Moderating Effect of Farmer Characteristics on the Relationship between Branding Practices and Performance of Commercial Farmers

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Abstract

The objective of this study was to establish the moderating effect of farmer characteristics on the relationship between branding practices of fresh fruits and vegetables (FFV) and performance of commercial. Data was collected using a semi structured questionnaire and analyzed using both descriptive and inferential statistics. The study which was conducted in Kiambu County, Kenya, established that farmer characteristics had a statistically significant moderating effect on the relationship between branding practices of FFV and performance of commercial farmers. Farmers should enhance their FFV branding skills and the government should also undertake the requisite initiatives to empower farmers in the branding of FFV as a means of adding value to the products for optimum results. Future research should adopt a time series design (to gather continuous data), target other fresh agricultural products; increase the variables and constructs being investigated and target other Counties with differing social economic and climatic conditions.

Keywords: Branding Practices, Farmer Characteristics, Performance of Commercial Farmers, Moderating Effect, Fresh Fruits, and Vegetables

1. Introduction

Technological advancement has resulted in all sectors of the economy getting saturated in the number of products being offered. Innovation is therefore of paramount importance for the survival, growth and success of a firm. However, as noted by Lisboa, Lages and Skarmeas (2010), most firms place emphasis on technology and product development capabilities, neglecting other possible capability domains. Lisboa, et al. (2010) have established that by investing in non-technology related product development capabilities, managers allow for the discovery and experimentation of new ideas and features, which facilitates the development of truly innovative, and competitive products, which in turn provide a basis for effective product differentiation. Non technical product development capabilities play a pivotal role in driving product differentiation.

Kotler and Keller (2009) observe that suppliers engage in various branding practices by utilizing different brand elements to differentiate their products from competition. On their part, Ahmad and Baharun (n.d.) point that today, brand building has become the most important issue in strategic marketing and the main driver for shareholders' value and returns. They further note that a strong likeable personality of the brand founder could cause the market to associate the brand with the personality. The brand is therefore seen to be something beyond the 'name' of the offering and becomes a means of building emotional relationship with customers.

The theory of branding is a central theme in product differentiation. It postulates that producers will strive to offer products with superior attributes to gain market dominance. Trienekens (2011) observes that for most fresh food products, there is limited differentiation and branding of the products at farm level despite the availability of numerous product differentiating attributes. However, due to increased competition, agricultural producers have started adopting branding as a value adding activity (Beverland, 2007).

The entrepreneur in a small and medium size enterprise (SME) may be perceived as a role model or as a "hero" and this subconscious association greatly contributes to shaping the personality of the brand (Ahmad & Baharun (n.d.). Therefore, for small and medium size farms, the characteristics of the entrepreneur commercial farmers affect their performance capabilities in different ways.

Ahmad & Baharun (n.d.) have established that product differentiation will be more about entrepreneur personality of being honest, trusted, reliable, knowledgeable, and innovative. It is more about qualities of somebody that we would be comfortable to work with for a long time.

Farmers' demographic characteristics influence their ability to engage in various performances related initiatives. According to Sindi (2008), the mature farmers are more experienced and have more access to required resource as compared to the young ones. The young farmers were found to be more accommodative of new ideas. Male farmers had easy access to credit, extension services and other farm inputs while female farmers had constraints in acquiring resources including modern technology. Farmers with secondary school level agricultural education used the right inputs leading to better performance (Saina, Kathuri, Rono, Kipsat & Sulo, 2012). Cooperative membership facilitated access to credit and other facilities (Verhofstadt & Maertens, 2013) and also enabled farmers to lobby for government support including extension services. Farmers who were more capitalized and technically and financially empowered were more effective in farming and marketing (Neven & Reardon, 2006).

The concept of firm performance relates to the manner in which a firm's resources are used to achieve its overall objectives. Kinyua-Njuguna (2013) presents it as the actual output of an organization measured against its intended outputs. Branding practices are demanding in terms of time, efforts, and financial resources. Both financial and non-financial parameters are used to measure firm performance arising from BP. Product output, price premium, profitability, and satisfaction were the performance measures adopted for this study since as established by Ailawadi, Lehmann and Neslin (2002), they are easy to assign and are consistent with the focus of business executives.

