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Evaluation of Market Potential of *Koche*, A Traditional Pastoral Meat Product for Commercialization in Kenya

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Abstract: ***Indigenous meat products from pastoral communities face numerous constraints thus have limited commercialization potential. Most of the products are sold only in the informal markets. Koche is a deep fried meat product prepared from beef or camel meat by the Borana community. Koche product is a rich nourishing snack that can last for a long time without refrigeration making marketing and handling convenient for consumers and retailers. However, Koche product is only marketed in the informal markets. The present study was designed to evaluate the market potential of Koche product in Eastleigh town, Nairobi to obtain information on marketing, consumption and factors influencing marketability of Koche product. A total of 30 traders and 196 consumers were randomly selected. Quantitative data were collected using pre-tested semi-structured questionnaires. Descriptive statistics such as percentages, frequencies and logit model were used for data analysis. The findings indicate that the market outlets for Koche product included sale in stalls (20%), hotels (6.7%) and street vending (73.3%). Street vending represented the highest percentage (73.3%). The main constraints affecting Koche product marketability were poor product quality (60%), strict regulations by city council (30%), and poor packaging material (46.7%). The results also revealed that majority (87%) of the households consume Koche product while only 13% did not consume Koche product. Taste (90.8%) was the most important quality criterion used by consumers at the point of purchase. Income, ethnicity and household size were found to be significant predictors ($p<0.05$) in the quantity of Koche product purchased. It was concluded that consumers' preferences associated with consumption patterns is affected by disposable income, cultural background and household size. Therefore, to enhance marketing of Koche product, processors and traders must target individuals with a higher propensity to consume Kocheproduct.***

Keywords: Food Security, indigenous meat products, *Koche,* Market potential

1. Introduction

Meat is important in the diet. From a nutritional perspective, it is regarded as a valuable food rich in nutrients such as fats, vitamins, proteins and minerals (Fayemi *et al.*, 2012). The demand for meat is rapidly increasing in sub-Saharan Africa (Delgado et al., 1999). A consumption rate of 44 kg by the year 2050 is expected (Thornton, 2010). This incremental demand is due to livestock revolution and rapid urbanization (Delgado, 2003; Thornton, 2010). In Kenya, a large population has a strong meat culture .The urban areas represent the highest consumption (Kenya Market Trust 2014). Currently, per capita meat consumption is estimated at 10.8kg and 1.1kg with beef, chicken, mutton, goat and camels accounting for 80% (EPZA, 2005; MAL and F, 2015).

Processing of indigenous meat products is widespread in Africa (Gagaoua *et al.*, 2018). Over the years, preservation of meat was done to prolong shelf life. Traditionally, animals were slaughtered at home and due to lack of refrigerators, processing was one possible way to store the meat (Dabasso *et al.*, 2018). Indigenous meat products are most valuable products (Zheng et al., 2016). They symbolize the heritage of the country (Campos et al., 2013). Recently, indigenous meat products have been widely accepted due to their high quality, natural composition and sensory characteristics (Guerrero et al., 2009). In Africa, there are many varied traditional meat products.

Koche is a deep fried indigenous meat product prepared by Borana women from northern Kenya. Camel or beef is used. The meat is cut into thin strips and mixed with salt. The meat strips are suspended on ropes to dry. The dried meat strips are comminuted into small cubes and deep-fried. *Koche* product is cooled and preserved in oil used for frying (Dabasso et al., 2018). *Koche* product can last for several months thus making handling and marketing convenient for consumers and retailers (Dabasso *et al.*, 2018). However, *Koche* product is only sold in the informal markets (Gichure *et al.*, 2014).

Informal market comprises both legal and illegal activities. It is marked with a number of features such as non-compliance with legal standards, requirements and procedures analogus with the formal markets (Chambwera, 2012). Sub-optimal pricing usually happens (Soinaya, 1992). Therefore processors and marketers sell their products at unprofitable and low prices.

Hence it is important to evaluate the market potential for *Koche* product in areas with high demand for *Koche* product so as to identify and develop a potential large formal market. This study aims at establishing a viable market for *Koche* product so that processors who are mostly small holders will benefit through increased incomes thus better livelihoods.

2. Study Area

The study was conducted in Nairobi County. Nairobi County has 17 sub-counties. Kamukunji sub-county was selected

and the study focused on Eastleigh North as depicted in Fig.1. Eastleigh North has a population size of about 98, 277 (KNBS 2009). Eastleigh North was purposively selected to get adequate respondents since *Koche* product is regularly marketed there.

