government playing strong management role, Benefiting whole society. The leather and leather products, textile and garments, metal and engineering, and chemical and pharmaceutical manufacturing subsectors, were identified as the main priority sectors to contribute substantially to the growth of the Manufacturing Sector. This strategy thus has a special strategic fit to contribute to successful execution and attainment the country's Growth and Transformation Plan. Ethiopian trade value in 2010 E.C. was $120 million only 33.5% of the

planned value, $400 million (GTP-2) and 0.12% of the world trade but job created was 22,000 more than 100% (MoTI, 2002; ELIDI, 2015).

Ethiopia has set a vision to increase the current national value of leather by tenfold in 2025 to reach $1.6 Billion. The Leather Sector presents many opportunities to the Ethiopian Economy ranging from export earnings, employment generation, contribution to Government revenue and other multiplier contributions to the rest of the Economy. The growth of the Leather Sector will contribute significantly to the transformation of the Ethiopian economy in the coming years (ELIDI, 2018/2019).

Ethiopia is well endowed with livestock, which is a foundation of developing the Leather Sector, once the necessary technical, economic, human and infrastructure resources are put in place. In 2011 the country had 53.4 million cattle, 25.5 million sheep and 22.7 million goats (CSA, 2011). The number of livestock in 2015 increased to 56.7 million, 29.3 million and 29.1 million for cattle, sheep and goats respectively (CSA, 2014/15).

As per 2015 statistics, the leather industry was estimated to have 72 large and formal enterprises: 33 tanneries, 17 shoe manufactures, 3 gloves makers, and 19 leather and leather goods industries. There are however several hundreds of MSMEs operating in markets and backyards manufacturing an assortment of footwear, leather goods and garments (ELIDI, 2015).

As per the GTP-II plan the export value for leather sector was $600 million and with a total job creation of 76,000. However the performance of the sector lagged behind the targets that were set. A number of studies have identified the following as constraints, retarding the growth of the sector: inadequate capacity in resource optimization and productivity improvement; shortages of quality hides and skins; shortage of finished leather; dependence on imported accessories and other intermediate inputs; inadequate managerial expertise and skilled labor; difficult access to export markets and low profit margins; design weaknesses; inadequate access to suitable finance; weak physical infrastructure and customs delays and high mobility because of low wages. A number of researches and studies have been done on the determinants of export performance in manufacturing industries in different parts of the world. Sisay Menji (2010) revealed on his study of Export Performance and Determinants in Ethiopia using co-integration analysis;

However, no study to date has quantified the significance of any of the constraints with regard to the underperformance of the sector; consequently, it is not possible to rank them. Hence, this study is prominent for ranking the constraints and recommending certain possible solutions using a panel data analysis. The manufacturing firms are considered as a cross-section while the ten years are the time to be used.

1.2 Statement of the Problem

As per the GTP-I plan the export value for leather sector was to reach on the yearly export value of $239.63 in 2003 E.C (the beginning of the plan year) and $496.99 million in 2007 E.C (the final year of the plan year) and with a total job creation of 16,726. However; the performance of the sector lagged behind the targets that were set in export value and achieved the yearly export value of $104.33 in 2003 E.C (the beginning of the plan year) and $132.86 million in 2007 E.C (the final year of the plan year). But the sector achieved more beyond the planned value in job creation with 22,673 in 2007 E.C. The government has also planned the second growth and transformation plan, GTP-II for the years (2008-2012 E.C.). According to GTP-II, the expected export value at the end of the fifth year is $800 million per year. However; the export growth trend has not shown this in the past four years of GTP-II. For instance, the export value for the 2010 E.C Fiscal year was $133.77 million which is almost equal with that of 2007 E.C. which sows stagnant growth in export value of the sector (GTP-I, 2015).

A number of studies have been conducted on the determinants of export performance in manufacturing industries in different parts of the world, on the determinants of export performance of Ethiopian manufacturing sector, and more specifically on the determinants of export performance of Ethiopian leather industry.

Sisay Menji (2010) on his study of Export Performance and Determinants in Ethiopia using co-integration analysis showed manufacturing exports equation reveals an interesting result, manufacturing exports supply was found to be negatively & significantly affected by foreign income. Similar to merchandise export results, manufacturing exports were also found to be positively affected by gross capital formation. Terms of trade, real effective exchange rate, share of trade in GDP, and foreign direct investment were found to be insignificant.

A descriptive study survey has been made and the following constraints has been identified as factors retarding the growth of the leather sector: inadequate capacity in resource optimization and productivity improvement; shortages of quality hides and skins; shortage of finished leather; dependence on imported accessories and other intermediate inputs; inadequate managerial expertise and skilled labour; difficult access to export markets and low profit margins; design weaknesses as per recent fashion trends; inadequate access to suitable finance; weak physical

infrastructure and customs delays and high mobility because of low wages (COMESA and MoTi, 2016).

However, no study to date has quantified the significance of any of the constraints with regard to the underperformance of the sector in the country in recent years. Consequently; it is not possible to rank them as per their significance to the export performance of Ethiopian leather industry and propose appropriate solution as per their priority so that the country could get the required foreign exchange from the export of leather and leather products. Therefore; this study is designed to determine the relationship of different determinants such as number of leather products exporting firms, number of sectorial employees, total national export value, quality and real effective exchange rate with Ethiopian leather industry Export Value for the time 2002 to 2011 E.C using Panel Data Analysis.

1.3 Objectives of the study

1.3.1 General objective

The general objective of this study is to analyze the determinants of Ethiopian leather industry exports' performance.

1.3.2 Specific objectives

The study seek to achieve the following specific objectives

- To examine the relationship between Quality and the Ethiopia leather industry export performance during 2002-2011;
- To analyze the effect of the Sector Specific Human Resources on the Ethiopia leather industry export performance in 2002-2011;
- To examine the effect of number of leather products exporting firms on the Ethiopia leather industry export performance in 2002-2011;
- To examine the consequence of gross national export value on the Ethiopia leather industry export performance in 2002-2011; and
- To analyze the relationship between real effective exchange rate on the Ethiopia leather industry export performance in 2002-2011;

1.4 Research Hypothesis

1.4.1. Research Hypothesis

The key interests of this study include the export value as outcome variable and number of leather products exporting firms, number of sectorial employees, total national export value, quality and real effective exchange rate as decision variables. The study will also consider the proximate causal links between these variables, and other underlying determinants. Based on these general premises, the following core hypotheses are meant to be tested:

i. H0: There is no strong effect of product and service quality standards on the Ethiopia leather industry export performance.

ii. H0: The sector specific human powers have no strong influence on the Ethiopia leather industry export performance.

iii. H0: there is no substantial effect of the number of leather products exporting firms on the Ethiopia leather industry export performance.

iv. H0: The gross national export value has no significant effect on the Ethiopia leather industry export performance.

v. H0: The real effective exchange rate has no significant effect on the Ethiopia leather industry export performance.

1.5 Significance of the Study

The study generally provides useful information to policy makers, sector industry owners, researchers, academic scientists and other stakeholders. It helps policy makers to come with relevant policies which could be certainly put in action to make the country get all the benefits of the sector export value in a sensibly short period of time. The study also helps the industries understand the root cause of their underperformance and the proposed solutions to increases their productivity and ultimately their profit.

In addition, the study makes a methodological contribution in terms of applying advanced econometric models and other tools in analyzing the relationship between determinants of export performance and export value of leather sectors in Ethiopia. The study also pinpointed some gaps and limitations that future studies need to address. It can also serve as a case study to researchers, development actors, and others working elsewhere to replicate similar or related studies by building on its limitation and produce recommendations of more robust and broader applicability. Based on the extent of implementation of its recommendations by decision makers, this study will also be expected to benefit leather and leather products industry owners specifically get proper return from their investment and ultimately increase the export value for the country.

1.6 Scope and Limitation of the Study

The study analyzed determinants of the export performance of Ethiopian leather and leather products industries including tanneries, footwear, leather goods and garments factories during the period 2009 – 2018. The study tried to analyze determinants such as number of leather products exporting firms, number of sector specific skilled human power, quality, total national export value, and real effective exchange rate. The limitation of this work is the problem of genuine data which was collected over the mentioned time period by different organizations. Besides, there is privation of willingness of factory owners to disclose their status aptly. Had it been longer time and more financial resource, these limitations would have been diminished to the highest level. Another major limitation is that data is available only for 10 years while panel and time serious research designs require more years of data. Therefore, this study is only to provide an indicative trend and performance in the sector.

1.7 Delimitations

Though Ethiopian leather and leather products are also exported by MSMEs by themselves, outsourcing, franchising and subcontracting, the research study is delimited to those medium and higher manufacturing factories registered under export license.

1.8 Organization of the Study

This study organized in five chapters. The first chapter deals with introduction of the study, statement of problems, research questions, objectives of the research, significance of the study, scope and limitation of the study and finally the organization of the study. The second chapter discusses concepts and theories related to the area of study. The review of the literature includes theoretical as well as empirical review. The third chapter presents the research design and methodology as well as the model specification. Chapter four deal with model estimation and interpretations of results. At the end, chapter five presents the conclusions and policy recommendations of the study.

