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Market Orientation and Entrepreneurial Proclivity as Antecedents of Innovative Behaviour: Implications for Cocoa Farmers in Ghana

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Abstract

Despite the increasing importance of innovation in literature, there is no agreement about its antecedents. This clearly makes it difficult and risky for cocoa farmers to choose suitable strategies to adopt, develop and promote successful innovations to fit their farm situations. The research questions were aimed at assessing the level of the entrepreneurial proclivity of cocoa farmers, their level of market orientation, their level of innovative behavior, and the influence of entrepreneurial proclivity and market orientation on innovative behavior. Cocoa farmers were sampled from all the six Cocoa Regions in Ghana. In total, 370 cocoa farmers, who participated in the Farmer Business School, were sampled using the multi-stage sampling procedure. Data were analyzed using descriptive statistics (mean, standard deviation) and inferential statistics (multiple linear regression). The study showed evidence that market orientation and entrepreneurial proclivity can be considered as antecedents of innovation with the key factors being, customer emphasis, intelligence dissemination, and market responsiveness. The study recommends improved flexibility in the cocoa marketing system of Ghana giving attention to the systems of customer/export options available to cocoa farmers.

Keywords: Agricultural extension; Cocoa management; Farmer business school; Innovation development; Rural development.

1. Introduction

Cocoa production remains a major contributor to the Ghanaian economy. The industry is however, characterized with low productivity and peasantry, compared to other high producing countries [1]. This is because, in the past, extension organizations were more concerned with the process of disseminating technical information or innovations about the production needs of farmers [2]. This brought about low adoption rates among the cocoa farmers. CRIG [3], also noted that only about 3% of cocoa farmers have adopted the full range of technologies developed for cocoa farmers in Ghana. The resultant effect is that cocoa farmers are among the poor in the country [4]. However, the adoption of innovations can be regarded as an essential element necessary for cocoa farmers who desire to maintain their competitive edge in the market [1]. To remain competitive in the industry, two mixes of factors are necessary, market orientation and entrepreneurial proclivity.

From a behavioural and organisational perspective, market orientation is aimed at sustaining a relatively high measure of performance by organisations. It is a way to gain value with customers [5, 6]. This is reason market orientation cannot become the sole responsibility of the marketing department but rather, the responsibility of all the various departments in an organisation. Various research studies have confirmed that market orientation has a significant influence on customer value, costs, innovativeness and performance [7-9]. Farms or organisations that believe in the concept of market orientation always place value on their ability to understand the needs of their clients. They do this so that they can be able to extend better services to them. This shows that they have a continuous and proactive persuasion that helps them to identify and meet the needs of their customers and ultimately produce financial results. Organisations with such unique and excellent marketing practices can perform than their competitors. They also find simple ways to resolve their client complaints so that they could focus on other important needs [9, 10].

Consistent with market orientation (MO), a cocoa farmer is likely to find value with a marketing practice that is more customer centred [5, 6]. This customer centeredness affects the entire farm operations which includes gathering information on customers, competitors and the markets and develop a cohesive process that structures market information to reduce uncertainties in decision making [11, 12].

In this study, entrepreneurial proclivity is defined as the propensity to act entrepreneurial. It is demonstrated by innovativeness, pro-activeness and risk-taking assumed by cocoa farmers. This is what drives the need for change, assessment of opportunities and innovative activity [13]. Farmers and farm organisations are admonished to develop entrepreneurial proclivity because it is conducive for market orientation to evolve and develop. The effect on how the various functions or offices within the farm organisation work provides a bridge for extensive innovative activity [14]. In this sense, it is suggested that entrepreneurial proclivity coupled with a market-oriented culture can make a significant contribution to successful innovative behaviour [11]

