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Choice of Marketing Channels in the Kenyan Domestic Organic Market

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Abstract The study was conducted to evaluate the factors influencing organic farmers' participation in organic or conventional and direct or indirect market channels in the domestic market. These factors may include socio-economic, marketing or institutional factors. The study involved organic farmers in the peri-urban regions of Kajiado, Kiambu and Nairobi Counties. The data was collected between March and May 2014. Methodology: A questionnaire was administered to 117 organic farmers to establish the determinants of their choice of a market channel, in Kenya's domestic organic market. This represented a census of the entire population of both certified and uncertified organic farmers serving the Nairobi market and affiliated to the umbrella body, Kenya Organic Agriculture Network (KOAN). Semi structured questionnaires were administered to the organic producers and the main buyers. A theoretical model of marketing channel choice, under random utility maximisation was used to test the effect of price, certification cost, requirements, group membership, and region (county) among other factors on the decision to choose a marketing channel. 56 per cent of the farmers sold through the available organic outlets. The other farmers (44 per cent) reported sales to the local conventional channels. 67.7 per cent sold directly to consumers either at the organic farmers markets or the conventional markets Different forms of transaction costs were observed to negatively impact on sales to the organic channels. Different approaches such as certification and information access may be employed to reduce transaction costs in the organic sector and encourage sales through indirect and organic channels. However, group formation alone may not enhance marketing of organic products hence more research is needed into group characteristics for effectiveness.

Keywords: *certification, Kenya, marketing channel, multinomial logit, organic, transactioncosts*

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1. Introduction

Organic agricultural production has been promoted in Africa as an environmentally, socially and economically sound food production system. Mainly promoted by IFOAM, two thirds of new organic farmers converted in Africa between 2009 and 2010 [1]. Sustainable promotion of organic agriculture must however include opportunities for organic market development and participation by smallholder farmers [2]. This will ensure organic production provides an environmentally friendly alternative for economic and livelihood enhancement while assuring consumers of safe food [3].

Organic markets are often short, localized and specialised channels dominated by direct marketing [2] mainly through the Farmers' markets. The growing number of supermarkets presents an opportunity for new indirect channels [5] along with the speciality retail outlets. Producers expect to reap better returns from the direct channels since the longer the value chain the smaller the producers' share of the retail price [6]. Farmers selling at the Farmers' market further enjoy more control of the market but growth in volume has been difficult relative to indirect markets. Formal indirect markets are better able to coordinate product quality including organic claims in the face of technological changes [7]. Moreover, retailers provide a faster, ready market for the organic products. However, they are also deemed to have higher and more complex quality requirements over which small producers have little or no control. The failure of producers to take advantage of the direct farmers markets and organic indirect channels accordingly may indicate a market failure due to transaction costs [8].

Organic markets in developing countries tend to be thin and the institutions nascent [9]. The occasional and verbal contracts prevailing in these markets render trust building difficult. The supply of raw perishable products, conversion period and certification process could lead to a rise in transaction costs and a barrier to market access [10]. Such transaction costs may be in the form of limited information access and hold up problems for the market actors mainly the smallholder farmers [11,12]. Transaction

costs could eventually lead to market failure and conventionalization due to broken value chains and inadequate market linkages in the organic sector [13].

The domestic market for organic products in Nairobi, Kenya has indicated good potential for organic vegetables in spite of premium prices [9,14]. The market is composed of a small base of producers and a small but growing niche market in the urban suburbs of the city [15]. Up to ten retail outlets have been operated intermittently in Nairobi and a few in the main towns in Kenya selling both certified and uncertified organic products [15].

They include supermarkets, retail outlets, processors and farmers markets. The retailers consist of an organic restaurant and a green grocer shop buying a variety of fruits and vegetables from the farmers on informal contracts. However, these outlets often require small daily quantities of produce, offer lower prices and delayed payments of which the farmers have limited control [9]. The farmers market is a weekly marketing channel organised for the farmers by the national organic agriculture movement. While the processor presents a huge market opportunity outside the country, the product range is limited to selected fruits.