CHAPTER 2. LITERATURE REVIEW

2.1 Theoretical and Empirical Literature Review

2.2.1 Theoretical Literatures Review

i. Theory of Absolute Advantage

Theory of Absolute Advantage by Adam Smith (1776) is an important theory in this study. It suggests for a country to produce and export products in which it has absolute advantage (can produce more efficiently) and import those products which it has absolute disadvantage. In this case, Ethiopia has to export leather and other leather products because is endowed with rich livestock resource base and import capital goods which can be used to produce other the leather products. Ethiopia is yet to exploit leather market opportunities available abroad for example, in 2014 the leather demand in the world was worth more than 100 billion US$ (World statistical compendium, 2015) while Ethiopia's leather and leather products exports stood at 134 million US$ (MoTI, 2017/2018).

ii. Law of Comparative Advantage

The early classical theory pointed out possible gains from trade. These gains stem from specialization in production due to international trade. According to Salvatore (1990), if countries specialize according to their comparative advantage, enhanced resource allocation can be achieved. The theory advocates that, a country should produce and export goods in which it can do better, and import the goods in which it has comparative disadvantages. To a developing country like Ethiopia which ranks first in terms of cattle population in Africa and majority of its people have low level of technological skills is advised to produce and export livestock products such as leather and import from developed countries intermediate and capital products such as machines. This would improve (allocation) efficiency because resources which have formerly been employed in the production of other goods are now shifted to the production of the goods of which a country can produce best. Consequently, the welfare of all trading nations is improved.

iii. Heckscher-Ohlin Model

This model states that, a capital-abundant country will export the capital-intensive good, while the labor-abundant country will export the labor-intensive goods. According to Heckser-Ohlin model a country with a relatively plenty of labor and a shortage of capital, it would imply directing focus in exporting labor intensive goods such as leather and importing capital intensive goods. Furthermore, the theory puts emphasis on resource endowment in making decision the products to be exported. For example, Ethiopia, despite ranking third in Africa for having large number of livestock, it earns little foreign exchange from leather exports than other countries like Morocco and Tunisia which are known to have less number of livestock in relative terms (UNIDO, 1997).

iv. Modern trade theory

International trade cannot be explained neatly by one single theory. Furthermore, our understandings of international trade theories continue to evolve. Thus, international trade is complex and is impacted by numerous and often – changing factors. Modern theories of trade emerged after World War II and these theories were developed in large part by Business School Professors, not economists. Moreover, many of these theories are firm – based as opposed to country - based traditional theories of the classical and neoclassical schools.

The new trade theory (NTT) is a collection of economic models in international trade which focuses in the role of increasing returns to scale and network effects, which were developed in the late 1970s and early 1980s. Network effect is a phenomenon whereby a good or service become more valuable when more people use. However, if too many people use the good or service, negative network effect can occur, such as congestion. This decreases the utility for users. Therefore, providers of goods and services which use a network effect must ensure that capacity can be increased sufficiently to accommodate all users. The internet is a good example. The following list comprises the new trade theories: The Gravity Model, Intra – Industry Trade, Technology Gap Theory, and Product Life – Cycle Theory, Country Similarity Theory/Overlapping Demand Theory, Global Strategic Rivalry Theory and National Competitive Advantage Theory. Therefore; countries, esp. developing nations, should do hard so that they will be competitive in this ever-changing world in the global trade.

2.2.2 Empirical Literature

The notion that developing countries can accelerate their economic development by expanding exports and in particular exports of manufacturing has become conventional wisdom. Many economists have demonstrated, at least in broad terms, the contribution of trade to growth and development. Even those who remain skeptical of the role of the market concede that trade is an important component of economic growth. Many developing countries now recognize the importance of trade for efficiency, a healthy balance of payment, employment creation and the exploitation of comparative advantages in resource endowment (Panoutsopoulos, 1992).

There are few studies that have explored the determinants of leather and leather products exports in developing countries. Available studies have found out that weak support policy, poor quality of leather and leather products, market access barriers, low pace of industrialization and poor marketing strategies are some of the reasons for the low exports leather and leather products from developing countries in global markets. Wakari (2009) stated that there is wide range of issues that industry operators and policy makers identified as factors affecting the industry's competitiveness. These include product quality, scale of operation, marketing strategy and external trade taxes. They also include infrastructure, government incentives, raw material price instability, financial problems and lack of policy focus to the leather sector in general and the like. Schmel (1998) and Magretta (2000) observed that, marketing is the core of the modern leather trade. Having necessary trade information on both local and export market is something which is lacking in most African countries. Currently, Ethiopia domestic marketing system is not well integrated due to infrastructure constraints and institutional weaknesses. Furthermore, marketing chain of the said product involves a number of middlemen from primary producers to the exporter who are not considering the quality of the product. Schmitz (2004) found that the availability of raw hides and skins to the traditional leather manufacturing industries of the developed countries is influenced by the import restrictions imposed by the developed countries in processed leather from developing countries, these restrictions of processed leather affects many of developing countries, Ethiopia is among them. On the other hand, Collier (2000) argued that transaction costs faced by African leather manufacturers are typically high, because manufacturing firms are intensive users of services that are particularly expensive in Africa, this results to the export of raw hides and skins instead of processed ones. UNIDO (2002, 2003)

argues that, indirect costs have also been found to be working against the capacity utilization, efficiency and productivity, and some of these costs are induced by inappropriate government policies while some are inherent. World Bank (2004) asserts that African leather export is not competitive enough in the world market due to market access barriers-by developed countries, low level of technology and poor infrastructure. The study recommends that public infrastructure, such as paved roads, has an important role to play in lowering production costs and thus increasing external competitiveness and market shares. Other constraints facing the leather industry in Ethiopia include poor quality of the Hides and Skins recovered, husbandry practices and low quality base of the hides and skins which has impact on each of the subsequent stages of processing of the leather, ultimately determining the quality and price of the intermediary or an end product. FAO (2005), point out four constraints that inhibit African agricultural and livestock products; these are production constraints, high unit domestic processing and marketing costs, market access constraints, and lack of reliable and up to date market information. However, Gereffi et al. (2001) state that access to international market cannot be achieved merely through making and marketing of new products, it requires gaining entry into international markets, design of quality products and market network consisting of many different firms. Therefore, for Ethiopia leather sector to improve they must create internal and external environment that will link the sector to the global markets. Ethiopia has quota and duty free preferential market access for garment exports to the Unite State under Africa growth and opportunity Acts (AGOA) and EU under all but arms (EBA) initiatives. The establishment of COMESA free trade area will create duty and quota free access to domestic as well as foreign investors operating in the country to benefit from this opportunity.

World Bank (1987) attempted to estimate Ethiopian major export supply response with respect to change in relative unit value, real GDP, real exchange rate, export tax and domestic consumption. The result indicates that only export tax and domestic consumption are statistically significant variables at 10 per cent level while the rest variables are not significant; nevertheless all but the real exchange rate have the expected signs. The exchange rate elasticity of the exports was found –0.16 and that of price, domestic consumption and real GDP variables were 0.12, 3.78 and 1.07 respectively.

Kiros Hailu (2012) had studied the major determinants of export growth rate which have been a matter of argument in Ethiopia and Africa as a whole for a long period of time using a co integration and error correction model. Estimation result of the model shows that the relationship between the foreign price level, and terms of trade with the export growth rate are positive and negative which are statistically significant respectively. The gross domestic product also positive and significant but it is not strong. So the foreign price level, Terms of trade and gross domestic product appear to be major determinants, whereas the real exchange rate and FDI have no statistically significant effect on Ethiopia's export growth rate.

Mohammed Dafalla Abdalla Babiker (2012) had studied and examined from an empirical point of view, the impact of some macroeconomic variables on Sudan's real exports over the period (1990-2013) taking in to consideration real gross domestic product, economic infrastructure, and exchange rate as explanatory variables. The importance of the research stems from the fact that export earnings are considered among the essential factors that enhance economic growth. In addition to that, exports significantly contribute to the main productive sectors of the economy by providing the required financial resources and creating job opportunities. The Ordinary Least Squares (OLS) method was applied to estimate the log-linear form of the specified model. The results indicate that real exports in Sudan are highly responsive to changes in real GDP, while less responsive to exchange rate devaluation and infrastructure. Based on the research findings, the research recommends providing adequate financial resources for the productive sectors of the economy for enhancing production and stimulating exports. Exchange rate stabilizing policies should also be adopted for reducing the gap in exchange markets and for improving the purchasing power of the home currency, which will no doubt impact positively on exports performance. Rehabilitation of economic infrastructure was highly recommended for reducing the cost of transportation and making exports more competitive in the international markets.

Abdul Ghafoor et al. (2013) studied the impact of major variables affecting export performance of leather goods from Pakistan using primary data source. The exporters from Punjab province were taken as the sampling frame as they share almost 90 percent of total leather exports from Pakistan.

In Punjab, leather production and export facilities are primarily located in district Sialkot and Kasur. A representative sample of 40 leather exporters was selected purposively from total

population of leather exporters in these districts. The impact of major variables on export of leather goods i.e. jackets was explored for the two main markets viz. USA and Germany by employing double log form of regression analysis. In case of the USA market, value of adjusted R2 was 0.72 whereas the F-value was 15.40. The estimates of regression analysis revealed that experience and education of exporters, purchase price of raw material and ISO certification 9000 were the significant variables whereas marketing cost and energy crises showed insignificant impact on leather exports from Pakistan to the USA market. On the other hand, for the German market, value of adjusted R2 was 0.74 whereas the F-value was 16.73. Experience of exporters, purchase price and energy crises were the significant variables whereas education of exporters, marketing cost and ISO certification showed insignificant impact.