2. *The Research Problem*

The choice of branding practices depends on the objective of the exercise (Kotler & Keller, 2009). For fresh agricultural product brands, the effectiveness of these practices in creating unique brand identity that will translate into premium performance is moderated by a farmers' demographic characteristics (age, gender, education, income and experience) coupled with farm ownership (Evenson & Mwabu, 1998).

The Horticultural subsector in Kenya accounts for 36 per cent of the agricultural GDP with vegetables and fruits accounting for 74.2 per cent of the horticulture (Government of Kenya, 2012). Various shortcomings were noted in the reviewed studies which render them inadequate in establishing the moderating effect of farmer characteristics on the relationship between branding practices of fresh fruits and vegetables and performance of commercial farmers.

A study in Malaysia by Ahmad and Baharun (n. d.) established that the success of a data processing firm was attributed greatly to the entrepreneur (personality, networking, and leadership). The success of the brand relied greatly on the entrepreneur whereby his personality was taken to be part and parcel of the firm's services. The study further established that brand building was likely to be more successful through personality association with the entrepreneur acting as a tangible being with a personality that is easy to understand and relate with. However, this study relied on the views of only one entrepreneur with the individual entrepreneur's contribution being the only basis for the conclusions of the study. The study also did not provide any quantitative evidence to support the reported performance.

In Netherlands, Bremmer, Alfons, Lansink, Olson, Baltussen and Huirne (2002) sampled 141 farms with 122 responses and established that farmer's age, off farm income, and family labour input have no significant relationship with farm development while mechanization has a high marginal impact on farm development. The study used a probit model for data analysis which can only evaluate two values of the independent variable. The study ignored financial aspects and only considered farm development and innovativeness as measures of performance.

Regionally, Verhofstadt and Maertens (2013) analyzed 401 responses from households served by 26 cooperative societies in Rwanda and established that membership in a cooperative had a positive impact on farm performance in regard to volumes sold and income generated. The study was not sector specific, ignored the role of branding practices on performance, and relied on descriptive data analysis. In Kenya, Evenson and Mwabu (1998) analyzed secondary data from the Central Bureau of Statistics covering seven districts, 676 farmers and 3682 observations and established that extension services, experience, male gender, education and highlands ecological zones improved farm productivity. The study measured performance in terms of volume productivity.

McCulloch and Ota (2002) compared performance data from horticultural and non-horticultural workers in Nairobi and Mount Kenya regions and small holder horticulture and non-horticulture farmers in Mount Kenya region and concluded that export horticulture contributes to an increase in income, job creation, access to credit and extension services. However, this study relied on descriptive data analysis and ignored the role of branding practices in enhancing performance of commercial farmers.

The studies outside Kenya were conducted under different social economic and regulatory conditions and are therefore location variant. Other than the studies by Bremmer et al. (2002) and McCulloch and Ota (2002) the other studies were not related to horticulture products. None of the cited studies evaluated the effect of more than one of the current study variables on performance. To bridge the identified gaps, the current study utilized descriptive and inferential statistics and undertook linear regression and correlation analysis of the secured data. The study simultaneously considered the relationship between branding practices of fresh fruits and vegetables and performance of commercial farmers and the moderating effect of farmer characteristics on this relation. It addressed the following research question: what is the moderating effect of farmer characteristics on the relationship between branding practices for fresh fruits and vegetables and the performance of commercial farmers?

3. *Objective of the Study*

The objective of this study was to establish the moderating influence of farmer characteristics on the relationship between branding practices for fresh fruits and vegetables and performance of commercial farmers. The hypothesized relationship stated that:

H1: The relationship between branding practices for fresh fruits and vegetables and performance of commercial farmers is significantly moderated by farmer characteristics.

4. *Review of Related Literature*

Branding practices are initiatives undertaken by brand owners in an effort to develop and promote their brands. The initiatives can be grouped as identification, communication, or classification practices depending on the objective of the branding task. For identity creating practices, Kotler and Keller (2009) described branding as a means of helping consumers identify a product by giving it a name and using other brand elements that create mental structures that organize their knowledge about the product.