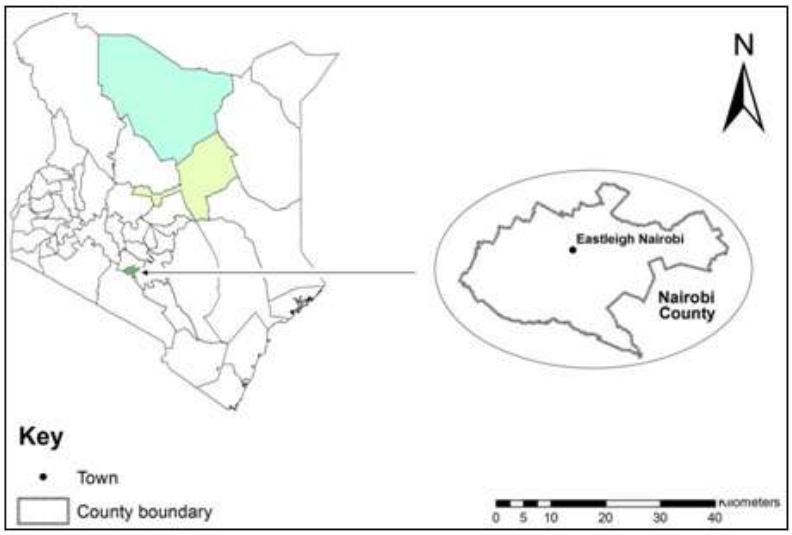

Figure 1: Study regions for *Koche* market potential

Study design
A cross-sectional design with random and purposive sampling was used to select consumers and traders respectively.

Consumers
A total of 196 consumers were randomly selected. Sampling was based on the willingness to take part in the interview.

Sample size determination
The desired sample size for the consumers was determined using the formula of Fischer *et al* (1991):

$$n = \frac{z^2 pq}{d^2}$$

where;
n= the desired sample size (assuming the population is greater than 10000)
z= the standard normal deviation, set at 1.96, which corresponds to 95% confidence interval
p= the estimated proportion of the target population having a particular characteristic. In this present study, the proportion of *Koche* consumers was estimated at 85% based on a pretesting survey (Ören and Biçkes, 2011; Rodriguez delAguila and Gonzalez-Ramirez, 2013)
q= 1-p
d= degree of accuracy desired, here set at 0.05, corresponding to the 1.96
In substitution, $n = \frac{1.96^2 \times 0.85 \times (1-0.85)}{0.05^2} = 195.9216$ consumers

Traders
Purposive sampling was used to select traders involved in marketing of *Koche* product. A total of 30 traders were sampled.

Data collection
Data were collected using pre-tested semi-structured questionnaires administered through oral interviews. For the traders, data was collected on the socio-economic characteristics, quantities of *Koche* product sold, unit prices and problems in *Koche* trading. For the consumers, the questionnaires were partitioned into demographics, consumption patterns, quality criteria used before purchase and factors affecting purchase of *Koche* product.

Data Analysis
Data was analysed using Statistical Package for Social Sciences (SPSS) Version 20 and results presented using percentages and frequencies. Chi-square test was also performed to establish relationships between different variables. The predictor factors in the quantity of *Koche* purchased were determined using the logit regression model.

3. Results

Socio-economic characteristics of the traders.
Table 1 shows the socio-economic characteristics of the traders in *Koche* marketing. All the traders interviewed were female. Forty percent had primary education and also (40%) had no formal education. Very few (20%) had secondary education. Sixty three percent of the traders were married, (17%) were divorced, (13%) were widowed and (7%) were single.

Table 1: Socio-demographic characteristics of traders in *Koche* marketing

Variables	Frequency (n=30)	Percentage (%)
Sex		
Male	0	0
Female	30	100
Education		
No education	12	40
Primary	12	40
Secondary	6	20
Marital status		
Single	2	7
Married	19	63
Divorced	8	17
Widowed	4	13

Figure 2 shows distribution of the traders based on age. The findings show that (50%) of the traders were aged 46 and above years, whereas (26.7%) were aged 36-45 years and (20%) were aged 26-35years. Only (3.3%) were aged 18-25years.

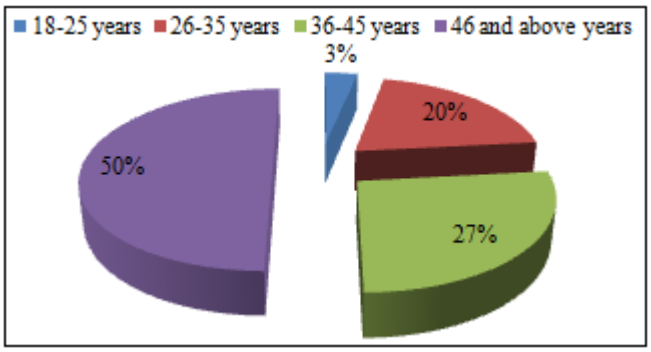

Figure 2: Distribution of *Koche* traders by age (years)

Figure 3 shows distribution of traders based on experience in the activity. The highest proportion (33.3%) had an experience of 3 to 5 years, and (26.7%) and (16.7%) had an experience of 9 to 10 years and 6 to 8 years respectively. About (13.3%) had an experience of less than 3 years and a few (10%) had an experience of more than 10 years.

