American Journal of Research in Business and Social Sciences
Vol. 2(2), pp. 1-13, March, 2022

ISSN: 2768-5462
https://www.mprijournals.com/

Full Length Research

Determinants of Export Performance of Honey Industry in Ethiopia

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Accepted 28th February, 2022

Abstract: The study was conducted to identify the determinants of export performance of honey industry in Ethiopia and to establish trends of the Ethiopian honey export volume and honey export value. Specifically, the study aimed to assess factors that determine the export performance of existing Ethiopian honey exporters, to identify the extent at which the determinants have an effect on performance of Ethiopian honey export industry, and to assess the trends of Ethiopian honey export in volume and value. In the study a descriptive and explanatory research designs were adopted and the sampling technique (non-probability-purposive sampling technique) was used to select sample of 96 sample size from 24 Ethiopian honey exporting firms. The data collection methods; primary and secondary methods were applied to collect the data. The analysis of the secondary data showed that the trends of the Ethiopian honey export volume and honey export value showed an average decline rate of 53% and 51.5% respectively during 2011-2020. The result of primary data indicate that domestic market price and application of agrochemicals on crops, and adulteration mixing honey with other products negatively affect honey export performance with (mean 4.30 and Std dev 0.645), and (mean = 4.43 and std dev =.597), and (mean= 4.48 and std dev= .525) negatively affect honey export performance. Honey marketing legal framework revealed mean value (mean = 4.43, std dev= .637), laboratory service (mean 4.36 and std dev = .636), storage and packaging materials with (mean = 4.33 and std dev= .633) by suppliers and producers, financial credit services (mean= 4.10 and Std dev = .640), and supply of honey (mean= 4.31 and mean= .675) positively affect honey export performance in Ethiopia. The study recommends Ethiopia to have mandatory honey standard, technical supervision and follow up must be strong to reduce adulteration of honey and enhance quality as it is the major criteria of export standard, establishment of new policies on application of agrochemical crops and pesticides, creating suitable condition to produce honey storage and packaging materials in the country, increase production volume to stabilize domestic market price and increase export performance.

Keywords: Ethiopia: Export Performance: Market: Honey Export Volume: Honey Export Value

Cite This Article As: Gezahagn, D. M. (2022). Determinants of Export Performance of Honey Industry in Ethiopia. American Journal of Research in Business and Social Sciences, 2(2): 1-13.

1.0 Background of the study

Ethiopia has high potential of producing honey. It stands first in Africa and tenth in the world in honey production (Legesse, 2014: Ababor & Tekle, 2018). The country is endowed with varied ecological and climatic conditions and it is also home to some of the most diverse flora and fauna in Africa. Its forests and woodlands contain diverse plant species that provide surplus nectar and pollen to foraging bees (Guyo & Legesse, 2015; Tekle & Weldeyohanis, 2016; Sahle et al., 2018). The ideal climatic conditions and diversity of floral resources allow the country to sustain around 10 million honeybee colonies, which is the largest honey bee population in Africa (Ababor & Tekle, 2018). Bee beekeeping is a longstanding practice in Ethiopia and is an integral part of the Ethiopian agriculture. Beekeeping has manifold benefits in Ethiopia. It is a source of foreign currency through the export of honey and beeswax (W/Giorgis et al., 2015: Yadeta, 2016). Beekeeping is a minimal investment and pro-poor agricultural sub-sector. For poor and vulnerable communities, even for those without access to land, small scale beekeeping has made a significant contribution to their livelihood security. Beekeeping is a source of cash income for households (Gebretsadik & Negash, 2016), enhances food and nutrition security and reduces poverty (Legesse, 2014), generates an employment (Belie, 2009: Sahle et al., 2018), and provides pollination service (Gebretsadik & Negash, 2016). Based on the technology advancement of beekeeping practice, there are four different types of honey production systems (beekeeping practices) in Ethiopia, namely traditional forest beekeeping, traditional backyard beekeeping, transitional and modern beekeeping (Yadeta, 2016: Ababor & Tekle, 2018).

1.2 Statement of the Problem

The issue of concern as a nation with regard to the Ethiopian honey export is that despite the long standing practice of bee keeping in Ethiopia, huge honey production potential of the country, the recognition the beekeeping sub-sector is getting by government and non-governmental organizations and also the particular interest of the government to enhance the foreign earning from honey, the annual average annual honey export volume is low and only about 12% of the actual average annual honey production of the country during the period 2011-2020 (ECC). According to ECC (2020) report, the trends of import and export of honey, the amount of exported honey to the global market is greater than the amount of honey imported to the country. The main buyers of Ethiopian honey are Germany, United Kingdom, Sudan, Norway, Saudi Arabia, and Yemen. The main buyers of beeswax are Germany, Japan, United States, United Kingdom and Italy. Despite of the big market for honey and beeswax, producers are less exposed to quality standards suitable for domestic or external market. As a result, a number of intervention activities have been carried out to face the challenges there by developing the subsector, especially honey and other bee products. According to EMDIDI, 1300 tons of honey was planned to generate 4.6 million USD, and the performance was31% (444 tons and 1.4 million USD) in 2017. In 2020, the country panned to export 479 tons and generate 1.32 million USD, but the performance was low 150.09 tons and 0.52 million USD. The honey export performance of Ethiopia during 2017 to 2020 was declined by 62% (0.88 million USD).

Desalegn (2012) reported that past interventions have been production focused and neglected the wider value chain context, hence the impact of their investments have been negligible. The different studies on honey value chain analysis conducted in different parts of the country (Mohammed, 2016: Jagiso et al., 2018) aimed at identifying value chain actors and functions and studied mainly the domestic honey marketing, but they did not gave attention for export market. According to the CSA and ECC (2018) the annual low honey production capacity of Ethiopia, the annual honey export capacity of the county is also low. The average annual honey export volume was only about 11% of the actual average annual honey production of the country during the period 2011-2020. The range of variation of the percent share of the annual honey export from the annual honey production was between the lower of about 2% in 2019 and the highest of about 17% in 2013. Shiferaw et al. (2016) and Sahle et al. (2018) also reported that low supply and quality of honey negatively affect Ethiopian honey export. But the studies failed short to establish the root causes of the export problems they reported across the honey export. Until the honey reaches to the honey exporters and consumers as final product of the chain, different activities, which are carried out at the levels of functions and support functions of the chain (starting from the beekeeping input supply) can cause honey supply and quality problems and involve high cost, which in turn attribute to the Ethiopian honey export challenges.

