Assessment of Factors Affecting Performance of Agribusiness Enterprises in Somaliland

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Abstract: **In Sub-Saharan Africa, the agricultural sector remains to be the mainstay of the economies. The establishment of agribusiness opportunities offers widespread benefits in terms of food. This study aimed to examine the social, economic, technological, and environmental factors behind the deterioration of the agribusiness sector in Somaliland. The study administered semi-structured questionnaires to 96 respondents in the Gabiley district. The Linear regression results indicate that nine variables, namely; price fluctuation, prolonged drought spell, entrepreneurship training, access to extension services, capital, greenhouse technology, use of mobile money transfer, were statistically significant at 5%. However, four hypothesized variables; farm inputs, land size, education, and availability of farmers' cooperative societies) were not statistically significant. The study recommends that Somaliland's ministry of agriculture provide agricultural extension staff and capital to stimulate agribusiness development in the country.**

Key Words: **Agribusiness, Enterprises, Performance**

I. INTRODUCTION

Globally, the agro-industrial development in value addition has become a significant source of income to the economy and has created many employment opportunities worldwide. These industries are dominant in most developing economies regarding the impact in the value addition in the manufacturing sectors (FAO 217; Adhikari et al., 20218). The agro-processing industries can be implemented efficiently in small or medium scales by employing the least cost, labor-intensive technologies. Going the agro-based industry way will relieve economies in job creation, food security, eradication of poverty, and increased farm income, leading to improved living standards (UNIDO, 2017; Wilkinson & Rocha, 2009).

Africa is steadily advancing towards establishing agro-based industries to aid in adding value to its locally produced raw agricultural products to attain the current global demand for the processed agro-products. The current position of Africa in the international market for agricultural commodities is still poor because it trades in raw products, which accounts for 25% of the 60 % non-fuel exports to the world market.

Arguably, the development of agro-processing firms and the establishment of profitable agribusiness opportunities will transform the African markets and increase its net worth in intra-regional trade (Agro-Industries Development Initiatives, 2010).

A strategy to alleviate poverty in the developing economies with a particular focus in Africa is to expand agricultural production capacity, add value to the primary agricultural products from the within value chains, and empower smallholder produces. Achievement of innovation in the agricultural sector is made possible through entrepreneurship. Therefore, there is a great need to increase the shelf-life of the raw agricultural products by adding to their value, thereby increasing the gross margins for the farmers (NEPAD, 2013). For this effect, the Malabo declaration was passed by the heads of state and governments of the African Union member states in 2014 to accelerate agricultural growth and transformation towards shared prosperity and better-quality livelihoods living standards. This challenges the political economies to formulate models for structural and agricultural transformations in Africa (Malabo Declaration, 2014).

In Somaliland, the agricultural sector is the bedrock of the economy. The livestock contributes to 40 percent of the GDP, with 65 percent earnings from exports. It also employs about 71 percent of the labor force in the country. Agriculture is done in agro-pastoralism in the regions of Gabiley, Awadal, and Marodijeh, which are the major crop-producing regions (FAO, 2018). Agribusiness undertakings are directly linked to the entrepreneurship role in the countryside, which has shown a significant increase in the standard of living. The commercialization of primary agricultural goods has been a challenge due to the bulky nature and perishability of the commodities, which lead to low price bids in the market. Supporting agribusiness increases the value addition to raw products, improves food security, and improves livelihood and economic growth (Herliana et al., 2019; Olowa & Olowa, 2015).

Over the recent past, the impact of climate change on agricultural production has been felt through the unusual recurrence of droughts and floods, loss of soil fertility, pest and disease infestation on crops and livestock, and loss of biodiversity in Somaliland (Musa et al., 2020). This has resulted from constraints in production that include hostile climatic conditions, insufficient investment, limited technical capacity in production, among others (Baley & Sugulle, 2011; FAO, 2017). Climate Impact change on agricultural production in Gabiley district, which is considered the country's food basket for its significant contribution, influences the returns from agriculture. Focus on agribusiness,

and improved output can be a remedy to improve the market performance of this sector in Somaliland (Abdullahi, 2014).

Despite the positive contributions and potential of the agricultural sector into Somaliland's economy, agribusiness entrepreneurs are still struggling to overcome various environmental, production, and marketing challenges. As a result, Somaliland has become a market for Ethiopian agricultural produce. Moreover, there is limited information in the literature so far on the same topic in the country. This study was conducted to fill the knowledge gap and elicit evidence-based interventions and policy instruments in the country's agricultural sector.

