The Role of Ethiopia Commodity Exchange (ECX) in Stimulating Agricultural Commodities Export: A Case Study of Export Coffee

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ABSTRACT

The purpose of this paper was to examine the role of Ethiopia Commodity Exchange in stimulating agricultural commodity exports with the case of export coffee. A structured questionnaire was prepared to collect data. The data were analysed using descriptive statistics, correlation & regression. The findings of descriptive statistics of the independent variables showed that facilitation of physical trade dimension scored the highest rating with a mean value of 3.83 while the storage and grading dimension scored the least mean value of 2.86. The correlation analysis results indicated that facilitation of physical trade had a significant correlation with the export performance and the remaining variables' result indicated that they were moderately correlated with export performance. Regression analysis was conducted, and the result indicated that storage and grading, market information provision and market development dimensions of ECX's roles had a significant positive influence on export performance of coffee exporters.

Keywords: Commodity exchange, Export performance, Price discovery, Agricultural commodities, and Coffee.

INTRODUCTION:

Before the establishment of Ethiopia Commodity Exchange (ECX), commodity market in Ethiopia was characterized by the presence of prohibitively high transaction costs, evidenced by the lack of sufficient market coordination between buyers and sellers, the lack of market information, the lack of trust among market actors, the lack of contract enforcement, and the lack of grades and standards (Gabra-Madhin & Goggin, 2005; Mohammed, 2017).

Gabre-Madhin and Goggin (2005) argue that the fundamental market problem that faced Ethiopia during that time was the rather universal problem of achieving economic order and indicated that a commodity exchange can address this critical need through a system that itself generates market information, that enhances the transparency of product grades, qualities, and marketed volumes in addition to the market-clearing price, that promotes self-regulation through a structure that enhances the incentives for preserving order and integrity of the system (Islam *et al*., 2020). So, ECX was established in 2008 with the main objective of providing a fair and equitable market place for agricultural commodities by the Ethiopia Commodity Exchange Proclamation No. 550/2007 (Andersson, 2017). Rashid *et al*. (2010) assert that since 2004, more and more countries have been launching exchanges-notable ones include Malawi in 2004, Nigeria in 2006, the Ethiopian Commodity Exchange (ECX) in 2008 and the new Zambian exchange, ZAMACE, established in 2007.

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Ethiopia Commodity Exchange from the beginning started trading maize and wheat although it was not able to trade a substantial volume of these commodities. Therefore, ECX focused on trading export commodities with the support of policies discouraging the export of coffee through other outlets (Rashid *et al*., 2010).

Since its establishment in 2008, ECX has received much attention in the international media and community. It has been visited by visitors from around the world including state leaders and different UN officials. Hernandez *et al*. (2015) identified two reasons why ECX has received such high level attention. First, ECX is the only functioning commodity exchange in the Least Developed Countries. Second, ECX has been effective in communicating its early success stories. Several early ECX successes stories-especially the ones about linking smallholders to markets, increasing coffee exports, and having zero defaults-were appealing to the media, policymakers, and development partners (Hernandez *et al*., 2015).

However, according to the study of Hernandez *et al*. (2015), the evidence behind such success stories has been largely anecdotal; there has been very little systematic analysis to determine whether the ECX is actually the driving issue of enhancements in Ethiopia's agricultural markets. There are different opinions regarding ECX's contribution to its market participants (Azim and Sharif, 2020).

Hernandez *et al*. (2015) found out that ECX has brought about strict regulations to the Ethiopian coffee markets: it has eliminated direct trading relationships between exporters and small coffee producers, requiring them to sell in specific locations with a pool of licensed traders or processors, who in turn have to go through a certification process to sell their coffee. They argued that this has clearly resulted in higher transaction costs, which could potentially cancel out the benefits of electronic payments, aggregate price information, and other innovations ECX has introduced to coffee markets (Islam and Alam, 2019).