There is very little information available on the relationship between entrepreneurial proclivity and market orientation on innovative behaviour of cocoa farmers in Ghana. It has been established elsewhere (in studies such as Narver and Slater [5]; Kohli and Jaworski [6]; Moreno and Casillas [11]) the importance of these separate concepts (entrepreneurial proclivity and market orientation) in fostering innovative behaviour. However, the combined effect of the two concepts (market orientation and entrepreneurial proclivity) on innovative behaviour is yet to be established. Through the Farmer Business Organisation organised for Cocoa farmers in Ghana, they were trained in order to transform their farming entity from a hobby to a business. This process as intimated in literature [5-9, 11] can be influenced by the market orientation (a factor influenced by the training activities) and entrepreneurial proclivity (a factor influenced by the farmers themselves) of the cocoa farmers. Both external and internal antecedents can be crucial in developing the innovative behaviour of cocoa farmers. This study attempts to contribute to providing critical insights on the antecedents of innovative behaviour among cocoa farmers in Ghana using the Farmer Business School as a case.

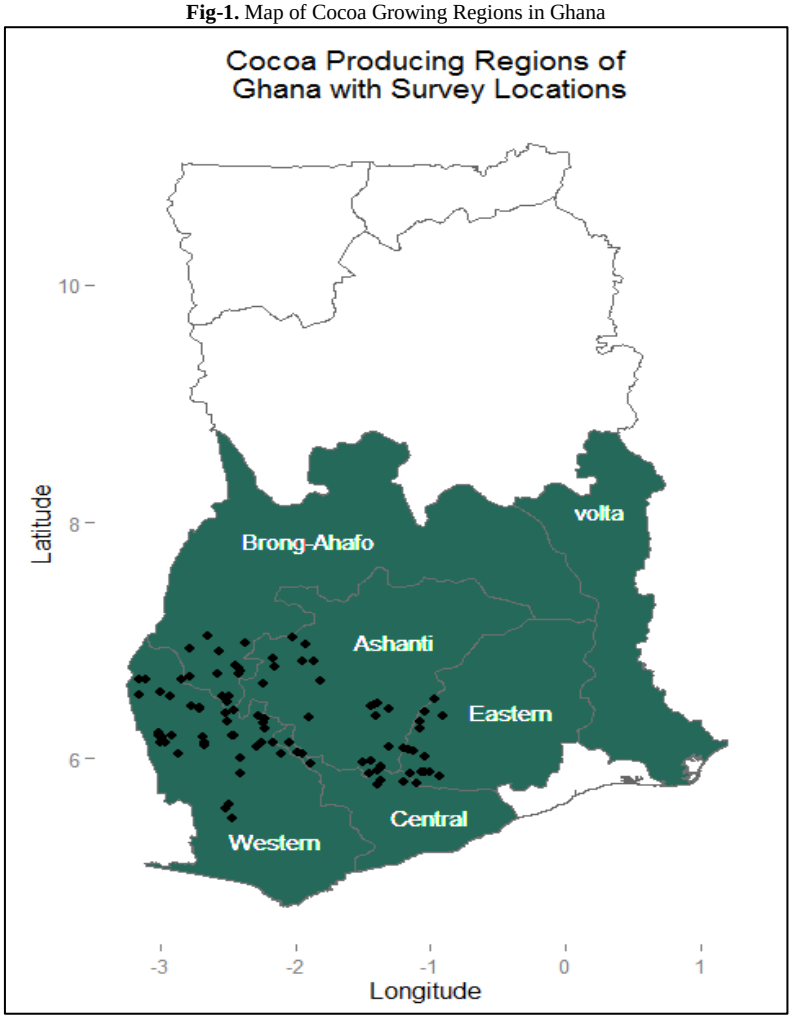
The study will attempt to answer the following questions;

1. What is the state of market orientation and entrepreneurial proclivity among cocoa farmers in Ghana?
2. What is the level of innovative behaviour exhibited by the cocoa farmers in Ghana?
3. How is innovation behaviour influenced by entrepreneurial proclivity and market orientation?

2. Materials and Methods

The research design adopted for this study was a descriptive survey design. The study area was Ghana but with specific focus on the six Cocoa Regions. The study population consisted of all cocoa farmers in the country. The Ghana Statistical Service (2014) reported an estimated population of cocoa farmers to be around 350,000. In total, 370 Cocoa farmers were sampled from all the six Cocoa Regions in Ghana; Ashanti (62 respondents), Brong Ahafo (62 respondents), Central (62 respondents), Eastern (62 respondents), Volta (32 respondents) and Western (90 respondents).

