Consumer willingness to pay for fair-trade attributes of goat meat in Kenya: A choice experiment analysis

David Jakinda Otieno

Department of Agricultural Economics, University of Nairobi, Nairobi, Kenya. E-mail: jakinda1@yahoo.com

Abstract

Fair trade is an important ethical concern in the food value chains of developed countries. However, there is a dearth of empirical insights into consumer preferences for this critical aspect in the domestic markets of developing countries. The current study analysed consumer willingness to pay (WTP) for fair-trade attributes in the goat meat value chain in Nairobi, Kenya. Choice experiment data from 270 randomly sampled consumers was analysed using the random parameter logit (RPL) model. The results show that 56% of the consumers were aware of the fair-trade concept and 64% of them were willing to pay for fair-trade-compliant practices. Specifically, consumers were willing to pay a premium of 62% to prevent child labour, 45% to support provision of medical insurance for workers in the meat value chain, 40% for direct purchase from producers, 39% for fair-trade labelling and 30% to support disabled people as part of corporate social responsibility.

Key words: fair trade; consumer willingness to pay; choice experiment; goat meat; Kenya

1. Introduction

Red meat value chains are important to the livelihoods of many producers, consumers and other stakeholders in developing countries such as Kenya. Total annual meat production in Kenya is about 702 090 metric tonnes. Of this, 75% is beef, 9% is poultry, 7% is goat meat/chevron and the rest is mutton, pork, rabbit and camel meat (Kenya Institute for Public Policy Research and Analysis [KIPPRA] 2018: 72). With increased urbanisation and the modernisation of lifestyles, the consumption of red meat (mainly roast/barbecued beef and goat meat – popularly known as *nyama choma*) has grown considerably in the urban areas of the developing world. The Food and Agriculture Organization of the United Nations ([FAO] 2017) projects that the small ruminants sub-sector (goats and sheep) will be an important driver of economic growth and a pathway out of poverty in Kenya, as the demand for chevron and mutton is expected to increase by 46% by 2050, from 87 000 tonnes in 2010. Goat meat accounts for 8% of the Kshs 104 billion that is generated annually by the livestock sector in Kenya (Nyariki & Amwata 2019). Further, considering that goats are more adaptable to harsh climatic conditions in arid and semi-arid lands (ASALs) than other livestock species such as cattle, improving their marketing has potential for increasing their offtake. This would be useful for building resilient livelihoods against droughts for many households that reside in the ASALs, which comprise more than three-quarters of Kenya's land area (Muricho *et al*. 2019). Harnessing the commercial potential of goat meat enterprises can also contribute to improving Kenya's serious global hunger index (GHI) of 23.7, which is worse than the worldwide average GHI of 18.2, by reducing undernutrition (Von Grebmer *et al*. 2020). Such value chains can contribute to equitable sharing of returns among those who participate in them if the procedures and practices used are compliant with fair-trade principles and codes of conduct that advocate for ethical consumption behaviour. Thus, as noted by Becker-Olsen *et al*. (2006), fair-trade buying is an important form of ethical production and consumer behaviour.

Typically, consumers can express their ethical concerns by buying products that have positive qualities or boycotting products that have negative qualities; examples of the latter, for instance, are the use of child labour, poor agrarian wages and dangerous working environments. Some of the most cited cases in the literature of ethical concerns among consumers include boycott campaigns against *Nike* due to alleged labour abuses, and *Nestle* because of suspected poisonous infant formula (Zimmermann 2011).

According to Howard and Allen (2008), fair-trade is a food-labelling scheme that is primarily designed to support social justice and ecological sustainability. It is based on price premiums to improve the living conditions of producers and workers. The standards governing this notion advocate for a fair-trade floor price that must be paid for a product. Such price is determined through a summation of the production cost, living cost and cost of complying with fair-trade standards. In hired-labour scenarios, fair employment conditions include international labour organisation (ILO)-accepted core labour standards that entail freedom from discrimination, no forced labour, freedom of association and collective bargaining, conditions of employment that meet legal minimums such as fair wages, and protection of health and safety (McDowall *et al.* 2011).

At the production level, fair-trade principles include ensuring there is a clear product label to inform and assure consumers that there is an honest mechanism to ensure that producers and labourers actually receive a 'fair share' of the price paid for products by consumers (Yang *et al.* 2012); allowing the organisation of producers into cooperatives with democratic rights, i.e. respect for workers/producers' freedom of association in groups that can exert pressure to bargain for better prices; and ensuring ecological and ethical quality standards. At the consumer level, fair-trade practices include transparency in product transformation procedures to allow traceability; the production of certified quality products; and providing awareness of labelling and monitoring processes.