A study by Rashid (2015) also indicated that commodity exchanges can contribute to market development by reducing transaction costs, improving price discovery, and reducing price risks. In his study, Rashid concluded that the ECX's claims about linking smallholders to markets or improving farm gate prices are not supported by this set of data. To measure the contribution of ECX to the traders, it is important to study and analyze from traders own perspective as empirical studies conducted by Anderson *et al*. (2017).

Hernandez *et al*. (2015) have not addressed the feeling of traders on ECX's performance and contribution to the economy in general and the coffee sector in particular. Their studies were merely based on statistical data. Therefore, this study aimed to fill this knowledge gap and validate the findings of previous researches by assessing the role of ECX in stimulating agricultural commodities export focusing on coffee exporters' view and perception.

Literature review

Why Commodity Exchanges?

Jayne *et al*. (2014) reflect that vibrant agricultural commodity exchanges will greatly enhance the performance of Africa's agricultural sectors and contribute to overall economic development as mentioned by. Commodity exchanges can reduce the costs and risks of transacting. In addition to providing valuable public information such as prices and volumes of trade, commodity exchanges, in many indirect ways, can encourage the financial sector to invest in agricultural value chain development, improve farmers' access to markets, reduce marketing margins, and encourage agricultural productivity growth (Jayne *et al*., 2014).

There is consensus that the most important marketing-related constraints facing Africa's farmers revolve around five points: (1) high production and marketing costs, leading to low profitability and a disincentive to produce for the market; (2) constrained access to credit, especially for small-scale farmers; (3) limited availability of profitable new farm technologies to adopt and use sustainably; (4) price volatility; and (5) poor market access and competitiveness conditions (Jayne *et al*., 2014)

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The core objective of a commodity exchange is to create a fair, orderly, and efficient system for matching supply and demand to enable what is called "price discovery" or the true market price based on the alignment of supply and demand (Alam, 2020). To achieve this alignment, a commodity exchange can and must regulate market conduct through certain risk management instruments designed to ensure that market conduct follows the principles of a fair, orderly, and efficient marketing system. These instruments involve setting limits on trading positions, adjusting margin and other deposit requirements, and setting price circuit filters to limit price movements, among others (Gabre-Madhin & Goggin, 2005).

According to Gabre-Madhin (2008), the overriding objective of a commodity exchange then and now is to ensure a fair, orderly, and efficient marketing system, to encourage smallholder farmers to produce more for the market, to benefit domestic agro-industry through a more efficient and reliable supply chain, and to enhance Ethiopia's export competitiveness through getting the domestic market in order and identifies three groups of problems facing the commodity market: 1) absence of integrated commodity marketing policy that addresses all the processes that involve transport, grading, storage and information facilities for the producer as well as for consumer; 2) the absence of well-equipped institutional establishment which can provide all marketing services to all market actors and 3) the absence of private and public partnership in the commodity market. Thus, commodity exchanges are established among other reasons, mainly to respond to the above and related challenges.

Benefits of Commodity Exchanges

According to UNCTAD (2009), the benefit of a commodity exchange is based on its institutional capacity to remove or reduce the high transaction costs often faced by entities along commodity supply chains in developing countries. Paul I, 2011 (Worku, 2014) also mentions that commodity Exchange is fundamentally designed to provide service and add value to all market players by addressing contract performance risk and contract default risk on physical delivery or payment. Gabra-Mahdhin (2001) suggests that establishing market institutions such as grain exchanges reduces transaction costs (costs related to market search time, search labor and cost of holding working capital during market search). In emerging markets, commodity exchanges can play a useful role in physical trade, including in the financing of commodity inventories. By providing a transparent, disciplined marketplace they can reduce the discovery costs of a physical trade and the counterparty risks in commodity transactions (Ngmenipuo & Issah, 2015).

Commodity derivatives have a crucial role to play in managing price risk especially in agriculture dominated economies (Sahadevan, 2002). Properly functioning commodity exchanges can promote more efficient production, storage, marketing, and agro-processing operations, and improved overall agriculture sector performance (Apriyanti, 2020).

