Influence Of Buyer Practices, Demographic And Farm Characteristics On Choice Of Marketing Channel Intermediary Of Unprocessed Tea In Kiambu County, Kenya

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Abstract

Agricultural market liberalization aimed to boost competitiveness in commodity markets, with Kenya's tea sector initially seen as a success story under the Kenya Tea Development Authority (KTDA). However, by the early 1990s, smallholder farmers began advocating for market reforms to gain more influence over their produce. The government responded by transforming KTDA into a marketing agent and manager of small-scale tea farmers' factories. Despite this, the problem related to broker intermediary continues, which has resulted in theft of unprocessed green tea leaves. It has also resulted in low quantities of green tea leaves being delivered to KTDA despite its efforts to supply farmers with fertilizer and extension services to small-scale tea farmers. This study investigated the determinants of the choice of marketing channel intermediary of green tea leaves in Kiambu County. Specifically, the study investigated the influences of: buyer practices, demographic characteristics, and farm characteristics on choice of marketing channel intermediary for fresh green tea levels in Kiambu County. A sample of 394 tea farmers from a target population of 25,624 tea farmers across five sub-counties: Githunguri, Gatundu North, Chania, Lari, and Gatundu South. The sample was determined using Yamane's formula, and data was collected using a structured questionnaire. The study was grounded on three theories: utilizing utility theory, bulk building theory and transaction cost theory. Descriptive statistics were used when analyzing profile of tea farmers, while inferential statistics, mainly binary logit regression analysis was used to reveal the nature of the relationship between explanatory variables and the choice of marketing channels. Findings revealed that, buyer practices (credit terms, sorting methods and pricing) significantly the choice of marketing channel. Additionally, demographic factors and farm characteristics had a significant influence on farmers' choice of green tea leaves marketing channel. In conclusion, it is recommended that the government through KTDA enhance strategies tailored towards addressing specific needs of different demographic groups, its buyer practices, and enhance market access for farmers. This will give it a more competitive edge compared to brokers, which will be of benefit to tea farmers.

***Key Words:** Demographic Factors, Buyer Characteristics, Farmer Characteristics and Marketing Channel Intermediary*

I. Background Of The Study

In 2021, global tea production reached 6.4million tons (ITC, 2022). Globally, tea industry employs over 13 million people, of whom nine million are small scale tea farmers. The leading tea farmers in million kilograms are China producing 3063.15, India 1343.06, Kenya 537.83, and Sri Lanka producing 299.34 million kilograms (International Tea Committee (ITC) (2022). During the year 2022, global tea consumption stood at 6.1 million tons, with China, India, Turkey, Russia, and the United Kingdom emerging as the top tea-consuming nations (ITC, 2022). These trade statistics emphasize the interconnectedness of the global tea market, where tea-producing countries export to meet the demands of importing nations. In 2022, China produced over 40% of the world's tea, consumed over 30% of the world's tea, and exported over 20% of the world's tea according to ITC (2023). Furthermore, China boasts an impressive array of tea varieties, encompassing green tea, black tea, oolong tea, white tea, and pu-erh tea. Among these, green tea reigns supreme as China's most favored type, representing over half of the nation's tea output.

According to Peng, et.al., (2015) Government-owned factories purchase tea leaves from small scale farmers, process them into various tea types, and distribute the products in bulk or packaged under government-regulated brands. However, DeBernardi, (2023) stated that Tea produced on private farms in China is usually of higher quality, as these farms focus on specific tea varieties and maintain more control over the entire production process. The tea is sold locally to consumers, through tea houses, or exported to international markets. Moreover, Xiao (2017), the flourishing private factories in China's tea industry have become attractive options for an

increasing number of farmers, drawn by the promise of higher prices and enhanced support, including access to training and advanced technologies. State-owned enterprises like China Tea Co., Ltd, as the author points out, now grapple with fierce competition from their private counterparts. Building on this, Röschenthaler's (2021) study underscores the negotiation process between farmers and brokers, a pivotal step in determining tea prices based on quality and prevailing market conditions. Once a mutually agreeable price is reached, farmers proceed to deliver their tea to these brokers. Moreover, Röschenthaler's research also illuminates the rising prevalence of brokers in the China-West Africa tea trade, which is leading many small-scale farmers to opt for broker-mediated sales channels. While those studies send the light on the reasons why brokers are present in the market for processed tea on route to Chinese market, it is not clear what drives the choice of selling the unprocessed tea leaves to brokers other than selling this product through state-owned intermediary