The Conceptual Framework

According to Walala et al. (2014), conceptual framework refers to a diagrammatic representation of the theorized relationship between the study independent and dependent variables. The research was to examine the factors that influence the performance of agribusiness enterprises. The independent factors were broadly categorized ad economic factors, technological innovation, social and environmental factors. The dependent variable of the study was the performance of agribusiness enterprises (profit margins).
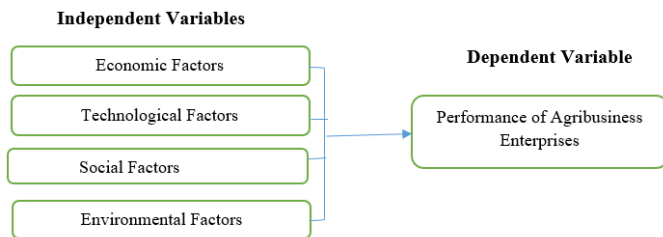

Figure 1:1: Conceptual framework of the study

II. METHODOLOGY

Research Design

The study employed the use of a cross-sectional survey. This was due to its superiority in capturing snapshots of characteristics of respondents using a single research tool. Secondly, the design helped the researcher describe socio-demographic characteristics and determine the causal effect relationship between study variables. Finally, this design also allowed the researcher to generalize the findings to the selected population.

Study Area

This study was conducted in the Gabiley district. It is situated about 58 km from Hargeisa, the capital city of Somaliland in the Horn of Africa. It is the largest agricultural district in the Maroodi Jeex region. Gabiley is located in a plateau area with an estimated population of about 320,430 people. The main economic activity is farming, consisting of both crops and livestock rearing. The common crops comprise maize, sorghum, and vegetables. On the other hand, crop and livestock production is primarily small-scale in nature. Most farm produce is for subsistence, with the few surplus yields

being taken to the market to earn a living among smallholder farmers.

Target Population

The target population for this study was smallholder tomato entrepreneurs.

Sample size determination

Since the population size was unknown, the researcher used the Fischers' formula:

$$n = \frac{p(1-p)Z^2}{E^2}$$

$n = Sample\ size \quad E = 0.1$

$p = Proportion\ of\ population \qquad p = 0.5$

$\quad Z = Confidence\ interval \qquad\qquad Z = 1.96$

$$Z = 1.96$$

$$n = \frac{0.5(1-0.5)1.96^2}{0.1^2} = \frac{0.25 \times 1.96^2}{0.01} = \frac{0.9604}{0.01} = 96$$

Sampling procedure

The study used multi-stage sampling techniques involving 3 stages. In the first stage, Gabiley was purposively chosen since it is one of the agricultural hub districts in Somaliland. In the second stage, Gabiley district was divided into four administrative units as follows; Allaybaday, Kalabaydh, Arabsiyo and Wajaale: In the third stage, the number of respondents was obtained using probability proportion technique depending on the size of the administrative unit. The researcher used simple random sampling technique to give respondents equal chances of participation in the data collection process.

Data Collection Tool and Procedure

The researcher acquired a letter of introduction from the relevant authorities before the onset of data collection process. The study employed the use of a semi-structured questionnaire. The research instrument was structured into two broad parts. The first section contained the socio-demographic characteristics of the respondents such as gender, age, marital status, education level, income, size of the household, among others. The second part of the questionnaire contained the hypothesized factors affecting agribusiness enterprises like, economical, technological and environmental.

The study recruited eight fresh university graduate research enumerators (Abaarso-tech University 4 and University of Hargeisa 4) to help in self-administration of the questionnaires. This method was chosen since most of the respondents did not know how to read and write. The research were trained for two days to build their capacity in the study scope, goal and administration of the questionnaire to the

respondents. The researcher conducted a pre-test of the research questionnaire. The main aim of the pre-test exercise was to evaluate enumerators' competency to administer the questionnaires independently and improvement of the research tool. The respondents for the pre-testy comprised of 12 agribusiness entrepreneurs from Hargeisa district.

Data Analysis

The study used Scientific Package for the Social Sciences SPSS vs. 25 for data analysis. The retrieved questionnaires from the field were verified for completeness, coded and entered into SPSS vs 25 software. The researcher conducted perfect by comparing the entered soft copy data and hard copy questionnaire to improve the quality of the data. In the next

Y_i = Sales from agribusiness enterprises

X_j = Hypothesized variables

β_0 = Constant

β_i = Regression coefficients

ε_i = stochastic term

III. FINDINGS

Response rate

The study issued 96 questionnaires to the respondents. The researcher retrieved all of them, but only one questionnaire was discarded due to incompleteness. This resulted in a response rate of 98.7%, which was adequate for further analysis.

Socio-demographic characteristics

The study's socio-demographic characteristics include gender, age, marital status, education level, household size, and income.