UNCTAD (2009) in its case study conducted on Brazil, China, India, Malaysia, and South Africa identified different impacts of commodity exchanges on farmers and other entities that are categorized under price discovery, price-risk management, venue for investment, facilitation of physical commodity trade, facilitation of financing to the agricultural sector and market development and discusses the following benefits of commodity futures markets from the Indian context: price Discovery, price Risk Management, import-Export competitiveness, and predictable pricing. Eleje *et al*. (2008) identified the following roles of commodity exchange markets to the economic development of a nation from the Nigerian context: Price discovery, risk management, transactional efficiency, and allocation of capital and accumulation of capital.

In general, the roles and impacts of commodity exchanges in a country's economic development are different based on the nature of the Exchange and the area they operate. UNCTAD (2009) promotes that for exchanges that offer spot trade or supporting activities, the institutional function is to facilitate trade-bringing together buyers and sellers of commodities, and then imposing a framework of rules that provides the confidence to transact.

Conceptual Framework and Hypotheses

In the Ethiopian context, in which trade and storage (grading) functions are being served by the commodity exchange, the researcher identified and added the storage and grading, enabling competition and market information provision as core functions of ECX in addition to the price discovery, facilitation of physical trade and the market development roles shared by other commodity exchanges discussed in the literature.

Hypotheses:

1. *H1*: ECX's price discovery function has a significant positive influence on coffee exporters' export performance
2. *H2*: By facilitating the physical trade, ECX brings a significant positive influence on coffee exporters' export performance.
3. *H3*: ECX has a significant positive influence on coffee export performance by providing storage and grading service.
4. *H4*: ECX's market development function has a significant positive influence on coffee exporters' export performance.
5. *H5*: ECX has a significant positive influence on coffee exporters' performance by creating a competitive market.
6. H6: ECX has a significant positive influence on coffee export performance by providing reliable and timely market information.

METHODOLOGY:

A survey was designed to measure the role of ECX in stimulating coffee export from coffee exporters' perspectives and opinions quantitatively. All 196 coffee exporters who are directly trading at ECX as members and non-member direct traders were the target population of the study. A representative sample of 130 was taken using a proportionate stratified sampling technique to make a rationale sample size which was the sum of members' sample size (80) and non -member direct traders' sample size (50). The survey questions were prepared based on the benefits of commodity exchanges discussed in the background and respondents were asked to rate their agreement on the statements. The five points Likert scale was used for the statements of the questionnaire ranging from 1 for "strongly disagree", 2 for "disagree", 3 for "no opinion", 4 for "agree", and 5 for "strongly agree".

Additionally, a one-year trade data of coffee at ECX was used to measure competitiveness and concentration of the market to validate with the findings of the questionnaire. As the study had employed a cross-sectional survey design approach, only a one year coffee trade data was used. A total of 130 questionnaires were distributed for the respondents (80 for members and 50 for non-member direct traders). Excluding eight (8) questionnaires that were not filled out by the respondents, 118 questionnaires (84 from members and 34 from non-member direct traders) were fully answered and returned which is 90.77% of the total distributed questionnaires. The data collected using the questionnaires were coded and entered into Statistical Package for Social Sciences (SPSS). Thereafter descriptive analysis (percentages and mean) was carried out by using SPSS and was presented in tables. In addition to the primary data collected from the questionnaire, in to test the argument that ECX encouraged competition and kept the market concentration low, the concentration index of the market was measured.

Data Analysis and Interpretation

Descriptive analysis, correlation analysis, and regression analysis were used to analyze the data that were collected using the survey method. Besides, concentration ratio and market competitiveness were measured to analyze the secondary data collected. The results of the analysis and interpretation of the results have been presented in the below sections.