Francis Lwesya (2018) examined the determinants of Leather and Leather products Exports in Tanzania. Ordinary Least Square (OLS) analysis was applied on time series data from 1980 to 2015. The findings showed that export of raw hides and skins, and high costs of production are among the deterring factors to leather and leather products export in Tanzania. Export of raw hides and skins and costs of production recorded negative and significant relationship with leather exports. On the other hand, hides and skins collection recorded insignificant relationship while leather price in the world market had negative and significant relationship with leather exports. This suggests that other factors such as low quality of leather and leather products exported, inadequate capital investment, stiff competition with foreign companies for hides and skins and inadequate market information explain the state of current Tanzania's leather exports. Therefore, according to the author, attracting local and Foreign Direct Investment (FDI) in the leather subsector by providing friendly investment climate and addressing the supply side constraints will enable increased high quality leather and leather products diversification and exports.

Mulualem Eshetu Zewdie (2002) on his study of the performance and determinants of the Ethiopian leather export sector tried to examine the overall performance of the sector. In particular an econometric approach using Ordinary Least Square (OLS) has been applied to determine the significance of major quantitative factors for the variation in the supply response of the export sector under review. Consequently, the world market unit price/value of the exports and the local real exchange rate have been found to have significant effect on the long run supply

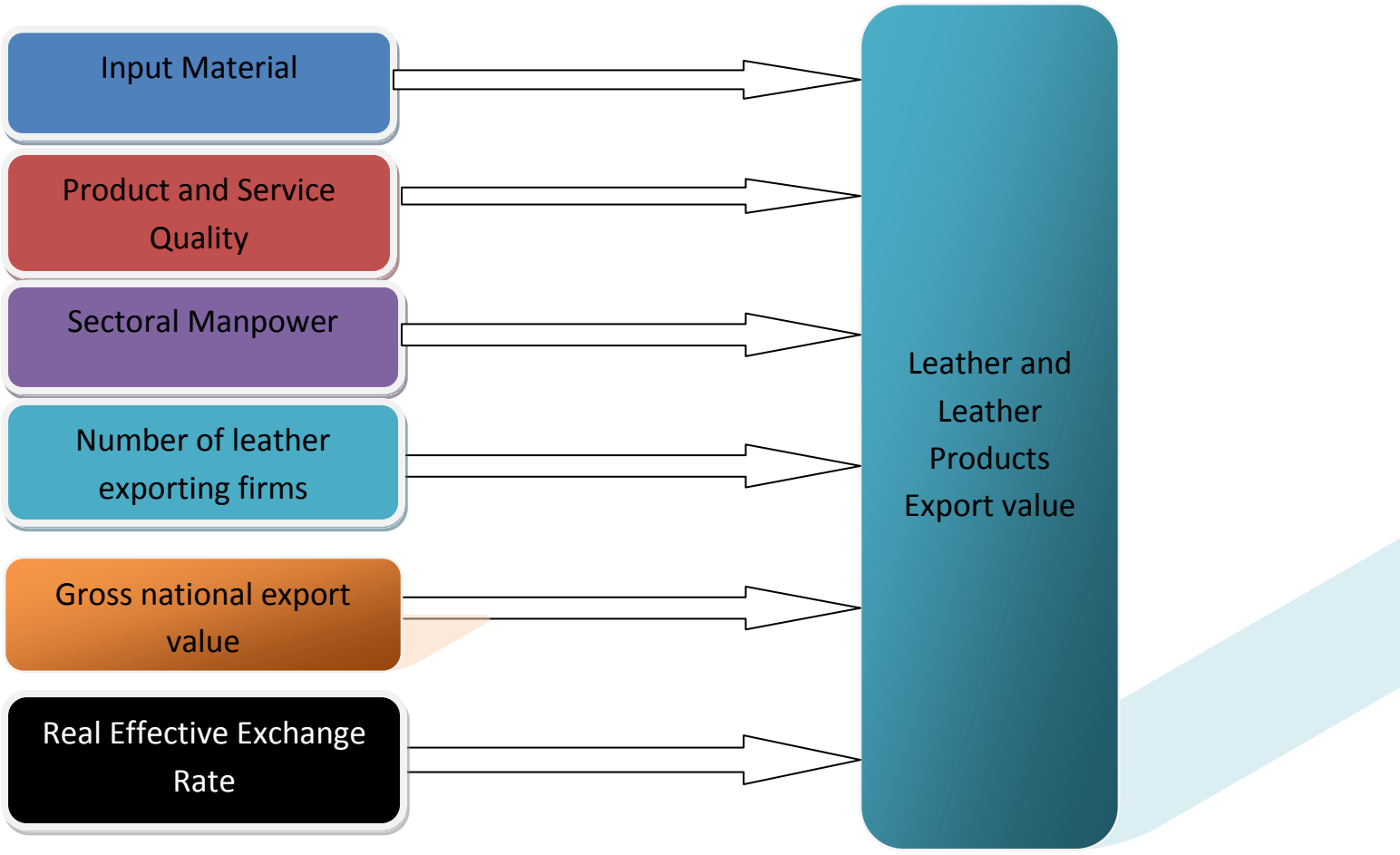
of the export sector. In the short run analysis, the domestic consumption pressure and world supplies from major exporters are found important factors in hindering the growth of the export sector. On the other hand the real income of the country (which represents domestic production capacity) does not appear to have significant contribution to the change in supply response of the export sector under study. In addition, poor quality status and insufficient supply of the raw stocks were among the main constraints for local tanneries to operate under capacity and consequently contributing to the declining trend of the export earnings. According to the author, the main causes for these constraints include traditional way of production, preservation and storage facilities. Moreover, lack of premium prices for higher quality raw hides & skins supplies plays a major role for disincentive in quality upgrading and limits the rates of recovery.

Finally, Sisay Menji (2010) on his study of analyzing factors affecting export supply of Ethiopia, during the period 1981 – 2004 have been made using co integration analysis. The two models estimated depict that merchandise export volumes are significantly influenced by gross capital formation (proxy for production capacity) and share of trade in GDP (proxy for trade liberalization) while other variables; terms of trade, real effective exchange rate, foreign income, and foreign direct investment were found to be insignificant. Manufacturing exports equation reveals an interesting result, manufacturing exports supply was found to be negatively & significantly affected by foreign income. Similar to merchandise export results, manufacturing exports were also found to be positively affected by gross capital formation. Terms of trade, real effective exchange rate, share of trade in GDP, and foreign direct investment were found to be insignificant. The study concludes with recommendations to increase share of manufactured exports and diversify export base of the country.

2.2.2 Conceptual Framework

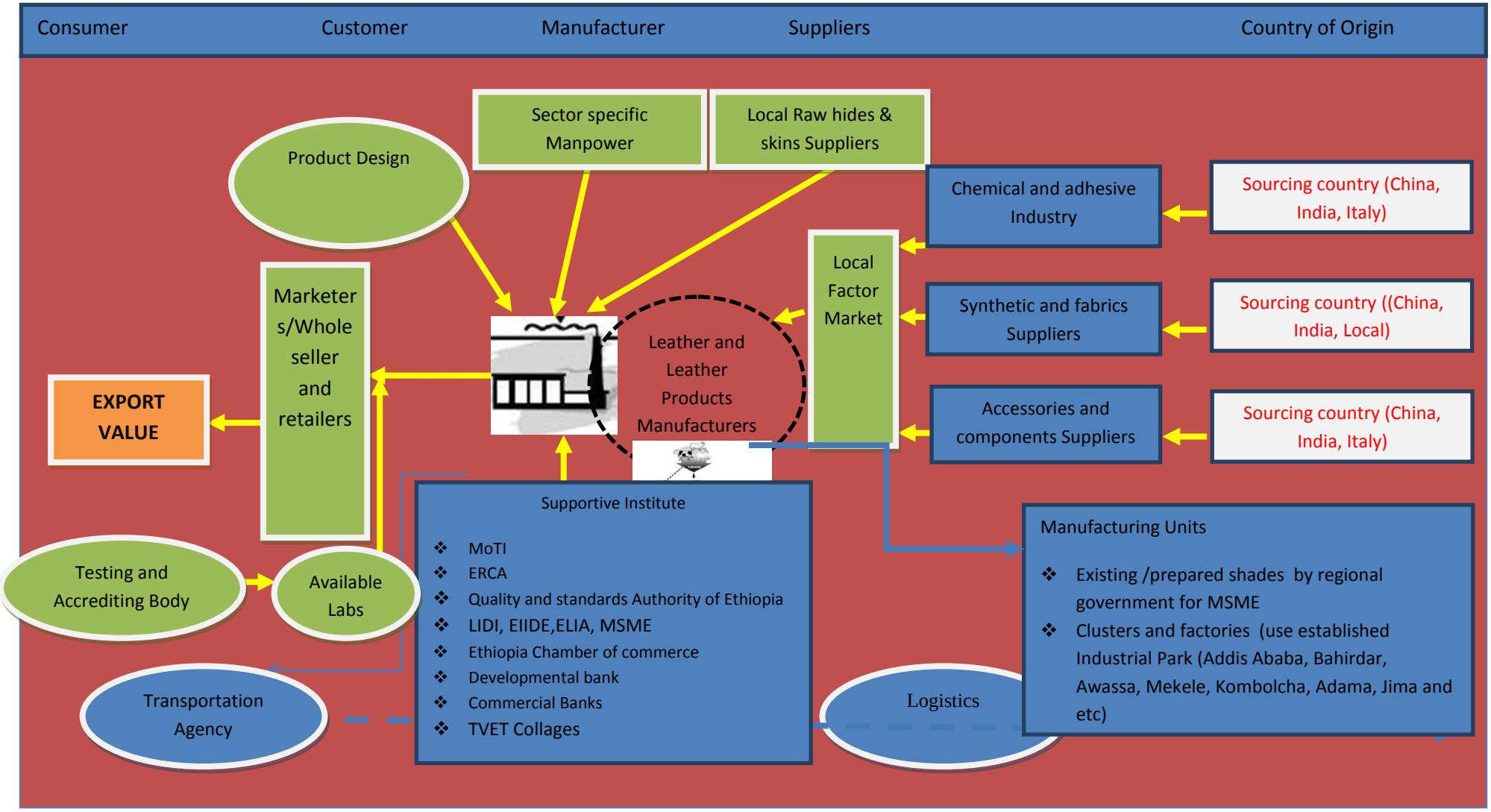
The conceptual framework which reveals the relationship between the input material, both product and service quality and sector specific manpower to bring about the final export standard leather and leather products has been shown below schematic representation of the conceptual framework. The brief and more elaboration of the conceptual framework are shown on the following fig.1 and fig.2 respectively.