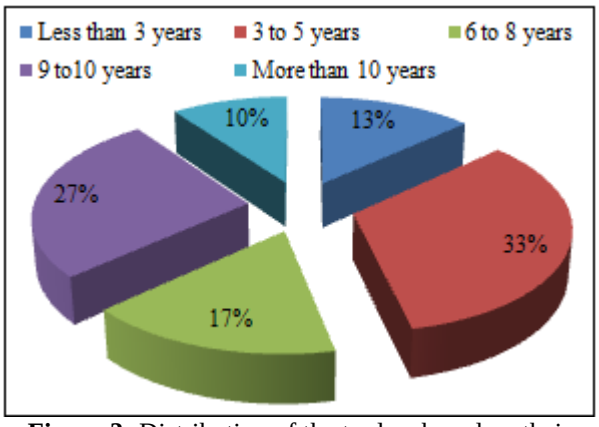

Figure 3: Distribution of the traders based on their experience (Years).

Marketing channel of *Koche* product

Table 2 shows the channel of *Koche* product during marketing. Majority of the traders (76.7%) were supplied with *Koche* product from Isiolo and (23.3%) of the traders were supplied with *Koche* product from Garissa. Most of the traders (73.3%) sold *Koche* product on the streets. About (20%) sold *Koche* product in stalls/shops and only (6.7%) sold in hotels. Most of their buyers (100%) were household consumers.

Table 2: Distribution channels of *Koche* product

Factors	Variables	Frequency (n= 30)	Percentage (%)
Suppliers	Isiolo	23	76.7
	Garissa	5	16.7
	Other(process on their own)	2	6.7
Selling place	Stalls/shops	6	20
	On the streets	22	73.3
	Hotels	2	6.7

Pricing and economics of *Koche* marketing

Analyses of the marketing characteristics of *Koche* product revealed that a kg of *Koche* product was sold at 1200Kshs. However, the price varied among the traders from 1200 to 1400Kshs. The monthly profit obtained from the sales of *Koche* product also varied from one trader to another. Ten percent of the traders made a monthly profit of less than 5000Kshs, (33.3%) made a monthly profit of 5000-10000Kshs, (33.3%) made a monthly profit of 10000-15000Kshs while only (23.3%) made a monthly profit of more than 15000Kshs (Figure 4).

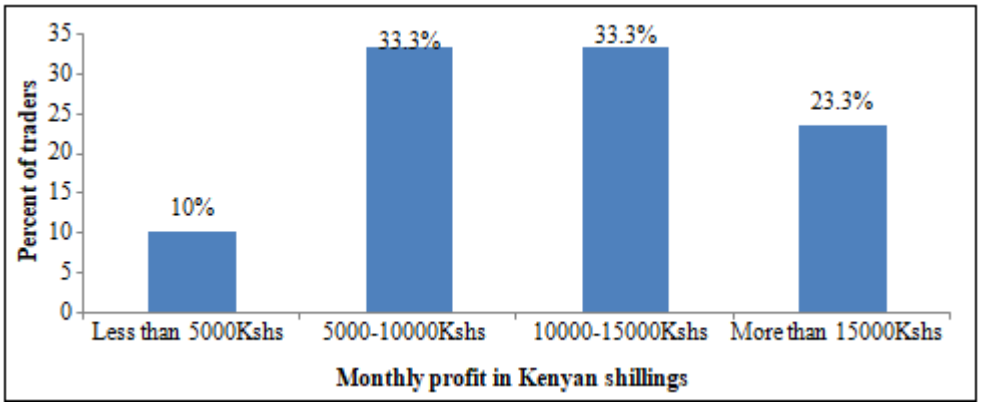

Figure 4: Monthly profit declared by the traders interviewed

Challenges faced by *Koche* traders.

Despite the socio-economic importance of trading of *Koche* product, the traders were faced by various challenges. Table 3 summarizes the importance of the challenges. The most important challenges specified by the traders were inadequate market and storage space (73.3%), harsh climatic conditions (73.3%) and strict regulations by city council (70%).

Table 3: Challenges faced by *Koche* traders

Challenges	Most important		Least important	
	Frequency	Percentage	Frequency	Percentage
Inadequate market and storage space	22	73.3	8	26.7
Harsh climatic conditions	22	73.3	8	26.7
Strict regulations by city council	21	70	9	30
Poor packaging material	16	53.3	14	46.7
Poor product quality	12	40	18	60

Table 4 shows association between selling place of *Koche* product and the challenge experienced. There were significant differences ($p< 0.05$) between selling place and inadequate market and storage space, harsh climatic conditions and strict regulations by city council. However, no significant difference ($p> 0.05$) was observed between selling place and poor packaging material and poor product quality.