The domestic honey marketing has been widely studied in different parts of the country and honey marketing constraints have been identified (Abebe, 2009; Shenkute et al., 2012; Bayenes, 2013;Yadeta, 2016; Ababor & Tekle, 2018).However most of these studies and reviews on Ethiopian honey export industries were based on desk reports and reviews which are made by using rapid assessments, observations, discussion and experience sharing with stakeholders and compiling different reports of the sector and the findings of these studies may not be applicable to the honey export industries in Ethiopia. Therefore these were the main reasons why the researcher motivated to conduct this study mainly focusing on determinants of export performance of honey industry in Ethiopia.

1.3 Research Hypothesis

This study contributed to the body of knowledge by identifying the challenges of export performance of Ethiopian honey industries. To address the above problems the following hypothesis are set.

H1: Domestic market price has a negative effect on Ethiopian honey export performance.

H2: Legal framework and Ethiopian honey export performance have a positive relationship.
H3: Laboratory service has a negative effect on honey export performance.
H4: packaging and Storage facilities and honey export performance have positive relationship.
H5: Chemical application on crops affects honey export performance negatively.
H6: Absence financial and credit facility has a negative effect on Ethiopian honey export performance.
H7: Honey supply and honey export performance have positive relationship.
H8: Adulteration oh honey product has a negative effect on honey export performance

1. 4. Objective of the study

1. 4.1. General Objective the study

The main objective of this study was to investigate the determinants of export performance of Honey industry in Ethiopia.

1. 4.2. Specific objectives of the study

The specific objectives of the study were:

- To assess the trends of Ethiopian honey export in volume and value.
- To identify factors that determine the export performance of Ethiopian honey exporters;
- To examine the extent at which the factors that determine honey export companies affect Ethiopian honey export performance.

1.5 Significance of the study

The findings and knowledge that were generated from this study contribute to the better understanding of the factors affecting Ethiopian honey export performance, and helps to formulate appropriate policies, design strategies and prepare programs and projects to sustainably address the export challenges, and significantly enhance honey export of Ethiopia for the benefit of the Nation. Further, by sustainably improving the export of honey from Ethiopia, based on the findings of this study, the claimed benefits of beekeeping (employment generation, source of income, source of foreign currency and ecological services) can be realized given the huge and untapped honey production potential of Ethiopia. It enables owners and Manager of honey export industries to know factors influencing the performance of their company and take mitigation. The study provides information for honey export industries which are currently under construction in order to understand and prepare themselves for the likely factors which will determine their performance. The study's result might also initiate other researchers to conduct different research works from different perspectives, which may contribute for strengthening of the export performance of Ethiopian honey in the international market.

2. Review of Related Literature

According to the Trade Map data (2016, 2018), total world honey export volume was 637 thousand tons in 2016 and 689 thousand tons in 2018, with an increase of 52 thousand tons (8% increase) in 2018 compared with that of 2016. According to FAOSTAT (2018), the world total production of honey was estimated 1,852,598 tonnes in 2019. Africa shares 10.25% (189,876) of the total production of honey. When we look the export performance and honey trade in the world, 628,202 tons and 1,964,689,000 value of USD was exchanged in 2019. From this, only 1% or 5,752 tons and 14,247,000 USD were exported from African continent (FAOSTAT, 2019). The corresponding world honey export values were 2, 230 million USD in 2016 and 2, 232 million USD in 2018. The increase in world honey export value was 2 million USD (0.09 % increase) in 2018 compared with that in 2016. Based on the average annual honey export volumes of 2014-2016 (FAOSTAT, 2018) the top five honey exporting countries in the world were: China, Argentina, Vietnam, Ukraine and Mexico, ranging from average annual export volume of 134 thousand tons of China to 37 thousand tons of Mexico. According to the data of ECC (2016), the Ethiopian annual honey export volume totalled to about 459 tons valued in thousand at about 1,623 USD and about 421 tons in 2017 valued in thousand at about 1,668 USD. The shares of honey export volumes from the annual country's honey production during 2016 and 2017 are about 1% and 0.9% respectively. The major importing countries include Sudan, Norway, Germany, France, United Kingdom and Somalia.

Based on Ethiopian national export plan, 1300 tons of honey was planned to generate 4.6 million USD, and the performance was31% (444 tons and 1.4 million USD) in 2017. In 2020, the country panned to export 479 tons and generate 1.32 million USD, but the performance was low 150.09 tons and 0.52 million USD. The honey export performance of Ethiopia during 2017 to 2020 was declined by 62% (0.88 million USD). Guyo & Legesse (2015); Yadeta (2016); Ababor & Tekle (2018) in their review papers have reported that the honey price in the domestic honey market is mostly advanced than the international honey price, which makes honey export less cost-effective in Ethiopia. Due to this several honey exporting companies have dropped out of the international honey trade and are now targeting the local markets which are still attractive. But there is no mention in the review papers whether or not the high domestic honey price was the only reason for the exporters to drop out of the international honey trade and targets the local markets. As stated by Desalegn (2012), the past interventions have been production focused and neglected the wider value chain context, hence the impact of their investments have been negligible. Another constraining factor to expand the Ethiopian honey export to EU countries (which have large and lucrative honey market) was that Ethiopia was not eligible to export to the EU until 2008. Lack of effective market promotion in the market in honey products, there is lack of competition in the

world market and the other reason that affects the honey export and market is the honey price at the domestic market is mostly higher than the international honey price, which makes honey export less profitable in Ethiopia (Assefa, 2014).

