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Exploring retailer marketing strategies for value added bean products in Kenya

RESEARCH ARTICLE

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Abstract

Unlike many other Sub-Saharan African countries, for many years Kenya had comparative advantages in the manufacturing of processed bean products. However, for new competitors intending to join the bean processing industry, little is known about marketing strategies for value added bean products. Using data from 90 retailers in the Nairobi and Kiambu counties in Kenya, a two-step econometric procedure-multivariate probit and Poisson regression models were applied to analyse retailers' marketing strategy decisions. Findings show that information sources, cost of marketing, supply modalities, price of products, and quantities handled significantly influenced retailers' marketing strategy choice. Surveyed retailers applied varying marketing strategies to market value added bean products. There is need for prospective retailers to choose an appropriate mix of strategies to penetrate the dynamic market with a number of value added bean products, and promote local consumption of value added bean products.

Keywords: value added bean products, retailers, multivariate probit, Poisson, marketing strategies
JEL code: B41, C13, C21, C25, C31, C35, M31

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1. Introduction

The demand for processed foods, globally and in different regions of the world depends largely on the economic situation in a particular country (Fellows, 2004). Urbanization, coupled with rising disposable income and population growth, have contributed to the rapidly increased food burden among many African countries (Pramod and Hiriyappa, 2017; Woldemichael *et al.*, 2017). In 2015, Africa's population growth was estimated at 2.5% per annum and it is expected to double by 2050 (UNDP, 2015). Similarly, the share of urban residents in Africa in 2015 was estimated at 40% and is expected to reach 50% by mid-2030 (AfDB, 2015). Africa has further experienced increasing incomes especially for urban dwellers due to a growing proportion of population that earns wages from employment. The demand for convenient, easy to prepare or ready to eat foods has, in tandem with increasing population and income, increased dramatically which, in turn, increased the continent's import share due to the lack of processing plants (Andam *et al.*, 2017; Chemining'wa *et al.*, 2014; Theriault *et al.*, 2018; Woldemichael *et al.*, 2017). To this effect, the demand for processed foods is expected to increase at a rate of 4.8% for sub-Saharan countries.

Urbanization and population growth present enormous market opportunities for food processing (Monteiro *et al.*, 2013), in particular the food processing and packaging to fill the persistent gap in processed food demand and supply. Unlike many other Sub-Saharan African countries, for many years Kenya had comparative advantages in the manufacturing of processed agricultural products (Chauvin *et al.*, 2012). Notable among these are common beans which were traditionally considered to have long cooking time and therefore were time consuming and required more fuel. Products such as bean flour, canned beans, and chilled beans are now being supplied by hundreds of large and small-scale processors to meet the local demand for these products.

As the demand for processed and quick cooking beans continues to expand due to increased urbanization, agri-business activities like food processing and packaging will continue to grow as institutions like hotels, restaurants and individual consumers seek to save energy and cooking time, while retailers will seek to procure adequate quantities of processed beans for the customers in these urbanised towns. Current and potential common bean processors will require clear information on current marketing practices used in retailing value added bean products if they are to determine how to proceed in marketing as well as ensuring business sustainability and/or procuring processed products to meet consumer demands (Gillespie *et al.*, 2016; Kearney, 2010). One of the most important activities for any processor involved in processing foods for sale is to assess the demand for products and the proportion of that demand that could realistically be met by a processor in a competitive business environment *(*Bang *et al.*, 2016; Fellows, 2011; Schipmann and Qaim, 2011). This not only guides the processor on product variants to make, but also determines the size of the production facility and the level of investment required. This market investigation aims to identify the likely customers and consumers, types of promotion, and marketing and selling techniques that are likely to be most effective. This can only be done through clear marketing strategies to enable processors to understand who their target customers are, how to reach the target customers and how to retain customers (Pearson and Henryks, 2008).

In an effort to enhance value addition of common beans in both Kenya and Uganda, in 2015, a public-private supported factory under 'the precooked bean project' was inaugurated in Kisumu (Kenya) and Mukono (Uganda) to purchase beans from farmers in project bean growing areas for processing into precooked bean products (precooked bean and ready to eat bean snacks). It is anticipated that successful establishment of a bean processing industry will increase competition in processed beans as new products and new market opportunities emerge. However, it is not clear whether the business/ factory will be able to expand and make profits since the available processed bean products, marketing strategies and distribution channels for processed bean products have not been assessed.