Fig-1. Map of Cocoa Growing Regions in Ghana



The multi-stage sampling technique was employed to select the cocoa farmers. The first stage involved the selection of Cocoa Districts. Two districts from each of the regions with the exception of Western Region (3) and Volta Region (1) making a total of 12 districts were selected using the simple random sampling technique. Out of each districts, three communities each were selected through the simple random sampling technique. The final stage involved the simple random selection of the cocoa farmers to make up the sample size of 370 farmers. Questionnaires were the research instruments used for the collection of data. Data was analysed using descriptive statistics (mean, standard deviation) and inferential statistics (multiple linear regression).

Three key concepts were measured. The first concept was market orientation. In this study, the farmer is perceived as an entrepreneur and therefore the farm as an organisation. The definition of market orientation adopted in this study is this; market orientation is the farm culture that most effectively and efficiently creates the necessary behaviours for the creation of superior value for customers and, thus, continuous superior performance for the business. Market orientation was therefore measured as a merger of six constructs adopted from different studies [5, 8, 15-19]. The six constructs are as follows; competitor orientation, intelligence generation, market responsiveness, intelligence dissemination, inter-functional coordination and customer emphasis. The following scales decided based on literature as stated above were employed: 1 = very low; 2 = low; 3 = average; 4 = high and 5 = very high were employed to determine the level of market orientation of the cocoa farmers.

The second concept was entrepreneurial proclivity. In this study, entrepreneurial proclivity is defined as the propensity to act entrepreneurial. It is demonstrated by innovativeness, pro-activeness and risk-taking assumed by cocoa farmers [13]. Entrepreneurial proclivity was measured as a merger (a function of three measures-single aggregated mean value of three constructs); Risk taking, innovativeness and pro-activeness). Based on literature as stated above, the following scales were adopted: 1 = very low; 2 = low; 3 = average; 4 = high and 5 = very high were employed to determine the level of entrepreneurial proclivity of the cocoa farmers. This was used to get an index score for each of the constructs.

The third concept was innovative behaviour. In this study, innovative behaviour is defined as the level of skills the cocoa farmers were able to acquire through the Farmer Business School and practiced as at the time of the data collection. The mean scores for each of the skills set was calculated and ranked on a scale of 1 to 5. The basis for this scale was developed with ideas from Chian-Son and Yu-Hui [20]; Braak [21] and Rogers [22], thus, 1-Not adopted, 2-Very low, 3-Low, 4- High, 5-Very High.

Finally, a multiple linear regression was used to estimate the effect of market orientation and entrepreneurial proclivity on innovative behaviour. The dependent variable was innovative behaviour while the independent variables were market orientation (Market Responsiveness, Inter-functional coordination, Customer Emphasis, Competitor Orientation, Intelligence Dissemination and Intelligence Generation) and enterperneurial proclivity (Risk Taking, Innovativeness and Proactive).

Model Specification

Dependent variable = Innovative behaviour (1-Not adopted, 2-Very low, 3-Low, 4- High, 5-Very High). Independent variables = Market orientation (1 = very low; 2 = low; 3 = average; 4 = high and 5 = very high) and Enterpreneurial proclivity (1 = very low; 2 = low; 3 = average; 4 = high and 5 = very high). The a-prior expectation for all the independent variables was positive (+).

3. Results and Discussion

3.1. Market Orientation

Table 1 describes the six market orientation indicators, thus, Competitor Orientation, Intelligence Generation, Market Responsiveness, Intelligence Dissemination, Inter-Functional Coordination and Customer Emphasis.