Africa is home to thirteen tea-producing countries namely Kenya, Uganda, Malawi, Tanzania, Rwanda, Mozambique, Burundi, Ethiopia, Zimbabwe, Cameroon, Democratic Republic of the Congo, South Africa and Mauritius. Their tea production is an essential part of the global tea economy, the crop is considered vital for generating export revenue and employment, whilst also providing good cups for a growing domestic demand Global tea market report, (2020). Africa's thirteen tea-producing countries generate a total production of 795,600 metric tonnes (mt) of tea, with a growth rate of +36.4 per cent over the past 10 years (International Tea Board, 2020. According to London Tea Auction (LTA), 2022) in Africa Kenya is the leading producer with an output of 569,500 million tonnes Uganda follows with an output of 63,410 Malawi ranks third with an output of 46,100 mt. The first successful tea planting was carried out in Malawi. In Kenya, small-scale tea farmers are required to market their tea through KTDA-owned factories, (which was established in 1964 under the Agriculture Act (Cap 318) Section 91, Legal notice No. 42, replacing the Special Crops Development Authority (SCDA). The Authority took over management of small holder tea production and marketing. However, in the recent years, KTDA has encountered challenges ranging from price fluctuations in the global market, poor infastructure, management problems, and the most challenge, emergence of brokers as an alternative unprocessed tea marketing channel intermediary. This has hindered them form playing their role of managing tea production and marketing of the same in the global and local market. In contrast, private tea factories exhibit greater managerial flexibility, enabling them to swiftly adapt to shifting market conditions and evolving customer preferences (Matumbi & Muchelule 2023, Chepkoech, Keitany & Bett, (2023). Consequently, the private sector has been progressively gaining ground, with their tea production surging from 15% in 2019 to 20% in 2020. Government has responded to this challenge using 2020 Tea Act, which requires registration of a tea buyer, exporter, or importer, mandates that individuals looking to engage in this business must undergo registration under the Tea Board. Although their production has increased, it's not enough to keep the factory machines running 24/7. With huge profits and less amounts produced by estates owned by the private factories, the use of brokers who buys from farmers previously selling green tea to KTDA has gained root. This is a serious problem in Kericho, Kiambu and Murang'a. This makes the current study relevant, and it focuses on Kiambu county as it stands out as one of Kenya's prominent regions for tea cultivation (Tea Board of Kenya TBK in 2022).

Statement of the Problem

The government established Kenya Tea Development Authority (KTDA) a statutory legislation on 20 January 1964 under Legal Notice No. 42 Section 190 of the Agricultural Act (Cap 318 of the Laws of Kenya). KTDA aims to provide effective management services to the tea sector for efficient production, processing and marketing of high-quality tea. KTDA manages 65 tea factories that purchase tea from about 560,000 small-scale farmers who each own about a half-acre of tea (KIPPRA, 2022). This traditional tea marketing structure dominated by KTDA has faced challenges due to increased competition from private tea factories in the large tea estates (Koros, et.al., 2023). The competition shall compel KTDA to enhance its efficiency and competitiveness. It is also argued that it shall foster a more diverse and inventive landscape in the Kenyan tea industry. According to STiR Coffee and Tea Magazine (SCTM) (2023) a significant number of small-scale tea farmers, such as Annah Bisieri from Kisii County, have been switching from the Kenya Tea Development Agency (KTDA) to alternative ways of marketing their tea through private tea factories. In a study by Matumbi, & Muchelule, (2023), a significant challenge has emerged among small-scale tea farmers who are increasingly shifting their allegiance from KTDA-owned factories to private factories in Kiambu county. To achieve maximum results in terms of the amount of tea bought from small-scale farmers, the private factories owned by large-scale tea producers are using brokers.