The aim of this study was to analyse the marketing strategies for processed bean products in Kenya, given the current trend in processed food retail distribution in metropolitan Kenya in an era of increasing convenience for shopping and more women constituting the working class segment of the population. The objectives of this

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study were: (a) identify the types of value added bean products traded and how they are marketed in Kenya; (b) explore the effect of processed bean retailing business characteristics on the probability of adoption of marketing strategies; and (c) examine the determinants of the number of marketing strategies employed by retailers to distribute value added bean products to customers. By capturing the types of products available on the market, the types of retailers in business, and their marketing strategies, we anticipate that the processor will strategize and make significant sales. This paper contributes to this information gap by examining the effect of value added bean products retailing business characteristics on the probability and intensity of adoption of marketing strategies employed by retailers to distribute value added bean products to customers.

The rest of the paper is organized as follows. A brief literature review on retailing of processed foods in Africa and the conceptual framework for the study is presented in Section 2, and the methods used in the study are outlined in Section 3. Empirical results and the discussion are presented in Section 4. Finally, the paper concludes with key implications for processed food retailing industry in Section 5.

2. Retailing processed foods in Africa

The take-over of food retailing in East Africa has occurred much more rapidly in processed, dry, and packaged foods like noodles, milk products and grains, for which supermarkets have added advantages over mom and pop stores due to economies of scale (Snyder *et al.*, 2015). Several forces drive the observed increase in retailing services in processed foods. One of the key factors is urbanization with its consequent entry of women into the workforce outside the home. This has increased the opportunity cost of women's time and their incentive to seek shopping convenience and processed foods to save cooking time (Andam *et al.*, 2017; Reardon *et al.*, 2004). A large population continues to provide a large market in absolute terms for many emerging products (Bang *et al.*, 2016). In addition, supermarkets, in combination with large-scale food manufacturers as a form of retailing processed products, often offer greater variety and reduced prices of processed products (Monteiro *et al.*, 2013) due to accumulated economies of scale in business. Lastly, the rapid growth in ownership of refrigerators by consumers in this era has resulted in the ability to shift from piecemeal shopping in traditional marketplaces to weekly or monthly shopping. However, even a relatively small product penetration results into simultaneous existence of penetrated markets and untapped markets. This creates complex decision-making issues for retailers as to what extent they would like to target existing customer base versus the non-customers.

A number of studies shed light on the progress of the processed foods in Africa. Theriault *et al.* (2018) examined a range of grain product types sold across the five types of retail outlets (modern supermarkets, grocery stores, traditional shops, neighbourhood markets, and central markets) in Mali. They found that majority of the products were imported, a clear indication of the country's dependence on imports to meet national consumer needs. There were traces of local processing of agricultural commodities which had started taking pace due to easy sourcing of raw materials. Snyder *et al.* (2015) studied stores of large format regional and local supermarket chains, small format supermarkets, dukas and municipal open-air markets to ascertain the local response to the rapid rise in demand for a range of processed grain foods in Dar es Salaam, Tanzania. They found that regional (Kenya and Uganda) processed foods account for over 70% of processed foods available in retail outlets. Andam *et al.* (2017) analysed the distribution of five processed foods (starchy staples, processed cereals, dairy, fruits and vegetables, meat and fish, oils and fat spices) in six retail outlets in Ghana. As expected, over 60-83% of processed foods sold in the studied outlets were imported.

All the studies mentioned share some common features: (a) they examine the various types of processed products available in the retail outlets; (b) they primarily assess the proportion of processed foods that are imported; and (3) they further examine the pricing of those commodities. However, analysis of marketing strategies of the processed foods is a relatively under-researched topic in Africa.