Table-1. Market Orientation Indicators

Indicators	Mean	Std. Dev.
a. Competitor Orientation	2.12	0.42
b. Intelligence Generation	2.55	0.58
c. Market Responsiveness	2.66	0.47
d. Intelligence Dissemination	2.69	0.78
e. Inter-Functional Coordination	2.71	0.42
f. Customer Emphasis	3.05	0.51

Source: Field Data

Table 1 presents the mean scores for the indicators of market orientation of the cocoa farmers. It could be observed that the market orientation indicator with the lowest mean score was competitor orientation (M=2.12, SD=0.42). The market orientation indicator with the highest mean was customer emphasis (M=3.05, SD=0.51). The standard deviation of all the six indicators of market orientation were less than 1.0. This means that there is a general agreement (less deviation) among the respondents in terms of their distribution around the mean. The implication is that majority of the cocoa farmers do not place much emphasis on the relevance of their competitors in enhancing their market orientation. The cocoa farmers place much emphasis on their customers (LBCs) in enhancing their market orientation.

The market orientation indicator with the lowest score was “competitor orientation”. This means that the cocoa farmers do not have an understanding of their competitors’ strengths or strategies. The case is that cocoa farmers do

not even perceive their fellow cocoa farmers as their competitors. A good competitor orientation could help cocoa farmers to produce quality cocoa beans for their markets [23]. In an exceptionally cocoa sector, the presence of opponent farmers and their craving for superior value and incentive would probably expand the significance of a market orientation. It is imagined that highly market oriented cocoa farm owners would be more forceful in the age of market intelligence prompting the disclosure of opportunities to give a better incentive to the market. The capacity to learn quicker than contenders may likewise be an ability of market oriented farms and one that eventually may prompt sustainable competitive advantage [12].

With customer emphasis as the highest indicator in the market orientation of the cocoa farmers (participants and non-participants), it means the cocoa farmers are able to make achievements through their customer emphasis in relation to the LBCs [5]. However, this must not simply be about meeting the needs of the immediate consumer but seeing the entire network and providing items that are in sync with that of the immediate and subsequent buyers [18].

3.2. Entrepreneurial Proclivity

Table 2 describes the entrepreneurial proclivity of the cocoa Farmers based on their mean score of innovativeness, risk taking and pro-activeness.

Table-2. Entrepreneurial proclivity

Measure	Mean	Std. Dev.
a. Innovativeness	3.73	1.08
b. Risk taking	3.64	1.12
c. Pro-activeness	3.45	1.09

Source: Field Data

Table 2 presents the entrepreneurial proclivity of the cocoa farmers. Using the mean scores, pro-activeness was the least (M=3.45, SD=1.09). This was followed by risk taking (M=3.64, SD=1.12). Innovativeness was the highest (M=3.73, SD=1.08). From the results, it could be observed that all the indicators used in measuring the entrepreneurial proclivity of the cocoa farmers were above 3.0. This suggests that the level of entrepreneurial proclivity of the cocoa farmers was relatively high. Again, the standard deviation of all the three indicators of entrepreneurial proclivity were more than 1.0, suggesting that there is a general disagreement (more deviation) of the respondents in terms of their distribution around the mean.

Among the three indicators of entrepreneurial proclivity, innovativeness was found to be the highest. A study by Tham-Agyekum [24] similarly found that the majority of the farmers (89%) were highly innovative. Nossal [25] also measured the innovative level of grain growers in Australia and found that most of them (55%) were moderately innovative.

The level of risk taking by the cocoa farmers was also high (M=3.64), meaning that, most of the cocoa farmers like to 'step up' and get things moving instead of sit and sit tight for another person to do it. There is therefore a relatively high level of willingness of the cocoa farmers to pledge huge amount of resources into future opportunities when uncertainties beckon highly [26]. On pro-activeness, the implication of this result is that the cocoa farmers take initiatives emphasizing on expectation and seizing opportunities in new markets. They tend to be the first to enter the market and this could result in market dominance, higher profitability, customer loyalty and larger market shares [27]. Generally, the findings of the study imply that cocoa farmers seek creative answers to the problems in their farms [28]. They also explore opportunities, generate new ideas and always plan towards implementing change [29].

3.3. Innovative Behaviour

Table 3 describes the innovative behaviour of the cocoa farmers based on the skills set they were trained on during the Farmer Business School.

