



The Difference Between Ghana Cocoa Farmers' Personal Profile on their Financial Sustainability

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ABSTRACT

In pursuing their enterprises, cocoa farmers now need financial sustainability. This research focuses on financial sustainability because it is linked to the accessibility of agricultural funding and the effect on society for current and future generations in order to guarantee a sustainable livelihood. This study considers the personal profiles of cocoa farmers, which are sex, education level, number of dependents, and farm sizes. The cocoa farmers profile has a divergent view on their financial sustainability. The study is quantitative research and correlational design research. The sample population of 1,000 Cocoa farmers was conveniently sampled from the six cocoa-growing regions of Ghana as respondents. The study used self-constructed questionnaires to measure financial sustainability, which had sub-variables of financial viability, financial self-sufficiency, and financial impact. The statistical analysis for the differences was computed by using SPSS 23 with T' Test and ANOVA. The results of the study revealed that there was no significant difference in a number of dependents and educational level of cocoa farmers on their financial sustainability. Also, farm size and sex proved to have a significant difference in the financial sustainability of the cocoa farmer. Large farm size indicated a major difference in financial sustainability as compared to small farm size. Male cocoa farmers were better than the female cocoa farmers on their financial sustainability. The dominance of males in cocoa farming in Ghana makes them consider the financial sustainability of the cocoa farming venture more than females. This is because they are mainly supporting the livelihood of their families. Farm Size as a determinant of financial sustainability is evident by the yield larger farm size can give a cocoa farmer. The study recommends that in order to attain financial sustainability for the cocoa farmer, the farm size and sex must be considered.

Keywords: Financial Sustainability, Financial Viability, Financial Self-Sufficiency, Financial Impact, Cocoa Farmer

INTRODUCTION

In pursuing their enterprises, cocoa farmers now need financial sustainability. They must have the correct approach and implement suitable farming methods to ensure the viability and

financial stability. This research focuses on financial sustainability because it is linked to the accessibility of agricultural funding and the effect on society for current and future generations in order to guarantee a sustainable livelihood.

According to data, the agricultural industry generates jobs and earnings by employing one in three individuals of the world's economically active workforce, or approximately 1.3 billion individuals (The Economic of Ecosystems Biodiversity (TEEB), 2015). In 2013, KPMG Africa Limited revealed that 65% of African labor force contributed to agriculture, contributing approximately 32% to assessment activity. In Ghana, farming accounts for 44.7 percent of the labor force (GSS, 2018), and cocoa farming is the dominant occupation of the farmers. Ghana currently is the second largest producer of cocoa in the world (Woldatlas, 2019).

The World Bank (2016) revealed that 75% of the world is poor, living in rural regions, and living below US\$ 1. It is made up of farmers. It implies that they are not sustained financially. In Africa, under this situation, an average of 43 percent of farmers live. It is revealed that 50% of Ghana's agricultural workforce is not financially sustained and lives below US\$ 1 a day.

Cooke, Hague, and Mackay (2016) submitted to the United Nations International Children's Emergency Fund (UNICEF) on Ghana's standard of living in poverty and inequality revealed that 10% of the population lived in severe poverty. Their research showed that rural poverty is four times the urban poverty index in comparison with urban and rural poverty. The rural environment consists of individuals who are mainly farmers. Data from the World Poverty Clock support this lead that around 10% of Ghana's population spends below the \$1.9 per day worldwide poverty line (Larnyoh, 2018). Cocoa Initiative (2017) has stated that Ghana's per capita daily earnings for cocoa farmers is roughly \$0.40-\$0.45 which is far below the daily poverty line and, as a consequence, is not sustained financially.

This study considers the personal profiles of cocoa farmers in Ghana. These profiles are the sex, level of education, number of dependents, and farm sizes. These factors are terms to determine the financial sustainability of cocoa farmers.

Until recently, not much has been considered about the financial sustainability of cocoa farmers, especially in Ghana. This study seeks to investigate to find the difference of the personal profile on the financial sustainability of Ghana's cocoa farmers. This study has found the gap in knowledge to quantitatively contribute this discussion with a solution to understanding the cocoa farmers' financial sustainability. The study seeks to answer the research question:

1. Is there a significant difference in financial sustainability when considering their personal profile of cocoa farmers:
 - 1) Sex
 - 2) Educational Level
 - 3) Farm Size
 - 4) Number of Dependents

LITERATURE REVIEW

The word sustainability gained a great deal of prominence in the 1980s after the World Commission on Environment published an article entitled "Our Common Future." By deforestation, degradation, and carbon dioxide emissions, businesses have become more alarmed about the impacts of their financial decisions and operations on the environment. During this era, sustainable innovations have appeared to guarantee that resources are managed to satisfy the requirements of today's generation without comprising future generations' capacity to satisfy their requirements (Ford, 2012). Kuhlman and Farrington (2010) summarized sustainability based on three aspects: social, financial, and ecological. Financial sustainability is part of the financial stage measurement.