Figure 1: Brief Leather and Leather Products Export Performance Conceptual Framework



The following figure shows conceptual framework the detail supply chain in leather and leather products export performance studied and prepared by the author of this thesis.

Figure 2: Detail Leather and Leather Products Export Performance Conceptual Framework



CHAPTER 3. RESEARCH METHODOLOGY

3.1 Description of the Ethiopian Leather Sector

Ethiopia is one of the fastest growing nation achieving continues and vast economic development with the aim of achieving middle income country by 2025. The major development goals lie upon the radical economic transformation from the dominant agricultural economy to an industrial economy, especially in areas that are better suited in terms of potential success factor as defined by the government's Growth and Transformation Program as priority sectors. Amongst the priority sectors, leather manufacturing takes major leading position owing to the fact that it is highly interrelated with agriculture and the long experience of tanning industry in the country. Africa occupies a relatively low position in production and trade of hides and skins in the global leather industry in spite of its significant livestock population and low labor cost. In general, the share of Africa, in which Ethiopia is one of major players, is insignificant considering the 120-billion-dollar industry. Ethiopia's share in the global leather industry is less than 0.1% whereas the country has huge potential to bring it to one-billion-dollar annual revenue. In general terms, this reflects the leather sector's retrospective weakness in the various stages of leather production cycle starting with animal husbandry, tanning industry, leather products manufacturing of shoe, glove and leather goods and garment. The major challenge facing the industry is how to overcome these weaknesses and exploit fully the opportunities to support the national economy (GTP-I, 2015)

As part of its growth and transformation plan, the government has taken actions to develop the leather sector and make it competitive in the world market. It has given support to transform the leather technology from wet blue and /or pickle to crust level which adds value and bring better export value and economic benefit of the sector than that of the previous performances. The export of wet blue and pickle was discouraged by the government imposing 150% export tax in February 2008 and following that the crust material is also prevented from export with similar high tax rate in December 2011. In line with this, the government has supported the tanneries to transform their technology from beam house operations to re-tanning, dyeing and finishing as well. The value addition effort was not limited to finished leather but also to strength the users of this product to final commodity such as shoe factories, garment and leather goods factories as

well as glove makers. The foreign direct investment and support scheme, such as bench marking and twinning programs by government institutes for the manufacturers, is meant to facilitate knowledge and technology transfer and to lay down strong foundation in the area. Dynamism in the nature of the sector would demand advancement in technology and well nurturing of the input materials and tuning tussling market factors as we need to boost the sector within short period of time. The advancement in technology and capacitate the manufacturing plants is major agenda to meet GTP II plan and realize the industry national goal (ELIDI, 2019).

3.1.1. Current Industry Status

In the Ethiopian leather sector, there is a tremendous progress with respect to value addition and product diversification. Currently, the leather sector products are categorized into four strategic products, namely finished leather, leather-shoe, glove, leather-goods and garment. There are 31 leather industries, 18 leather footwear industries, 3 leather glove industries, 26 leather goods and garment industries in the country (Researcher's survey).

The leather and leather products industry of Ethiopia accounts 6-8 % of gross value of products from the total Ethiopian manufacturing sector. At the end of 2015, the statistics shows that 22,960 employees were engaged in leather and leather products industries. According to the National Bank of Ethiopia report (2015), the leather and leather products industries cover 4% of the total national export income. At the end of 2015 fiscal year, the earnings from leather and leather products export was 132.86 million USD and the average annual growth rate from 2011 - 2015 was 6% (CEA, 2015).

3.1.2. Leather Sector Value Chain

Production of hides and skins at the primary level in the rural areas starts with the butcher or the individual farmer in the community. In the urban centers, slaughtering takes place, to some extent, in an organized slaughter houses/ abattoirs with varying degrees of mechanization. The hides and skins at the rural level enter the value chain mostly through small traders who in turn sell to bigger main suppliers. This process is repeated with each step resulting in value-addition until the raw hides and skins are sold to tanneries. The poor prices obtained for hides and skins at the producer level and the subsequent poor quality of raw materials affects negatively the production of hides and skins trade. (ELIDI, 2018)

Once the hide and skin are supplied to the tanners in such manner, the value addition process is carried out from raw hide/skin to crust and finished leather. Along the value chain other main actors are footwear industry, glove, garment and leather goods industry, whereby finished leather articles processed for local and export market.

- Chemicals and machineries are the major inputs of the leather and leather products industry. Tanneries consume few chemicals form local sources that includes common salt, sulfuric acid, sodium carbonate and lime powder. Other ranges of chemicals are imported from other countries which incur higher amount of foreign currency. Almost all the machineries for the tanning industry are imported. Similarly, in footwear, glove, leather goods and garment, almost all the machineries, chemicals, accessories and reinforcement materials and packing materials that have been used in these industries are imported. There are few chemicals that are produced locally such as neoprene and polyurethane adhesive, fabric and few hand tools. On the other hand, huge volume of finished leather, footwear, glove, leather goods and garment are exported to various destinations throughout the world. Other stakeholders in the whole value chain of the leather sector play significant roles (COMESA, 2016).

3.1.3. Current Situation in Raw Hide and Skin Supply

Ethiopia occupies a relatively low position in production and trade in hides and skins within the global leather industry in spite of its significant livestock population and low labor cost. This reflects the leather sector's retrospective weakness in the various stages of leather production cycle starting with, animal husbandry; slaughter facilities; preservation and processing. Perhaps the most significant factor influencing production of hides and skins is the "cultural factor" in livestock rearing which lays emphasis on numbers of animals maintained by a farmer as a sign of wealth discouraging commercial farming/ slaughtering, The major challenge facing the industry is how to overcome these weaknesses and exploit fully the opportunities presented by the availability of hides and skins. (UNIDO, 2010)

It's obvious that rawhides and skins in Ethiopia have significant economic return especially when processed to finished usable leather products. Leather continues to be the commodity for elite possession in this era of vinyl and attractive plastics, aesthetics are dictating the market. This significant economic return in rawhides and skins comes true only if each stakeholder could have a good control over the different factors that affect the leather production along the value

chain. The leather industry sector is not benefiting due to deterioration in quality of rawhide and skins where prime defects viz. Diseases, poor patter, brand mark, knife cuts, poor substance, gouge mark, putrefaction, siding, scars, scratches, dirt and rub marks have been seriously detrimental to raw materials. Several reasons may contribute to low quality rawhides and skins output. First, poor animal husbandry, including inadequate and poor quality feeds, inadequate parasite and disease management, and branding with hot iron for identification purposes. Second, a good proportion of hides and skin, especially those produced in rural areas outside organized slaughter houses, may be of poor quality, due to inappropriate slaughtering, flaying, collection and initial processing methods used thus leading to spoilage and rejection in the market. Third, technology used at various stages in the processing chain from raw hides to finished leather products may be inappropriate or poor leading to poor quality products. Fourth, investment in technology, physical infrastructure, financial, information and skill of manpower engaged in the sector may be low in comparison to the need and potential leading to poor quality output (ELIDI, 2018).

3.1.4. Tanning Industry

The tanning sub sector of Ethiopia has more than 90 years of experience and has its own weakness and strength. Currently there are 31 medium and large tanneries with an average processing and producing capacity of finished leather, from 112.3 million sq. ft. of sheep skin, 74.89 million sq. ft. of goat skin and 58.68 million sq. ft. of cow hide per annum. At the end of 2015, the actual overall production was 51.71million sq. ft. of sheep skins, 33.50 million sq. ft. of goat skin and 48.63 million sq. ft. of cow hide which accounts, on the average, only 46% of the current production (ELIDI, 2915).

Regarding the supply of raw materials, raw hides and skins are 100% locally available whereas, out of the more than 300 different types of chemicals needed, only common salts, soda ash, lime powder and sulfuric acids are locally produced. The tanneries produce diversified products from sheep and goat skin products such as shoe upper, glove, garment, bag and lining leather. From cow hide shoe upper, bag, garment, glove, upholstery, sole, belt and lining leather. With the exception of sole, the rest are produced from grain and split leather for local and export market. Leather is exported mostly to Far East countries (China, Japan, Korea and Hong Kong), Europe, India, Pakistan, Malaysia, Thailand, Kenya, South Africa, Yemen and Saudi Arabia (ELIDI, 2018).

3.1.5. Footwear Industry

In Ethiopia, the establishment of footwear industries is not more than 50 years and is relatively young when compared to European countries. At the end of 2015, there were about 18 medium and large footwear factories, 4 shoe cluster that encompass 222 manufacturer and 80 micro and small shoe enterprises. The medium and large footwear factories have an installed capacity to produce 10 million pairs of shoe per annum; but the actual production in 2015 was 6.5 million pairs of shoes of which 3.53 million pairs of shoe were produced from micro and small enterprises. A total of 3.37 million pairs of shoe were exported for international market (Dereje T. and Ifa A., 2018).