The shift has another ramification in that, it shall diminish the bargaining power of small-scale tea farmers, considering that, the function of KTDA is to build the bulk of green tea leaves, process and look for the market (Matumbi, & Muchelule, 2023). Even if the one-off price paid to farmers by brokers sent by private large-scale tea farmers and processors seems high compared to the monthly payment per kg for quantity delivered to KTDA at the end of the year, the farmers also are paid tea bonus. KTDA also supplies farmers with fertilizer and extension services to improve production. If the shift is not addressed quantity of tea supplied to KTDA will

decrease, and the government shall lose the heavy investment already put in place in order to facilitate those services to the small-scale farmers by KTDA. Small-scale farmers who farm tea through telephone using hired labour, and the old-aged farmers are experiencing challenges with existence of brokers intermediary in tea marketing channel, whereby their produce is being stolen and sold by laborers to brokers from private tea factories at a through away price (Matumbi, & Muchelule, 2023). The important question that needs to be addressed is; what is driving this shift? If the real drivers are well investigated and understood, the government will be able to develop the right policies to guide the marketing of green tea leaves by small-scale farmers. It will also strive to minimize the inefficiencies at KTDA in order for it to serve the small-scale tea farmers better. Although Kirui et al (2016) investigated the drivers of choice of marketing channels of green tea in Kericho county, a gap exists in that the study focused on the farmers' characteristics and the farm characteristics only. It was important to investigate whether the small tea farmers' perception of KTDA buying practices influences the small farmers' decision on choice of the marketing channel. This study investigated the small farmers' demographic characteristics, buyer practices and farm characteristics as the premised drivers of the shift in the choice of marketing channels by small-scale farmers in Kenya. By identifying and analyzing the key determinants behind farmers' choices channel of green tea distribution in Kiambu, the study sought to contribute valuable insights that can inform policy decisions, improve the overall efficiency of the tea sector, and enhance the livelihoods of small-scale tea farmers in Kiambu County.

Objectives of the study

The general objective was to determine whether buyer practices, demographic and farm characteristics influences the choice of marketing channels of green tea leaves in Kiambu county. Specifically, the study sought to address the following objectives:

i. To investigate whether buyers' practices (prices offered, credit terms and sorting) have effect on the choice of green tea leaves marketing channel intermediary in Kiambu County
ii. To determine if tea producer demographic characteristics (income, age and education) influence the choice of green tea leaves marketing channel intermediary in Kiambu County
iii. To assess the effect of farm characteristic (acreage/size, location and ownership) on the choice of green tea leaves marketing channel intermediary in Kiambu County

Research Hypotheses

Based on the above objectives, the following three hypotheses were tested to address the research problem;

HO_1: Green tea buyers' practices (prices offered, credit terms and sorting) have no statistically significant effect on the farmers' choice of green tea leaves marketing channel intermediary in Kiambu County

HO_2: Demographic characteristics (income, age and education) have no statistically significant effect on tea farmers' choice of green tea leaves marketing channel intermediary in Kiambu County

HO_3: Farm characteristics (acreage/size, location and ownership) have no statistically significant effect on the choice of green tea leaves marketing channel intermediary in Kiambu County

II.   Literature Review

Theoretical literature

Research study must be grounded on theories or known models in a specific area being investigated (Mugenda, 2008). The theories help the researcher to identify variables that could explain a given relationship between the explanatory variables and the dependent variable. The study was guided by the following theories; Utility theory, Bulk building Theory and the Transaction cost theory. The origin of utility theory can be traced back to early economists and philosophers such as Jeremy Bentham (1748-1832), who introduced the concept of utility in the context of utilitarianism. Bentham proposed that people seek to maximize pleasure and minimize pain, and this idea became the foundation of utility theory. Utility Theory was applied to understand how the demographic characteristics of tea farmers such as income, age, and education influence their choice of marketing channels for green tea leaves. According to Utility Theory, individuals make decisions that maximize their perceived utility or satisfaction. In the context of tea farmers, their choices of marketing channels are influenced by how different options align with their preferences and the utility they derive from these options. Bulk building Theory is relevant in that the first level of middlemen in the channel of distribution plays the role of building the bulk, where they buy goods from different suppliers. The first level intermediaries in this study take the form of marketing board (KTDA) and brokers representing licenced processors. They help small-scale tea farmers to build the small quantities. The roots of Transaction Cost Theory can be traced back to Ronald Coase's (1937) seminal work, "The Nature of the Firm," published in 1937. as quality standards or payment arrangements. This theory is relevant in the current study as it recognizes provides a valuable framework for smallholder farmers to assess the costs and benefits associated with different marketing channels. By considering transaction-specific attributes and

analyzing costs related to search, negotiation, monitoring, and enforcement, smallholders can make more informed decisions that align with their unique circumstances and resource constraints.