Farmers may opt for direct or indirect marketing channels due to a host of reasons including their socio-economic characteristics, transaction costs or prices [16]. For instance, the perceived higher level of channel requirements and cost of certification could have a negative impact on sales to indirect and organic outlets [17]. Similarly, inadequate market information give a higher perception of price risk reducing the willingness to pay for transportation to the market [18]. Drawing on [19], this paper contributes to the organic marketing debate by analyzing the factors that influence the choices of marketing channels by organic farmers in Kenya. The understanding of these motivations would impact on market efficiency and contribute to expanding the domestic market.

2. Methodology

The study involved 117 organic farmers in the peri urban regions of Kajiado, Kiambu and Nairobi Counties. This represented the entire population of both certified and uncertified organic farmers operating around Nairobi city and affiliated to the umbrella body KOAN. These areas were purposively selected for their high concentration of organic farmers and their proximity to the city of Nairobi which is the main target organic market in Kenya [9]. Semi structured questionnaires were administered to the organic producers and the main buyers.

The interviews generated farm and household data related to demographics, farm characteristics, transaction costs and marketing outlet choices. The organic farmers were presumed to prefer and choose one channel over the others on the basis of an underlying utility maximisation subject to certain factors [20]. These factors may be technical, institutional or socio-economic. The outlets were labelled (1 = organic farmers market; 2 = organic processor; 3 = conventional market; and 4 = organic retail).

The expected utility of individual i choosing a channel j may therefore be expressed as the sum of a deterministic term V_{ij} and a stochastic term (ε) according to [20].

$$U_{ij} = V_{ij} + \varepsilon \quad (1)$$

Where U_{ij} is the utility, by each farmer, V_{ij} is a vector of exogenous characteristics influencing a farmer's choice of a market channel and ε is the error term. Assuming only one channel is chosen, $U_{ij} = 1$, and $U_{ij} = 0$ otherwise.

Thus, for an organic farmer who chooses the farmers market k, the utility U_{ik} exceeds that from the other options U_{ij} as follows.

$$U_{ij}\left(x_i\beta_{ij}\right) < U_{ik}\left(x_i\beta_{ik}\right)\forall k \neq j \quad (2)$$

Where, U_{ij} is the utility expected by each farmer, $\boldsymbol{x}_i$ is a vector of socio-economic, farm and institutional characteristics for individual i and β is a vector of the parameters to be estimated.

The choice of marketing channels by producers has been analysed widely using qualitative discrete choice models such as logit, tobit, and probit in various forms [6,21], as well as linear regression models [22]. The Multi nomial Logit model is better suited for analysing marketing channel choice with polytomous unordered dependent variables, which also controls for selectivity bias. To analyse the choice between the four alternative market channels in the domestic organic market, a multi nomial logit model was therefore estimated. The dependent variable was defined as one if the farmer sells to a specific channel and zero otherwise.

Transaction cost variables, price, land size, age and farmer group membership were the independent variables hypothesized to influence this choice. The probability of an individual organic farmer choosing a given channel may be represented as follows;

$$\begin{aligned} P_{ij} &= P\left(Y_i = j\right) \\ &= \left[\exp\left(x_i\beta_{ik}\right)\right] / \left[1 + \sum_{k=1}^{m} \exp(x_i\beta_{ik})\right] \end{aligned} \quad (3)$$

Where, P_{ij} is the probability of choosing a market channel relative to the conventional market; $\boldsymbol{x}_i$s are the exogenous variables (Table 1) and β are the coefficients to be estimated. The coefficients represent the odds or the likelihood of each channel choice relative to the conventional market.

Price represents the unit price received by the farmer for different organic products sold in the respective outlets. It is assumed that outlets offering higher prices will be preferred. Farmers with larger land sizes were expected to be wealthier and thus with more access to credit and operating capital. Organic producers require capital to finance certification, inputs and farm operations such as irrigation. This would ensure such producers remain in production and consequently market their produce all year round. This implies better product consistency and higher productivity as required by indirect and organic outlets.