Descriptive Analysis

As can be seen from **Table 1**, the role dimensions were taken as independent variables that were assumed to be impacting the export performance of ECX members. The mean score values of ECX's roles/functions ranged between 3.83 (mean score value of facilitation of physical commodity trade) with a standard deviation of 0.700 and 2.86 (mean score value of storage and grading with a standard deviation of 0.652). These scores were also the minimum and maximum mean score values of ECX's role dimensions.

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Table 1: Descriptive statistics of variables.

Descriptive Statistics			
Dimensions	N	Mean	Std. Deviation
Facilitation of Physical Commodity Trade	118	3.83	0.700
Market Information Provision	118	3.52	0.660
Export Performance	118	3.37	0.594
Enabling Competition	118	3.37	0.594
Market Development	118	3.24	0.550
Price Discovery	118	2.89	0.674
Storage and Grading	118	2.86	0.652
Valid N (listwise)	118		

Source: Survey result, 2019

Table 2: Pearson Correlations Matrix.

Correlations		Price Discovery	Facilitation of Physical comm. Trade	Storage & Grading	Market Development	Enabling Competition	Market Information Provision	Export Performance
Price Discovery	Pearson Correlation	1						
	Sig. (2-tailed)							
Facilitation of Physical commodity Trade	Pearson Correlation	.545**	1					
	Sig. (2-tailed)	.000						
Storage and Grading	Pearson Correlation	.618**	.563**	1				
	Sig. (2-tailed)	.000	.000					
Market Development	Pearson Correlation	.270**	.022	.317**	1			
	Sig. (2-tailed)	.003	.812	.000				
Enabling Competition	Pearson Correlation	.088	.021	.141	.581**	1		
	Sig. (2-tailed)	.342	.818	.127	.000			
Market Data Dissemination	Pearson Correlation	.270**	.022	.317**	1.000**	.581**	1	
	Sig. (2-tailed)	.003	.812	.000	.000	.000		
Export Performance	Pearson Correlation	.447**	.347**	.665**	.493**	.358**	.493**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	118	118	118	118	118	118	118
**. Correlation is significant at the 0.01 level (2-tailed).								

Source: Survey result, 2019

Correlation analysis

Thecorrelationbetweenindependentanddependentvaria
bleswasanalyzedusingtheStatisticalPackageforSocialS
cience (SPSS) using a Pearson Correlation coefficient. The results of the relationships among the variables used in the questionnaires are indicated in **Table 2**.

According to Field (2009), the classification of the correlation coefficient (r) is as follows: 0.1–0.29 is weak; 0.3–0.49 is moderate; and >0.5 is strong. On the other hand, when Pearson's r is positive (+), this means that as one variable increases in value, the second variable also increases in value. As indicated in **Table 2**, the six independent variables were positively (either moderately or strongly) correlated with export performance; the strongest correlation coefficient being between export performance and storage & grading (r=.65, p ≤ 0.01). Export performance is moderately correlated with the remaining independent variables ranging from r=.347, p≤ 0.01 for the facilitation of physical commodity trade to r=.493, p ≤ 0.01 for both market development and market information provision. Hence, there is a moderate positive relationship between these variables and export performance

Multiple Linear Regression Analysis

Multiple linear regressions were conducted to determine the explanatory power of the independent variables (price discovery, facilitation of physical commodity trade, storage and grading, market development, enabling competition, and market information provision) to identify the relationship and to determine the most dominant variables that influenced dependent variable (export performance). The significance level of 0.05 with a 95% confidence interval was used. The reason for using multiple regression analysis was to assess the role/impact of the role variables of ECX on the export performance of exporters. The model summary of the regression analysis is presented in **Table 3**.

Table 3: Model Summary.

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.739[a]	.546	.525	.50410	1.913
a. Predictors: (Constant), Market Information Provision, Facilitation of Physical Commodity Trade, Enabling Competition, Price Discovery, Storage and Grading, Market Development					
b. Dependent Variable: Export Performance					

Source: Survey result, 2019

The regression model presented how much of the variance in the measure of export performance is explained by the underlying ECX's role variables. The linear combination of the predictor variables i.e. price discovery, facilitation of physical commodity trade, storage and grading, market development, enabling competition, and market information provision to explain 54.6% of the variance in export performance and the remaining 45.4 % is explained by extraneous variables, which have not been included in this regression model. According to Mooi and Sarstedt (2011), in cross-sectional designs, values of around 0.30 are common while for exploratory research, using cross-sectional data; values of 0.10 are typical.