Empirical Literature

Mburu et al. (2017) evaluated smallholder dairy farmers' milk marketing channel choices in Kenya Highlands. The study found that farm acreage negatively influenced farmers' adoption of milk selling through the dairy cooperative channel, same with average milk price, the total number of cows milked. Nyaga et al. (2016) investigated the factors influencing fish tea farmers' marketing channel selection in Kirinyaga County. Findings of this study indicated that, farmers' choice of the market channel was influenced by the gender of the household head, distance to market; marketing cost, land tenure, number of fish ponds owned, access to extension services, cost of marketing, membership in a fish farming group, access to inputs, household income, price of fish, and type of fish reared. Chalwe (2011) evaluated the factors influencing bean farmers' decision to sell and their choice of marketing channel in Zambia. The results showed that farmers' choice of marketing channels was positively influenced by the price of beans, scale of operation (as measured by the number of beans harvested and quantity sold), distance to the market, farming mechanization used, and livestock ownership while this study entailed three key components on marketing channel choice; demographic characteristics, buyer practices and farm characteristics. Ogunleye and Oladeji (2017) in their study established that cocoa farmers in Nigeria chose choice market channels for their output based on time of payment, the form of payment, product pricing, distance from the farm, transportation cost, and product grading. Wojciech et al. (2013), indicated that commercial peach growers select a marketing channel for fresh peach sales after considering consumer preferences for quality qualities. Mutai et al, (2016) investigated whether socio-economic and institutional factors influenced smallholder farmers' choice of tea marketing channels in Kericho District; farmer demographic characteristics, buyer practices and farm characteristics influenced the choice of tea marketing channel. However, farm characteristics did not capture land ownership as either leased or otherwise, while the distances from KTDA tea buying centres was not captured. Wachira, et al (2023) investigated the determinants of choice of rice marketing channels in Mwea irrigation scheme, Kirinyaga County Kenya. The study found that factors such as education level, participation in marketing groups, distance to market, and age of the household head significantly influenced farmers' choice of marketing channels. Tumukunde, E. S. (2018) did a study on determinants of choice of marketing channels among potato farmers in Musanze District, Rwanda. Results showed that three main marketing channels were used by potato farmers namely brokers, open-air market and collection centers. Findings showed that brokers offered slightly high prices compared to collection centers; however, there was no significant difference between prices offered by collection centers and other marketing channels. Age had a positive influence on the choice of brokers while group membership, land size under potato cultivation, the quantity produced and off-farm income negatively influenced the choice of brokers relative to collection centers.
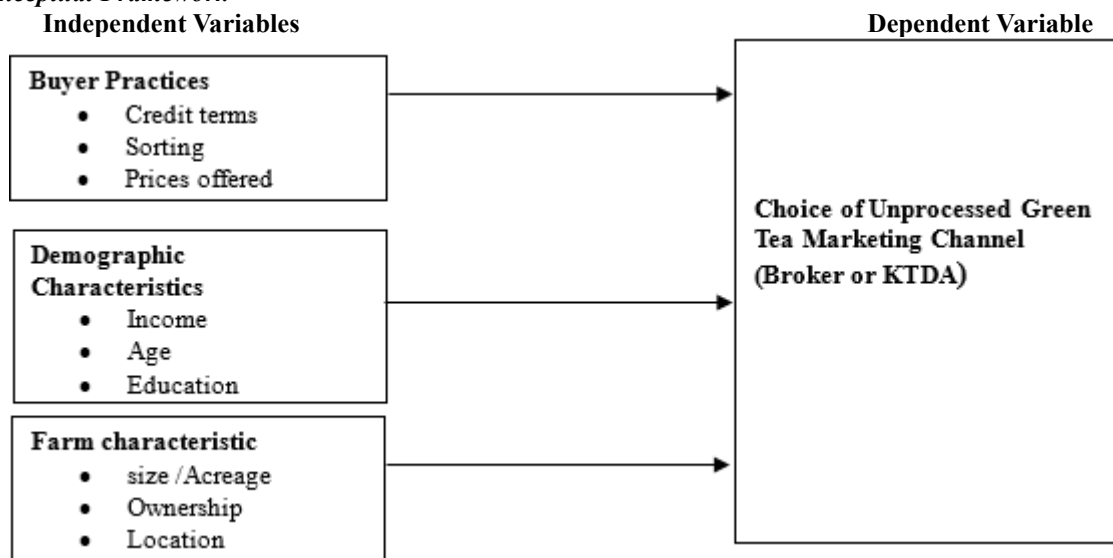
Conceptual Framework