Table 4: Association between selling place and challenges facing *Koche* traders

Challenges Selling place	(percentage %) Stalls On the streets Hotels			p-Value
Inadequate market and storage space				
Most important	0	100	0	< 0.05
Least important	75	0	25	
Harsh climatic conditions				
Most important	0	100	0	< 0.05
Least important	75	0	25	
Strict regulations by city council				
Most important	0	100	0	< 0.05
Least important	66.7	11.1	22.2	
Poor packaging material				
Most important	12.5	75	12.5	> 0.05
Least important	28.6	71.4	0	
Poor product quality				
Most important	25	75	0	> 0.05
Least important	16	72.2	11.1	

Significant at $p< 0.05$

Table 5 shows association between demographic characteristics and monthly profit obtained. A significant association ($p<0.05$) between monthly profit and trading experience was observed. However, no significant association ($p>0.05$ between monthly profit and the age groups, education groups and marital statuses was observed.

Table 5: Association between demographics and monthly profit obtained by the traders

Variables	Monthly profit in Kenyan shillings				
	5000Kshs	5000-10000kshs	10000-15000kshs	< 15000kshs	p- Value
Age					
18-25yrs	0	100	0	0	>0.05
26-35 yrs	0	50	50	0	
36-45yrs	25	37.5	25	12.5	
46 and above	13.3	33.3	26.7	26.7	
Education					
No education	16.7	41.7	16.7	25	>0.05
Primary	8.3	41.7	33.3	16.7	
Secondary	16.7	33.3	50	0	
Trading experience					
Less than 3yrs	25	50	25	0	>0.05
3 to 5yrs	12.5	50	37.5	0	
6 to 8 yrs	0	33.3	66.7	0	
9 to 10 yrs	11.1	22.2	22.2	4404	
More than 10yrs	0	0	0	100	
Marital status					
Single	0	100	0	0	>0.05
Married	15.8	36.8	31.6	15.8	
Divorced	20	0	40	40	
Widowed	0	75	25	0	

Significant at $p< 0.05$

Socio-economic characteristics of *Koche* consumers

Table 6 shows the socio-economic characteristics of the consumers. Majority (48%) belonged to the age range 25-34 years followed by the people (20.9%) in the age range of 35-44 years while those in the age range of 18-24 years were the minority (13.3%). The results also show that (55.6%) of the consumers were male while about (44.4%) were female. The marital status distribution of the consumers shows that majority, (80.1%) were married, about (14.8%) were single, (2%) were divorced and (3.1%) widowed. Considering, the educational background of the consumers, majority of them (42.9%) had only primary education. More than (94%) of the consumers were muslims and about (5%) practiced Christianity. The socio-economic distribution further shows that more than (78%) of the consumers who consume *Koche* product are of the Somali origin, followed by Borana (8.7%), Rendille (3.1%) while (10.2%) represented other tribes such as Kamba, Kikuyu, Luhya, Giriama and Luo. About (44.9%) of the respondents had a household size range of 1-3 with (30.1%) and (25%) having 4-6 and above 6 household sizes respectively.

Table 6: Socio-economic characteristics of *Koche* consumers

Variables	Percentage (%) of consumers
Age distribution	
18-24	13.3
25-34	48
35-44	20.9
45 and above	17.9
Gender	
Male	32.1
Female	67.9
Marital status	
Single	14.8
Married	62.2
Widowed	11.7
Separated	11.2
Level of education	
No education	18.9
Primary	43.4
Secondary	34.2
College	3.6
Ethnicity	
Somali	77.6
Borana	10.2
Rendille	1.5
Others	10.7
Total	
Religious affiliation	
Muslim	94.9
Christian	5.1
Average household size	
1-3	44.9
4-6	30.1
Above 6	25.0

Figure 5 shows the monthly income distribution of the consumers. Majority of the consumers (49.5%) earned 25000-30000Kshs per month, (40.8%) earned 15000-20000Kshs per month, about (7.1%) earned 35000-40000Kshs per month while very few (2.6%) earned more than 40000Kshs per month.

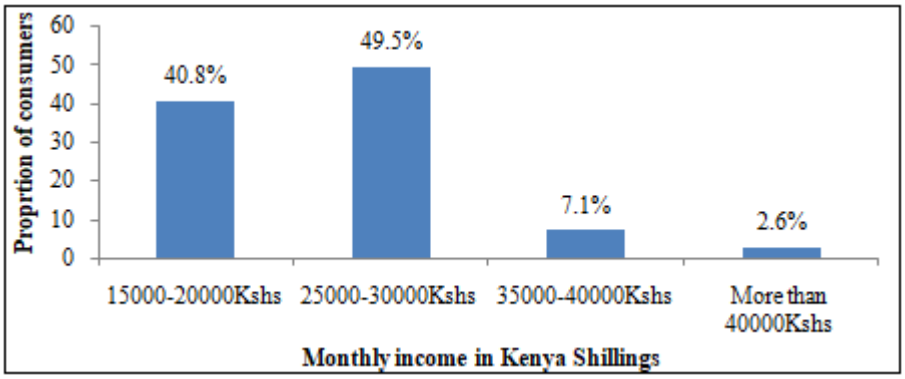

Figure 5: Income distribution of *Koche* consumers

Consumer preferences of *Koche* product.