Branding practices for fresh agricultural products are aimed at identifying, promoting, or classifying a product so as to create a premium status for the product and consequently improve the performance of a farmer. Branding practices demand that farmers adopt modern technology and an innovative management approach and actively seek expert support in their operations (Chapoto & Bansu, 2013). Aaker (2003) observes that it is difficult to build strong brands because of both internal and external pressures which confront a marketer. And as noted by Cook (2013), branding is even more difficult for fresh fruits and vegetables (FFV) since they lack year round supply of quality products and also require specialized handling due to their perishability. For farmers to overcome the challenges encountered in branding their products, they have to enhance their entrepreneurial ability by joining cooperatives to gain easy access to information, capital, reduced operational costs and enhanced negotiation skills (Toluwase & Apata, 2012). Farmers have also to enhance their academic qualifications since those with relevant academic qualifications were found to be more suitable to undertake branding practice because they have more capacity and are more resourceful in undertaking commercial decisions that improve their performance (Saina et al., 2012).

While economists view product differentiation as a process of creating better products for consumers at lower costs that lead to economic progress (Holcombe, 2009), marketers according to Romaniuk, Sharp and Broader (2007) take a broader view and contend that product differentiation can be achieved either through product features or image building advertising.

Farmers' social economic activities that influence their ability to engage in effective branding practices for enhanced performance have been identified as either demographic characteristics or farm related characteristics. Demographic characteristics include education level and financial abilities (Saina et al., 2012), gender (Evenson & Mwabu, 1998), and experience (Toluwase & Apata, 2012). Farm related characteristics were found to include size of farm (Dunaway, 2013), and type of land ownership (Bremmer et al., 2002).

In their study, Lisboa, Lages and Skarmeas (2010) established that an entrepreneur's ability to develop superior product features did not necessarily relate to product differentiation. They concluded that minor product modifications and incremental product improvements are not enough for gaining advantage over competition since customers are much more demanding and may expect such improvements and see them as natural to occur. Instead lisboa et al. (2010) are of the opinion that entrepreneurs need to develop explorative capabilities which allow for the discovery and experimentation of new ideas and features that facilitate the development of truly innovative and competitive products, which in turn encourage the development of a loyal customer base and attract new customers and thus enhance market effectiveness.

The personality of individual entrepreneurs in developing successful brands is highlighted by Ahmad and Baharun (n. d.). They observe that for a brand to create emotional attachment with customers, brand ambassadors or celebrities are engaged. They point out that a strong likeable personality of the brand founder could cause the market to associate the brand with the personality. Accordingly, where the entrepreneur is perceived as a role model or as a hero, the brand, and especially in an SME or in a business to business relationship will benefit and be emotionally received by the customers. If the entrepreneur is perceived as being honest, trusted, reliable, knowledgeable, and innovative, the brand will be seen to acquire the same qualities. The brand personality will be more about the qualities of somebody than the individual product's attributes.

5. *Methodology*

To establish the moderating effect of farmer characteristics on the relationship between branding practices of fresh fruits and vegetables and performance of commercial farmers, a descriptive cross sectional survey design was adopted. This design facilitated in establishing and describing the relationships among the key study variables (Kothari, 2004). It was cross sectional since it was conducted once to pick the parameters of a phenomenon at the specific time with the aim of accurately capturing the characteristics of the population relating to what, where, how and when of a research topic (Cooper & Schindler, 2003).

The population of the study consisted of 213 commercial farmers of FFV in Kiambu County. The population consisted of individual farmers (male & female), women groups, resident groups, cooperatives, limited liability companies and government departments growing between one and three crops in farms ranging between 5.5 to 0.125 acres. They engaged in farming activities to generate income. This study adopted stratified random sampling which allowed for making of probability based confidence estimates of various parameters (Cooper& Schindler, 2003). The key target was the owners or managers of commercial FFV farms. From the target population, the farmers were stratified into seven sub-counties namely Gatundu (Juja), Githunguri, Kiambu, Kikuyu, Lari, Limuru and Ruiru and a proportionate sample drawn relative to the size of each. To determine the sample size, a formula proposed by Israel (2009) was applied as follows:

$$n = \frac{N}{1+N(e)^2}$$ Where n is sample size, N is the population size, and e is the error term (0.05). Using N = 213 in

the formula, the resulting sample size (n) is 140 farmers.

The data was collected using a semi structured questionnaire through the direct interrogation method (Cooper & Schindler, 2003). The questionnaire was administered directly to the respondents through the assistance of Agricultural Extension Officers who were recruited as research assistants due to their close association with the farmers. The extension officers offer technical advice and other related services to the farmers in their normal day to day activities.