Table 1: Showing summary of socio-demographic characteristics of the respondents

Description	Frequency	Percentages
Gender		
Male	25	26.3%
Female	70	73.7%
Age of the respondent		
Above 60 years	7	7.0%
51-60 years	3	3.0%
41-50 years	38	41.0%
31-40 years	16	17.1%
20-30 years	31	32.9%
Marital status		
Married	71	74.7%
Single	18	18.9%
Divorced	6	6.3%
Education		
None	32	33.70%
Primary	43	45.30%
Secondary	18	18.90%
University	2	2.10%
Household size		
2-5 people	12	12.6%
6-10 people	72	75.8%
More than 11 people	11	11.6%
Income level		
$100-$150	30	32%
$150-$200	23	24%

stage, the researcher cleaned the data to eliminate outliers. The study employed the use of descriptive statistics to analyze the socio-demographic characteristics of the respondents. The researcher used Ordinary Least Squares (OLS) regression technique to determine the association between the hypothesized variables at 95% significance confidence interval.

Specification of Ordinary Least Squares (OLS) regression model:

$$Y_i = \beta_0 + \beta_i X_j + \varepsilon_i$$

Where

$200-$250	25	26%
$250-$300	14	14%
Above $300	4	4%

Survey data, (2020)

The study results indicate that the majority of the respondents, 73.7%, were male and 26.3% of the respondents were female. According to the Somali culture, males are the decision-makers in the household. They, therefore, control resource mobilization, mainly farming and agribusiness activities. Moreover, agricultural practices are labor-intensive and are consequently associated with males who are more muscular to implement. However, some women are also gaining interest in the farming sector, particularly agribusiness value additions and supply chain in most of the cities in Somaliland. A similar finding was obtained by Nzioki (2015) in his study: Gender Analysis of Maize Post-Harvest Management in Kenya. The study found that most of the respondents along the maize value chain were male.

The study findings show that most of the respondents, 41%, were in the age category of 41-50 years. Other respondents' age categories were as follows: 20-30 years 32%, 31-40 years 17%, above 60 years 7%, and finally, 51-60 years 3%. Some agribusiness enterprises require colossal capital, such as greenhouse and water drilling.

The study results revealed the majority of the respondents, 74.7%, were married, 18.9% were single, and 6.3% were widowed. This finding was in line with the age category of the respondents, where most of the respondents were elderly. The single respondents represent the youth who participated in the agribusiness supply chain and those who work as casual laborers in the agricultural farms for a living.

The study findings found out that the majority of the respondents, 45.3%, attained a primary level of education. Additionally, 33.7% of the respondents did not go to school, 18.9% achieved secondary level, and 2.1% of the respondents managed to attain university level of education. It is vivid that most agribusiness entrepreneurs have a minimum level of academic qualifications in Somaliland compared to other sectors like service and industrial. Given that agriculture is the backbone of many developing countries globally, particularly

in Sub-Saharan Africa, it is carried out by the majority regardless of their educational background.

The study findings indicate that most of the respondents, 75.8% had a household size of 6-10 people followed by 2-5 people 12.6% and 11-15 people, 11.6%. The Somali culture value larger households, which are associated with the blessing from Allah. Moreover, the use of family planning is highly prohibited among Muslim communities. The average family size is comprised of about seven people but differs from one household to another. In the agricultural sector, more family members are an asset since they are the primary source of labor.

The study results show that the majority of the respondents, 32% had a low-income level of $100-$150 followed by $200-$250 26%, $150-$200 24%, $250-$300 14%, and finally above $300 4%. This follows low wage rates in the agribusiness sector, where most of the respondents work as a source of labor on the farms or along the agribusiness supply chain.

IV. ECONOMETRIC RESULTS

The study adopted the use of linear logistic regression technique to determine the association between the study variables.

Table 2: Summary of (OLS) Logistic Regression Results on Factors Affecting Performance of Agribusiness Enterprises in Somaliland Module summary

Variable	B	S. E	Sig.
Constant	0.024	0.021	0.245
Availability of farm inputs	0.231	0.3276	0.572
Price fluctuation	-0.854	0.745	0.013
Prolonged drought spell	-0.462	0.030	0.029
Land size	0.377	0.439	0.431
Irrigation	0.629	0.343	0.007
Access to extension services	0.261	0.052	0.002
Access to capital	0.307	0.024	0.027
Greenhouse technology	.817	.497	.000
Education level	0.012	0.064	0.875
Use of mobile money transfer	0.761	0.462	0.000
Availability of farmers' cooperative societies	0.439	0.219	0.066

Source survey data, (2020)

The study findings indicated that price fluctuation was statistically significant (p-value 0.013) but with a negative slope (-0.854). This denotes that agribusiness enterprises in Gabiley are price elastic. Just like in other developing countries, the price of agricultural commodities n Somaliland varies with seasons and market forces of demand and supply. Nevertheless, large volumes of agricultural produce imports from Ethiopia is the primary contributor to fluctuating prices of agricultural commodities Somaliland. The result conforms to economic theory that states an inverse relationship between the cost of the commodity and the quantity of the item demanded by a rational consumer. A similar finding was obtained by (Boadu 2018, FAO, 2018 and Walala et al., 2014).