Financing sustainability principles include economic viability, economic autonomy, economic self-sufficiency, economic outreach, and economic effect (Seibel, 2000). Financial sustainability is the capacity to acquire or create sufficient resources for existing operations and a constant rate of development to satisfy future requirements (Leon, 2001). Hence, the financial sustainability of a farmer relates to his capacity to finance all present and future costs. One Acre Fund (2017) has stated that by impacting, reaching more farmers and lowering operating costs, financial sustainability is a means to an end and not the end itself. Bowman (2011) has classified the element of the present and the future as short and long where they represent resilience and maintenance capacity, respectively. Financial sustainability of the cocoa farmers consists of their financial viability, self-sufficiency, and financial impact.

Financial viability is put between the economy and environment in the sustainability model (Fitch, Jorgensen, Riart, & Vandenberg, 2014). Hayes (2013) noted that sustainability is where continuity in scheduled balanced inflow and outflow under evolving circumstances is reasonably achievable in the long term. According to Kolede and Oganisjana (2015), in attaining the farmer's goal and mission, the notion of financial viability is divided into solvency, sustainable development, and equilibrium. Solvency is the ability of the farmer to pay all

liabilities or debts (Sheshukova & Kolesen' 2012; da Silva & Filipe, 2013); use financial resources to provide sustainable development (Perrini & Vurro 2013; Zietlow, 2012) for both long and short-term equilibrium. It also commits to achieve the set objectives and mission to be financially viable (Ashley & Faulk, 2010).

Financial viability is achieved when income and total price and risk are at least break-even. In Tanzania, Molela (2016) researched the effect of cocoa farming and the capital market as a means of funding agriculture. It concluded that the world market income from cocoa is far above the price of manufacturing and interest on the borrowed funds. It pointed to the reality that Tanzania's cocoa farmers could have access to interest-based financing to operate their farming as a feasible source.

Financial self-sufficiency is the capacity to sustain a family without assistance and to meet one's requirements (Fitch, Jorgensen, Riat & Vandenberg, 2014). Burns (2016) claims that the endurance of achievement can be accomplished by managing revenue, having various revenue streams, and steady savings without extra economic assistance. It could be called self-sufficiency when it becomes long-term. Financial sustainability self-sufficiency is achieved when the income produced continuously covers the total expenditure. It is a metric to determine a company's longevity that can generate enough turnover to cover its costs (Beg, 2016). Serido and Deenanath (2016) observed that financial sustainability is based on capability and independence. The self-sufficiency of farmers is observed to be high in rice manufacturing and is also affected by family size, academic achievement, organizational subsystem, use of own plants, amount of plants, use of organic fertilizer and agricultural work (Abas, 2016).

Happiness, quality of life, and satisfaction address financial impact in the sustainability research (Hira, 2016). Income provides happiness; however, it is not easy to summarize the connection between earnings and happiness. It is a humble connection. A steady increase in revenue, therefore, shows well-being. Xiao (2013) found that in the long run, a meaningful life could be maintained financially by happier individuals. Economic factors such as net worth and earnings have been shown to have a positive or negative impact on the quality of life; social factors such as family size, marital status, and gender; financial management and financial communication process variables (Hira, 2016). The financial impact of satisfaction is explained by how you are in your economic situation. Living standards evaluate most of this satisfaction, level of income, level of assets, how to repay debt and remain in debt (Hira, 2016).

Farmers' attitude as noted by Watling and Zhou (2011), Asumah, Adu-Tutu, Dankwah, and Amponsah (2013) and is affected by demographic factors such as age, education, and farm size. It has also been confirmed by Akoto, Appiah, and Turkson (2017) that financial literacy is sparse in Ghanaian cocoa farms. These results have shown that Ghana's cocoa farmers have low financial literacy linked to their farm size, age, gender, and level of education. They are also evaluated for effectiveness and inefficiency features, among other variables (Utaranakorn & Yasunobu, 2016). Obuobisa-Darko (2015) also claimed that farm size, education, and age gave loan access and technology adoption in cocoa farming a positive correlation.