The adjusted R^2 gives some idea of how well the model generalizes and its value to be the same, or very close to the value of R^2. That means it adjusts the value of R^2 to more accurately represent the population under study (Pedhazur, 1982). The

difference for the final model is small (in fact the difference between R^2 and Adjusted R^2 is (.546− 0.525 = 0.021) which is about 2.1%. This means that if the model were derived from the population rather than a sample it would account for approximately 2.1% less variance in the outcome. The Durbin-Watson statistic expresses whether the assumption of independent errors is acceptable or not. As the conservative rule suggested that, values less than 1 or greater than 3 should raise alarm bells (Field, 2009). So that the desirable result is when the value is closer to 2, and for this data, the value is 1.913, which is so close to 2 that the assumption has almost certainly been met.

For this data, F is 22.79, which is significant at *P*<.0001 (because the value in the column labeled *Sig.* is less than 0.001). This result indicates that there is less than a 0.1% chance that an F-ratio this large would happen if the null hypothesis proposed about F-ratio were true. Therefore, it can be concluded that the

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regression model resulted in a significantly better prediction of export performance and that the regression model overall predicted export performance significantly well. The next part of the SPSS output reports an analysis of variance (ANOVA) and it is indicated in **Table 4**, and **Table 5** shows the constant

beta value (β) and p-value of the variables to examine the significance of the hypothesis. The significance level of each variable (P-value) is: .771, .843, .000, .029, .068 and .008 and their standardized coefficients are .025, .017, .547, .196, .145 and .228 respectively.

Table 4: ANOVA of Export Performance.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.568	6	5.761	22.792	.000[b]
	Residual	28.058	111	.253		
	Total	62.625	117			
a. Dependent Variable: Export Performance						
b. Predictors: (Constant), Facilitation of Physical Trade, Enabling Competition, Price Discovery, Market Information, Market Development, Storage and Grading						

Source: Survey result, 2019

Table 5: Summary of Coefficients.

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-.621	.395		-1.573	.119	-1.404	.161
	Price Discovery	.027	.094	.025	.292	.771	-.159	.214
	Facilitation of Physical Comm. Trade	.017	.087	.017	.198	.843	-.156	.191
	Storage and Grading	.614	.101	.547	6.100	.000	.415	.814
	Market Development	.261	.118	.196	2.213	.029	.027	.494
	Enabling Competition	.179	.097	.145	1.840	.068	-.014	.371
	Market Information Provision	.304	.113	.228	2.689	.008	.080	.528
a. Dependent Variable: Export Performance								

Source: Survey result, 2019

Table 5 also provides the results of the model predicting export performance through the variables of price discovery, facilitation of physical commodity trade, storage and grading, market development, enabling competition, and market information provision. According to the results in confirmation with the correlation analysis explained above, export performance had a positive and significant relationship with storage and grading and a positive and moderate relationship with the remaining five variables. But in

regression analysis, except storage and grading (p=.000), market information provision (p=.008), and market development (p=0.029) other variables were found insignificant.

Based on these results, the regression equation that predicts the role of ECX on export performance based on the linear combination of Price Discovery, Facilitation of Physical Commodity Trade, Storage and Grading, Market Development, Enabling

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Competition, and Market Information Provision is as follows:

EP = -.621 + 0.027 PD + 0.017 FPCT + 0.614 SG +0.261MD+ 0.179 EC +0.304 MIP+ e ……… (1)

Where:

PD =Price Discovery.
EP=Export Performance.
FPCT = Facilitation of physical Commodity Trade
SG = Storage and Grading.
MD = Market Development.
EC=Enabling Competition.
MIP= Market Information Provision.
e= sampling error.