Fair trade also entails an emphasis on participatory governance, inclusion and capacity building of the poor and marginalised groups in value chains (Blowfield & Dolan 2010). As noted by Browne *et al.* (2000), fair trade is concerned mainly with producers' and workers' treatment within farming systems, and other social and environmental criteria not normally associated with conventional trade. Willingness to pay (WTP) extra for fair-trade goods is based on the notion that the premium paid for produce with a fair-trade label translates to considerably improved producer livelihoods (De Pelsmacker *et al.* 2005).

Fair trade works well if all actors in the value chain are aware of and demand the processes to incorporate such practices. More so, fair-trade practices must be driven by consumers who have greater power in forcing producers to comply if they boycott non-compliant products and services. As noted by Andorfer and Liebe (2012), the fair-trade concept has received wide attention, focusing on imported food products in developed countries, especially in Europe, where the concept was introduced in 1988, and in the United States of America (USA). Kendall (2018) also found that, among the ethical issues, fair trade was the most valuable to American consumers. However, there is little research on fair-trade concerns within the domestic markets of developing countries, yet the principles of fair trade (fair price, fair labour conditions, direct trade with producers, democratic and transparent organisations, community development and environmental sustainability) are quite relevant to the well-being of stakeholders in such markets (Howard & Allen 2008). Exceptions include the assessment of consumer preferences for domestic versus imported poultry products in Ghana (Asante-Addo & Weible 2019).

In Kenya, there is no empirical evidence of awareness and perceptions of and WTP for fair-trade products and services. Yet the margins between producer prices, farm wages and consumer prices

are considerably wide, pointing to considerable possibilities for exploitation in value chains. For example, Monroy *et al*. (2013) note that farm-level coffee prices were 28% lower than international auction prices. Fobelets *et al*. (2017) also show that, compared to other developing countries such as India, Indonesia and Vietnam, farmers in Kenya earn less on average than the poverty line, which is defined by the World Bank as USD$3.1 per person per day. Further, large income disparities exist in Kenya, where more than 75% of the population is smallholder farmers living in rural areas, with an average Gini index of 50% between 1992 to 2007 (World Bank 2008). On average, the poorest 10% of people in Kenya earn 23 times less than the richest 10%. Further, less than 0.1% of the population (8 300 people) owns more wealth than the bottom 99.9% (more than 44 million people) (Oxfam International 2017).

Moreover, those who work in lucrative value chains seldom receive equitable welfare support in terms of better housing and health insurance. Dolan (2007), for instance, notes that despite cut flowers being a key export earner for Kenya, the majority of women who work on flower farms receive low wages, are exposed to the harmful effects of chemicals due to a lack of protective clothing, and are subjected to long working hours and job insecurity. Furthermore, there is a growing population of disadvantaged people, comprising disabled, unemployed and extremely poor persons, whose plight seems to be forgotten in the urban areas of developing countries such as Kenya.

The present study investigated consumer willingness to pay for fair-trade attributes in goat meat. Goat meat was chosen because it shares some similarities with international fair-trade products such as cheese, chocolates, coffee, cocoa, ham, olive oil, strawberries and wine, which are luxury products and/or labour-intensive, hence consumers would be willing to pay a premium for fair-trade attributes that seek to promote social justice in the value chains (Howard & Allen 2008; Rousseau 2015). Goat meat is considered to be a luxury good in Kenya for two reasons: a large proportion of high-income earners in the urban areas consume goat meat rather than other red meats (Juma *et al*. 2010); and its average price per kilogram is higher than that of beef by 50% (Kshs 600 compared to Kshs 400). Moreover, recent studies show that high-income consumers spend 14% of their food budgets on goat meat compared to low-income consumers, who spend 10% of their food budgets on goat meat (Kenya Markets Trust 2019).

2. Methodology

2.1 Study area

Data was collected from a survey of goat meat consumers in Nairobi, the capital city of Kenya. Nairobi was selected because it is the economic hub of Kenya, hosting 15% of the national population and contributing the largest share (21.7%) of the national gross domestic product (GDP) (Kenya Bureau of Statistics [KNBS] 2019a). Further, it has a growing middle class that has a high demand for red meat, as evidenced by its poverty rate of 16.7%, which is lower than that of other counties in the country and lower than the national average, viz. 36.1% (KIPPRA 2018). Moreover, the urban consumer segment of Nairobi was chosen for this study because, as noted by Gallenti *et al*. (2016), consumers in affluent societies increasingly pay more attention to the moral features of products in their purchase decisions. In a study of a Mexican urban population, Stanton (2019) also found that, as incomes increase in urban areas, working consumers were more likely to shift their consumption from foods that require more time to prepare to fast foods like roast meat, and would be more willing to pay premiums for prestige and social welfare attributes like fair trade.