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A marketing strategy in this study is conceptualized to mean a set of actions designed by retailers to meet business goals of increased revenue and market share (Pearson and Henryks, 2008; Szwacka-Mokrzycka, 2013). Effectiveness and performance of a marketing strategy is determined by a number of factors that condition the relationship between marketing strategies and business performance, and these factors act in various ways (Andam *et al.*, 2017; Bang *et al.,* 2016; Githaiga *et al.*, 2016; Kotler and Armstrong, 2010; Morgan, 2012; Theriault *et al.*, 2018). Figure 1 shows the interactions through which various factors influence marketing strategy choice and eventual value added bean products business performance. There are a number of retailers (retail shops, supermarkets) who trade in diverse value added bean products. The products range from sort and packed beans, canned, chilled, bean flour, among others. Given the diversity and nature of value added bean products, retailers have to decide which marketing strategies to use (the adoption decision), and the number of marketing strategies to adopt (the intensity decision). The retailers' marketing strategy choice (type and number of strategies to adopt), however, are influenced by a number of factors (internal and external), which in turn affect the performance (revenue, sales) of the business. Business level (internal) factors range from type of product, price, quantities, frequency of supply, available marketing strategies, and costs involved. Other factors (external) are eventually determined by factors that are beyond the retailers' control (environment in which a business operate). For instance, sources of information through which consumers get to know of available products can influence consumers' knowledge and changes consumers' behaviour. In contrast, challenges associated with doing business such as infrastructure, marketing costs and policy greatly influence business performance. Retailers who make better marketing strategies choices are likely to have positive performance. While those who receive less from a particular strategy may decide to drop (dotted line in Figure 1) in the subsequent period if they are unable to sell the targeted products profitably (Morgan, 2012).

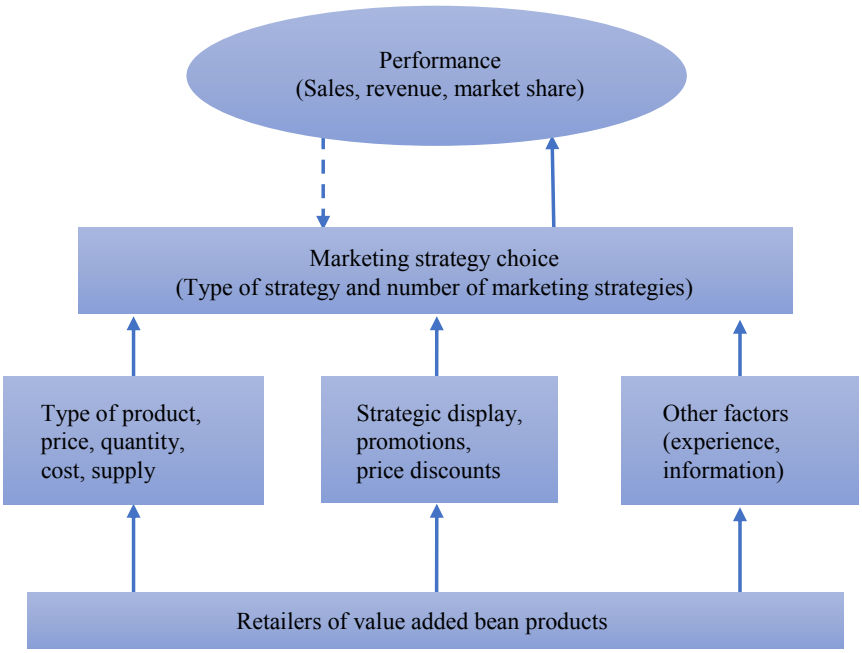

Figure 1. A conceptual framework linking marketing strategies and business performance. Adapted from Morgan 2012.

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3. Methodology

3.1 Sampling techniques, study area and sample size

In 2016, a survey of processed bean retailers was carried out in Nairobi metropolitan, Kenya. The first step involved a reconnaissance visit through referrals from processors in order to identify processed bean retailers. This involved asking if bean retailers sold any processed bean products or not. Three types of processed bean retail outlets that cover all types of traders operating in the study area were identified: processor outlets, supermarkets, and retail shops (also known as duka which is a small permanent shop unit but not a kiosk). Consent was sought before the interview and the best person in position to answer was interviewed. The findings of the reconnaissance survey guided the selection of the study sites and the sampling procedure.

The selection of the study sites was guided by the level of urbanization and sale of the processed bean products in the county. Using these criteria, two counties were purposively selected, namely Nairobi and Kiambu. This was followed by listing all processed bean selling retailers in each county. Retailers were randomly selected for interviews from the generated sampling frame. Across the two counties, a total of 2 processor outlets, 84 supermarkets and 4 retail shops were selected. In total, 90 retailers were interviewed, 46 and 44 from Nairobi and Kiambu counties respectively.