Different outlets were perceived by the farmers to impose varying degrees of requirements which can act as selective barriers to participation for those farmers unable to comply. This constitutes a transaction cost on the part of farmers. This is expected to lower market transactions to the organic outlets where the requirements are deemed high. Farmer groups have been widely promoted to small scale farmers for the benefits of reducing transaction costs

and increasing bargaining power [22].

Diversification, farmer–trader, county and links with training organisations are other variables expected to reduce transaction costs and enhance access to organic and indirect market channels. Certification cost represents different types of certification schemes. The lower levels represent group certification and uncertified producers with relatively lower costs. Literature predicts more expensive schemes could be motivated by marketing contracts with retail and processor organic buyers [23]. Hence farmers in the higher cost groups are expected to market in the organic and indirect outlets.

Table 1. Description of Variables of the Multinomial Logit Model

Variable	Unit of Measurement	Expected Impact
Dependent Variable Choice of Marketing Channel	1. organic farmers market 2. if organic processor 3. conventional market 4. organic retail	
Independent Variables		
Price	Price in KShs. per Kilogram of organic produce sold	+
Land size	Size of land owned in acres	+
Age	Number of years of respondent	+
Requirements	Level of requirements in preferred market outlet 0 = Few 1= 1 or more	–
Certification Cost	Classification of certification costs paid by different farmers 0 if no certification cost incurred 1 if cost = Kshs. 300/- per year 2 if cost = Kshs. 1500/- per year 3 if cost = Kshs. Exceeds 10000/- per year 4 if certified through the buyer	+
Farmer-Trader	If the farmer buys produce from other farmers for marketing 1= Yes 0 = No	+
Farmer group	Membership to a farmers group 1= Yes 0 = No	+/-
Diversification	Number of enterprises available on the farm	+
NGO Links	If the respondent has interacted with at least one organic NGO in the last five years 1= Yes 0 = No	+
Region (Farm county)	County where farmer is located 1.Kajiado 2.Kiambu 3.Nairobi	+/-

3. Results

The organic farmers in the study marketed their produce through four main channels in the domestic market (Figure 1). These included organic farmers market, a processor, retailers (organic restaurant and organic green grocer) and conventional market channels. About 56 per cent of the farmers sold through the three available organic outlets. The other farmers (44 per cent) reported sales to the local conventional markets.

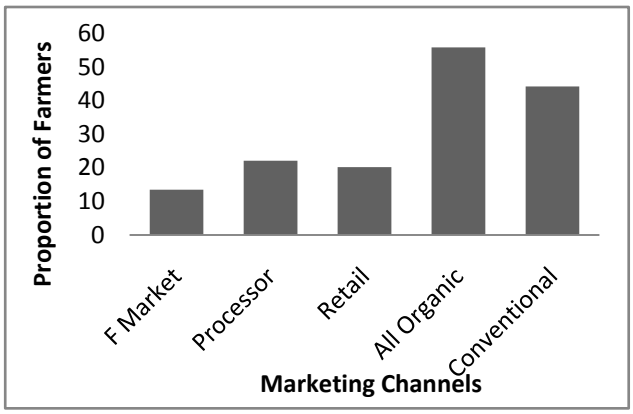

Figure 1. Marketing Channel Choices Utilized by Organic Farmers (Source: Author Field study, 2014)

Table 2. Characteristics of Independent Variables Influencing Choice of Market Channel

Variable	Mean	Std. Dev.
Price	43	19.4
Land size	1.9	2.4
Age	52	14.9
Diversification	3.8	1.0
Variable		**Percent Farmers**
Requirements (Few)		61
Value Chain Role (Farmer-Trader)		26
Farmer Group Member		79
Have NGO Links		52
Farm County		
• Kajiado		35
• Kiambu		36
• Nairobi		30
Annual Certification Cost	(KShs.)	
• None	(Uncertified)	19
• 300		36
• 1500		19
• 10000		3
• Buyer sponsored		23

The farmers' market and the conventional markets represent direct markets where farmers sell directly to consumers while processors and retailers are indirect outlets. This channel consisted of about 13 per cent of the farmers selling directly to consumers at a designated location every Saturday. About 22 per cent of the farmers used the processor as a marketing channel. Organic producers had not fully embraced the modern niche market opportunities offered by organic outlets probably for better market guarantee in the established conventional market channels.