2.2 Choice experiment method

The choice experiment (CE) method (Adamowicz *et al*. 1998) was applied to investigate consumer WTP for fair-trade attributes. The CE approach is a stated preference *ex ante* method for the assessment of goods/services that are not fully traded in the market and would not be easily evaluated through revealed preference approaches (Louviere *et al*. 2000). As noted by Lusk *et al*. (2003), choice experiments allow the estimation of trade-offs among alternatives by replicating realistic purchasing scenarios and enabling the evaluation of multiple attributes. The CE method was considered to be the most appropriate approach for this study because concern for fair trade is a relatively new concept in Kenya, with limited awareness and official regulation.

Recent applications of the CE method include an analysis of consumer WTP for organic and fair-trade coffee in Italy (Gallenti *et al.* 2016), the evaluation of consumer WTP for broiler welfare in the Netherlands (Mulder & Zomer 2017), consumer WTP for biofortified rice in Tanzania (Domonko *et al*. 2018), consumer preferences for domestic versus imported poultry products in Ghana (Asante-Addo & Weible 2019), and consumer preferences for localness and organic production of beef salami in Denmark (Denver *et al*. 2019). In Kenya, the CE approach has recently been applied to analyse consumer preferences for quality and safety attributes of artisanal fruit juices (Otieno & Nyikal 2017), consumer preferences for vitamin A-fortified sugar (Pambo *et al*. 2017), local stakeholders' preferences for foreign land lease design attributes (Otieno & Oluoch-Kosura 2019), and consumer WTP for chicken welfare attributes (Otieno & Ogutu 2019). Previous applications of the CE approach to estimate WTP for various aspects of different commodities demonstrate the ability of this method to quantify monetary values associated with components of goods or services, and thus offer useful information for targeting policy interventions to improve the design of the goods or services. The present study contributes to the literature through the application of the CE method to understand consumer WTP for fair-trade attributes in goat meat in Kenya; this is the first such analysis in a developing country context.

2.3 Choice experiment design

The CE design of fair trade-compliant practices involved an extensive literature review, key informant interviews, and a focus group discussion (FGD) with 14 randomly selected consumers. Following suggestions by Bateman *et al*. (2002), the FGD was also used to validate the attributes identified and the levels for inclusion in the design. Six attributes were selected for the CE design from the validation process. These were fair trade labelling; prohibition of child labour; provision of medical insurance for workers in the goat meat value chain; using part of the income from goat meat trade to support disabled persons; direct purchase from producers; and price per kilogram of goat meat. The attributes and their levels are presented in Table 1.

Besides price, which was set at three levels, two levels were used for each of the five other attributes. Fair-trade *labelling* of goat meat is meant to communicate with consumers and possibly entice them to buy compliant products. This is consistent with the observation by Grebitus *et al*. (2012) that consumer purchase behaviour for existing and new attributes can be signalled by appropriate labels. Effective labelling also improves consumers' trust and WTP higher prices for food products that are derived from ethical practices (Rousseau 2015; Schleenbecker & Hamm 2015; Ingrassia *et al*. 2017). *Prohibition of child labour* in goat meat production and trade is necessary as a fair-trade attribute to protect the right of children to education and therefore guarantee a skilled and productive next generation if human capital. Provision of *medical insurance to workers* in the goat meat value chain is part of social welfare improvement that would reduce the many risks encountered, including injuries while at work, illnesses and transmission of meat-borne diseases to consumers.

Table 1: Fair-trade attributes used in the CE design

Attribute	Description of attributes	Possible levels of attributes
Fair-trade labelling	Label indicating that the goat meat is compliant with fair-trade procedures	No; Yes
Prohibit child labour	Stop use of child labour in herding of goats	No; Yes
Medical insurance for workers	Provide medical insurance to workers in goat meat trade to manage injuries arising from cuts and slaughterhouse accidents	No; Yes
Support handicapped/ disabled persons	Establish a fund to support handicapped/disabled persons in order to reduce street begging by the disabled	No; Yes
Direct purchase from producers	Slaughterhouses should buy goats directly from producers instead of buying from brokers	No; Yes
Price	Price per kilogram for fresh goat meat (Kshs)*	600; 750; 900

Note: * USD$1 was equivalent to Kshs 103 at the time of the survey

Corporate social responsibility is an important aspect of fair businesses. In this respect, the study envisaged that the establishment of a fund to *support disabled persons* would help to reduce the emerging challenge of street begging and associated insecurity in the urban areas of many developing countries such as Kenya. Such forms of social protection contribute to the development of the communities in which businesses operate (Biggs & Messerschmidt 2005; Maloni & Brown, 2006).