3.1.6. Leather Goods and Garment Industry

The leather goods include leather bags, belts, wallets and small articles whereas leather garment include jacket, shirt, trousers and skirts. The installed capacity of the Ethiopian leather goods and garment industries is 74,000 pieces of leather garment and 4.88 million pieces of leather goods. But the actual annual production of leather garment at the end of 2015 was only 35,000 pieces (46.97 % of the total capacity) and 677,000 pieces of leather goods (15.8% of the total capacity). Out of this annual production, only 0.38 % of leather garment and 3.72 % of leather goods were exported in the international market. America, Japan and South Africa are the main export market. At the end of 2015, statistics shows that 2,297 employees were engaged in leather goods and garment industry. 76% of the industries are owned by local investor and 24 % of them are owned by foreigners (FAO, 2015).

3.1.7. Glove Industry

The installed capacity of the Ethiopian glove industries are 2.3 million pairs of glove per annum. At the end of 2015, a total of 1.84 million pair of leather gloves have been manufactured which accounts to 80% of the installed capacity. Currently 61% of industrial leather glove is for export market whereas fashion leather glove is totally (100%) for export market (MoTI, 2019).

3.1.8. Leather and Leather Products Export

The quantity of leather export per year has decreased from 12,604 tons to 2625 tons in the last 10 years. The quantity of leather goods and garment export per year was almost insignificant in the last 10 years, which has risen from 0.6 tons to 10 tons. The export per year of footwear has increased from 346 tons to 1673 tons. The leather glove export per year, which started in 2012,

has increased from 107 tons to 206 tons. Except glove export, all other leather product exports have fluctuated in the last 10 years (MoTI, 2015).

In the course of leather production by a process called tanning, it takes from 20 to 25 days to convert the raw hides and skins into finished leather. While leather is made from raw hides and skins, the materials have different names such as pickle, wet-blue crust. Ethiopia used to export raw hides and skins for many years before starting to make leather and later leather products by adding values. The country has started exporting pickle and then wet blue and crust step by step by adding values on the raw hides and skins. Currently, the country is exporting finished leather and other leather products like shoes, bags, jackets, gloves and so on. By doing so, the sector has created a lot of jobs for unemployed citizen. However; the products could not be competitive in the world market especially by getting reasonable price which may cover the cost and help the country by getting benefit out of the export market especially in the area of bringing hard currencies. In spite of the fact that there may be a lot of problems which hinders the enhancement of the export performance of the sector and few studies has been done on certain determinants, this study prefers to do on the three determinants which are quality, sector specific human power and availability of input materials (ELIDI, 2018).

The study is carried on export performance of Ethiopian leather and leather products export industries. As the industries have three major cross-sections which are tannery, footwear factories and leather goods and garment industries, the study prefers a panel data analysis over 10 years (2002-2011 EC).

3.2 Methodological Literature Review

Different authors have conducted studies on determinants of export performance in general and leather export performance in particular in different countries using different econometric models. The following table summarizes the point briefly.

Table 5: Methodological Literature review

S/N	Author	Dependent Variable	Independent Variable	Relation	Model
1	Kiros Hailu (2012)	Export growth (Ethiopia)	*Foreign price level, Terms of trade, Gross domestic product*	*Significant positive*	*Co-integration and error correction*
			Real exchange rate, FDI	*Not significant*	
2	Mohammed Dafalla (2017)	Real export (Sudan)	*Real GDP*	*Highly responsive*	*Multiple regression*
			Exchange rate, Devaluation, Infrastructure	*Less responsive*	
3	Dr.Abdul Ghafoor Awan et el (2013)	Export performance (Pakistan)	*Education, experience, Raw materials price, ISO certificate…USA*	*Significant*	*Double log form of regression analysis*
			Marketing cost, Energy crises…USA	*Insignificant impact*	
			Experience, Energy crises, Purchase price…German	*Significant*	
			Education, Marketing cost, ISO certification…German	*Insignificant impact*	
4	Francis Lwesya (2018)	Export (Tanzania)	*Export of raw hides/skins, High cost of production, leather prices in the world market*	*Negative and significant*	*Regression analysis*
			Hides and skins collection	*Insignificant*	
5	Mulualem Eshetu Zewdie (2002)	Export (Ethiopia-Leather)	*World market unit price,* *Local real exchange rate*	*Significant in the long run*	*Ordinary Least Square*
			Domestic consumption pressure, World supplies from major exporters *Poor quality status,* *Insufficient supply of the raw stocks*	*Significant Negative in the short run*	

			Real national income	*Insignificant*	
6	Sisay Menji (2010)	Export (Ethiopia)	*Foreign income*	*Significant negative*	*Imperfect Substitutes*
			Gross capital formation (proxy for production capacity) *Share of trade in GDP (proxy for trade liberalization)*	*Significant positive*	
			Terms of trade, real effective exchange rate, share of trade in GDP, FDI	*Insignificant*	
7	Jorge Carneiro et el (2011)	Export performance (Brazilian)	*External environment, Firm characteristics, Firm strategy* *systematization of export planning*		structural equation modeling (SEM)

3.3 Research Design

The study uses Panel research design since it fits the secondary data. The data for leather export value was collected from Ministry of Trade and Industry; the data for real effective exchange rate was taken from National Bank of Ethiopia; the data for total national export value was taken from Ministry of Finance and Economic Cooperation and the data for the number of sector specific human power, number of exporting firms and number of quality standard certified companies was taken from ELIDI for different cross sections such as Tanneries, footwear companies and leather goods and garment factories during the given study period.. The panel data are summarized and the three different variations which are within, between and overall variations were explained thoroughly. Fixed effect and random effect models were used to analyze the data and Hausman test was used to choose the appropriate one.

3.4 Types and Sources of Data

To investigate the effect of related labor productivity on export performance panel (a combination of cross sectional and time series data) secondary data of 10 years over the period of 2002-2011 EC is used. The time for data is chosen as it consists all leather and leather products such as finished leather, footwear, leather goods including bags, leather garments, gloves export in a better way.in other words; In addition organized data for various leather products export is available during the mentioned time. The leather export value data was taken from the MoTI and ELIDI. The national export value which is the export value of both service and products data was taken from MoFEC, the real effective exchange rate data was taken from NBE. The other data was taken from ELIDI.

3.5 Methods of Data Collection

Panel secondary data was collected for leather industries, footwear industries and leather goods and garment industries for the time period of 2002 to 2011 EC. The secondary data which includes the data of export performance, manpower with their respective skills, quality and effective real exchange rate was collected from Ministry of Trade and Industry, Ethiopian Leather Industry Development Institute, Chamber of Commerce, Central Statistics Agency, Ethiopian Revenue and Customs Authority, National Bank of Ethiopia, Ethiopian Leather Industry Association. No Sampling is required as the whole population, i.e. all tanneries, shoe manufacturers, leather goods manufacturers, leather garment and glove manufacturers participating in export market were taken as a whole.

3.7 Data Analysis Techniques

3.7.1 Model Specification

In this part, the paper employs a regression analysis in which leather and leather products export is assumed to be determined by number of leather products exporting firms, number of sectorial employees, total national export value, quality and real effective exchange rate. In line with the theoretical propositions and empirical literatures reviewed in the literature, the association percentage of sector specific human resources, product and service quality, real effective exchange rate, total national export value and number of leather products exporting firms have

with export value is examined by specifying the following model. The data used is for a period covering between 2002 to 2011 EC and is specified as follows:

Y=F(X)……...…….. (1)

$LEXP_{it} = \alpha_i + \beta 1LEXF_{it} + \beta 2NSEM_{it} + \beta 3TNEV_{it} + \beta 4QSCCit + \beta 5REERit + \mu_{it} + \varepsilon_{it}$, β i> 0……..…. (2)

Where, t is the number of periods, LEXPit is value of the dependent variable (in this case, the value of the leather and leather products real exports – exp) of sub-sector i in the period t, the parameter α is the constant, $LEXF_{it,}$ $NSEM_{it}$, $TNEV_{it}$, QSCCit, REERit are the independent variables (Number of leather and leather products exporting firms, Number of sectorial employees, Number of quality standard certified companies, Real effective exchange rate, Total national export value respectively) β1, β2, ..., β5 are the parameters of exogenous variables. Finally, u_{it} is the between entity error term for each company and ε_{it} is the within entity error term.

α_i (i=1….n) is the unknown intercept for each entity (n entity-specific intercepts).

By taking natural log on both sides

lnLEXP = α + β1lnLEXF + β2lnNSEMt + β3lnTNEV + β4lnQSCC + β5lnREER + μ, β i> 0…….. (3)

Where: lnLEXP = Natural logarithm of volume of exports;

lnLEXF = Natural logarithm of number of leather and leather products exporting firms

lnNSEM = Natural logarithm of number of sectorial employees

lnQSCC = Natural logarithm of number of quality standard certified companies

lnREER = Natural logarithm of real effective exchange rate

lnTNEV = Natural logarithm of total national export value

3.7.2 Operational Definition

The hypothesized variables include dependent and independent variables.

Dependent Variable: Leather Industries Export Value in USD. The value is the sum total of all comes from leather, footwear, leather goods and garments export.

Independent Variables: leather products exporting firms, number of sectorial employees, availability of input materials, total national export value, quality and real effective exchange rate. From Heckser-Ohlin model states a capital-abundant country will export the capital-intensive good, while the labor-abundant country will export the labor-intensive goods. In addition, the human capital development has a positive effect on the development of a nation's economy. As a result the sector specific human power and number of leather and leather exporting firms are chosen as an independent variable to be analyzed in the country context. Theoretically, the high GDP is related to high economic growth and the economic growth has related to high real effective exchange rate. In addition, despite the Leontef's Paradox, high quality product country has high export performance. Hence; these three variables are also selected to be analyzed in Ethiopia's context. In addition, there are empirical literatures which have been done using these variables (See, Table 1). In general, the variables are used to clearly identify the comparative and absolute advantages of the country and hence pave the way towards increasing the export performance of the leather sector.