Data were collected from the main processed bean retailers (individual retail shops and supermarkets), using semi-structured questionnaires administered through face-to-face interviews to capture all variables of interest. Data were collected on the kinds of value added beans dealt in, who supplies retailers with products, quantities supplied, and prices at which the products were supplied. Sorted and packed beans were included because of keen attention paid by producers in post-harvest handling ready for further processing. Data were also collected on the frequency of distribution of processed bean products, marketing strategies applied in retailing value added beans, how to reach target consumers, and how to retain consumers.

3.2 Marketing strategy adoption- a multivariate probit analysis

We consider several marketing strategies available to retailers of processed bean products. The retailer has to decide which marketing strategies to adopt (the adoption decision), and the number of marketing strategies to adopt (the intensity decision). We employ a multivariate probit to analyse the simultaneous adoption of multiple marketing strategies (strategic display, discount, promotion) and the potential correlations among the adoption decisions. The multivariate probit is an extension of the bivariate probit (Greene, 2003). It uses Monte Carlo simulation techniques to jointly estimate the multiple probit equation system (Geweke, 1989). The general multivariate probit model is specified as follows:

$$Y^*_{ij} = X_{ij}\beta_{ij} + \varepsilon_{ij} \tag{1}$$

Where Y^*_{ij} (j=1,2,…,m) represents an unobserved latent variable of the marketing strategy alternatives (in this case m=3) representing strategic display, promotions and advertising adopted by the ith retailer (i=1, ..., n), X_{ij} is a 1 × k vector of observed variables that affect the marketing strategy adoption decision, β_{ij} is a k × 1 vector of unknown parameters to be estimated. The other marketing strategies such as door to door, special attendance to promote new products, after sales offers, and face display have been omitted in the analysis due to limited adoption. Each Y^*_{ij} is a binary variable and thus Equation 1 is a system of m equations as shown in Equation 2:

$$\left\{\begin{array}{l} Y_1^* = \beta_1 X_1^{'} + \varepsilon_1,\ Y_1 = 1 \text{ if } Y_1^* \succ 0, Y_1 = 0 \text{ otherwise} \\ Y_2^* = \beta_2 X_2^{'} + \varepsilon_2, Y_2 = 1 \text{ if } Y_2^* \succ 0, Y_2 = 0 \text{ otherwise} \\ Y_3^* = \beta_3 X_3^{'} + \varepsilon_3, Y_3 = 1 \text{ if } Y_3^* \succ 0, Y_3 = 0 \text{ otherwise} \end{array}\right\} \tag{2}$$

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Where the error terms (across j=1, ..., m alternatives) are assumed to have multivariate normal distributions with mean vector equal to zero and a covariance matrix R with diagonal elements equal to one (Greene, 2003). The system of equations in Equation 2 is jointly estimated using simulated maximum likelihood method which yields consistent estimates and is asymptotically equivalent to the true maximum likelihood estimators for large samples.

3.3 Number of marketing strategies – Poisson regression model

In addition to the multivariate probit, a Poisson regression model (count model) was applied to determine the factors that influence the number of marketing strategies (the intensity of adoption) used by retailers to market processed bean products. The basic equation for the Poisson regression model as specified by Greene (2003) is:

$$Prob(Y_i = y_i|X_i) = \frac{e^{-\lambda_i}\lambda_i^j}{y_i!}, \; where, \; y_i = 0,1,2 \ldots \tag{3}$$

$Y_1, Y_2, Y_3, ..., Y_n$ are the predicted values of the number of strategies adopted and are assumed to have independent Poisson distribution with parameters $\lambda_1, \lambda_2, \lambda_3, ..., \lambda_n$ respectively (Greene, 2003). The goodness-of-fit tests given by both the deviance and Pearson statistics were applied to test the appropriateness of the Poisson model. Results were insignificant which implied appropriateness of the model. The dispersion ratios further confirmed absence of over dispersion. The model was estimated using the same set of variables applied in the multivariate probit. However, only the adopters were considered in the analysis due to the study need to count the number of marketing strategies employed per value added bean product.

Different dependent variables were estimated for the multivariate probit and Poisson models. For the multivariate probit model, the dependent variable was the type of marketing strategy (strategic display, price discounts, and promotions). This is measured as a dummy value equal to 1 if a retailer used the strategy and zero if retailers did not use the strategy. For the Poisson model, the dependent variable was the number of strategies. This is measured as a count of the various strategies (promotions, advertising, special display, price discounts, door to door, hire special attendants, face display, after sales services) that retailers adopted to market products.