From the above equation, it is indicated that storage and grading was the most important determinant of export performance (β=0.614, sig=0.000). The next significant correlation was with the dimension of market information provision (β=0.304, sig=0.08) followed by market development (β=0.261, sig=.029).

Hypotheses Testing

In determining what role ECX to have on the export performance of coffee exporter members, six hypotheses were developed which were later tested empirically to measure their statistical significance in the study context. Based on the statistical results, the hypothesis tests results are summarized in **Table 6**.

Table 6: Hypothesis Test Result.

S.N	Hypothesis	Result
1	H1: ECX's price discovery function has a significant positive influence on coffee exporters' export performance.	Not supported
2	H2: by facilitating the physical commodity trade, ECX has a significant positive influence on coffee exporters' export performance.	Not supported
3	H3: ECX has a significant positive influence on coffee export performance by providing storage and grading service (H3).	Supported
4	H4: ECX's market development function has a significant positive influence on coffee exporters' export performance.	Supported
5	H5: ECX has a significant positive influence on coffee exporters' performance by creating a competitive market.	Not supported
6	H6: ECX has a significant positive influence on coffee export performance by providing reliable and timely market information.	Supported

Secondary Data Analysis

Secondary data were collected to measure the items of the variable "enabling competition'' in addition to the primary quantitative data collected from the survey. Accordingly, the concentration level and competitiveness of the ECX coffee market were measured below using a one-year trade data of export coffee for the period from July 01, 2017, to June 30, 2018.

Market concentration level of ECX coffee market

The most common concentration ratio to evaluate the market structure is the CR4 which in this case means the four largest traders (both exporters and suppliers) of coffee at ECX. Low market concentration ranges from 0 to 50%, medium concentration from 50% to 80%, and high market concentrations from 80% to

100%. A greater degree of concentration indicates that there is higher non-competitive behavior in the coffee market. Thus, CR4 of export coffee was calculated as:

$$MKTS_i = Vi_{/TC}$$

Where,

MKTSi = market share of coffee Trader i,
Vi= amount of coffee handled by Trader I, and
TC=the total coffee traded/sold in ECX.

Concentration Ratio of m coffee buyers: combined market share of the m largest coffee buyers in the market is calculated as:

$$CRm = \sum_{i=1}^{m} MKTS_i$$

The CR4 index (the concentration ratio for the top 4 firms) has been the most relevant index to measure concentration before the advent of the HHI. It is given by the sum of the market shares of the largest 4 firms in the market (Naldi & Flamini, 2014). While it is clear that a low value of the index represents a larger competition level, while a high value (close to 100) represents an oligopoly situation, there is not a consensus on the correspondence between the value of the index and intermediate concentrations (Naldi & Flamini, 2014). Typically, if CR4<40, the industry is considered as very competitive as indicated in **Table 7**. One critique of the concentration ratio is that it does not take into account the distribution of market share across all firms in an industry (Boetel and Liu, 2010; Church and Ware, 2000; cited in Tamirat, 2013). Tamirat (2013) suggested that a concentration index that does not share this weakness is the Herfindahl-Hirschman Index (HHI). The Herfindahl index is the sum of the squares for each market share from major coffee traders in the sector. This index as presented in **Table 8** provides an indicator range from 0 to 1, with higher numbers generally indicating a decrease in competition and an increase in market share for the largest traders in the market.

$$HHI = \sum_{i=1}^{m} (MKTSi)^2$$

Table 7: Concentration ratio and competition level indicators.

CR4 Range	*Competition level*
0	*Perfect Competitions*
0–40	*Effective Competition or Monopolistic Competition*
40–60	*Loose Oligopoly or Monopolistic Competition*
>60	*Tight Oligopoly or Dominant Firm with a Competitive Fringe*

Source: Naldi and Flamini (2014)

Table 8: HHI Index and competition level indicators.