Definitions of the variables

- Number of leather and leather products exporting firms: this is the total number of leather exporting firms which include tanneries, shoe factories, leather goods and garments industry working in exporting leather and leather products. This variable was chosen because it is not clear how the increasing number of leather companies contribute to the value of export to the country.

- Number of sector specific employees: this is the number of employees joining the sector after being trained in the specific sector either in universities or TVET collages. This variable is also chosen to examine whether the export value depends on the human capital of the country.

- Number of quality standard certified companies: this is the number of leather exporting firms which are certified in quality standards including ISO 2000:9000 families. This variable was also chosen whether quality standard has any effect on export value or not.

- Real effective exchange rate: The real effective exchange rate (REER) is the weighted average of a country's currency in relation to an index or basket of other major currencies.

The weights are determined by comparing the relative trade balance of a country's currency against each country within the index. This variable is directly related to the exchange rate of a currency. This also was chosen to identify whether exchange rate of Ethiopia has significant effect on sectorial export performance in the mentioned period.

- Total national export value: this is the export value of the country from exporting both products and services. This includes value from exporting services such as transportation, tourism, electricity, and products such as manufacturing products, agricultural products. This variable was chosen to identify whether the hard currency gotten has any relationship with leather sector export value.

3.8. Diagnostic Checks

3.8.1 Multicollinearity Test

One of the classical assumptions of the regression model is that the explanatory variables are uncorrelated. If the assumption that no independent variable is a perfect linear function of one or more other independent variables is violated we have the problem of multicollinearity. Since the variance inflation factor (vif) is equal to 3.68 is less than 10, no problem of multicollinerity.

3.8.2 Hetroscedasticity Test

One of the basic assumptions of the classical linear regression model is the variance of each disturbance term ui, is some constant number equal to δ2. This assumption is known as homoscedasticity. If this condition is not fulfilled or if the variance of the error terms varies as sample size changes or as the value of explanatory variables changes, then this leads to heteroscedasticity problem. The study employs the White's heteroscedasticity test.

Symbolically it is written as

$E(ui2)= \delta 2$ (i=1,2,…n).

$V(ui) \neq \delta 2$, then the problem of heteroscadasticity arises

In the same way, from the generalized test for heteroskedasticity also suggests the data is homoscedastic as the probability value for the null hypothesis which is 0.3210 is greater than 0.05.

3.8.3 Autocorrelation Test

Serial correlation arises when the error terms from different time periods are correlated. In time series studies it occurs when the error associated with observations in a given time period carry over into future time periods. Serial correlation also called autocorrelation. Feasible Generalized Least Squares (FGLS) test was used in this study to test the presence of serial correlation in the residuals. As the Probability value of the overall value of Prob > chi2 and Wald chi2 indicated the no serial autocorrelation.

3.8.4 Normality Test

The disturbance term Ui is assumed to have a normal distribution with zero mean and a constant variance. The test of residual normality is very important after estimation in empirical studies. Jarque-Bera (JB) test will be an important residual normality test in this study. It is a joint asymptotic test and the test statistics is calculated from the skewness and kurtosis of the residuals.

$JB= N/6[S2+ (\beta 3-3)2/4]$

Where N is the number of observation; S is the coefficient of skewness, β3is a measure of kurtosis; and the test statistic is $\chi 2$ distributed. The joint test is based on the null hypothesis that the residuals are normally distributed (i.e., S=0 and β3=3). Non rejection of the null hypothesis at the standard critical values indicates normality of the residuals.

Most of the variables data are normal as the prob>chi2 is greater than 0.05.

3.8.5. Stationary Test

The standard classical estimation methods which are used in the applied econometric work are based on a set of assumptions: one of the assumptions is the stationary of variables. A time series data is said to be stationary if its disturbance term has zero mean, constant variance and the covariance between any two –time periods depend only on the distance or lag between the two periods. According to Harris (1995), currently econometrics has been showing that there are problems related to time series data used in the analysis of variables under investigation. This is due to the non-stationary of time series data. To avoid the drawback of wrong implications from the non- stationary regression, the time series data should be stationary. Conducting time series analysis on non-stationary data will result spurious or misleading results. According to Gujarati

(2003), a time series is strictly stationary if all of the moments of its probability distribution are invariant over time.

3.8.6 Unit Root Tests

A test of stationary or non-stationary has been become popular over the past several years. There are several ways of testing for the presence of a unit root: the Levin-Lin-Chu test. Hence, the emphasis here will be on using test to determine the null hypothesis that a series contains a unit root (i.e.it is non-stationary) against the alternative of stationary. In both tests the null hypothesis is that the variable is non-stationary against the alternative stationary. The null hypothesis is rejected only when there is strong evidence at the conventional levels of significant. Performing the test under all three alternatives will identify whether only the intercept or both the trend and intercept are significant.

As p-value = 0.0000 is less than 0.05, we can reject null hypothesis and hence the data is stationary for export performance.

CHAPTER 4. RESULTS AND DISCUSSION

4.1. Descriptive Analysis

The following table shows the summarized information of Ethiopian Leather Industries Export Performance in the years 2002 to 2011 EC with the selected independent variables.

Table 6: Ethiopian Leather Industries Export Performance in the years 2002 to 2011 EC

SN	Year	Subsector	LEXP	TNEV	QSCC	NSEM	LEXF	REER
1	2002	Footwear	6308914	11781228604	1	150	9	141
2	2003	Footwear	9005770	10081220762	1	300	14	121
3	2004	Footwear	11957086	10259406278	1	530	13	123
4	2005	Footwear	19097538	9859361822	2	780	11	139
5	2006	Footwear	30543710	10409577570	3	1080	15	140
6	2007	Footwear	34577565	11354448582	3	1450	17	141
7	2008	Footwear	35028529	20124704467	3	1880	22	158
8	2009	Footwear	38566552	17991533396	4	2330	22	159
9	2010	Footwear	49039054	14522408330	7	2890	22	172
10	2011	Footwear	44206970	13046760109	9	3500	23	162
11	2002	Leather Goods and Garment	138000	11781228604	1	25	5	141
12	2003	Leather Goods and Garment	314562	10081220762	1	60	6	121
13	2004	Leather Goods and Garment	1318360	10259406278	1	107	7	123
14	2005	Leather Goods and Garment	3227739	9859361822	1	192	8	139
15	2006	Leather Goods and Garment	4711869	10409577570	2	282	7	140
16	2007	Leather Goods and Garment	6181845	11354448582	2	402	9	141
17	2008	Leather Goods and Garment	8154382	20124704467	2	532	10	158
18	2009	Leather Goods and Garment	7550754	17991533396	2	687	10	159
19	2010	Leather Goods and Garment	8643503	14522408330	2	917	13	172
20	2011	Leather Goods and Garment	12133198	13046760109	2	1197	13	162
21	2002	Tannery	50633000	11781228604	1	159	24	141
22	2003	Tannery	94499459	10081220762	2	301	25	121
23	2004	Tannery	99724762	10259406278	3	422	25	123
24	2005	Tannery	100462851	9859361822	6	737	25	139
25	2006	Tannery	97692354	10409577570	6	975	29	140
26	2007	Tannery	92102620	11354448582	6	1153	28	141
27	2008	Tannery	73175395	20124704467	6	1650	27	158
28	2009	Tannery	69055941	17991533396	6	2084	27	159
29	2010	Tannery	76088630	14522408330	6	2180	27	172
30	2011	Tannery	64050437	13046760109	7	2459	28	162

The first thing to do when we have a panel data is to summarize the data. In panel data, the summary is a little bit more interesting than just providing mean standard deviation as it's typical. The reason for that is that we need to consider three variations, i.e. the overall, within

and between variations. As it can be seen from the following table, we can see eight (8) variables but the variables id and year are not real variables while they are here to indicate the cross-sectional and time series dimensions of the data respectively. We used the cross-sectional and time dimensions to decide how to classify the panel data. The real variables are the lnlexp which is the dependent variable; lntnev, lnqscc, lnnsem, lnlexf and lnreer are the independent variables.

Table 7: Within and Between Variations of Panel Data

Variable		Mean	Std. Dev.	Min	Max	Observations
Id	Overall	2	.8304548	1	3	N=30
	between		1	1	3	n=3
	within		0	2	2	T=10
year	Overall	2006.5	2.921384	2002	2011	N=30
	between		0	2006.5	2006.5	n=3
	within		2.921384	2002	2011	T=10
lnlexp	Overall	16.66846	1.690231	11.83501	18.4253	N=30
	between		1.685144	14.86109	18.19646	n=3
	within		.9478712	13.64238	18.11883	T=10
lntnev	Overall	23.25349	.2431145	23.01169	23.72521	N=30
	between		0	23.25349	23.25349	n=3
	within		.2431145	23.01169	23.72521	T=10
lnqscc	Overall	.9388508	.7384361	0	2.197225	N=30
	between		.5165897	.4158883	1.448823	n=3
	within		.6010351	.5099719	2.184234	T=10
lnnsem	Overall	6.42779	1.213396	3.218876	8.160519	N=30
	between		.7549665	5.559956	6.933281	n=3
	within		1.038866	4.08671	7.955407	T=10
lnlexf	Overall	2.726922	.5413321	1.609438	3.367296	N=30
	between		.5739632	2.130475	3.27539	n=3
	within		.2566023	2.149245	3.161396	T=10
lnreer	Overall	4.97482	.1121944	4.795791	5.147494	N=30
	between		0	4.97482	4.97482	n=3
	within		.1121944	4.795791	5.147494	T=10

Source: Source:STATA 13 result

The table also summarized that there are N= 30 observations in 3 groups for a total of T=10 years from 2002 to 2011. Next, every real variable was described statistically as follows:

Time-invariant variables like individual id have positive between variations and zero within variations. Firstly, the standard deviation for lnlexp indicates that between variations are more than within variations. The between variations represent the variation between different

subsectors while the within variations indicate the variation within the same subsector over time. This explained there is no big variation in different years in the similar companies.