Majority of the respondents (87%) had consumed *Koche* product while only (13%) had not consumed *Koche* product. Majority of the consumers (54%) indicated that they consumed *Koche* product since it was their cultural food. Twenty-one percent indicated that they consumed *Koche* product due to health benefits, (6%) indicated that they consumed *Koche* product since it was ready to eat, (10%) indicated that they consumed due to good taste and (9%) were indifferent. Majority of the consumers (37.7%) preferred chapati as an accompaniment, (28.3%) preferred pancake, (15.1%) preferred eating without accompaniment and (2.5%) were indifferent.

Table 7: Consumer preferences

Variables	*Percentage (%) of the consumers*
The primary reason for purchase of	
***Koche* product**	
Health benefits	**21**
Cultural food	**54**
Ready to eat	**6**
Good taste	**10**
Indifferent	**9**
Preferred accompaniment	
With pancake	**28.3**
With Chapati37.7	
With Tea	**15.1**
Without	**16.4**
Indifferent	**2.5**

Purchase points for *Koche* product

The majority of the purchase points reported in the study for all the consumers were on the streets (64.8%) (Figure 6). The reason given was that street vending was the dominant market outlet for *Koche* product. However, (20.8%) of the consumers purchased in the stalls, (4.4%) purchased in hotels and(10%) prepared at home.

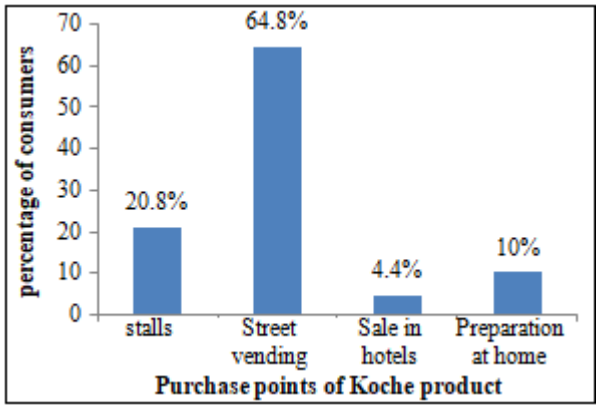

Figure 6: *Koche* product purchase points by consumers in the study area.

Quantity of *Koche* product purchased by consumers.

Figure 7 shows the average quantity of *Koche* product purchased by consumers on a monthly basis. Majority of the consumers(49.7%) purchased 2-3 kg, (23.3%) of the consumers purchased more than 3 kg, (14.5%) of the consumers purchased 1-2 kg and (12.6%) of the consumers purchased less than 1 kg.

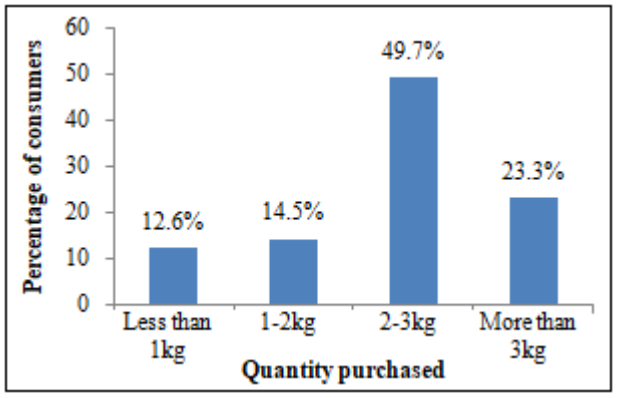

Figure 7: Quantity of *Koche* product purchased by consumers

Consumer frequency of purchase of *Koche* product.

Figure 8 shows the frequency of purchase of *Koche* product by consumers. Majority of the consumers (33.3%) purchased once a month, (24.5%) of the consumers purchased 1 to 3 times a month, (16.4%) of the consumers purchased more than once a week, (22%) of the consumers purchased once a week and only (3.8%) purchased every day.

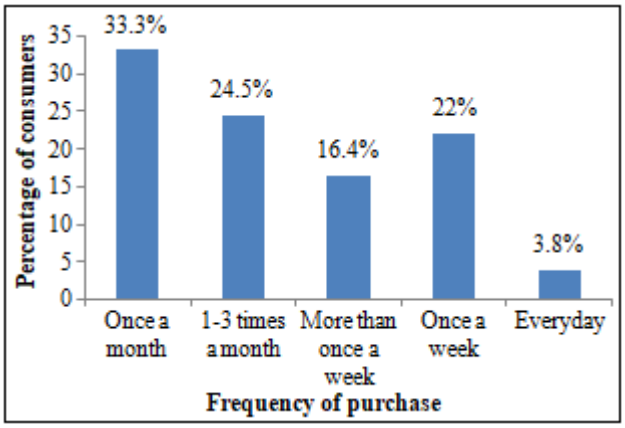

Figure 8: Frequency of purchase of *Koche* product

Quality criteria used by consumers to purchase *Koche* product.