HHI	**Competition level**
<0.15	Unconcentrated Markets/competitive
0.15–0.25	Moderately Concentrated Markets
>0.25	Highly Concentrated Market

Source: Naldi and Flamini (2014)

Table 9: Market concentration measures of ECX Coffee Market.

Concentration measure	**Buyers**	**Sellers**
CR4	29.19	16.00
HHI	0.03	0.02

Source: Author's calculation based on secondary data

Using the aforementioned two measures of market concentration and competition, the degree of concentration and competition for both buyers and sellers of coffee, sesame and pea beans for the trade conducted during the period July 01, 2017 to June 30, 2018 has been presented in **Table 9**.

From the result, both CR4 and HHI results indicated that the coffee market of ECX was un-concentrated and perfectly competitive which indicates that there are low market concentration and a lesser threat of oligopoly from both the suppliers and buyers (exporters) side of ECX's export coffee market. This result is supported by the findings of the descriptive statistics in which the majority respondents (70.4%) agreed that ECX's coffee market is not dominated by a few coffee traders.

CONCLUSION:

The main purpose of the study was to examine the role of ECX in stimulating coffee export by measuring the level of influence of ECX's core functions: price discovery, facilitation of physical trade and market development, on coffee exporters' export performance from members' perspective. To meet the general objective, a survey was made. The questionnaire on dimensions of ECX's roles was developed and distributed to coffee exporting members and non-member direct traders of ECX. Objectives of the research have been attained. The general objective of this study was to measure the role of ECX in stimulating coffee export. Regression analysis was conducted to verify if the independent variables influence export performance. According to the findings, storage & grading, market information provision, and market development were found to have a significant impact on export performance. All the selected dimensions have a positive influence on the dependent variable/export performance. Export performance is also significantly correlated with the independent variables. Overall, it can be concluded that ECX has a significant role in harnessing the performance of its coffee exporter members through its price discovery, facilitation of physical commodity trade, storage & grading, enabling competition, market development, and market information provision. However, as per the ratings of the respondents, the services of ECX concerning some core roles including storage and grading and price discovery was below mid-point which needs to be improved   to stimulate exporters' performance further.

Recommendations

There searcher forwarded the following recommendations based on the research findings and the conclusion drawn in the previous sections. Storage and grading and price discovery roles of ECX were rated below the mid-point which shows that most of the respondents were not happy with these services. These roles on the other hand positively influence coffee exporters' performance. Therefore, ECX should achieve and maintain effective and transparent grading and storage services to improve members' confidence in this regard. ECX should focus on building or renting better and scientific storage hardware and introduce better warehouse management practices in order to avoid coffee wastage and quality deterioration during the storage of coffee. An efficient price discovery mechanism should also be in place as a significant number of respondents believed that ECX's price doesn't reflect the market fundamentals (supply and demand). The company should also work to protect unnecessary shortages, gluts and other pricing distortions by creating better price signals. Regulators of coffee marketing and export should control those market actors who create artificial shortages, gluts, and other unnecessary price distortions that do not reflect the realities of the market domestically and internationally. Market development is one core function of commodity exchanges nowadays. ECX should give attention to this service. Continuous capacity building and training tailored to coffee exporter members should be given. Besides, the company should think of starting international trade facilitation services for its members.

Implications for Future Research

The study was conducted only on coffee exporting members of ECX. This study was also cross-sectional and explanatory. Future researchers could undertake a more in-depth longitudinal study on other commodities exporter members of ECX. Further future research should also focus on inter-country commodity exchanges across commodities such as other cash crops in Zambia, Nigeria, or Malawi. This study revealed that export performance of coffee exporting members of ECX is affected by

other variables than the variables under study (price discovery, facilitation of physical commodity trade, storage, and grading, market development, enabling competition and market information provision). Therefore, other variables that could affect the export performance of ECX members are potential are as for further study.

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CONFLICTS OF INTEREST:

The author, Fetene Aragaw, declares that he does not have any conflicts of interest regarding this study.

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