Independent Variables   **Dependent Variable**

Figure 1: Conceptual Framework

Research Methodology

A sample of 394 tea farmers from a target population of 25,624 tea farmers across five sub-counties: Githunguri, Gatundu North, Chania, Lari, and Gatundu South was used. The sample was determined using

Yamane's formula, and data was collected using a structured questionnaire. The sample was determined using Yamane's formula, and data was collected using a structured questionnaire. Descriptive statistics were used when analyzing profile of tea farmers and their responses, while inferential statistics, mainly binary logit regression analysis was used to reveal the nature of the relationship between explanatory variables and the choice of marketing channels.

III.   Results

The response rate was calculated by dividing the number of completed questionnaires by the total number of distributed questionnaires. Out of 394 questionnaires distributed, 351 were completed and returned, resulting in a response rate of approximately 89.1%. This response rate indicates robust engagement from participants and enhances the reliability of the findings. Descriptive statistics indicated that majority of the respondents, comprising 61.3%, had attained secondary education. more than half (300= 86 %) are earning less than 30,000 Kenya Shillings per month. Majority of the respondents were above 40 years (248 respondents =71%). Descriptive statistics for buyer practices revealed that: more than half of the respondents (56.13%) rated KTDA prices as good relative to the prices offered by brokers, more than half (71.22%) of the respondents felt that the credit terms for KTDA were rather long, and that 76.63% felt that KTDA was serious when sorting/grading tea before buying. Descriptive for farm characteristic, more than half of the respondents (79.48%) felt the location of their farms were not far from KTDA tea buying centers. Further, results indicated that, 339 of the respondents were real owners of tea farms, while only 12 had leased the farms. 50 respondents owned farms which were less than an acre, 274 had farms of sizes ranging between 2-5 acres while 27 respondents had farms measuring more than 5 Acres.

Table 1: Correlation Analysis

		Buyers Prayers			Demographic Characteristics			Farm Characteristics		
		Credit terms	Sorting	Prices Offered	Income	Age	Prices Offered	Acreage/Size	Location	Ownership
Buyers Practices	Credit terms	1								
	Sorting	0.12 (0.04**)	1							
	Prices offered	0.21 (0.03**)	0.15 (0.38)	1						
Demographic Characteristics	Income	0.05 (0.73)	0.02 (0.82)	0.11 (0.31)	1					
	Age	0.07 (0.67)	0.03 (0.79)	0.09 (0.43)	0.08 (0.49)	1				
	Education	0.14 (0.42)	0.10 (0.54)	0.19 (0.28)	0.12 (0.34)	0.05 (0.57)	1			
Farm characteristics	Acreage/size	0.09 (0.55)	0.08 (0.58)	0.14 (0.36)	0.15 (0.25)	0.04 (0.68)	0.16 (0.22)	1		
	Location	0.03 (0.85)	0.11 (0.41)	0.05 (0.72)	0.06 (0.64)	0.07 (0.55)	0.04 (0.65)	0.09 (0.71)	1	
	Ownership	0.06 (0.75)	0.04 (0.69)	0.10 (0.47)	0.08 (0.68)	0.09 (0.40)	0.07 (0.37)	0.05 (0.86)	0.03 (0.79)	1