Table-3. Innovative Behaviour in Farmer Business School

Innovation	Mean	Std. Dev.
a. Fill a simple cropping calendar	4.11	1.23
b. Obtain a guaranty for a loan	4.14	1.14
c. Manage financial deficits and surplus money	4.15	1.12
d. Use the financial calendar to plan my farm/household expenditure	4.16	1.14
e. Determine profit or loss of my farm business	4.18	1.14
f. Calculate money out and money in	4.19	1.15
g. Bargaining new farm opportunities	4.19	1.09
h. Manage savings and reimburse a loan	4.21	1.10
i. Assess a cooperative business opportunity	4.22	1.07
j. Measure a plot with simple tools	4.24	1.12
k. Contribute to strengthen FBO in business	4.25	1.02
l. How to access cocoa farm support services	4.28	1.01
m. Produce good quality cocoa following COCOBOD techniques	4.36	0.83

Source: Field Data
Note: Scale: 1-Not adopted, 2-Very low, 3-Low, 4- High, 5-Very High

Table 3 represents the mean innovative behaviour (adoption of skills) of the cocoa farmers in the farmer business school. The least adopted skill was "fill a simple cropping calendar" (M=4.11, SD=1.23). The highest adopted skill was "produce good quality cocoa following COCOBOD techniques" (M=4.36, SD=0.83). This implies that the area of filling of the cropping calendar still needs some polishing up to be done while the majority of the cocoa farmers are highly skilled in producing good quality cocoa following COCOBOD techniques.

The standard deviation of majority of the adopted skills were greater than 1.0, suggesting that there is a general disagreement (more deviation) of the respondents in terms of their distribution around the mean. As observed from the Table, all the adopted skills were more than 4.0, implying that generally, the level of innovative behaviour (skills adopted) of the cocoa farmers in the farmer business school module is relatively high. Contrary to the findings of this study, Akoto [30] observed that generally, most cocoa farmers rather have low skills in areas such as farm planning, calculating profits of business, practice of savings, credit worthiness, loan co-sign consequences, insurance practice and financial investments. Other areas such as record keeping still remain a gray area for most farmers although it has the potential of reducing risks significantly. The reason could be that, contrary to the exposure the cocoa farmers in this study received through the farmer business school, these farmers did not have that experience.

3.4. Influence of Entrepreneurial Proclivity and Market Orientation on Innovation Behaviour

Table 4 describes the influence of entrepreneurial proclivity and market orientation on innovative behaviour.

Table-4. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	41.37	9	4.60	9.82	0.00[b]
Residual	168.11	359	0.47		
Total	209.48	368			

Source: Author's Construct

$R=0.44$; $R^2=0.20$; Adjusted $R^2=0.18$; Std. Error of the estimate=0.68

a. Dependent variable: Innovative behaviour

b. Predictors: (Constant), Market Responsiveness, Inter-functional coordination, Customer Emphasis, Competitor Orientation, Intelligence Dissemination, Intelligence Generation, Risk Taking, Innovativeness, Proactive

From Table 4, it could be observed that there is a significant influence of entrepreneurial proclivity and market orientation on innovative behavior ($p<0.05$). Therefore, this implies that as the entrepreneurial proclivity and market orientation of the cocoa farmers also increase, their innovative behaviour is also likely to increase. A 'R^2' figure of 20% shows that the independent variables (entrepreneurial proclivity and market orientation) explain about 20% of the variability observed in the dependent variable (innovative behavior). The 'R^2' figure is very small and it suggests that about 80% of the factors that could explain innovative behaviour among cocoa farmers are not explained in this study. However, it is sufficient to indicate that similar results were also found by Otero-Neira, *et al.* [31]. In that particular study, it was found that market orientation and entrepreneurial proclivity affect the innovative behaviour of furniture companies. It will therefore not be far-fetched to assert that these two factors are antecedents of innovative behaviour. It will not be out of place to encourage market orientation among cocoa farmers who have a high propensity for entrepreneurship. Their approach to taking risks and initiatives and proposing positive change in their farm activities need to be encouraged. A high level of commitment is needed to learn in promoting these activities for enhancing productivity and livelihoods of cocoa farmers [18].

Table 5 describes the coefficients of the multiple linear regression model.