The study variables were operationalized and measured using direct measures and 4 point rating scales ranging from 1=Not important to 4=Very important; 1=Not strong to 4=Very strong and 1=Not at all to 4=Great extent. Data was analyzed using both descriptive statistics (frequencies, percentages, mean, and standard deviation) and inferential statistics (chi square, linear regression and correlation analysis). Stepwise regression analyses were used to bring out the individual effects in the form: $Y=a_0+b_1X_1+b_2X_2+e_1$ for the moderating effect of farmer characteristics on the relationship between branding practices for fresh fruits and vegetables and performance of commercial

5.1 Data Analysis Methods and Interpretation of Results

The Analytical Models adopted for this study was as follows:

Multiple linear regression model: The relationship between branding practices and performance of commercial farmers = f (branding practices of FFV and farmer characteristics): $Y_1 = a_0 + a_1 BP + a_2 FC$ ie; Y_1 (BP+FC) where:

Y_1 = composite index for performance of commercial farmers; a_0 = intersect constant;

a_1, a_2 = regression coefficients;

BP = composite score of branding practices;

FC = composite score of farmer characteristics.

The results were interpreted on the basis of the value of R^2, product moment correlation (R),

Regression coefficient and conducting of an F test (analysis of variance (ANOVA).

6. *Presentation and Analysis of Empirical Results*

The data used for this research was corrected from 140 farmers spread across seven sub-counties in Kiambu County. The 140 questionnaires were successfully filled and found suitable for further analysis resulting in a response rate of 100%. This compared favorably with a similar study conducted among farmers by Bremmer et al. (2002) which had a response rate of 86.5%.

6.1 Reliability and Validity

The study sought to establish the reliability of the research instrument by computing the Cronbach's Alpha coefficient in regard to the elements in the study variables. The Cronbach's Alpha reliability coefficients indicated reliability level of the instrument at 0.7364. The level was above the acceptable minimum value of 0.50 (Cronbach, 1951) and above the recommended value of 0.7 (Nunnally & Bernstein, 1994). The internal consistency of the measures used had therefore adequately measured the relevant study variables.

6.2 Summary of Farmer Characteristics

Table 1 contains a summary of the individual characteristics of the respondent commercial farmers.

Table 1: Summary of Commercial Farmer Characteristics

Farmer Characteristics	N	Mean Score	Standard Deviation	CV (%)
Demographic characteristics	140	2.30	0.498	21.65
Membership to Associations	84	1.54	0.474	30.78
Source of funding	140	2.39	0.752	31.41
Production Facilities	133	1.28	0.354	27.66
Farm size	140	2.86	1.437	50.24
Farm ownership	140	2.26	1.728	76.46
Training	140	1.96	0.812	41.43
Overall Average Score	**-**	**2.08**	**0.865**	**41.49**

Source: Primary data.

The summary results in Table 1 present average mean scores (mean score=2.08, CV=41.49) implying that all farmer characteristics contributed at an average level to performance of commercial farmers. The characteristics considered to make the greatest contribution were demographic characteristics (mean score=2.30, CV=21.65), source of funding (mean score=2.39, CV=31.41) and farm size (mean score=2.86, CV=50.24). The characteristics reported to be of least importance were membership to associations (mean score=1.54, CV=30.78) and production facilities (mean score=1.28, CV=27.66).

6.3 Summary of Branding Practices

Branding practice undertaken by commercial farmers included brand identification practices, brand name selection practices and brand promotion activities. Table 2 contains a summary of the performance indicators of the activities undertaken by the farmers in furtherance of branding practices.

Table 2: Summary of Branding Practices

Branding Practices	N	Mean Score	Standard Deviation	CV (%)
Brand Name Selection strategies	9	2.48	1.350	54.44
Brand Identification Practices	8	3.04	0.904	29.74
Brand Promotion activities	140	1.77	0.631	35.65
Overall Average Score	**-**	**2.43**	**0.612**	**25.19**

Source: Primary data.

The branding practices summary data in Table 2 (mean score=2.43, CV=25.19) show that branding as a marketing practice had low adoption among the respondent farmers. Brand identification practices (mean score=3.04, CV=29.74) were the most common branding practices the respondent farmers engaged themselves in. Brand promotion activities (mean score=1.77, CV=35.65) was the least adopted among the branding practices.