Independent variables included in the multivariate probit and Poisson regression models include: the type of value added bean products including sorted and packed beans, canned and chilled (frozen) beans, and these took values 1 if sold and 0 if not sold by a retailer. Experience was captured as the number of years in transacting in the foresaid products. Price was captured in dollars per kilogram. Quantity of product was measured in kilograms per month. Cost of marketing was represented by amount incurred in dollars to carry out the business. Other potentially influential factors are captured by count of information sources used (bean actors, print media, radio, customer reference, internet, television), frequency of supply (daily, weekly, monthly), and various challenges that affect the value added bean retailing business.

The implicit functional form for the multivariate probit and Poisson regression models are specified as:

> Model 1: multivariate probit regression: Decision to adopt = f (strategic display: canned, chilled, experience, price of sorted beans, price of chilled/canned, quantity of sorted beans, cost of marketing, information sources, weekly supply, monthly supply)(discount: canned, chilled, experience, price of sorted beans, price chilled/canned, quantity of sorted beans, cost of marketing, information sources, weekly supply, monthly supply)(promotion: canned, chilled, experience, price of sorted beans, price of chilled/canned, quantity of sorted beans, cost of marketing, information sources, weekly supply, monthly supply) + e.

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Model 2: Poisson regression: number of marketing strategies used = f (canned, chilled, experience, price of sorted beans, price of chilled/canned, quantity of sorted beans, cost of marketing, information sources, marketing challenges, weekly supply, monthly supply) + e.

4. Results and discussion

4.1 Descriptive statistics of retailing value added bean products

Following Snyder *et al.* (2015) classification, each processed bean product represents both a product type and a brand. Each product type has several brands and therefore several products. Among the surveyed retail outlets, the study identified five product types (baked, chilled, bean flours, bean pastes, sorted and packed) manufactured from dry common beans into other forms that can be easily prepared. Of the five value added bean products, sorted and packed dry beans (59%) were the most traded, followed by chilled (20%), canned (15%), instant beans (5%) and bean flours (1%).

Given the low percentages reported for instant beans and mixed bean flour, the analysis was majorly focused on sorted and dry packed, canned, and chilled beans. For sorted and packed beans, retailers dealt in a number of brands which range from Butterfly (15%), Nyayo (7%), Wairimu, Rosecoco (5%), yellow beans and kituru, among others. For canned/chilled beans, the brands range from Kenylon (20%), American garden (14%), Heinz (6%), Peptang (12%), Delmonte (4%) and Mara among others.

Table 1 presents the various characteristics of retailing value added products. Retailers use various sources of information to equip themselves with updated information on processed bean products. These include bean actors, print media, radio, customer reference, internet, television and NGOs. Among the various sources,

Table 1. Characteristics of retailing value added bean products.

Variable	Sorted and packed (n=87)	Canned (n=22)	Chilled/frozen (n=29)
Sources of information (%)			
Bean actors	86.14	81.48	87.88
Print media	3.96	-	6.06
Radio	2.97	-	-
Customer reference	2.97	3.70	3.03
Internet	1.98	3.70	-
Television	0.99	7.41	3.03
NGOs	0.99	-	-
Suppliers (%)			
Processors	75.73	95.45	74.29
Product distributors	23.30	4.55	25.71
Wholesaler	0.97	-	-
Marketing strategies (%)			
Strategic display	49.14	60.00	62.07
Promotions	12.93	6.67	-
Advertising	11.21	6.67	-
Special display	9.48	3.33	-
Price discounts	6.90	23.33	37.93
Door to door	6.90	-	-
Hire special attendants	1.72	-	-
Face display	0.86	-	-
After sales service	0.86	-	-

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bean actors (word of mouth) were the most common sources of information. These results are in line with the findings of Gillespie *et al.* (2016) who found word of mouth to be the most common method of sourcing information by US grass fed beef suppliers.