Majority of the consumers (90.8%) used taste as the most important quality attribute at the point of purchase. However, (83.2%) used flavor, 73.2%) used fat content, (61.3%) used chewiness, (61.3%) used appearance and (22.4%) used size of meat chunks (Figure 9).

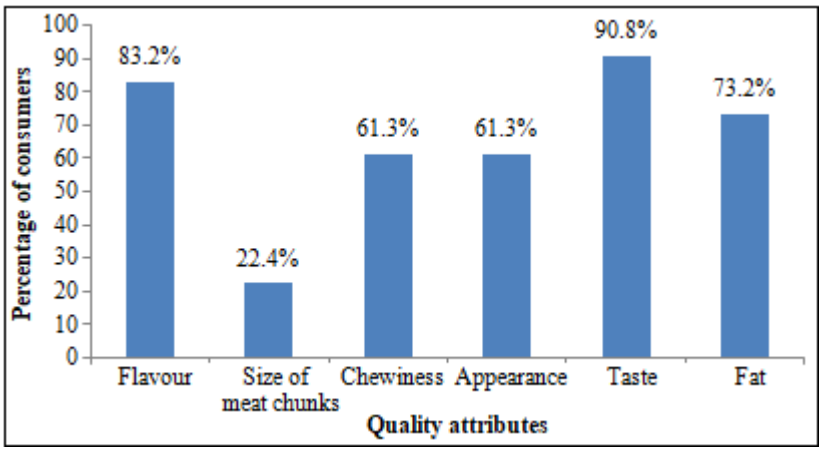

Figure 9: Quality criterion used by consumers at the point of purchase of *Koche* product

Factors that influence purchase of *Koche* product by consumers

In table 8, the results of the logit model for *Koche* product indicated that ethnicity, income and household size have significant influence on the quantity of *Koche* product purchased. This finding implied that Somalis and Boranas are less likely (0.024 and 0.010 odds) respectively to consume less than 1 kg of *Koche* product as compared to more than 3 kg than other tribes ($p< 0.05$). Somalis and Boranas are also less likely (0.025 and 0.021 odds) to consume 1-2 kg of *Koche* product as compared to more than 3 kg than other tribes ($p<0.05$).

Table 8: Predictor socio-demographic factors of consumption of *Koche* product

Variables	Less than 1kg(odds)	1-2kg(odds)	2-3kg (odds)
Age			
Income	0.102*	0.433	0.542
Household size	0.033*	0.70*	.168*
Gender			
Male	1.737	3.869	1.54
Female[R]			
Marital status			
Single	0.543	0.25	0.366
Marrie			
Education			
No education	3.728	4.6	1.781
Primary	2.589	9.06	1.305
Secondary	3.03	0.9	1.325
College[R]			
Tribe			
Somali	0.024	.025*	0.115
Borana	0.01	0.021	0.107
Rendille	4.276-011	2.24E-10	0.03
Others[R]			
Religion			
Muslim		3.371	5.052
Christian[R]			

Significant ($p<0.05$), R, Reference group

Factors affecting purchase decisions by consumers

Figure 10 shows factors affecting purchase decisions by consumers. Majority of the consumers (29%) identified price as an impediment towards purchase of *Koche* product. Twenty seven percent identified poor product quality, (21%) identified poor hygiene of the traders involved in *Koche* product marketing, (19%) indicated proximity to the market outlet and (4%) identified lack of consumer information.

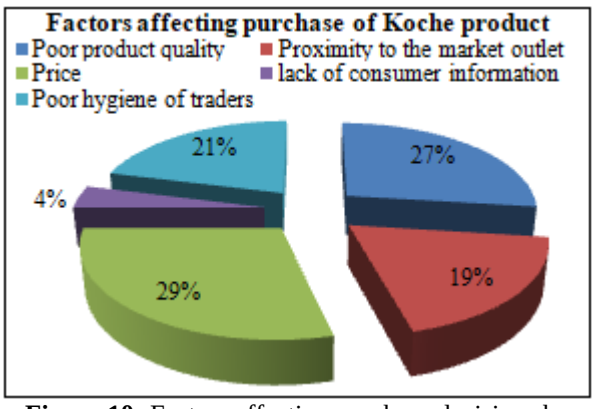

Figure 10: Factors affecting purchase decisions by consumers.