Table-5. Coefficient of Multiple Linear Regression Model

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.89	0.37		5.09	0.00
Customer emphasis	**0.35**	**0.08**	**0.24**	**4.36**	**0.00**
Competitor orientation	0.02	0.11	0.01	0.20	0.84
Inter-functional coordination	-0.05	0.09	-0.03	-0.52	0.61
Intelligence generation	0.02	0.09	0.02	0.24	0.81
Intelligence dissemination	**0.19**	**0.06**	**0.19**	**2.98**	**0.00**
Market responsiveness	**0.21**	**0.08**	**0.13**	**2.55**	**0.01**
Innovativeness	0.08	0.06	0.09	1.42	0.16
Risk taking	-0.12	0.07	-0.12	-1.69	0.09
Proactive	0.09	0.06	0.10	1.45	0.15

Source: Author's Construct

Table 5 presents information on the coefficient of the variables measured. Customer emphasis, intelligence dissemination and market responsiveness as components of market orientation were found to be the key factors that influence the innovative behaviour of cocoa farmers ($p<0.05$). The positive coefficients also show that as they

increase, innovative behaviour of the cocoa farmers also increase and vice versa. The components of entrepreneurial proclivity were not significant factors as separate entities. This suggests that they do not on their own influence the innovative behaviour (level of adoption) of cocoa farmers.

Customer emphasis has a positive and significant influence on the innovative behaviour of cocoa farmers. Its implication for cocoa farmers is that they should develop a customer oriented culture for their LBCs [32]. All the strategies should be developed in such a way that they deliver superior value to the customers (LBCs) [5, 33]. This strong association with the LBCs will help to obtain benefits in financial terms [34]. These will ensure sustainable farm outputs [35].

Intelligence dissemination has a positive and significant influence on the innovative behaviour of cocoa farmers. The use of the data and information strategies in farm organisations ought to go past straightforward client (LBC) fulfillment [5] in light of the fact that, as expressed by Ho and Tsai [36], if data collection, synthesis and response happen at the degree of the clients' (LBCs) higher order objectives, all things considered, novelty will line up with client desires. Market orientation, for [37] builds up certain standards with respect to data collection as far as disseminating information related to customers is concerned.

Market responsiveness has a positive and significant influence on the innovative behaviour of cocoa farmers. According to Bunic [38], market responsiveness includes the determination of target markets, the plan and choice of products and services and the production, distribution and promotion of the product. This means that if the Ghana COCOBOD permits cocoa farmers to choose and design their own products, services and markets that is suitable, they are likely to become innovative or adopt technologies that will meet such needs. However, with the current system where only the LBCs are permitted to purchase cocoa from farmers, cocoa farmers cannot be innovative. This proposed arrangement can bring innovativeness among the cocoa farmers in Ghana. As stated by Narver and Slater [5], cocoa farmers will then utilise their resources to deliver superior value to even the LBCs or implement and execute strategies by responding to their customer and market needs [39].

4. Conclusion

The level of entrepreneurial proclivity as found among the cocoa farmers was relatively high, also evident in risk taking, pro-activeness and innovativeness. Customer emphasis, intelligence dissemination and market responsiveness were found to be the key factors of market orientation that influence the innovative behaviour of cocoa farmers.

Based on these conclusions, the study recommends an improved flexibility in the cocoa marketing system of the country giving credence to the systems of customer/export options available to cocoa farmers and the dissemination of improved innovations. This is because the current system does not permit cocoa farmers to negotiate prices on their own, neither are they permitted to market cocoa beans to buyers. These are all decided by the cocoa system which poses a strong limitation and resistance to entrepreneurial inclinations or proclivity among the cocoa farmers.

Contribution/Originality

The study affirmed that indeed market orientation and entrepreneurial proclivity are antecedents of innovation. The areas that needed much emphasis was customer emphasis, intelligence dissemination and market responsiveness. The marketing system being operated by Ghana in the cocoa industry needs to give some flexibility to farmers to exploit as many buying outlets as possible instead of being fixated with the Licensed Buying Companies. Authors declare that this paper has never been published before or currently submitted anywhere for this purpose.

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