Certain variables are hypothesised to influence the farmers' choice of marketing channel (Table 2).

From the foregoing model, both the McFadden R^2 and the likelihood ratio chi square test statistic suggested that the model fit the data well at 1 per cent level of significance. The multinomial logit model assumes that the odds ratio of any set of outcomes is obtained without reference to other outcomes that might be available. The Hausman test for independence of irrelevant alternatives was therefore performed. The obtained p values were not significant and hence no evidence that this assumption was violated. The results of the multinomial logit model indicate the variables that may influenced the choice of marketing channels (Table 3).

Price had a positive influence on channel choice where farmers preferred organic retailers and farmers markets to the conventional one which offered no premium price. Hence the organic farmers in the study selected organic marketing channels in expectation of higher prices from the organic outlets. Organic farming was mainly a preserve of small scale farmers with most organic producers on farms below 1 Ha on average. Larger farms seemed to prefer the conventional outlets. Increasing the land size by one acre increased the probability of selling to the conventional channels by 5 per cent. Price, perceived requirements and links with NGOs seemed to positively influence the choice for farmers markets.

Farmers age, links with NGOs and certification influence the choice for processors positively while integration of the farmer role, farmer groups and requirements were negative for the choice of organic retailers relative to the conventional channels. The results of the multinomial logit model are further illustrated by the marginal effects (Table 4).

Table 3. Results of the Multinomial Logit Estimation for Choice of Marketing Channels

	Farmers Market Coefficient (p value)	Processors Coefficient (p value)	Retailers Coefficient (p value)
Price	48.38 (0.00)***	12.83 (0.00)***	12.90 (0.00)***
Land size	-.92 (0.09)*	-1.36 (0.02)**	-0.78 (0.02)**
Age	6.88 (0.08)*	6.04 (0.05)**	2.43 (0.35)
Diversification	1.63 (0.41)	2.17 (0.20)	3.61 (0.05)**
Requirements	4.39 (0.04)**	-5.79 (0.01)*	-4.48 (0.01)***
Farmer-Trader	22.00 (0.99)	-7.55 (0.00)*	-4.53 (0.03)**
Farmer Group Member	16.60 (0.99)	-2.81 (0.23)	-4.84 (0.02)**
Have NGO Links	4.47 (0.04)**	5.20 (0.03)**	3.25 (0.13)
Farm (Kajiado) County	(Base)	(Base)	
Kiambu	-1.32 (0.60)	-3.00 (0.39)	-1.78 (0.35)
Nairobi	-2.53 (0.14)	-10.98 (0.01)***	-8.20 (0.01)***
Certification Cost	.80 (0.52)	10.72 (0.00)***	8.65 (0.00)***
Constant	-287.78 (0.95)	-71.45 (0.00)***	-59.16 (0.01)***
Conventional	(base outcome)		
Number of obs, = 104 LR Chi-Sq2(33) = 187.41 Prob > Chi-Sq. = 0.0000 Log likelihood = -40.20 Pseudo R^2 = 0.70			

P values in parentheses: *P<0.1, ** P<0.05, ***P<0.01.

Table 4. Marginal Effects of the Multinomial Model for Choice of Organic Channels