In order to achieve business goals of increased revenue and market share, retailers applied a combination of marketing strategies which ranged from strategic display, promotions, advertising, price discounts and after sales, among others (Table 1). Regardless of the processed bean product under consideration, strategic display was the most commonly used strategy, 49%, 60% and 62% for sorted, canned and chilled beans, respectively. Offering price discounts was the second most used strategy for canned (23%) and chilled (38%) beans.

In terms of quantity supplied per month (Table 2), there were significant differences in quantities handled for the three bean categories (541 kg of sorted and packed beans; 171 kg of canned, and 67 kg of chilled beans. Canned (2.6 USD per kg) and chilled (2.5 USD per kg) beans were supplied at a significantly higher price compared to sorted and packed beans (1.1 USD per kg). Indeed, canned and chilled beans that were supplied at a relatively higher price attracted significantly higher selling prices than sorted and packed beans. There were no significant differences in experience associated with dealing in the three bean products. In terms of the marketing costs, it was significantly more expensive to market sorted and packed beans (108 USD) compared to canned beans (69 USD). This is partly attributed to the volumes handled.

Considering how often retailers received these products, 38% of retailers reported placing orders whenever they needed sorted and packed beans. Canned beans were mainly supplied on a monthly basis (33%) followed by weekly (27%). The basic forms of receiving chilled beans were on weekly basis (38%) and by placing orders (31%). Individual final consumers were the primary consumers of processed bean products (100%) for all three products.

4.2 Drivers of adoption of marketing strategies for processed bean products in Kenya

The analysis of factors affecting the probability of adopting/using marketing strategies is limited to only three strategies (display, discount and promotion) because very few retailers used other marketing strategies, such as advertising, door to door, face display and after sales services. Table 3 reports the multivariate probit regression results for the selected strategies. Diagnostic statistics appear at the bottom of the table. The *P*-value of the Wald test statistic for the overall significance of the model was 0.000 indicating that the multivariate probit regression is highly significant overall. The likelihood ratio test of rho was highly significant (P=0.020) further indicating that a multivariate probit specification fits the data. The correlation coefficients among the error terms of the adoption equations are all significant implying that the decision to use one strategy affects the decision to use other strategies. The correlation coefficients between the three strategies are all positive and significant at a 1% level. Ignoring the prospective correlation in adoption of

Table 2. Economic analysis of value added bean retailing business.[1]

Variable	Unit	Sorted and Packed (n=87)	Canned (n=22)	Chilled/Frozen (n=29)
Quantity supplied per month	kg	540.9^{a} (334.4)	171.5^{b} (125.2)	66.8^{c} (49.70)
Supply price per kg	USD	1.06^{a} (0.25)	2.58^{b} (0.51)	2.50^{b} (0.68)
Selling price per kg	USD	1.33^{a} (0.27)	2.96^{b} (0.76)	2.99^{b} (0.74)
Marketing margin per kg	USD	0.27^{a} (0.13)	0.38^{b} (0.36)	0.49^{b} (0.22)
Experience	Years	3.4^{a} (1.30)	4.7^{a} (1.10)	4.1^{a} (3.50)
Marketing costs per month	USD	107.70^{a} (77.63)	69.17^{b} (40.64)	128.61^{a} (95.20)
Marketing strategies	Number	1.6 (1.10)^{a}	1.3^{a} (1.00)	1 (0)^{b}

[1] Pair-wise *t* test with equal variances assumed. Superscripts ab, ba, ac, bc for two categories indicates that the variable is statistically different between the categories; two categories marked with aa, bb indicates that the variable is not significantly different between the categories. In parentheses are standard deviations.

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Table 3. Adoption of marketing strategies: results of multivariate probit regression.[1,2,3]

Variable	Strategic display		Price discount		Promotions	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Canned ^	0.761	0.571	3.679***	0.914	-0.486	0.560
Chilled ^	0.399	0.336	2.422***	0.654	-0.077	0.379
Experience	0.038	0.048	-0.022	0.078	0.001	0.053
Price of sorted	-0.002	0.006	0.014	0.011	0.012	0.008
Price of chilled/canned	0.002	0.003	-0.001	0.003	0.002	0.004
Quantity of sorted	0.000	0.000	0.000	0.001	0.000	0.001
Cost of marketing [a]	0.068	0.194	1.634***	0.523	0.000	0.001
Information sources	0.004	0.356	1.503***	0.412	-3.831***	0.369
Frequency of supply						
Weekly ^	-1.114**	0.413	0.199	0.585	0.822**	0.411
Monthly ^	0.520	0.337	-1.551***	0.588	0.264	0.434
Constant	-0.466	2.205	-21.186***	6.174	-0.178	2.380
/atrho21	-0.930***	0.345				
/atrho31	-0.535**	0.262				
/atrho32	0.420*	0.238				
rho21	-0.731***	0.161				
rho31	-0.489**	0.199				
rho32	0.397**	0.201				