4. Discussion

The present study provides greater evidence of trading of *Koche* product mainly in Eastleigh Town, Nairobi. This reflects a shift towards a market oriented production objective. However, *Koche* marketing system found in the studied areas was dominantly informal marketing. Street vending represented the highest percentage (73.3%) with all the traders interviewed being women. This agrees with the study of (Muyanja *et al.*, 2011; Gadaga *et al.*, 2014) who found out that women pre-dominate street food activity. Majority of the traders (50%) were aged 40 and above years and had either primary or no education. Similarly, (Montcho *et al.*, 2018; Muinde and Kuria, 2005) reported that majority of the street food vendors were aged 36-56 years with either primary or no education. The findings also show that selling of *Koche* product was an old job for some interviewed. Ten percent of the vendors had more than 10 years' experience in this activity. About the economic profitability, majority of the traders (33.3%) earned a profit of 5000Kshs-10000Kshs. Chi-square tests performed revealed trading experience as a significant factor ($p< 0.05$) for profit .The longer the experience, the higher the net profit. A possible explanation could be due to their good knowledge of the market and higher reputation. This is in agreement with the results of a study conducted by Montcho and others (2018) that found out that the net profit of grilled meat vendors differed with the experience. However, despite the economic profitability of the business, the vendors faced a number of challenges. In particular, harsh climatic conditions, strict regulations by city council and inadequate market and storage space were significantly ($p< 0.05$) associated with the selling place. Most of the traders (73.3%) who sold *Koche* product on the streets were challenged by harsh climatic conditions, inadequate market and storage space and strict regulations by city council. This is in line with the study of Tshuma and Jari (2013) who reported that storage space was one of the dominant constraints facing street vendors.

This present study also indicated that a good percentage of the sampled population consumed *Koche* product. The key driver in consumption of *Koche* product was culture. This supports other findings where culture was the main factor influencing consumption of traditional meat products (Berndsen *et al.*, 2004; York et al., 2004). However, consumption was rare and not habitual. A high proportion of the consumers (33.3%) indicated that they purchased *Koche* product once every month and the reason was that it was expensive. The consumers associated the quality of *Koche* product with taste, size of meat chunks, flavor, appearance and fat content. However, taste was regarded as the most important quality attribute when purchasing. This supports the findings of Rodriguez, (2006) who reported that consumer's perceived quality is influenced mostly by taste. However, it contradicts the findings of Troy and others (2010) who reported that consumer acceptability is mostly influenced by product appearance

Consumer' purchase decisions were influenced by income, ethnicity and household size. In regards to income and household size, these findings were consistent with the results of (Amao and Ayantoye, 2014; Mafimisebi, 2012; Musaba and Namukwambi, 2011) that income and

household size is related to the amount of fish consumed. However, it contradicts the findings of CengizSayin and others (2010) who found insignificant relationship between household and income size with the amount of fish consumed.

Among the factors affecting purchase, price was considered the most important. This agrees with the findings of Vimiso and others (2012) who observed that most purchases are determined by the amount of cash available. However, it contradicts earlier consumer studies by (Montcho *et al.*, 2018; Rheinlander et al., 2018) who reported that personal trust in vendors was the most important factor affecting purchase.

5. Conclusion

The study reveals that there is a great market potential for Koche product. A high proportion of the population consume Koche product. However, the market is still underexploited since the majority of the consumers were only pastoral communities. Promotion should thus be done to non-convectional consumers to increase consumption. In addition, the logit model results indicated that income, household size and ethnicity have a significant influence in the purchases of Koche product. Hence, the marketers could target the pastoral communities and consumers from high-income households in their marketing and promotion campaigns to increase sales of Koche product.