Most of the time, the exposure of Honey Bees to chemicals is through ingesting of residues from the pollen and nectar of plants. When insecticides, herbicides and fungicides are applied to crops, they reach the bees through pollen, nectar and through the air, water or soil (Oliver, 2012, cited by Bett, 2017). The author stated that this occurs when bees are on the flowers at the time of application of the insecticide and the bees die instantly. Some other types of pesticides allow the bees to return home and then they die. There are certain pesticides that do not have any effect on the adult honey bees but cause damage to young and immature bees.
According to Legesse (2014) the whole domestic honey market lacks proper structure and legality. It is of lengthy chain of actors that widens the access of producers to bigger and better paying markets. So, the beekeepers complain the business as not rewarding and even lacking market for their product, while the consumers see the ever increasing price of honey as unfair. In many cases, adulteration of honey has been a frustrating factor for both the producers and legal buyers and sellers as traceability and accountability of sellers is hardly possible (Yadeta, 2016). However, according to the CSA data (2017), the actual annual honey production of Ethiopia was about 48, 000 tons, which is only about 10% of the country's annual honey production potential. Annual average honey production of the country totalled about 49, 000 and 51,000 tons in 2015 and 2016 respectively (CSA, 2015 and 2016), both yields still only about 10% of the annul honey production potential of the country. It is evident from these yield figures that the country's huge honey production potential has not yet been properly utilized, which is an issue of concern in the face of food and nutrition insecurity, poverty in the country as well as chronic shortage of foreign currency earnings from export.

According to Meklit (2017), challenges of honey export are, lack of training, lack of information about the international market, illegal trade to the neighboring countries, also there is low level of government support to the sector ,there is also lack of participating in different trade fairs to promote their product ,and also there is lack of government support to promotion opportunity this factor lid to limit the expansion of honey export and it shows there is high marketing challenge in the export of honey. Tekeba & Yeshitila (2018) stated in their Review of Ethiopia's Global Position in Honey and Other Bee Products Production and Marketing: Analysis of Sectoral Opportunities and Limitations; Lack of mandatory standards resulting in adulteration and other fraud, Limited products for the market, Poor Market infrastructure and linkage, Limited technical knowhow coupled with lack of inputs and technology, Absence of branding, Absence of internationally accredited laboratory facilities for residue monitoring, Illegal export of honey across the borders, too general extension service, traditionalism in the sector, limited research and development capacity to promote honey products diversification, Packing related problems, limited regulatory functions including testing and certifying laboratories, and Weak organizations representing the interests of beekeepers, producers and buyers are the major challenges of honey production and export in Ethiopia.

According to Shenkute et al. (2012), in the study areas, in three zones namely Kaffa, Sheka and Bench-Maji zones of Ethiopia, the honey containers mostly used by the sample respondents included plastic sack, tin/barrel, clay/log pot, animal skin, gourd pot and plastic containers. The respondents explained that these containers helped to store honey for a long time and are air tightened. Now a day's honey export companies are not working by their full potential. The reason behind include absence of market legal frame work, Seasonal availability of honey, lack of standardized packaging materials manufacturing industry, absence of regular inspection, Adulteration problem and high price of honey in local market (Kebede et al., 2018). In Sileshi (2018) study, his thesis titled "Honey Quality, Marketing System and their Impact on Domestic and Export Market. The Case of Gozamen District, East Gojjam Zone, Amhara Region" identified that traditional packaging, transportation and storage materials (use of fertilizer bags and trading & storing honey with butter) lead to honey quality deterioration. Therefore, it is advisable to practice the existing honey quality standards in the domestic market so as to establish supply of quality honey in the market chain. According to a review paper on honey production and marketing in Ethiopia by Yadeta (2015), the whole domestic honey market of Ethiopia lacks proper structure and legality. It is of lengthy chain of actors that widens gap for the access of producers to bigger and better paying markets. According to the author the market faces challenges like smuggling that pushes the legal actors out of the market.

3.0 Research Methodology

3.1 Description of the study area

The study is a national level study conducted in Ethiopia. Ethiopia is located in the North Eastern part of the African continent or what is known as the "Horn of Africa." The country is bounded by Sudan on the west, Eritrea and Djibouti on the northeast, Somalia on the east and southeast, and Kenya on the south. Ethiopia lies between the Equator and the Tropic of Cancer, between the 30 N and 150N Latitude or 330 E and 480 E Longitude. The country occupies an area of approximately 1,127,127 square km., which is slightly less than twice the size of Texas. The total land area is 1,119,683 square km and the area occupied by water bodies is 7,444 sq. km. The Ethiopian border is 5,311 km long. Ethiopia has the largest bee population in Africa, and in honey production the country stands first in Africa and tenth in the world. Therefore, this study was focused on identifying determinants of export performance of Ethiopian honey industry. It also focuses on establishing the trends of Ethiopian honey export volume and value during 2011- 2020.

3.2. Population and Sample Size

3.2.1 Population of the study

The target population for the study was the licensed Ethiopian honey exporting companies and active since last five years in Ethiopia as of 2019. Before conducting the study, the first measure taken is investigating into the target population to be studied, to have a clear map of the target population. According to the information from the responsible experts in the MoT, the type of trade license, which the ministry issues are "honey and honey products producer and exporter". A holder of this kind of license is eligible to either produce or export honey and honey products, or to produce and export honey and honey products. Because of the type of the trade license, which the MoT issues related to honey, its central database does not hold disaggregated data on honey exporting firms. The only available data of licensed Ethiopian honey exporting firms as five (5) years data (2015-2019), from the Export Promotion Directorate, under the Ministry of Trade. According to these data, the total number of the honey exporting firms in Ethiopia during that period was Seventy (70). Thus, in this study, the target population of the Ethiopian honey exporters included the 70 honey exporting.

3.2.2. Sample Size

But only 24 are selected based on their export performance and experience. Four (4) managers or experts (general manager, marketing manager, production manager and Finance manager) were taken from each honey exporters that are totally 96 people. Therefore, there were96 sample sizes selected as respondents from 24 honey export industries.

3.3. Sampling techniques

Discussions were held with relevant officials and experts in the and Ethiopian Honey and Beeswax Producers and Exporter Association (EHBPEA) and Ethiopian Meat and dairy industry development institute (EMDIDI) to seek information that helped to select sample honey exporting firms, which can provide adequate information for the study. Accordingly, non probability type of sampling, purposive sampling technique was used to select the target sample.