[1] Likelihood ratio test of rho21 = rho31 = rho32 = 0: chi2(3) = 9.83296 Prob > chi2 = 0.0200; Log pseudolikelihood = -92.076301; Wald chi2(30) = 414.20; Prob > chi2 = 0.0000.

[2] [a]=logarithm; ^= dummy variable (yes=1, 0=otherwise).

[3] Significance levels at 1%***, 5%** and 10%*.

the marketing strategies and simply estimating the equations independently would therefore generate biased and inconsistent estimates of the standard errors of the parameters for each strategy (Greene, 2003).

■ *4.2.1 Use of strategic display*

Regression results (Table 3) revealed that strategic display was primarily influenced by how often products were supplied. Strategic display was favoured if supplies were not on weekly basis. This implies that as long as retailers continued receiving products on a weekly basis, it became very hard for them to make considerable sales through this strategy.

■ *4.2.2 Use of price discounts*

A number of factors significantly influenced the use of price discounts to market value added bean products. Retailers who dealt in either canned or chilled beans were most likely to use price discounts. This is likely to attract more consumers due to associated price cuts, and thus improve retailers' margins. This corroborates the findings of Paramod and Hiriyappa (2017) who found selling processed food products at affordable prices as one of the key factors that attracted more consumers in Ramanagara District, India.

Contrary to the expected, cost of marketing value added bean products had a positive influence on use of discounts. This shows that as marketing costs increase, it is more beneficial for retailers to offer price discounts to avoid losses as products expire. Managing and controlling costs have been found to have an influence on the profitability and success of food related businesses (Gillespie *et al.*, 2016; Szwacka-Mokrzycka, 2013)

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In addition, information sources had a positive influence on use of price discounts. More information about prevailing price cuts for value added bean products is likely to influence how retailers act in terms of discovery of new market opportunities, choice of markets and finding solutions to consumer problems prior to supplying products. The study findings corroborate those found by Githaiga *et al.* (2016), who found a positive influence of prior knowledge on adoption of marketing strategies for micro and small enterprises in food processing.

Finally, procuring processed bean products on a monthly basis had a negative impact on retailers' use of price discounts in marketing products. This calls for weekly price discounts to attract more customers to buy the processed bean products.

■ *4.2.3 Use of promotions*

Study findings show that information sources and procuring products on a weekly basis were the two factors that influenced retailers' use of promotions as a marketing strategy. The number of information sources had a negative effect on use of promotions. Promotional activities were not favoured where retailers had access to increasing number of information sources. Information about different market outlets and prevailing products on the market would be known by retailers. Information sources have been found to have an influence on promotional activities of processed food products (Abera, 2016; Chemining'wa *et al.*, 2014; Pramod and Hiriyappa, 2017).

Supplying processed bean products on a weekly basis had a positive influence on use of promotions. This implies that it is more rewarding to maintain customers who lookout for new products on the market (keen on noting the dates on which products were manufactured before consumption) through weekly promotions.

4.3 Factors conditioning the number of marketing strategies employed by retailers

Table 4 presents the Poisson regression results for the factors affecting the number of marketing strategies employed by retailers to sell value added bean products. The standard errors reported are robust to control for heteroskedasticity. More diagnostic statistics appear at the bottom of the table. Various factors influenced the number of marketing strategies that retailers adopt to sell processed bean products.

Selling either canned, chilled or both had a positive influence on the number of strategies. These increase the likelihood that retailers will use an increasing number of marketing strategies to sell the products. This suggests that as consumers are exposed to new and various processed bean product variants that caters for diversified tastes, retailers will opt for greater numbers of marketing strategies to reach out to the targeted consumers. This is in line with the findings of Pramod and Hiriyappa (2017) and Theriault *et al.* (2018) who found processed food variants to be one of key factors that influence the number of marketing strategies adopted for processed foods.