**P-value significant at 0.05 level of significance

Binary Logistic Regression Results
Table 2: Model I - Results for Binary Logit Regression Model for Dependent Variable and Buyer Practices

Logistic regression			Number of obs	=	351
	LR chi2(3)	=	239.04		
	Prob > chi2	=	0.0000		
Log likelihood = 68.17808			Pseudo R2	=	0.6301

Channel choice|	Coef.	Std. Err.	z	P>|z|
Credit terms|	1.1876541	.3446574	3.45	0.016**
Sorting		1.045321	.8495264	1.23	0.028**
Prices offered	-1.160054	.97689061	-1.19	0.035**
_cons		4.70554	.7571733	6.2	0.000

** p=value significant at 95% confidence interval

From results in Table 2, the log likelihood statistic was 78.17808, while chi-square = 239.04, and was significant since (p-value =0.000) at 0.95 confidence interval. Consequently, the hypothesis that all regression coefficients in the model are zero is rejected. Therefore, a significant relationship was present between tea farmer behavior in terms of choice of marketing channel and the explanatory variables in this binary logit regression model. The results indicates that KTDA long credit terms is associated with higher probability of farmers opting to sell green tea leaves to brokers, and association is significant (coef =1.1876541 , p-value= 0.016). The results further indicate that KTDA seriousness in sorting/grading of green tea before buying is associated with higher

probability of a tea farmer opting to sell green tea leaves to brokers, and association was significant (coef =, 1.045321, p-value= 0.028). The high prices offered by KTDA are associated with lower probability of farmers selling green tea leaves to brokers, and the association was significant (Coef = -1.60054, p-value = 0.035). Thus, null hypothesis HO_1: Green tea buyers' practices (prices offered, credit terms and sorting) have no statistically significant effect on the farmers' choice of green tea leaves marketing channel intermediary in Kiambu county was rejected, and the alternative hypothesis accepted.

The findings regarding buyer practices and their significant impact on the choice of marketing channels for green tea leaves echoes the work of Ogunleye and Oladeji (2017), who highlighted that time of payment and the form of payment significantly influenced cocoa farmers' market channel decisions. While their focus was on cocoa, the underlying principle that financial arrangements can impact marketing choices resonates with the findings concerning credit terms in this study. Additionally, this study found that less strict sorting practices correlated with a higher likelihood of selling to brokers which suggests that farmers may prefer to engage with brokers under more lenient quality requirements. Similar conclusions were drawn by Mutai et al. (2016), who noted that various internal farm management practices, including the quality of produce, could influence marketing strategies and partnerships. Such observations indirectly support the notion that operational practices, like sorting, play a critical role in market channel selection. Moreover, the influence of pricing strategies was evident in this study, where higher prices were found to correlate with an increased likelihood of selling green tea leaves to brokers. This finding underscores the importance of price in buyer practices and aligns with Chalwe (2015), who noted that the price of beans positively influenced the choice of marketing channels. This suggests that, similarly to the decisions made by tea farmers, producers across various crops are inclined to select outlets that offer more lucrative pricing.

Table 3: Model II - Binary Logit Regression Model for Dependent Variable and Demographic Characteristics

Logistic regression		Number of obs	= 351
	LR chi2(3)	= 242.31	
	Prob > chi2	= 0.0000	
Log likelihood = 79.41225		Pseudo R2	= 0.60330
Type of channel ~d |	Coef. Std. Err.	z	P>|z|
Income |	1.284352 .6389953	2.00	0.026
Age (40 and below years) |	1.144602 .8238185	1.39	0.015
| Education(secondary& Below)	1.167543 .191849	6.02	0.000
_cons |	3.34567 1.191619	4.78	0.000