Independent variables	Conventional dy/dx (p-value)	Retailers dy/dx (p-value)	FarmerMarket dy/dx (p-value)	Processor dy/dx (p-value)
Price	-1.48 (0.00)***	.01 (.05)**	1.55 (.00)***	-.08 (.46)
Land size	.05 (0.00)***	.00 (.80)	-.02 (.26)	-.04 (.16)
Age	-.25 (.07)*	-.14 (.27)	.20 (.15)	.20 (.06)*
Diversification	-.15 (.07)*	.20 (.05)**	.01 (.84)	-.05 (.38)
Requirements (Few)	.07 (.34)	-.15 (.06)*	.23 (.00)***	-.14 (.04)**
Farmer-Trader	-.29 (.99)	-.26 (.99)	.21 (.00)***	-.32 (.97)
Farmer Group Member	-.20 (.99)	-.45 (.98)	.66 (.99)	.01 (.99)
Have NGO Links	-.22 (.03)**	-.01 (.91)	.10 (.10)	.12 (.09)*
Farm County (Kajiado)				
Kiambu	.07 (.25)	-.02 (.90)	-0.01 (.94)	-.08 (.59)
Nairobi	.26 (.00)***	-.08 (.45)	.03 (.56)	-.20 (.10)
Certification Cost	-.33 (.00)***	.23 (.04)**	-.10 (.06)**	.20 (.02)**

p values in parentheses: *P<0.1, ** P<0.05, ***P<0.01.

From the marginal effects a unit increase in the farmers' age increased the probability of selling to the organic processor channel by 20 per cent while reducing the probability to sell to the conventional by 25 per cent. Older farmers with more organic experience would choose this channel relative to conventional channels. The older farmers are less likely to make the long distances to farmers markets and organic retailers' or invest in the search for these relatively new markets. Certification cost had a significant and positive effect on the probability of selling to the organic processor and retail outlets.

Farmers in the most expensive certification schemes kept away from the farmers markets and the conventional markets. These are mostly the individual wealthier farmers with third party certification schemes. The probability to sell through organic retailers and processors increased by more than 20 per cent for a higher cost of certification level.

Farmers' value chain integrative role as a trader in the value chain was significantly associated with reduced sales to the processor and retailer organic outlets relative to the conventional markets. As expected, the practice enhanced sales to the organic outlets although this was mainly to the farmers market by 17 per cent. Contrary to expectation, farmer groups did not seem to positively influence sales to the organic or indirect channels. Diversification involves the availability of multiple enterprises to the farmer which helps to spread risks. Diversification had a significant association with retail market channels compared to conventional channels. Thus implying more diversified farms may access the retail outlets more easily. Diversifying by an additional enterprise increased the probability of selling to the organic retailers by 20 per cent while reducing sales to the conventional channels by 15 per cent.

The perceived higher level of requirements in the indirect channels was positively and significantly associated with increased sales to the farmers market where the farmers controlled the market. Consequently, increased requirements reduced organic farmers' chances to participate in formal or specialised markets leading them to resort to the direct organic or conventional outlets. Contact with support organisations mainly organic non-governmental organisations positively influenced the access to farmers markets and organic processors.

The county variable was analysed as a factor variable with the Kajiado as the base or reference category. Hence compared to farmers in Kajiado, Nairobi and Kiambu farmers were significantly less attracted to organic retail and processing channels than conventional outlets. Besides, farmers from Kiambu and Nairobi faced relatively longer distances from the organic markets in Kajiado County. Moving from Kajiado to Nairobi increased the probability of selling in the conventional outlets by 26 per cent. Hence these farmers may not utilize or access market information from the organic markets on time. Nairobi farmers significantly accessed conventional channels compared to Kajiado farmers.

4. Discussion

Farmers from Kiambu and Nairobi faced relatively longer distances to the organic markets in Kajiado County, in the absence of other market outlets closer to the farmers. Poor development of organic market infrastructure and market institutions may provide farmers little incentive to transport their produce to the indirect organic markets further away [6]. Thus longer distances and few markets may hinder efficient business transactions as well as chain coordination mechanisms. This may be further aggravated by moral hazard and lack of trust between market agents, characteristic of new markets [24].

The transaction costs observed included mainly lack of market information represented by the region (County), channel requirements and certification cost variables. Proximity to markets predisposes farmers to easier access to information regarding prices, demand, supply and other market requirements [25,26], thus reducing their transaction cost and facilitating their decision making. Nairobi farmers in the study may have opted for direct markets mainly the conventional since the retailer and processor channels were located relatively further away. Being the most urbanized region, farmers in Nairobi were also surrounded by numerous conventional market outlets.