The variable prolonged drought spell had a negative relationship (-0.046) but a robust statistical significance level with a p-value (0.029). This implies that instances of drought spell discourage agribusiness entrepreneurs in the Gabiley district from participating in the production of vegetables. This is because agribusiness entrepreneurs in the Gabiley district heavily rely on rain-fed agriculture. The majority of farmers do not use irrigation systems due to the high cost of the drilling and installation process.

Entrepreneurship training was statistically significant p-value (0.007) and with a positive slope (0.629). The findings reveal that agribusiness entrepreneurs who acquired agribusiness skills performed well. The entrepreneurship training programs have the potential of building the capacity of farmers to practice agricultural production as a business rather than as a subsistence. The training also creates awareness to farmers to embrace modern farming methods to increase their productivity and profitability per unit of land under the production process.

Agricultural extension services had a positive association (0.261) with a solid statistical significance level with a p-value (0.002). The findings indicate that farmers who accessed the extension services performed much better than their counterparts who didn't. The agricultural extension services provided the farmers with technical agricultural skills ranging from land preparation, spacing, planting, management practices, pest and diseases control, harvesting, value addition, and marketing of agricultural produce.

Access to capital was statistically significant p-value (0.027) and with a positive slope (0.307). The findings denote that farmers who received agricultural start-up capital were performing better, unlike those with no access to capital. Most agribusiness entrepreneurs access the capital from commercial banks, government support, and grants from non-government organizations and development partners in Somaliland. The capital obtained includes the supply of farm inputs (seeds, chemicals, and fertilizer), farm machinery, solar panels, greenhouses, and irrigation system.

Greenhouse technology was a statistically significant p-value (0.000) with a strong positive association (0.817). The result indicates that agribusiness entrepreneurs who used greenhouse technology performed better in the Gabiley district than farmers who practiced open-field vegetable production. Although the farmers eluded that the initial greenhouse investment capital was too high, it helped them control notorious vegetasble pests and diseases and optimized farm

inputs. Many studies in the literature have similar findings (Olowa, 2015; Nzioki, 2015; Musa et al., 2020; FAO, 2018).

The use of mobile money transfer revealed a positive relationship (0.761) with a robust statistical significance (0.000). The findings denote that digital mobile money transfer services play a crucial role in ensuring real-time monetary transactions. The study results further show that the majority of the respondents use Telesom (Zaad) and Somtel (e-dahaab) services.

V. CONCLUSION

The study was aimed at assessing factors affecting the performance of agribusiness in Gabiley district in Somaliland. The findings indicate that social, economic, environmental, and technical factors significantly influenced agribusiness activities in Somaliland. The OLS logistic regression results suggest that nine variables, namely; price fluctuation, prolonged drought spell, entrepreneurship training, access to extension services, capital, greenhouse technology, use of mobile money transfer, were statistically significant at 5%. However, four variables (availability of farm inputs, land size, education, and availability of farmers' cooperative societies) were not statistically significant.

The agribusiness sector in Somaliland is still evolving and has a more significant potential to improve food security and create job opportunities and generate government revenue. However, the study findings reveal that modern agricultural methods in agribusiness, especially greenhouse, irrigation, trained agricultural extension expert, are underutilized. Although, they show promising strong statistical significance with the performance of agribusiness ventures in Gabiley district, Somaliland.

VI. RECOMMENDATIONS

The study recommends that Somaliland's Ministry of Agriculture and Development provide more extension staff to help the farmers acquire relevant agricultural knowledge and practices. This would consist of conducting agricultural workshops, demonstration sites in all districts, and on-farm visits at least three times in a season.

In collaboration with other development partners, the government of Somaliland should provide farmers with soft agricultural loans to enable them to purchase agricultural inputs. The initiative will allow low-income farmers to acquire capital intensive like greenhouse and farm machinery to improve agricultural production.

The study recommends establishing the price control system to caution the farmers during excess supplies, especially during the harvesting seasons. The study findings showed that the majority of the agribusiness entrepreneurs cited price fluctuation as the main challenge facing the performance of the agricultural sector in Somaliland.

Somaliland's government should support the farmers by installing irrigation systems to allow continuous agricultural commodities instead of depending on rain-fed agriculture, which is liable to crop failures and seasonality in the production process.

The study recommends that agribusiness entrepreneurs form a joint social group starting from the district, regional up to the national level. This would enable them to have better access to the market, farm inputs and minimize transportation costs through economies of scale.

The study recommends similar studies in other regions of Somaliland. This would yield comparable results and increase the geographical scope since the current study was based in Gabiley district, which may not generalize Somaliland due to diverse regional climatic conditions.

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