Results in Table 3 indicates that Log likelihood statistic was79.41225, while chi-square =242.31, and was significant since (p-value =0.000) at 0.95 confidence interval. Consequently, the hypothesis that all regression coefficients in this model are zero is rejected. Therefore, a significant relationship was present between tea farmers behavior in terms of choice of green tea marketing channels and the explanatory variables in this binary logit regression model. The results indicates that tea farmers 'low incomes (Ksh 40,000 and below) is associated with high probability of farmers selling green tea leaves through brokers than if the farmers' incomes are high(Above Ksh. 40,000), and the association was significant (coef =1.284352 , p-value= 0.026). It can also be observed from the results that, farmers with level of education (secondary & below) are associated with high probability selling green tea leaves through brokers than if the farmer has attained above secondary level of education., and the association was significant (coef = 1.167543 , p-value= 0.00). Concerning the age of the farmers, from the results that, farmers of aged 40 years and below are associated with high probability selling green tea leaves through brokers than if the farmers are much older(above 40 years), and the association was significant (coef = 1.144602, p-value= 0.015). Based on those results, null hypothesis HO_2: Demographic characteristics (income, age and education) have no statistically significant effect on tea farmers' choice of green tea leaves marketing channel intermediary in Kiambu county was rejected and the alternative hypothesis accepted.

The findings of this study are consistent with existing literature. For instance, the research by Mburu et al. (2017) on smallholder dairy farmers in the Kenya Highlands utilized a logit model to evaluate their milk marketing channel choices, identifying several demographic characteristics influencing these decisions. This study demonstrated that factors such as farm acreage and average milk prices significantly impacted farmers' choices, aligning with the current study findings on how demographic factors influence marketing choices. In a similar way, Nyaga et al. (2016) investigated the factors influencing fish farmers' marketing channel selections in Kirinyaga County. This study employed a multinomial logit model and findings indicated that various demographic characteristics, including household income and access to inputs, significantly impacted farmers' marketing channel choices. The results support the notion that demographic characteristics play a critical role in determining how farmers navigate market channels.

Chalwe (2015) also conducted a similar study by evaluating factors influencing bean farmers' decisions to sell and choose their marketing channels in Zambia. The study reaffirmed the importance of demographic elements, revealing how the scale of operation and distance to the market influenced marketing channel choices, thereby reinforcing the current study findings regarding incomes and education levels. Moreover, Ogunleye and Oladeji (2017) highlighted similar trends with cocoa farmers in Nigeria. Their study identified time of payment, product pricing, and distance from farms as significant determinants in farmers' market channel selections. These insights parallel the findings of the current study, particularly regarding how lower incomes affect market channel choices. Mutai et al. (2016) investigated socio-economic and institutional factors within tea farming and found that demographic characteristics such as age, gender, and education significantly affected farmers' marketing channel participation. This further illustrates the robust link between demographic factors and market behavior, echoing the results of the current study related to education levels and income.

Wachira et al. (2023) examined rice marketing channels and found that factors such as education level and household age significantly influenced farmers' choices, corroborating with the findings of the current study on educational attainment's impact on marketing channel selection among tea farmers. Lastly, the research of Tumukunde (2018) investigated potato farmers' marketing channels in Rwanda, finding that demographic factors such as age positively influenced choices, while off-farm income had a negative effect on brokers' preferences. This is consistent with the findings of the current study on low-income farmers and their preference for brokers, emphasizing the role of demographic influences in marketing decisions.

Table 4: Model III - Binary Logit Regression Model for Dependent Variable and Farm Characteristics

Logistic regression   Number of obs   =   351
LR chi2(3)   =   248.21
Prob > chi2   =   0.0000
Log likelihood = 72.31455   Pseudo R2   =   0.66532

Type of channel ~d |	Coef.	Std. Err.	z	P>|z|
Acreage/farm size (less than 1acre)|	1.076712	.65618003	1.64	0.022
Location (Near KTDA Buying Center) |-1.165437		.8674536	-1.34	0.045
| Ownership (real owners)	-1.1234265	.7542345	- 1.49	0.000
_cons |	3.61234	0.98765	3.6	0.000