6.4 Performance of Commercial Fresh Fruits and Vegetable Farmers

The constructs used to describe performance of commercial farmers were price, volume, profitability and satisfaction achieved by the respondent farmers. Table 3 contains a summary of the individual indicators of the achieved performance.

Table 3: Summary on Performance of Commercial Farmers

Indicators of Performance of Farmers	N	Mean score	Standard Deviation	C.V (%)
Price premium	99	1.25	0.493	39.41
Sales Volume	126	1.59	1.089	68.62
Profitability	124	1.51	0.917	60.68
Satisfaction	140	2.72	0.619	22.77
Overall Average Score	**-**	**1.77**	**0.780**	**44.11**

The summary results in Table 3 show low overall average levels of performance of commercial farmers (mean score=1.90, CV=40.23). Farmer satisfaction had the highest mean score (mean score=2.72, CV=22.77) implying that on average, farmers were satisfied with their undertakings. Price premium had the lowest mean score (mean score=1.25, CV=39.41) which indicated that the farmers were not earning the price premiums they expected**.**

6.5 Moderating effect of Farmer Characteristics on the Relationship between Branding Practices and Performance of Commercial Farmers

To assess the moderating effect of farmer characteristics on the relationship between branding practices and performance of commercial farmers, the following hypothesis was set:

H1: The relationship between branding practices for fresh fruits and vegetables and performance of commercial farmers is significantly moderated by farmer characteristics.

By adopting a method proposed by Baron and Kenny (1986), the moderating effect of farmer characteristics was determined by first testing the main effect of independent variable (branding practices for fresh fruits and vegetables) and moderator variable (farmer characteristics) on the dependent variable (performance of commercial formers) and the interaction between branding practices and farmer characteristics. Moderation is assumed to take place if the interaction between branding practices and farmer characteristics is statistically significant.

To create an interaction term, the independent (branding practices) and dependent (farmer characteristics) variables were converted to standardized scores. The two standardized variables were then multiplied to create an interaction variable. An increase in R^2 and a statistically significant interaction between branding practices and farmer characteristics would suggest that a moderating effect of farmer characteristics on the relationship between branding practices and performance of commercial farmers could be supported. The regression results are presented in Table 4.

Table 4: Regression Results of the Moderating Effect of Farmer Characteristics
(A) Goodness-of-Fit

Model1	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df 1	df 2	Sig. F Change
a	.397[a]	.158	.152	.70328	.158	25.841	1	.138	.000
b	.454[a]	.206	.195	.68525	.048	8.365	1	.137	.004

a. Predictors: (Constant), Branding practices
b. Predictors: (Constant), Farmer characteristics, Branding practices

(B) The overall Significance

Model		Sum of Squares	df	Mean Square	F	Sig.
A	Regression	12.781	1	12.781	25.841	.000[a]
	Residual	68.255	138	.495		
	Total	81.036	139			
B	Regression	16.709	2	8.354	17.792	.000[b]
	Residual	64.327	137	.470		
	Total	81.036	139			

a. Predictors: (Constant), Branding practices
b. Predictors: (Constant), Branding practices, Farmer characteristics
c. Dependent Variable: Performance of commercial farmers

(C) The Composite Score Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.063	.175		6.087	.000
	Branding practices	.547	.108	.397	5.083	.000
2	(Constant)	.243	.331		.736	.463
	Branding practices	.536	.105	.390	5.115	.000
	Farmer characteristics	.396	.137	.220	2.892	.004

a. Dependent Variable: Performance of commercial farmers

As shown by the moderation results in Table 4A and 4B, there was a statistically significant change in the percentage of the variation explained by the interaction of farmer characteristics and branding practices. The results in Table 4A indicate a change in R^2 when interaction of farmer characteristics and branding practices is introduced (0.158, 0.206). The significance results in Table 4C indicate a significant variation in the relationship between branding practices and performance of commercial farmers on the introduction of farmer characteristics (beta= 0.390, 0.220; P-value=0.000, 0.004). Therefore, we accept the hypothesis at β=0.005 and conclude that Farmer Characteristics have a statistically significant moderating effect on the relationship between Branding Practices and Performance of commercial farmers. This implies that the influence of branding practices on performance of commercial farmers is substantially modified by the presence of farmer characteristics. Based on these results, performance of commercial farmers can be predicted as follows:

$$Y= 1.063+0.390BP +0.220FC+ 0.206BP*FC$$

Where:

Y= Performance of commercial farmers
BP= Branding Practices
FC= Farmer Characteristics
BP*FC= Interaction of branding practices and farmer characteristics
1.063= y-intercept; constant
0.390= an estimate of the expected increase in performance of commercial farmers corresponding to an increase in branding practices
0.220= an estimate of the expected increase in performance of commercial farmers corresponding to an increase in farmer characteristics
0.206= an estimate of the expected increase in performance of commercial farmers resulting from the interaction of branding practices and farmer characteristics.