The organic farmers occasionally sold to other farmers who in turn delivered the produce to the organic outlets in larger volumes, to reduce transport costs. This kind of chain integration influenced sales to the organic markets. This may indicate the lower price risk associated with the farmers market as well as the benefit of economies of scale from larger volumes. However, the farmers markets may have appealed to organic producers for other reasons including acting as a platform for exchanging production and market information and social net-working [27].

Group production and marketing activities are often useful and recommended to alleviate the challenges of embryonic institutions in developing countries. However, farmers in the study did not engage in group marketing though high in group membership. These may be costly and complex to coordinate and monitor [28], or ineffective due to low trust levels among the members or weakness in leadership [18]. Marketing issues did not seem to be the focus of the groups observed relative to other urgent activities such as table banking.

The observed higher prices in the organic channels provide evidence for the possible existence of an organic price premium or value added by the organic label. Better prices tend to encourage market participation even in far off markets by warranting the transportation costs to these markets [29]. This legitimizes the expected economic benefits for small holder farmers in organic production. Furthermore, the organic farmers preferred the organic farmers' markets which are spot markets. Such markets generally offer better prices to producers selling directly to the consumers [30]

High level of regulation in the farmers market however did not deter farmers from selling in this channel. This may be due to the requirements and standard setting process in the farmers markets being more inclusive of farmers and therefore more easily understood and adopted. Requirements imposed or perceived in different marketing channels may facilitate or become a barrier to market development [31,32]. Regulation is required to ensure credibility among actors along the value chain. This is particularly important in organic value chains where the certified product quality is intrinsic. Too stringent quality

requirements can however discriminate against resource poor producers as they often lack capacity to comply with such requirements [33].

Higher investments in certification charges seemed to render the organic farmers a responsibility or obligation to sell in the organic outlets. While the organic, training and standards may motivate and encourage individual farmers to sell in the formal organic channels, this could also subject the farmers to a possible hold up problem due to asset specificity [8]. This may call for safeguards in the form of enforceable and group contracts to protect small scale farmers [34].

Literature predicts that producers with regular contacts with training organisations may be better informed and thus empowered to trade in indirect markets [25]. However the results from this study could not confirm such findings. The trainings carried out may involve only a small number of farmers repeatedly with no avenue to communicate the lessons to others. This may suggest the need for an investigation into the nature of support and mandate of the training organisations as well as the scope of the training programs in relation to organic marketing [35].

5. Conclusion

The study identified various factors influencing the choice of organic product marketing channels in Kenya. There was a high tendency by organic producers to stick to organic outlets as long as they had paid a high price for certification. The more expensive certification modes mainly by individual farmers thus accessed the indirect retail market channels. Hence increased and improved certification services may enhance access to modern organic markets by individual and relatively larger organic producers. Better coordination of the farmer groups through private and public partnerships is required to improve the cohesion and market focus of the farmers groups.

While the organic farmers were able to comply and continue selling in the farmers market in spite of high quality requirements from this channel, more complicated requirements from the retailers pushed the farmers away from the indirect organic channels. Supporting small scale farmers to increase their capacities through training and provision of limiting inputs may enhance their compliance potential. This along with new markets closer to the farmers would reduce transaction costs and eventually lead to better prices in exchange for better quality of organic products.

The study identified preference by farmers for channels with less information transaction costs, namely farmers markets and conventional markets. Hence, coordinated market intelligence to the Organic farmers through the organic movement is key to reduce transaction costs. This information may further include channel demands and market price trends to help small scale farmers make better marketing decisions and contracts. The organic producers can further reduce unit transaction costs through collective marketing as indicated by farmers taking up the trader role which increased access to the farmers market. More formalized organization of this function can enhance participation in the organic channels. Individual farmers on the other hand may be more suitable for contracts with the indirect channels.

Further research may therefore involve investigation of organic farmers' stated market preferences involving a wider range of producers to better inform the farmers' market needs and expectations. Further studies may also explore effective farmer groups and other support programs with regard to reducing marketing costs in the organic sector.

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