3.4. Data source and data collection tools

3.4.1 Data source

This study was used both primary and secondary data source were used. The primary data was from semi-structured questionnaire distributed to honey exporters while reports, published and unpublished documents were secondary data sources. A questionnaire data collection method will be employed in the study to collect the primary data of the study. The questionnaire used to collect the data was developed by the researcher. The researcher did extensive review of previous relevant studies to select the questions and develop the questionnaire. The questionnaire was sent electronically through email message to the respondents purposely selected honey exporting firms, together with supportive letters from College of Business and Economics Arsi University. The source of the secondary data used in this study were Ethiopian Central Statistics Agency and Ethiopian Customs Commission, which were considered as the sources of reliable and valid national data. Ten years of export data, 2011-2020was used in the study with the intention to establish recent trends of Ethiopian honey export volume and value. It was used to examine challenges of Ethiopian honey export on one hand and observe the trends of Ethiopian honey export on the other hand.

3.4.2 Data Collection Tools and Procedure

The questionnaire was divided into two sections. The first section contained the general information characteristics of the respondents were requested to provide information about their education level, positions and address. The second section of the questionnaire was designed to enable the researcher to gather information about determinants of export performance of honey exporters in Ethiopian. For all questionnaire included in section two, the respondents were requested to indicate their feeling on a five point Likert scale type to measure weighted as follows: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5= strongly agree. But, while making interpretation of the results of mean and standard deviation the scales are reassigned as follows to make the interpretation easy and clear. 1 - 1.8= Strongly Disagree, 1.81 – 2.6 = Disagree, 2.61 – 3.4= Neutral, 3.41 – 4.20= Agree and 4.21 – 5 = Strongly Agree.

3.5. Data Analysis Techniques

The collected primary raw data were edited to detect errors and omissions and to correct these when possible. They were then coded and numerals were assigned to answers so that responses can be put into a limited number of categories or classes. Further, classification of the data is made to reduce the data into homogeneous groups in order to draw meaningful relationships. Tabulation of the data is also performed as appropriate to summarize and display the raw data in compact form for further analysis. The secondary data were tabulated as required and put in a way ready for analysis. Descriptive and Inferential analysis methods were applied in this study to analyze the processed primary and secondary data. SPSS software program version 23was used in the analysis. The major statistical measures used in the analysis of the study data include frequency, percentage, mean, mean deviation and score. The model used in this study was Linear Multiple Regression model to identify extent determinants of export performance

of Ethiopian honey exporters. This means to identify strength effect of the independent variables have on a dependent variable (export performance of honey exporters). The model was adopted from different studies conducted on the same area. The model is shown below:

Ei= f (**β**i) + ε

Then **Ep= α +β1 (DP) + β2 (A) + β3(PS) + β4 (HS) +β5 (LF) +β6 (AF) +β7 (CA+β8 (LS) + ε**

4. 0 Results and Discussion

4.1. Descriptive Statistics

4.1.1. Trend of the Ethiopian Honey Export Volume, 2011-2020

The results and discussions of the analysis of the secondary data cover, trends of the Ethiopian honey export volume and export values during 2011-2020. It also covers the Ethiopian honey export destinations during the same period. The sources of the secondary data used for the study are the Ethiopian Central Statistics Agency (CSA) and the Ethiopian Customs Commission (ECC). Figure 4.1 shows, the trend of Ethiopian honey export volume from 2011-2020. The results show that the general trend of the Ethiopian honey export volume was on a sharp decline.

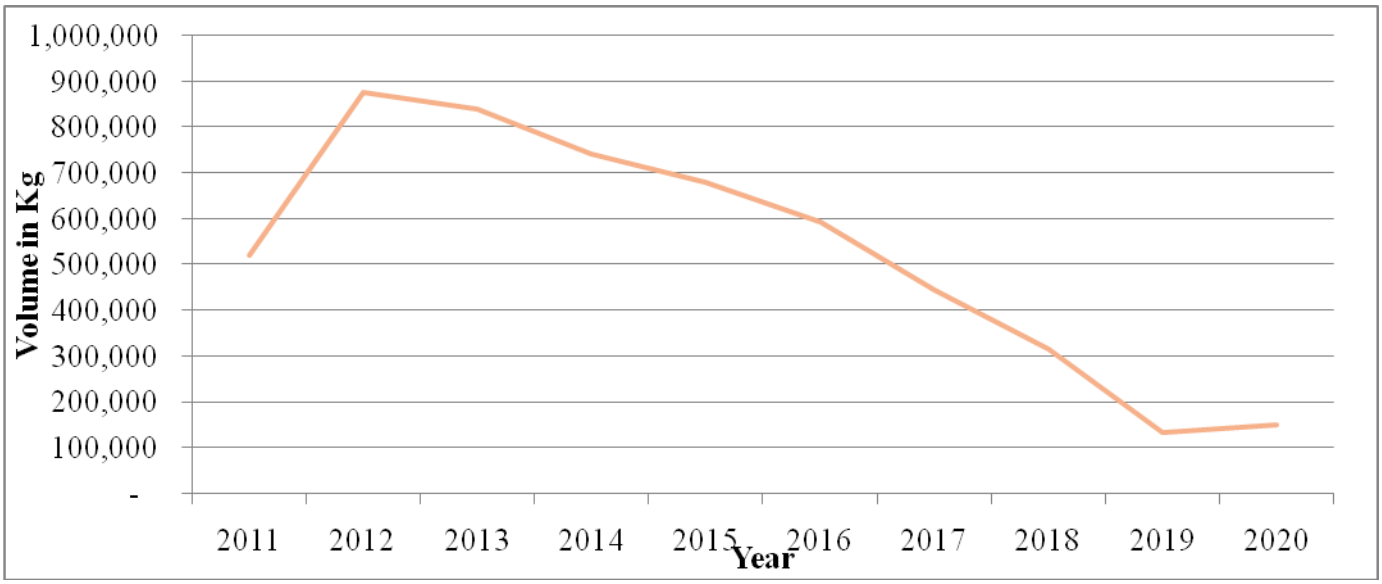

Figure 4.1 Trend of the Ethiopian Honey Export Volume, 2011-2020
Source: CSA and ECA, 2021

The honey export volumes of 2011 to 2013, there was a sharp increase. Then after the honey export volume continued declining sharply at an alarming rate and hit the lowest honey export volume level in 2019 since 2011. The minimum honey export volume was about 134.4 tons in 2019 and the maximum honey export volume was 876.6 tons in 2013 with a mean of816.5tons (the average of 2011 and 2016). Over these years, the Ethiopian honey export volume decreased at an average annual rate of 53%. The findings of this study clearly show the urgent need of government and the private sector to develop and enhance the honey export. The issue is what the root causes for these alarming declining rates of the honey export are. Reasons for this are not well established. This study has identified the factors affecting of Ethiopian honey export performance, which when addressed would help to enhance the Ethiopian honey export.