The above results show that farmer characteristics have a positive and statistically significantly contribution to the relationship between branding practices and performance of commercial farmers. The regression coefficient of 0.390 implies that a unit change in branding practices would lead to a 0.390 change in performance of commercial farmers while a unit increase in farmer characteristics would lead to a 0.220 increase in performance of commercial farmers. The coefficient of 0.206 indicates the change in performance of commercial farmers when branding practices and farmer characteristics interact with each other.

7. Discussion of the Results

To evaluate the moderating effect of farmer characteristics on the relationship between branding practices and performance of commercial farmers, a regression analysis was carried out. The results indicated that the interaction of farmer characteristics and branding practices resulted in statistically significant effect on performance of commercial farmers. These results imply that as a moderator, farmer characteristics influenced the relationship between branding practices of fresh fruits and vegetables and performance of commercial farmers.

The results are supported by the findings by Jekanowski, Williams, and Schick. (2000) who established that state fresh fruits and vegetable brands recorded improved performance in terms of doubling consumer awareness of the products in one year, having more inelastic demand in respect to price, more elastic income response, and fewer substitutes relative to similar unbranded products. Similarly, Chapato and Bansu (2013) established that farmers who adopted modern technology and a more innovative management style registered superior results. In the current study, majority of the respondent farmers (92.8%) were found to have a minimum of three years' experience in farming fresh fruits and vegetables with 79.3% of them being in the 40 years and above age category.

The statistically significant influence of the moderating effect of farmer characteristics on the relationship between branding practices of fresh fruits and vegetables and performance of commercial farmers is further supported by the finding by Toluwase and Apata (2012) that farmers acquired more experience with age leading to improved productivity.

8. Recommendations

The study established that farmer characteristics had a statistically significant moderating influence on the relationship between branding practices for fresh fruits and vegetables and performance of commercial farmers. To be able to undertake effective branding practice for fresh fruits and vegetables and also ensure optimum performance by commercial farmers, farmers should enhance their abilities through the initiatives identified in the study which include; joining associations, improving their education and training, acquiring required inputs and increasing their funding. The significance of the combined influence of branding practices and farmer characteristics on the performance of commercial farmers was established by this study. The government should undertake farmers' empowerment programs aimed at equipping farmers to ensure that they can effectively engage in branding practices for fresh fruits and vegetables as a means of commercializing the fresh fruits and vegetables sub sector of the agricultural sector for optimum performance by commercial farmers.

9. Suggestions for Further Research

This study established that farmer characteristics had a statistically significant influence on the relationship between branding practices of fresh fruits and vegetables and performance of commercial farmers. The study focused only on fresh fruits and vegetables among all other agricultural products offered to the market in their fresh unprocessed form. This limits the generalization of the study to only a small section of the agricultural sector. To expand the scope of the study, future research should cover other fresh agricultural products.

The study population was limited to Kiambu County which has unique characteristics that favor the commercialization of the fresh fruits and vegetables sub-sector of the horticultural sector. While the findings of the study provide useful insight into the interrelationships among the study variables, the unique characteristics of the County may limit the extent to which the findings can be generalized to other counties. This calls for an extension of the study to other counties with differing social economic and climatic conditions to confirm the hypothesized relationships in the current study.

The current study adopted a descriptive cross sectional survey design which involved collecting data once at a specific time. The study relied on data provided by the respondents to evaluate the contribution of different variables to the performance of commercial farmers. Branding practices and farmer characteristics take time to generate results. A time series design would enable the gathering of continuous data to demonstrate the effect of both branding practices and farmer characteristics throughout the life cycle of the product. A study should be designed to correct collaborative secondary data to confirm the self reported data on branding practices and performance provided by the respondents. This would reduce subjectivity in the provided data and strengthen the reliability of the study findings.

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