Research by Djokoto, Afrane-Arthur, and Badu-Prah (2015) also found that males are predominantly involved in Ghana's cocoa farming. These men are in the 50-year age bracket. Osei (2018) certifies that the reduced percentage of females in cocoa farming in Ghana is due to the absence of funding sources from creditors. As is evident in IITA (2016), West Africa's average age of cocoa farmers, where 70 percent of the world's cocoa is cultivated in 50 years, with 60 years of life expectancy. It implies that there will be a world issue with a shortage of chocolate if the youth are not involved in cocoa farming.

According to Samberg, Gerber, Ramnkutty, Herrero, and West (2016), the average agricultural land in sub-Saharan Africa is small, as less than five hectares of farmland are allocated to a farm family. In Ghana, the Agriculture Ministry estimated the size of the cocoa farm per farmer to be 0.4 hectares or 1 acre. According to a report by Akudugu (2016), farm size had a significant effect on the financial sustainability of the farmers..

METHODS

This is a quantitative study, and the research design is correlational. According to the official website of Ghana COCOBOD, Ghana's cocoa farmers are estimated at 800,000. This study conveniently sampled 1,000 cocoa farmers as the respondents from the six cocoa-growing regions of Ghana, outliers of which were 20 respondents. Therefore, there were 980 real respondents used for the research. The self-constructed questionnaires were administered to the respondents. Financial sustainability was measured with sub-variables of financial viability, self-sufficiency, and financial impact and was checked for internal consistency with Cronbach alpha of 0.898, 0.857, and 0.831 respectively. Financial viability had seven items, financial self-sufficiency had six items, and financial impact had nine items. The difference on sex was analyzed by T'Test and number of dependents, farm size and educational level are also analyzed by ANOVA all with SPSS 23.

RESULTS

The sex distribution of the respondent consisted of 658 men (67%) and 322 women (33%). Their age varies from 15-35 years of age 236 (24 %), 36-60 years of age 712 (73 %) and 32 years of age 61-65 (3%). Again, the number of dependents per household head was acquired from 1-12 dependents, 403 (41%), 13-24 dependents, 399 (41 %) and 25-38 dependents, 178 (18%). A total of 321 (33%) had a farm size of 0.5-10 acres, 488 (50%) had 11-20, 109 (11%), 21-30 acres, and 62 (6%) 31-44 acres. Cocoa farmers ' education level were also analyzed. Cocoa farmers without formal education were 45 (5%), 733 (75%) had basic education, 148 (15%) had secondary education, and 54 (6%) tertiary education school.

The study investigation of the personal profile difference in financial sustainability. In determining the difference due to sex, the initial analysis used independent-sample t-test to compare the financial sustainability score with the sex of the respondents. The Levene's Test for Equality of Variances p-value .879 indicated that the study uses Equal variances assumed. The finding was that there is a significant difference in the scores of the sex $t(978) = -2.247$, $p = .025$, two-tailed. The magnitude of the mean score was very small, with effect size squared (Eta) 0.0001 or 0.01% at a 95% confidence interval. It implies that the male ($M=2.918$, $SD=.2477$) differs from the females ($M=2.880$, $SD=.2465$) by 0.66%. The males' perceptions of financial sustainability in cocoa farming are better than females in Ghana. This finding agrees with Akoto, Appiah, and Turkson (2017) study on the financial literacy of cocoa farmers, which indicated that the males differ from the females. This was because cocoa farming is predominantly a male occupation (Osei, 2018).

A one-way between-groups analysis of variance was piloted to determine the influence of age on financial sustainability, as showed in Table 2. The respondents were grouped as a youth (15-35), middle-age (36-60) and old age (61-65). There was no statistically significant difference at $p < 0.05$ level for the three groups: $F(2,977) = .135$, $p = .874$. Nevertheless, the non-significance actual mean difference in the mean scores between the groups was quite small. The effect size, computed using eta squared, was .0003 at a 95% confidence interval. This implies that the age group perception of financial sustainability is the same when it comes to cocoa farming. Though IITA (2016) has declared that cocoa farming is made up of middle-age people, this study shows that when it comes to their financial sustainability, they do not differ.

In examining the same difference test based on the number of dependents of the cocoa farmers in connection to financial sustainability the results showed no statistically significant difference

at $p < 0.05$ level for the three groups: $F(2, 977) = .1.350$, $p = .260$ as presented in Table 2. The effect size of the calculated based on eta squared was 0.0028 at a 95% confidence interval, which is interpreted as small. This meant that the number of dependents of a cocoa farmer does cause a change in their financial sustainability. It implies that financial sustainability issues are paramount to all cocoa farmers. Asamoah and Owusu-Ansah (2017) have pointed out that the greater the number of dependents of the cocoa farmer, the higher their financial sustainability. However, this study points out that it does cause a difference in their financial sustainability. Also, the educational level of the cocoa farmer and the difference in financial sustainability was examined as depicted in Table 2. There were four groups of educational levels. The research resulted to a no statistically significant difference at $p < 0.05$ level for the four groups: $F(3, 976) = .1.770$, $p = .151$. There was also a small effect size (eta) of 0.0054 at a 95% confidence interval. This implies that the level of education attained by the cocoa farmer did not give any difference in their perception of financial sustainability.