4.1.2. Trend of the Ethiopian Honey Export Value, 2011-2020

The trend of the Ethiopian honey export value during the period of 2013-2020 is shown in Figure 4.2. As illustrated in figure 4.2, the trend of Ethiopian honey export value sharply increased in 2013 and then after almost sharply declined from the year 2013 to 2020. The export value hit the lowest level in the year 2019. The minimum honey export value is, USD 260 thousand, the maximum is USD 2, 918 thousand, with the mean of, USD 2,017. Over these years, the honey export value, decreased with an annual average rate of 52%. The trend of Ethiopian annual honey export value is about the same to the trend of Ethiopian annual honey export volume (Figure 4.1).

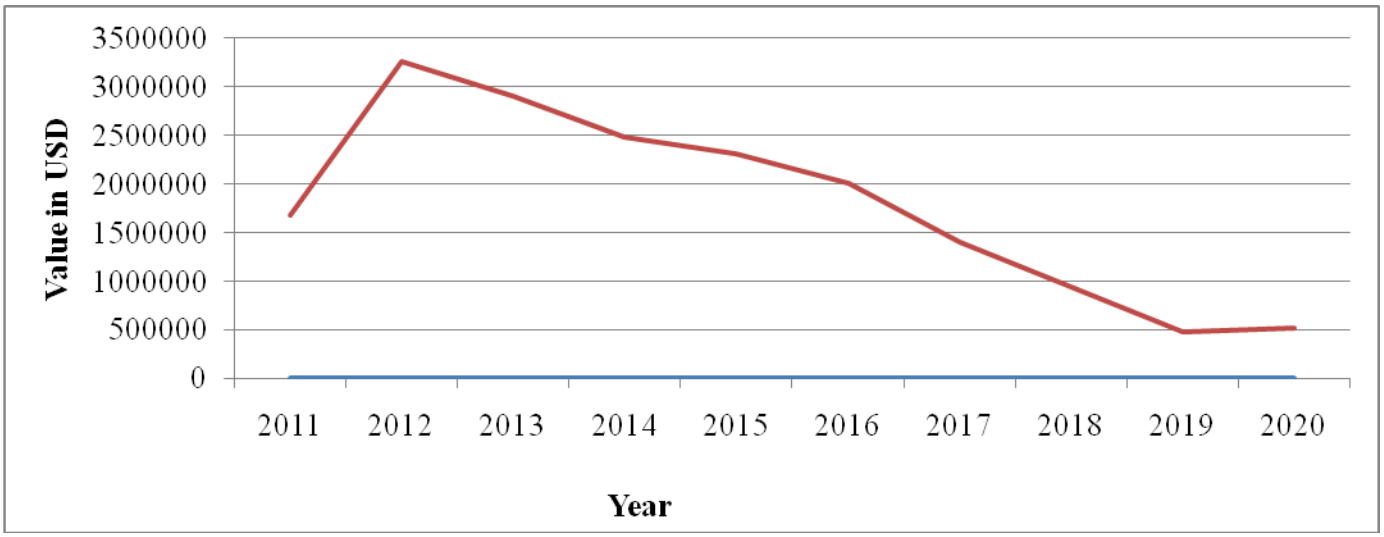

Figure 4.2 - The trend of the Ethiopian honey export value during the period of 2011-2020
Source: CSA and ECA, 2021

It is likely that when honey export volume decreases (Figure 4. 1), honey export value also decreases as illustrated in Figure 4.2. It is also evident that the declining rate of the honey export volume (Figure 4.1).The challenges for Ethiopian honey export, identified in this study are also contributing factors for the sharply declining trend of honey export value.