Secondly, as far as lntnex is concerned, there is no between variation as the total national export value for the same year is equally taken for all of the subsectors. But the within variation is also taken as overall variation.

Unlike for lnlexp, the within variation for lnqscc and lnnsem is more than the between variation which indicates there is increment of number of certified companies in the same sectors. Every subsector has increased the number of quality certified companies and the number of sector specific employees over time.

For lnlexf, the between variation is more than the within variation which means the number of exporting firms between subsector is higher than the number of firms within the same subsector over time. In other words, the number of firms in a subsector is not increased from year to year as there is high gab in the number of firms in different subsectors.

The major problem for the leather sector export performance is the lack of proper data in an organized form. This is because most of the stakeholders such as revenue and custom authority do not have skilled human power in the sector. Companies are not willing to give their full information. As a result information from different stakeholders is not exactly the same.

There are also problems in the value chain of the leather and leather products manufacturing industry. All the raw hides and skins collectors are from the same tribe and this causes market failure in the sector. In the meantime, most people are investing on the full package, i.e. the same investor has tannery, shoe company and leather goods firm, too and this has problem in the sectorial competition. The descriptive analysis is utilized to only briefly show the relationship between dependent and independent variables mentioned on all the specific objectives but the detail relationship was shown on econometric analysis shown below.

4.2. Econometric Analysis

After running both fixed effect and random effect models of pane data analysis; the Hausman test has shown the random effect model is preferable for the data. As per Hausman test, we will not reject the null hypothesis since 0.6977 is greater than 0.05 and we have to use random effect model.

Table 8: Comparing Estimators for panel data models-Fixed and random effect models

LnLexp	Fixed Effects		Random effect	
	Coefficient	**P>|t|**	**Coefficient**	**P>|t|**
Lntnev	-0.6753235	0.270	-.7191926	0.235
Lnqscc	-0.5153106	0.098	-.2819983	0.295
Lnnsem	0.8308644	0.003	.5077902	0.003*
Lnlexf	1.567303	0.038	2.548013	0.000*
Lnreer	-0.9499141	0.575	-0.9127286	0.578
Constant	27.967		27.9854	
R^2 within	0.7863		0.7656	
R^2 between	0.9563		0.9972	
R^2 overall	0.8846		0.9238	
sigma_u	.55588901		0	
sigma_e	.50310857		.50310857	
rho	.54971651		0	

Note: * denote rejection of null hypothesis at 5 percent level.

Source: Authors own calculation using STATA 13

The explanatory variables are jointly significant and 92% variation in Lnlexp is jointly explained by the explanatory variables and the model is accurate as R^2 is more than 0.8.

From t-statistics, only two variables, i.e. lnnsem and lnlexf are solely significant as their P>|t| is less than 0.05.

The result showed that 1 percent increase in sector specific employee; there will be an increment of 0.5% in leather export value. This means increasing sector specific human power in the sector increases the export value by such amount. This result is in line with the empirical findings of Dr.Abdul Ghafoor Awan et el (2013) work that education has significant impact on export performance of leather products of Pakistan to USA market. Both the findings are in line with

the theoretical prediction of Heckser-Ohlin model states a capital-abundant country will export the capital-intensive good, while the labor-abundant country will export the labor-intensive goods. In addition, the human capital development has a positive effect on the development of a nation's economy. As a result the sector specific human power and number of leather and leather exporting firms are chosen as an independent variable to be analyzed in the country context. In addition, despite the Leontef's Paradox, high quality product country has high export performance and the high quality product is produced by educated and skilled human power.

In the same way; the result showed that 1 percent increase in leather exporting firm; there will be an increment of 2.55% in leather export value. This result is in line with empirical findings of Sisay Menji (2010) work that Gross capital formation (proxy for production capacity) has significant impact on export performance.

From the random effect model given on the above analytical table, we can clearly see that number of leather exporting firms and number of sector specific employees have significant positive relationship with leather export performance; on the other hand, real effective exchange rate, quality standard certification and total national export value have insignificant negative relationship with leather export performance of Ethiopia.

The following will be the model equation for the random effect panel data analysis:

.

$$Y = 27.985 - 0.719X1 - 0.282\ X2 + 0.508\ X3 + 2.548X4 - 0.913\ X5 + .50310857$$

While Y = Natural logarithm of leather export performance

X1 = Natural logarithm of total national export value

X2 = Natural logarithm of number of quality standard certified leather companies

X3 = Natural logarithm of number of sector specific employees

X4 = Natural logarithm of number of leather exporting firms

X5= Natural logarithm of real effective exchange rate

In other words, we can directly rewrite the model equation as follows:

$$lnlexp = 27.985 - 0.719lntnev - 0.282\ lnqscc + 0.508\ lnnsem + 2.548lnlexf - 0.913\ lnreer + 0.50310857$$

After the analysis, it has been clearly gotten that there is no significant relationship between quality certification, gross national export value and real effective exchange rate and the Ethiopia

leather industry export performance during 2002-2011; however, these variables are the most concerned variables by higher government officials in frequent meetings.

On the other hand; sector specific human resources and number of leather products exporting firms have positive and significant association with the Ethiopia leather industry export performance during analysis period.

Therefore; to improve the export performance of the Ethiopian leather sector; the government and other stakeholders should work to increase skilled human power in the sector. This may include doing to expand both government and private training centers to give on-job and off-job trainings rather than manufacturing traditionally. In the meantime; there should be a system so that companies shall better recruit and use trained human powers that are trained in different universities and TVET collages so that they manufacture globally competitive leather and leather products. Secondly; the export performance of the sector will increase if number of export firms increases. The data analysis has shown positive and significant relationship between number of firms and export value despite the sectorial investors are blamed of selling their products locally. Therefore; government should work to attract private investors toward the sector by reassuring all facilities and preconditions.

Table 9: Summary of null hypothesis and findings

s/n	Null hypothesis	Econometric model	Condition
1	H0: There is no strong effect of product and service quality standards on the Ethiopia leather industry export performance.	Random effect Panel model	Reject the null hypothesis
2	H0: The sector specific human powers have no strong influence on the Ethiopia leather industry export performance.	Random effect Panel model	Accept the null hypothesis
3	H0: There is no substantial effect of the number of leather products exporting firms on the Ethiopia leather industry export performance.	Random effect Panel model	Accept the null hypothesis
4	H0: The gross national export value has significant effect on the Ethiopia leather industry export performance.	Random effect Panel model	Reject the null hypothesis
5	H0: The real effective exchange rate has effect on the Ethiopia leather industry export performance.	Random effect Panel model	Reject the null hypothesis

CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The main objective of this study is to examine whether number of sectorial employees, total national export value, number of leather products exporting firms, quality standards and real effective exchange rate have impact on the Ethiopia leather industry export value using the panel data analysis.

Before applying the model the necessary tests like unit root test were applied using Levin-Lin-Chu unit-root test. Following stationarity test, model stability test was carried out in the study and the result shows the absence of multicollinearity, serial correlation, heteroscedasticity problem and abnormal distribution of the residuals.

The findings of this study reveal that sector specific human resources and number of leather products exporting firms have positive and significant association with the Ethiopia leather industry export performance during analysis period.

it has been clearly gotten that there is no significant relationship between quality certification, gross national export value and real effective exchange rate and the Ethiopia leather industry export performance during 2002-2011

5.2 Recommendations

Based on the findings of the study the following policy recommendations are suggested:

Ethiopia is challenged with a persistent and wide negative balance of payment by importing huge commodities and exporting very few commodities. In the meantime; there is huge shortage of hard currency in the country.

Therefore policy makers of the country such as the national export council should use export targeting system which will be more optimal for economic growth.

Therefore; to improve the export performance of the Ethiopian leather sector; the government body such as ministry of trade and industry and ministry of science and higher education and other stakeholders should work to increase skilled human power in the sector. This may include doing to expand both government and private training centers to give on-job and off-job trainings rather than manufacturing traditionally. In the meantime; there should be a system so that companies shall better recruit and use trained human powers that are trained in different universities and TVET collages so that they manufacture globally competitive leather and leather products. Secondly; the export performance of the sector will increase if number of export firms increases. The data analysis has shown positive and significant relationship between number of firms and export value despite the sectorial investors are blamed of selling their products locally. Therefore; government should work to attract private investors toward the sector by reassuring all facilities and preconditions. Besides, the government should invest on skill development continuously through benchmarking programs with different middle income countries, expanding different long-term and short-term training and educations supported by technical facilities in the area of leather and leather products.