Acknowledgement

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References

[1] Amao. J.O., and Ayantoye, K. (2014). Consumer Preference and Consumption Pattern for selected forms of Fish in Oyo State, Nigeria. *International Journal of Science, Environment and Technology;* 3 (3):841 – 860.
[2] Berndsen, M., and Pligt, J.V.D "Ambivalence towards meat, " . *Appetite;* 42(1): 71-78.
[3] Cengiz, S., Yilmaz, E., Mencet, M.N., Suleyman, K. and Yavuz, T. (2010). Analysis of Factors Affecting Fish Purchasing Decisions of the Household: Antalya District Case. *Journal of Animal and Veterinary Advance*; 9(12):1689-1695.
[4] Campos, S.D. (2013) .Nutritional value and influence of the thermal processing on a traditional Portuguese fermented sausage (alheira). *Meat Science*; 93(4): 914 - 918.
[5] Chambwera, M. (2012). The informal economy: A threat or driver for the green economy? http://www.greeneconomycoalition.org/know-how/informal-economy-threat-or-driver-green-economy. Accessed on May 2018.
[6] Dabasso, B.G., Roba, H.G., Makokha, A., Onyango, A., and Maina, J. (2018).Understanding traditional meat processing knowledge among the Borana pastoralist of Northern Kenya.*Journal of Food Research ;* 7: (4) : 30-40.
[7] Delgado, C., Rosegrant, M., Steinfeld, H.Ehui, S.andCourbois, C. (1999) . Livestock to 2020: the next food revolution. IFPRI.Food, Agriculture, and the Environment Discussion Paper 28. Washington, D.C. (USA): IFPRI.https://cgspace.cgiar.org/handle/10568/333.
[8] Delgado, C. L. (2003). "Rising consumption of meat and milk in developing countries has created a new food revolution." *Journal of Nutrition*; 133(11): 3907S-3910S.
[9] EPZA (2005), Meat Production in Kenya.Kenya Export Processing Zones Authority. Nairobi, Kenya. Retrieved from http://www.epzakenya.com/UserFiles/File/MeatIndustry.pdf last accessed on 30/05/2018.
[10] Gadaga, T.H., Ntisike, M.M., and Ntuli, V . (2011). Socio-economic and hygienic aspects of street food vending in Maseru City, Lesotho.*USWA Research Journal of Agriculture, Science and Technology;* 15: 28-39.
[11] Guerrero, L. (2009). Consumer-driven definition of traditional food products and innovation in traditional foods.A qualitative cross-cultural study.*Appetite*; 52(2): 345-354.
[12] Kenya Market Trust (KMT), (2014). Kenya Livestock & Meat Market AnalysisforCattle, Goat&Sheep.http://www.kenyamarkets.org/download/get/kenya-livestock-meat- analysis1/35.
[13] Mafimisebi, T. 2012. Comparative Analysis of Fresh and Dried Fish Consumption in Rural and Urban Households in Ondo State, Nigeria, IIFET 2012 Tanzania Proceedings. Available at:https://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/35117/Mafimisebi.pdf?sequence=4 Accessed on 27th March, 2018.
[14] Ministry of Agriculture, Livestock and Fisheries (MAL&F), (2015). Strategic Plan 20312017 .http://www.kilimo.go.ke/wpcontent/uploads/2015/05/MoALF_Strategic-Plan_2013-2017.pdf.
[15] Montcho, M., Babataounde, S., Yamego, V.B., Aboh, A.B., and Mensah, G.A. (2018). Socio-economic determinants of away from home grilled meat consumption and typology of grilled meat actors in bobo-Dioulassa, West Burkina Faso. *Journal of Fisheries and Livestock Production* ; 5 (4) : 3-9.
[16] Muinde, O.K., and Kuria, E. (2005). Hygienic and sanitary practices of vendors of street foods in Nairobi, Kenya.*African Journal of Food, Agriculture and Nutrition Development ;*5: 1-13.
[17] Musaba, E. C. and Namukwambi, M. (2011). Socio-economic determinants of consumer fish purchase in Windhoek, Namibia. *African Journal of Agricultural Research* ; 6(6):1483-1488.
[18] Muyanja, C., Nayiga, L., Namugumya, B., and Nasinyama, G. (2011). Practices, knowledge and risk factors of street food vendors in Uganda.*Food Control*; 22: 1551-1558.
[19] Rheinlander, T., Olsen, M., Bakang, J.A., Takyi, H., and Konradsen, F.(2008) .Keeping up appearances,

perceptions of street food safety in urban Kumasi, Ghana.*Journal of Urban Health;* 85: 952-964.

[20] Rosegrant M. W., S Cline. A., Li, W., Sulser, T.B., and Valmonte-Santos, R.A. (2005). Looking Ahead: Long-Term Prospects for Africa's Agricultural Development and Food Security.2020 Discussion Paper No. 41, International Food Policy Research Institute, Washington, DC, USA.

[21] Sonaiya, E.B. (1992). A development strategy for improving sustainable small-holder rural poultry production. Proceedings XIX World's Poultry Congress, Amsterdam, The Netherlands, 20–24 Sept, 1992.

[22] Thornton, P. K. (2010). "Livestock production: recent trends, future prospects, ". *Philosophical Transactions of the Royal Society* ; 365(1554): 2853- 2867.

[23] Tshuma, M., and B. Jari.(2013). The Informal Sector as a Source of household Income: *Journal of African Studies and Development.*

[24] Troy, D.J., and Kerry, J. P. (2010). Consumer Perception and the Role of Science in the Meat Industry.*Meat Science* ; 86: 214-226.

[25] Vimiso, P., Muchenje, V., Marume, U., and Chiruka, R. (2012). Preliminary study on consumers' and meat traders' perceptions of beef quality and how the beef quality is affected by Animal welfare practices. *Academic journal* ; 7 (22) : 2037-2048.

[26] York, R., and Gossard, M.H. (2004). "Cross-national meat and fish consumption: exploring the effects of modernization and ecological context, "Ecological *Economics*; 48 (3): 293–302.

[27] Zeng, W. (2016). Chinese ethnic meat products: Continuity and development. *Meat Science*; 120: 37-46.