4.1.3. Ethiopian Annual Honey Export Volume and Value by Destination, 2011-2020

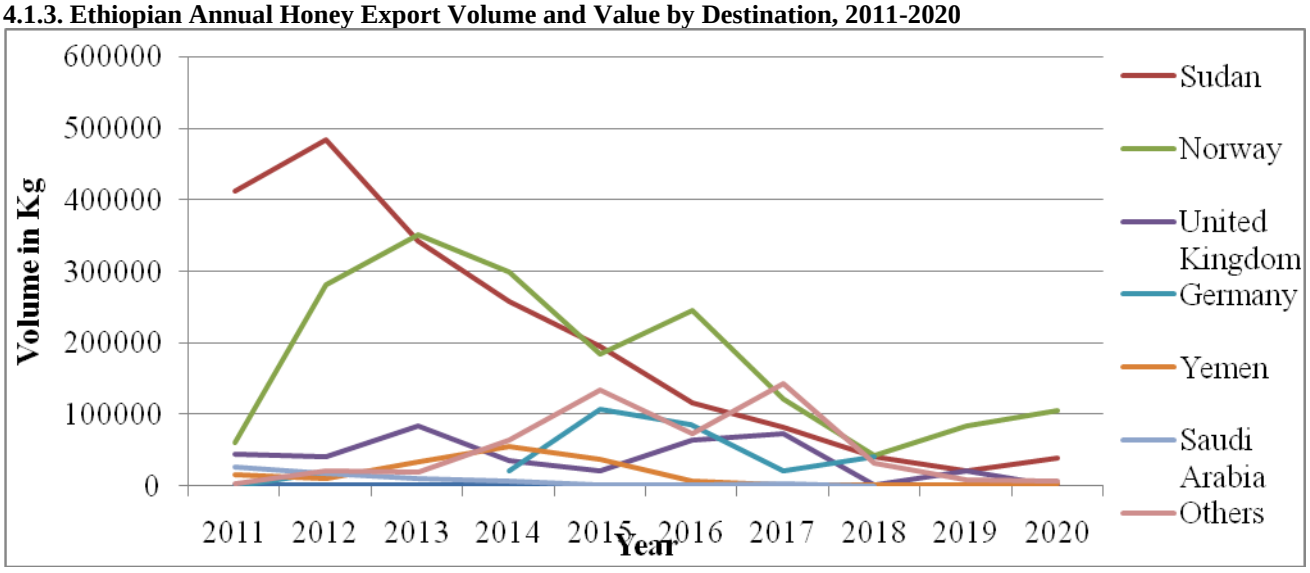

Figure 4.3 illustrates the destination of Ethiopian honey volume exported during, 2011-2020.
Source: CSA and ECC

Sudan, Norway, United Kingdom, Germany, Yemen, and Saudi Arabia were the major Ethiopian honey importers. Since 2013, Norway was the leading honey importer except 2014, followed by Sudan. Sudan imported the highest honey volume in 2011, 2012 and 2014. As illustrated in Figure 4.3 the general trend of the honey import of all countries was on the decline. All countries hit their lowest level of honey volume import in the year 2018. The trend of the Ethiopian annual honey export volume (Kg) by destination is about the same to that of trend of Ethiopian annual honey export volume. The sharp declining trend as illustrated in Figure 4.3 is a concern for Ethiopia, which is striving to diversify export commodities and enhance foreign earnings. While the reasons for the declining rate of honey export volume to those countries are not well document, it is clear that the declining rate of the Ethiopian honey export volume illustrated in Figure 4.2 is likely to have had an impact.

4.2. Determinants of Ethiopian Honey Export performance

Descriptive analysis was planned to describe factors affecting export performance of Ethiopian honey exporters by using mean and standard deviations. The responses of the respondents for the variables indicated below were measured on five point Likert scale

with: 1= strongly disagree, 2= disagree, 3 = neutral, 4= agree and 5= strongly agree. But, while making interpretation of the results of mean the scales were reassigned as follows to make the interpretation easy and clear. 1–1.8= Strongly Disagree, 1.81–2.6 = Disagree, 2.61–3.4= Neutral, 3.4–4.20= Agree and 4.21–5 = Strongly Agree (Best, 1977, as cited by Yonas, 2013). During the survey, the honey exporting firms were asked to respond to relevant questions, and identify honey export performance challenges they encountered across the different aspects, with the aim of establishing the honey export challenges. The following determinants of honey export performance were examined during the survey.

Table 4.1Determinants of honey export performance in Ethiopia

List of factors	N	Mean	Std. Deviation
Domestic market price factor	96	4.30	.645
Legal framework factor	96	4.43	.637
Laboratory service factor	96	4.36	.636
Financial credit facility	96	4.11	.648
Agrochemical factor	96	4.43	.597
Storage and packaging factor	96	4.33	.663
Honey supply factor	96	4.31	.675
Adulteration factor	96	4.48	0.525

Source: Survey Data, 2021

The table above result describes domestic price of honey as determinant of export performance. Majority of the respondents are strongly agree with price of honey in domestic market as export performance factor as overall mean was(M=4.30, SD=.645).From this result it can infer that domestic market price is problem to increase the honey export performance in Ethiopia. The table above describes absence of legal framework for honey marketing as export performance determinant. Majority of respondents were strongly agree with absence of legal framework negatively affects export performance of honey as the overall mean was (M= 4.43, SD=.637).The findings indicate that exporting honey to countries with stringent import regulations require testing the honey in internationally accredited, and absence of laboratory service negatively affects the export performance of honey industries in Ethiopia (M=4.36, SD=.636). The finding was supported by Gebru (2019) indicate that exporting honey to countries with stringent import regulations require testing the honey in internationally accredited laboratory. When the sample respondents were asked where they test the honey they export 70% replied they use internationally accredited laboratories abroad.

As shown in table 4.1the majority of the respondents agree with the statements; there is a problem of financial credit service (M=4.10, SD=.640). The findings indicate that financial limitation is a challenge for the honey exporters either to strengthen or expand their firms. The result was supported by the study undertaken by Gebru (2019) that the respondents who asked if there is financial credit service problem, 71 % replied that the credit crevice was not adequate and 29% reported the credit service was adequate. As it can be seen from the table 4.1majority of respondents of honey exporters in Ethiopian were strongly agree with agrochemical application as export performance determinant as overall mean was(M=4.43, SD=.597). The findings of the study show that most of the survey respondents reported that their export performance was affected because of unavailable packaging and storage facilities (mean 4.33 and Std dev .663). Similar findings to this study were also reported by Belie (2009) where in the study area 46.7% of the sample respondents used plastic bucket 40.0% used plastic sack 10.8% used gourd and 2.5% used animal skin to store honey for short period. It is clear from the findings how the quality of honey is compromised by use of inappropriate containers by beekeepers that are the major honey supplies of the firms.

The respondents were asked constraints they encounter because honey marketing problems. Majority of them were agreed with lack of honey supply for export and it affects their performance (mean 4.31 and std dev .675). The implication of the shortage of honey supply reported by the firms due to the identified reasons is that the firms cannot be competitive in the honey export market which demands reliable, consistent supply of honey in bulk. This necessitates addressing the root causes for the shortage of honey supply prevailing at the production function level in the honey value chain to enhance the export of Ethiopian honey. Based on this study, most of respondents were strongly agree with the statements related to adulteration as determinant factor of honey export performance with aver all mean of 4.48 and Std.dev 0.525.