The cocoa farm size was grouped into four, and the difference was investigated in relation to financial sustainability. The study concluded a statistically significant difference at $p < 0.05$ level for the four groups: $F(3, 976) = 4.609$, $p = .003$. Nevertheless, reaching statistical significance, the actual difference in mean scores between the groups was quite small. The effect size, which was computed using eta squared was .0.0140 at a 95% confidence interval. Post-hoc comparisons were done as showed in Table 1 on equal variance assumed with LSD test indicated that group 1 of farm size of 0.5-10 acres was significantly different from farm sizes 21-30 acres and 31-44 acres and farm size 11-20 was also significantly different along with 21-30 acres and 31-44. However, there was no significant difference between farms sizes 0.5-10 acres and 11-20 acres, 20-30 acres, and 31-44. This implies that the size of the farm affected the cocoa farmers' association with financial sustainability. Smaller farm sizes comparison and bigger farm sizes comparison in relation to financial sustainability were statistically not different.

Table 1. Post Hoc Tests Results for Farm Size and Financial Sustainability

Dependent Variable: LSD	Financial Sustainability	Multiple Comparisons					
		Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound	
(I) Farm Size (Acreage)	0.5-10	11-20	.0095	.0177	.5923	-.0253	.0443
		21-30	.0761*	.0273	.0055	.0224	.1297
		31-44	.0878*	.0342	.0104	.0206	.1549
	11-20	0.5-10	-.0095	.0177	.5923	-.0443	.0253
		21-30	.0666*	.0261	.0110	.0153	.1178
		31-44	.0783*	.0332	.0187	.0130	.1435
	21-30	0.5-10	-.0761	.0273	.0055	-.1297	-.0224
		11-20	-.0666	.0261	.0110	-.1178	-.0153
		31-44	.0117	.0392	.7656	-.0653	.0887
	31-44	0.5-10	-.0878	.0342	.0104	-.1549	-.0206
		11-20	-.0783	.0332	.0187	-.1435	-.0130
		21-30	-.0117	.0392	.7656	-.0887	.0653

*. The mean difference is significant at the 0.05 level.

Table 2. The Difference in Cocoa Farmers' Financial Sustainability When Personal Profile is Considered

	Sex	Age	Number of Dependents	Educational Level	Farm Size
T	-2.247				
F	0.23	0.33	0.492	1.296	4.43
Sig	0.025	0.968	0.612	0.276	0.004

Df	978	2/977	2/977	3/976	3/976
Eta squared	0.0051	0.0001	0.0028	0.004	0.0134

Significant at the 0.05 level (2-tailed).

DISCUSSION AND CONCLUSION

The study reveals that when it comes to financial sustainability and sex, there is a significant difference. Cocoa farming in Ghana is dominated by males who are mostly the heads of the family. As a result, they seek more financial sustainability in order to maintain the livelihood of their families. This point is supported by Nyirenda, Nkhata, Tembo, and Siamundele (2018) in their study of subsistence farming.

Page and Bellotti (2015) postulate that the age of a farmer does impact differently in relation to their financial sustainability. This comment supports the results of this research when considering cocoa farmers in Ghana. Furthermore, Manes Rossi, Brusca, and Aversano, (2018) have noted that educational level does not differ when it comes to seeking financial sustainability. When it comes to the number of dependents to financial sustainability difference, the study revealed that it was not significant. This is confirmed in the study of Adhiana and Maida (2018) in their assessment of poverty levels of farmers.

The impact on farm size significant difference is confirmed by the study of Ren et al. (2019) in China. Their study noted that the farm size helps the farms to increase yield, which affects the profitability and thus their financial sustainability. In the same vein, cocoa farmers support this declaration.

In summary, the research rejected the hypothesis that there is no significant difference in financial sustainability when considering farm size and sex. However, the study failed to reject the same hypothesis when it considered age, number of dependents, and educational level. The study recommends that in order to attain financial sustainability for the cocoa farmer, the size of the farm and gender must be considered. In another vein, financial sustainability for the cocoa farmer is not the preserve as a dependent of the farmers' educational level and a number of dependents.

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