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APPENDIXES

Appendix A: Multicollinearity Test

vif

Variable	VIF	1/VIF
lnnsem	4.69	0.213106
lnqscc	4.36	0.229229
lnreer	3.73	0.267844
lnlexf	3.22	0.310815
lntnev	2.39	0.417864
Mean VIF	3.68	

Appendix B: White's test for heteroskedasticity

```
. imtest, white
White's test for Ho: homoskedasticity
        against Ha: unrestricted heteroskedasticity
        chi2(20)     =     22.37
        Prob > chi2  =    0.3210
Cameron & Trivedi's decomposition of IM-test
---------------------------------------------------
            Source |       chi2     df      p
-------------------+-------------------------------
  Heteroskedasticity |      22.37     20    0.3210
          Skewness |       6.84      5    0.2331
          Kurtosis |       1.39      1    0.2383
-------------------+-------------------------------
             Total |      30.59     26    0.2438
---------------------------------------------------
```

Appendix C: Autocorrelation Test

xtgls lnlexp lntnev lnqscc lnnsem lnlexf lnreer, corr(ar1)

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoscedastic

Correlation: common AR(1) coefficient for all panels (0.4211)

Estimated covariance = 1 Number of obs = 30

Estimated autocorrelations = 1 Number of groups = 3

Estimated coefficients = 6 Time periods = 10

Wald chi2(5) = 197.20

Prob > chi2 = 0.0000

---

lnlexp	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
lntnev	-.6038987	.4928562	-1.23	0.220	-1.569879 .3620817
lnqscc	-.1291395	.25811	-0.50	0.617	-.6350259 .3767469
lnnsem	.4412462	.1729101	2.55	0.011	.1023486 .7801437
lnlexf	2.313316	.3201295	7.23	0.000	1.685874 2.940759
lnreer	-.2314697	1.281066	-0.18	0.857	-2.742313 2.279374
_cons	22.81403	9.162435	2.49	0.013	4.855989 40.77207

Appendix D: Normality test

. sktest lnlexp lntnev lnqscc lnnsem lnlexf lnreer

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
lnlexp	30	0.0066	0.1106	8.43	0.0147
lntnev	30	0.0435	0.4802	4.62	0.0993
lnqscc	30	0.7978	0.0041	7.32	0.0257
lnnsem	30	0.0665	0.5663	3.94	0.1391
lnlexf	30	0.2552	0.0470	5.12	0.0774
lnreer	30	0.6850	0.0973	3.19	0.2025

Appendix E: Unit Root Test/ Stationary Test

xtunitroot llc lnlexp, lags(1)
Levin-Lin-Chu unit-root test for lnlexp

Ho: Panels contain unit roots Number of panels = 3
Ha: Panels are stationary Number of periods = 10

AR parameter: Common Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included
ADF regressions: 1 lag
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-7.1029	
Adjusted t*	-5.8722	0.0000

Appendix F: Summarized Panel Data

xtsum

```
Variable       |      Mean   Std. Dev.       Min        Max |    Observations
---------------+--------------------------------------------+----------------
id      overall |         2   .8304548          1          3 |     N =      30
        between |                 1          1          3 |     n =       3
        within  |                 0          2          2 |     T =      10
year    overall |    2006.5   2.921384       2002       2011 |     N =      30
        between |                 0     2006.5     2006.5 |     n =       3
        within  |          2.921384       2002       2011 |     T =      10
lnlexp  overall |  16.66846   1.690231   11.83501    18.4253 |     N =      30
        between |          1.685144   14.86109   18.19646 |     n =       3
        within  |          .9478712   13.64238   18.11883 |     T =      10
                |                                        |
lntnev  overall |  23.25349   .2431145   23.01169   23.72521 |     N =      30
        between |                 0   23.25349   23.25349 |     n =       3
        within  |          .2431145   23.01169   23.72521 |     T =      10
lnqscc  overall |  .9388508   .7384361          0   2.197225 |     N =      30
        between |          .5165897   .4158883   1.448823 |     n =       3
        within  |          .6010351  -.5099719   2.184234 |     T =      10
lnnsem  overall |   6.42779   1.213396   3.218876   8.160519 |     N =      30
        between |          .7549665   5.559956   6.933281 |     n =       3
        within  |          1.038866    4.08671   7.955407 |     T =      10
lnlexf  overall |  2.726922   .5413321   1.609438   3.367296 |     N =      30
        between |          .5739632   2.130475    3.27539 |     n =       3
        within  |          .2566023   2.149245   3.161396 |     T =      10
lnreer  overall |   4.97482   .1121944   4.795791   5.147494 |     N =      30
        between |                 0    4.97482    4.97482 |     n =       3
        within  |          .1121944   4.795791   5.147494 |     T =      10
```

Appendix G: Fixed Effect Model Analysis

```
. xtreg lnlexp lntnev lnqscc lnnsem lnlexf lnreer,fe

Fixed-effects (within) regression               Number of obs      =        30
Group variable: id                              Number of groups   =         3
R-sq:  within  = 0.7863                         Obs per group: min =        10
       between = 0.9563                                        avg =      10.0
       overall = 0.8846                                        max =        10
                                                F(5,22)           =     16.19
corr(u_i, Xb)  = 0.5948                         Prob > F          =    0.0000

------------------------------------------------------------------------------
      lnlexp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      lntnev |  -.6753235   .5971306    -1.13   0.270    -1.913697    .5630496
      lnqscc |  -.5153106   .2983129    -1.73   0.098    -1.133974    .1033525
      lnnsem |   .8308644   .2528339     3.29   0.003     .3065191     1.35521
      lnlexf |   1.567303   .7114252     2.20   0.038     .0918977    3.042709
      lnreer |  -.9499141   1.667552    -0.57   0.575    -4.408206    2.508378
       _cons |     27.967   10.52593     2.66   0.014     6.137561    49.79644
-------------+----------------------------------------------------------------
     sigma_u |  .55588901
     sigma_e |  .50310857
         rho |  .54971651   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(2, 22) =      1.47                 Prob > F = 0.2508

. estimate store fixed
```

Appendix H: Random Effect Model

```
xtreg lnlexp lntnev lnqscc lnnsem lnlexf lnreer,re


Random-effects GLS regression                   Number of obs     =        30
Group variable: id                              Number of groups  =         3
R-sq:  within  = 0.7656                         Obs per group: min =        10
       between = 0.9972                                        avg =      10.0
       overall = 0.9238                                        max =        10
                                                Wald chi2(5)      =    290.88
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000
------------------------------------------------------------------------------
      lnlexp |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      lntnev |  -.7191926   .6061008    -1.19   0.235    -1.907128    .4687431
      lnqscc |  -.2819983   .2694176    -1.05   0.295    -.8100471    .2460505
      lnnsem |   .5077902   .1700488     2.99   0.003     .1745008    .8410797
      lnlexf |   2.548013   .3156158     8.07   0.000     1.929417    3.166609
      lnreer |  -.9127286   1.640444    -0.56   0.578     -4.12794    2.302483
       _cons |    27.9854   10.44758     2.68   0.007     7.508528    48.46228
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  .50310857
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimate store random
```

Appendix I: Hausman Test

. hausman fixed random

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	random	Difference	S.E.
lntnev	-.6753235	-.7191926	.0438691	.
lnqscc	-.5153106	-.2819983	-.2333123	.128081
lnnsem	.8308644	.5077902	.3230742	.1871052
lnlexf	1.567303	2.548013	-.9807097	.6375833
lnreer	-.9499141	-.9127286	-.0371855	.2994549

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 3.01

Prob>chi2 = 0.6977

(V_b-V_B is not positive definite.

Appendix J: The Panel Data Used for the Study

SN	Year	Subsector	LEXP	TNEV	QSCC	NSEM	LEXF	REER
1	2002	Footwear	6308914	11781228604	1	150	9	141
2	2003	Footwear	9005770	10081220762	1	300	14	121
3	2004	Footwear	11957086	10259406278	1	530	13	123
4	2005	Footwear	19097538	9859361822	2	780	11	139
5	2006	Footwear	30543710	10409577570	3	1080	15	140
6	2007	Footwear	34577565	11354448582	3	1450	17	141
7	2008	Footwear	35028529	20124704467	3	1880	22	158
8	2009	Footwear	38566552	17991533396	4	2330	22	159
9	2010	Footwear	49039054	14522408330	7	2890	22	172
10	2011	Footwear	44206970	13046760109	9	3500	23	162
11	2002	Leather Goods and Garment	138000	11781228604	1	25	5	141
12	2003	Leather Goods and Garment	314562	10081220762	1	60	6	121
13	2004	Leather Goods and Garment	1318360	10259406278	1	107	7	123
14	2005	Leather Goods and Garment	3227739	9859361822	1	192	8	139
15	2006	Leather Goods and Garment	4711869	10409577570	2	282	7	140
16	2007	Leather Goods and Garment	6181845	11354448582	2	402	9	141
17	2008	Leather Goods and Garment	8154382	20124704467	2	532	10	158
18	2009	Leather Goods and Garment	7550754	17991533396	2	687	10	159
19	2010	Leather Goods and Garment	8643503	14522408330	2	917	13	172
20	2011	Leather Goods and Garment	12133198	13046760109	2	1197	13	162
21	2002	Tannery	50633000	11781228604	1	159	24	141
22	2003	Tannery	94499459	10081220762	2	301	25	121
23	2004	Tannery	99724762	10259406278	3	422	25	123
24	2005	Tannery	100462851	9859361822	6	737	25	139
25	2006	Tannery	97692354	10409577570	6	975	29	140
26	2007	Tannery	92102620	11354448582	6	1153	28	141
27	2008	Tannery	73175395	20124704467	6	1650	27	158
28	2009	Tannery	69055941	17991533396	6	2084	27	159
29	2010	Tannery	76088630	14522408330	6	2180	27	172
30	2011	Tannery	64050437	13046760109	7	2459	28	162
Source			MoTI	MoFEC	ELIDI	ELIDI	ELIDI	NBE