Results in table Table 4.4 indicate that Log likelihood statistic was 72.31455, while chi-square =248.21 and was significant since (p-value =0.000) at 0.95 confidence interval. Consequently, the hypothesis that all regression coefficients in this model are zero is rejected. Therefore, a significant relationship was present between tea farmer behavior in terms of choice of green tea marketing channels and the explanatory variables in this binary logit regression model. The results indicates acreage/farm size (less than 1acre) is associated with high probability of selling green tea leaves through brokers than if the acreage is large(more than an acre) and the association was significant (coef =)\| 1.076712, p-value= 0.022). It can also be observed from the results that, farmers who are real ownership of tea farms are associated with low probability of selling green tea leaves through brokers than if the farmer has leased the tea farm, and the association was insignificant (coef = -1.1234265 p-value= 0.00). Results further revealed that, farmers who viewed the location of KTDA buying centres as near from their farms are associated with low probability of selling green tea leaves through brokers than those farmers who rated the KTDA centres as far, and the association was insignificant (coef = \|-1.165437   p-value= 0.045). Thus, the null hypothesis: HO_3: Farm characteristics (acreage/size, location and ownership) have no statistically significant effect on the choice of green tea leaves marketing channel intermediary in Kiambu county, was rejected and the alternative hypothesis accepted.

This study's results align with the existing literature on the importance of farm characteristics in determining marketing channel choices. For instance, the study by Mburu et al. (2017) focused on smallholder dairy farmers in the Kenya Highlands and utilized a logit model to analyze their milk marketing channel choices. Their findings indicated that farm acreage negatively influenced farmers' decisions to sell milk through cooperative channels, underscoring how farm size can limit marketing options. Similarly, Nyaga et al. (2016) conducted a study on fish farmers' marketing channel selection in Kirinyaga County, employing a multinomial logit model. They discovered that factors such as land tenure and the number of fish ponds owned significantly influenced marketing channel choices. This supports the notion that farm characteristics, including ownership and operational scale, have a substantial impact on farmers' decisions regarding their marketing strategies. Findings in the current study are also in concurrence with Chalwe's (2015) study that evaluated factors influencing the marketing channel intermediary for bean farmers in Zambia. Findings in the current study were also agreeing with those in a study by Ogunleye and Oladeji (2017) on cocoa farmers in Nigeria, which concluded that factors such as proximity to markets and the form of payment influenced market channel choices. The findings also highlight that the choice of marketing channels is not only impacted by the farmers' characteristics but also by

the context of their operational framework. Furthermore, the findings are in agreement with those a study by Wojciech et al. (2013) on commercial peach growers, which illustrated the influence of various farm attributes such as size and location on marketing channel selection.

IV.   Conclusions And Recommendations

The researcher concluded that demographic factors, buyer practices and farm characteristics significantly influence the choice of unprocessed green tea leaves marketing channel intermediary in Kenya. It is recommended that KTDA develops targeted programs in order to address the specific needs of different demographic groups. For younger and middle-aged farmers, especially those with lower incomes and secondary education, initiatives should focus on providing access to modern marketing tools, technology, and financial support. Educational programs tailored to these tea farmers can enhance their market understanding and channel selection capabilities. Additionally, for the low educated farmers (secondary level and below), status-based support should be considered, such as mentorship programs, where KTDA farm extension officers link such farmers to farmers with higher education. Such farmers may be using modern methods due to their level of tea farming knowledge, commitment and experience, which would benefit the former, whereby their channel selection can be significantly improved.

Addressing farm characteristics is vital for improving green tea farmers' marketing strategies. To mitigate issues related to inadequate farm size, stakeholders, mainly the government should explore solutions such as cooperative farming models or consolidation of smaller farms to achieve economies of scale. Providing assistance with legal and family ownership transitions can further stabilize marketing strategies. Enhancing infrastructure and resources accessibility to KTDA tea buying centers can also facilitate better market access. This will reduce the possibility of small-scale tea farmers who feel the centers are far from their farms from selling their produce to brokers. As a result, tea farmers' standards of living will improve. To better align with green tea farmers' needs, KTDA should adopt more flexible payment terms, but if they are to continue with extended payment periods (per month payment and end year bonus), they should consider other favorable conditions like higher prices. While it's not possible for KTDA to do without sorting/grading before buying tea delivered in their buying centers, standardizing methods and incorporating feedback on sorting by color, texture, and stem presence can enhance small-scale tea farmer satisfaction. This will make KTDA to remain the most preferred marketing channel intermediary compared to brokers.

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