4.3 Correlation Analysis Result

Correlation analysis was planned to analysis the relation between the selected determinants of export performance (independent variables) and dependent variable (performance of honey export) in Ethiopia. According to Berndt et al (2005), the level of association as measured by Pearson's co-efficient falls between -1.0 and +1.0, which indicates the strength and direction of association between the two variables. The interpretation of the result is as follows; a correlation result between 0 to 1 implies positive relationship, 0 (zero) for no relationship, 1 for perfect positive relationship, -1 for perfect negative relationship and between -1 to 0 indicate the existence of negative relationship. Based on the questionnaires which were filled by the respondents of honey industries in Ethiopia the results of the correlation analysis between these variables are shown in table 4.10 below.

Table 4.2results of correlation analysis

Source: SPSS output

Correlations										
		DM	LF	LS	AF	AC	SP	HS	A	EP
Domestic market price	Pearson Correlation	1								
Legal framework	Pearson Correlation	-.058	1							
Laboratory service	Pearson Correlation	-.008	.038	1						
Access to finance	Pearson Correlation	-.155	-.055	-.078	1					
Agrochemical application	Pearson Correlation	-.363**	-.122	-.230*	-.070	1				
Storage and packaging	Pearson Correlation	-.265**	-.008	-.273**	.212*	.446**	1			
Honey supply	Pearson Correlation	.243*	.073	.533**	.213*	-.321**	-.131	1		
Adulteration	Pearson Correlation	.448**	-.180	-.187	-.153	-.370**	-.115	-.257*	1	
Export performance	Pearson Correlation	.341**	.259*	.338**	.270**	.039****	.428**	.409**	.212*	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

From the above 4.2 correlation table, we can see that most of the independent constructed variables were correlated with export performance. Among the variables the highest and strong correlation coefficient was found between Storage and packaging and export performance (0.428), between honey supply and export performance (0.409), and followed by variables between domestic market price and export performance (0.341), between laboratory service and export performance (0.338), and between Access to finance and export performance(0.270) and between legal framework and export performance(0.259), between adulteration and export performance (0.212), and between agrochemical application and export performance. Therefore, from the above table we can conclude that domestic market, Laboratory service, storage and packaging, and honey supply are significant at p (sig) value is less than α=.05 level, whereas legal framework, agrochemical and adulteration are significant at p (sig) value is less than α=.01 level.

4.4. Regression Analysis Result and Discussions

The objective of this study was identifying various factors, which influence the export performance of honey in Ethiopia. In order to study the relationship between the dependent and independent variables and specify the best predictors of the dependent variable (export performance) a multiple Regression model was applied. Multiple regressions were used for testing the model and objectives. It provides information regarding the significance of the variables that were included in the model while the R^2 explains how much variance in the dependent variable is explained by the model or how much the honey export performance is explained by the constructed variables.

Table 4.3 Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.854[a]	.729	.675	.14249	.729	13.470	8	40	.000

a. Predictors: (Constant), Domestic Market Price, Honey supply, Adulteration, Agrochemical Application, Legal Framework, Access to Financial credit facility, Laboratory Service, Storage and Packaging Facility
b. Dependent Variable: Export performance

The regression result in table 4.3 above show that the predictor (independent) variables have explain 72.9% of the variability of dependent variable. The adjusted R square which is a coefficient of determination shows that, 67.5 % of dependent (export performance) variable was explained by independents variables and the remaining 32.5 % are explained by other variables out of this model.

Table 4.4Anova table

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.188	8	.273	13.470	.000[a]
	Residual	.812	88	.020		
	Total	3.000	96			

a. Dependent Variable: Export performance
b. Predictors: (Constant), Domestic Market Price, Honey supply, Adulteration, Agrochemical Application, Legal Framework, Access to Financial credit facility, Laboratory Service, Storage and Packaging Facility

From the ANOVA test in table 4.4 it shows the table Sig. value 0.05 is greater than the calculated sig. value of .000. This shows the statistically significant relationships between the eight independent variables (domestic market price, legal framework, laboratory service, access to finance, agrochemical application, storage and packaging, honey supply and adulteration) and export performance at 5% significance level. This means, the explanatory variables have great impact on export performance of honey in Ethiopia. But it does not mean that all these factors influencing honey export performance have equally significant correlation with export performance, and the model is well fitted at 5 percent level of significance.

Table 4.5 Regression Coefficients

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	.321	.180		1.785	.042		
	Domestic market price	-.540	.249	.188	2.166	.036	.637	1.570
	Legal framework	.055	.095	.308	.585	.022	.895	1.117
	Laboratory service	.596	.134	.411	4.457	.000	.618	1.618
	Access to finance	.475	.202	.354	2.349	.024	.780	1.283
	Agrochemical application	-.378	.169	.412	2.238	.031	.505	1.981
	Storage and packaging	.737	.152	.350	4.838	.000	.679	1.472

Honey supply	.203	.285	.256	.712	.040	.452	2.211
Adulteration	-.760	.136	.233	-5.574	.000	.521	1.921

a. Dependent Variable: Export performance

The level of impact each independent variable crate on the dependent variable can be examined by unstandardized Beta coefficient. The regression coefficient explain the average amount of change in dependent variable that caused by a unit of change in the independent variable. The larger value of Beta coefficient that an independent variable has, brings the more support to the independent variable as the more important determinant in predicting the dependent variable. In the table-above 4.5, coefficients indicated how much the dependent variable varies with an independent variable, when all other independent variables are held constant. The beta coefficients indicated that how and to what extent the independent variables influence the dependent variable. Accordingly, the result of coefficient value of regression analysis indicated the highest determinant factor which affect export performance was agrochemical application (at Beta value=.412), followed by laboratory service (Beta=.411), Access to finance (Beta=.354), storage and packaging (Beta=.3.50), legal framework (Beta= .308), Honey supply (.256), adulteration (.233), and domestic market price (Beta=.188). Thus, from this finding one can infer that agrochemical application and laboratory service has the most significant factors influencing honey export performance. Their significance levels are 0.036, 0.022, 0.000, 0.024, 0.000, 0.040 and 0.000respectively, which are less than 0.05. This indicates significant relationship between them and the dependent variable export performance. Based on the above table 4.13 finding we can develop the following regression model:

E= 0.321-0.540 (DP) + 0.055 (LF) + 0.596 (LS) + 0.475 (AF) - 0.378 (CA) + 0.737 (PS) + 0.203 (HS) - 0.760 (A) + ε

Where; E –Export performance, DP -Domestic market price, A – Adulteration, PS - Packaging and storage facilities, HS - Honey supply, LF - Legal framework, AF -Access to Finance, CA -Chemical application, LS – Laboratory service, $\boldsymbol{\beta}_1$-$\boldsymbol{\beta}_8$ coefficients of independent variables, **α**– constant, ε - Error Term

Based on the above model result, the explanatory variables have positive or negative influence to honey export performance in Ethiopia. The coefficient of domestic market price= -0.540 .i.e. a unit change in domestic market price leads to .540 unit decrease in export performance, Legal framework =.055 indicating that a change in legal framework leads to .055 increase in honey export performance, Laboratory service= 0.596 implies that a one unit change in Laboratory service leads to 0.596 unit increase in export performance, Access to finance= 0.475 signifies that a one unit change in access to finance results to 0.475 unit increase in export performance, Chemical application beta value= -0.378 indicates that application of chemicals leads to -0.378 units decrease in export performance, Storage and packaging = .737 implies that a one unit change in storage and packaging results to 0.737 unit increase in export performance, Honey supply = .203that a one unit change in honey supply results to .203 unit increase in export performance, Adulteration with beta value = -.760 means that lack of quality because of adulteration results to .760 unit decrease in export performance. These findings provide significant support for the reliability, transaction efficiency and ease of use literature which advocates that the variables have an influence upon customer satisfaction in Ethiopian commercial banks.

5.0 **Summary, Conclusion and Recommendations**

5.1 Summary

The trends of the honey export volume and value continued declining sharply at an alarming rate and hit the lowest honey export volume and value levels in 2018 since 2011. Sudan, Norway, United Kingdom, Germany, Yemen, and Saudi Arabia were the major Ethiopian honey importers. Since 2013, Norway was the leading honey importer except 2014, followed by Sudan. Sudan imported the highest honey volume in 2011, 2012 and 2014. All countries hit their lowest level of honey volume import in the year 2018. The trend of the Ethiopian annual honey export volume (Kg) by destination is about the same to that of trend of Ethiopian annual honey export volume. According the findings of the analysis of the primary data of this study, the factors affecting honey export performance in Ethiopia. Domestic market price, absence honey marketing legal framework, the problem to get laboratory service, wide use of inappropriate storage and packaging materials, application of agrochemicals on crops, inadequate financial credit services, inadequate supply of honey, and adulteration or mixing honey with other products. Thus, because of the seasonality of honey production, inadequate supply of honey and quality of honey are challenges for the honey export performance. Correlation result revealed that all factors except domestic market price, chemical application and adulteration measuring export performance were positively related with export performance. Also all independent variables are significantly correlated with each other. The results of regression analysis indicated that there is a positive effect of Legal framework, laboratory service; financial service; storage and packaging, and honey supply with unstandardize beta coefficient value of, 0.055, 0.596, 0.475, 0.737 and 0.203 respectively. The multiple regression result indicated that factors affecting honey export performance (domestic market price, legal framework, laboratory service, Adulteration, packaging and storage facilities, chemical application, honey supply and access to finance) accounted for 72.9% of the contribution for honey export performance in Ethiopia (R^2 = .729).

5.2 Conclusion of the Study

From this research study, it can be concluded that the Ethiopian honey export performance is affected by a wide ranging and interlinked challenges, which urge addressing the factors holistically. During (2011-2020),the trends of the Ethiopian honey export volume and honey export value showed a sharp decline. Over the same period the period the Ethiopian honey export volume decreased at an average annual rate of 53% and the honey export value decreased at an average annual rate of 51.5%. The findings of the analysis of the primary and secondary data of the study are complimentary, and have revealed the factors affecting the Ethiopian honey export performance and the alarming declining trend of Ethiopian honey export volume and value.

To conclude on descriptive statistics of the above variables export performance of Ethiopian honey industries, Ethiopian honey exporters are not in good status of practicing important factors of export performance which this study considered (domestic market price, legal framework, laboratory service, Adulteration, packaging and storage facilities, chemical application, honey supply and access to finance), are the major determinants. Correlation analysis indicates that all factors except domestic market price, chemical application and adulteration measuring export performance were positively related with export performance and significant at $p<0.05$.

5.3 Recommendations of the Study

Based on the findings of this study the following recommendations are made for informed development interventions and policy measures, to develop the honey production and enhance the Ethiopian honey export performance. Conduct honey market study in potential honey producing areas and developing corrective measures/strategies is expected from honey exporters. The domestic honey marketing in the country is full of challenges which put the legal traders, including the honey exporter, in disadvantage. Further, because of the market problems the domestic honey price is highly distorted and is very advanced than the international honey price. Government has to adopt and ensure provision of strong honey export oriented beekeeping extension and financial credit services. Government have to work to have mandatory honey standard, strengthen existing regulation and bridge regulation gaps. Government have to improve the huge honey production potential of the county to properly tap and stabilize domestic market price, increase supply and enhance the Ethiopian honey export. Establishment of new policies on application of agrochemical crops and pesticides besides to government bodies. Creating suitable condition to produce honey storage and packaging materials in the country. Further studies should be conducted on how to establish a legal framework for honey marketing system and improve honey quality so as to create healthy marketing system and encourage honey export. Technical supervision and follow up must be strong from government side to reduce adulteration of honey and enhance quality as it is the major criteria of export standard.

Acknowledgments

First and for most, I would like to thanks my almighty God for let me to stay in life to this days and enable me to complete my thesis. Next I would like to express my sincere gratitude to my advisor Dr. Habtamu Dadi for the continuous support, his patience, motivation, enthusiasm in preparation of this thesis. His guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my MBA thesis. Third, my special appreciation goes to management and staff members of honey export industries' which this study is conducted for their honest and concerned response for my questioner. I also never close my acknowledgment without expressing special gratitude for staff members of Ethiopian custom and revenue authority, ministry of trade and industry and Ethiopian meat and dairy development institute for their cooperation in providing me all the necessary information and data for the study. Finally, I would like to thank all my friends and families (my wife Ms Dinsiri and my son Numaaf) for their contribution.

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