Price of value added products (sorted beans, canned, and chilled) is associated with increasing number of marketing strategies that a retailer can adopt. This implies that retailers would be willing to adopt as many marketing strategies to reach out to the targeted consumers and recover the costs incurred in business. This is in line with the findings of Andam *et al.* (2017) and Theriault *et al.* (2018) who found strategic pricing as one of the key mechanisms applied by processed foods retailers to target higher end segment of the market (who normally shop in modern retail outlets).

In addition, large volumes of value added bean products handled by any retailer as opposed to small volumes results into increasing number of strategies needed to market the products. Greater volume decreases transaction costs per kilogram sold, and therefore opens the opportunity for retailers to sell to outlets (supermarkets, wholesalers) that may demand higher volumes. The results corroborate those found by Gillespie *et al.* (2016),

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Table 4. Factors affecting the number of marketing strategies: Poisson regression results.[1,2]

Variable	Coefficient	Robust standard error
Canned^	0.358 **	0.172
Chilled^	0.438***	0.103
Experience	0.019	0.020
Price of sorted beans	0.007 ***	0.002
Price of chilled/canned	0.001*	0.001
Quantity of sorted beans	0.0002*	0.0001
Cost of marketing[a]	0.159***	0.075
Information sources	0.144	0.136
Number of challenges	0.115	0.079
Frequency of supply		
Weekly^	-0.085	0.146
Monthly^	-0.057	0.124
Constant	-2.771**	0.833
Goodness-of-fit chi2=36.742 (Deviance statistic)	Prob > chi2(78)=1.0000	Dispersion ratio: 36.742/78=0.47
Goodness-of-fit chi2=41.051 (Pearson statistic)	Prob > chi2(78)=0.9998	Dispersion ratio: 41.051/78=0.53

[1] [a]=logarithm; ^= dummy variable (yes=1, 0=otherwise).

[2] Significance levels at 1%***, 5%** and 10%*.

where increasing numbers of animals raised for slaughter increased the number of marketing channels used by grass-fed beef producers in the USA.

The study further found increasing costs of marketing to be associated with increasing number of strategies adopted. This would imply that retailers need to select fewer marketing strategies, and if possible avoid strategies that are too costly to implement. Managing marketing (operational) costs has a great influence on food marketing strategies use (Szwacka-Mokrzycka, 2013)

5. Implications for processed food retailing industry

Unlike many other Sub-Saharan African countries, for many years Kenya had a comparative advantage in the manufacturing of processed agricultural products. Notable among these are common beans which were traditionally considered to have long cooking time and therefore were time consuming and required more fuel. However, for new competitors intending to join the bean processing industry, it is not clear whether business will be able to expand and make meaningful profits since marketing strategies and distribution channels for value added bean products have not been properly assessed. In 2016, a survey of value added bean retailers was carried out in Nairobi metropolitan to ascertain the various marketing strategies used to sell value added bean products. Study findings showed that the primary buyers of value added bean products were individual consumers. Prospective value added bean products will have to devise appropriate marketing strategies to reach out to available customer base (individual consumers) in order to induce higher processing volumes and increased bean procurement from producers.

The study found that retailers who dealt in different products applied different strategies to market value added products. This implies that prospective value added bean retailers will have to choose an appropriate mix of strategies to penetrate the market and therefore influence consumers to buy the products. This diversified marketing strategy is likely to enable retailers to reach out for varying types of consumers (non-users, potential users, first-time users, regular users, and ex-users).

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Frequency of products supply influenced the type of marketing strategy for value added bean products. In cases where the supply is tagged on a weekly basis, the study recommends use of promotion as the best marketing strategy for such products. This is justified on grounds that as more and more products are procured on a weekly basis, customers need to be notified on a constant basis through carrying out a number of promotions. This will help retain the value of processed products locally and in turn improve the income of farmers who are the key suppliers of the raw materials. The observed supply arrangements imply that prospective value added bean retailers will have to carefully consider procurement processes in designing marketing strategies.

Access to information greatly influenced decision on which marketing strategy to use. Given that the majority of consumers are individuals with probably limited access to information on the type of value added bean products on the market, it is important that retailers use various information channels to reach out to targeted consumers. This could take the form of community radios or broad casting on televisions in local languages. This is likely to lead to increased interest in the products, as consumers will be well informed about existing products.

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