Direct buying from producers reduces the disparities between the actual price paid by consumers and the farm gate price. As noted by Browne *et al*. (2000), this provides fair returns to producers to enable them afford decent living standards. Denver *et al*. (2019) also found that geographic proximity to the farm was highly preferred by Danish beef consumers. *Price* was included as a measure of the compensation for providing a fair-trade package. In line with Olynk *et al*. (2010), the average price per kilogram of goat meat from various consumption outlets at the time of the survey (Kshs 600) was used as the base price level. Following suggestions from the FGD, two other levels representing progressive improvements in fair-trade compliance were included. As in other previous CE studies (such as those of Wang *et al*. 2018; Otieno & Ogutu, 2019; Otieno & Oluoch-Kosura 2019), a uniform interval was adopted for the price attribute to ensure proper scaling of the WTP estimates.

The CE design was generated following a two-step procedure using NGENE software (ChoiceMetrics 2009). In the first step, a fractional orthogonal design was generated from the attributes and this was used in an exploratory survey of a preliminary sample of 46 respondents. The information gathered from this stage was analysed to obtain prior parameters. In the second step, the 'priors' were used to generate a *D-optimal* CE design (i.e. a design that yields data that enables the estimation of parameters with significantly low standard errors from a relatively smaller sample) (Bliemer & Rose 2010).

The design had a high *D-optimality, D-efficiency* measure of 89.87% and a relatively good utility balance, a *B-estimate* of 95.01%, which surpasses the minimum threshold measure of utility balance, which is a B-estimate of 70%. This shows there was a very limited likelihood of dominance by any alternative in the choice situations. Furthermore, the CE design generated had an *A-efficiency* measure of 89.03%, implying that the variance matrix could yield reliable estimates (Huber & Zwerina 1996). The final design had 36 paired choice profiles that were randomly blocked into six sets of four choice tasks. Respondents were randomly assigned to one of the six sets. Each choice task consisted of two alternatives (A and B) and an opt-out/no buy alternative (C), in which all fair-trade attributes were set at the 'zero level'. During the survey, respondents were asked to consider only the attributes presented in the choice tasks and to treat each choice task independently. One of the choice tasks presented to the respondents is illustrated in Table 2.

Table 2: Example of choice task presented to respondents

Attributes	Goat meat type A	Goat meat type B	Neither A nor B
Fair-trade label	No	Yes	
Prohibit child labour in herding	No	Yes	
Medical insurance for workers	Yes	No	
Contribution for disabled people	Yes	No	
Direct buying from producers	No	Yes	
Price per kg (Kshs)	600	900	
Which **ONE** would you choose?			

2.4 Sampling and data collection

Nairobi city was selected for the study because it contributes 21.7% of the national GDP (KNBS 2019a). Furthermore, the city hosts 15% of the national population (compared to 46 other counties), with a growing middle class that represents the key segment that consumes meat (Ipara 2019). For a target population of N = 2 250 853 adults aged between 18 and 77 years, Cochran's (1977) formula was applied to determine a sample size of n = 385, assuming a confidence interval (p) of 95% and that the desired level of precision, (e) = 5%. However, due to the challenges of urban surveys, such as insecurity in crowded estates, unwillingness by some people to participate in interviews without monetary enticement, and the unavailability of working respondents, the response rate was 76%, giving a randomly selected 293 consumers of goat meat. The valid sample size dropped to 270 due to the elimination of 23 incomplete questionnaires during the data-cleaning process.

Primary data was collected in December 2017 through a focus group discussion and a consumer survey using a structured questionnaire and a CE design. Using a purposive sampling approach, the survey covered two main goat-consuming sections of the city: 55.9% in Eastlands (Buruburu, Chokaa, Imara Daima, Kayole, Njiru, Ruai, Tassia and Umoja) and 44.1% in the rest of Nairobi (Dagoreti, Nairobi West, South B, South C and Syokimau). The respondents were interviewed at various points of red meat consumption: open-air/roadside markets (39.4%), residential areas (28.3%), food kiosks/restaurants (17.8%), butcheries (10.6%) and supermarkets (3.9%). Thus, in order to effectively capture those directly involved in the goat meat trade, over two-thirds (71.7%) of the respondents were interviewed at points of purchase.

The survey questionnaire was structured in four sections. Questions seeking information on consumer purchase and consumption behaviour were placed in section one. Section two had questions on consumer awareness and perceptions of fair trade. Section three provided a brief explanation of the meaning and relevance of the fair-trade attributes included in the study and their levels, followed by CE design alternatives and the choice question. Finally, consumers' socio-demographic information was captured in section four of the survey questionnaire.

2.5 Data analysis

The CE data on consumer WTP for fair-trade attributes in goat meat was analysed using the random parameter logit (RPL) model following Revelt and Train (1998). The utility obtained by individual n from alternative i in choice situation or time period t was specified as:

$$U_{int} = \beta_n X_{int} + \varepsilon_{int}, \qquad\qquad (1)$$

where X_{int} is a vector of observable variables, β_n is an unobserved coefficient vector for each individual and varies in the population, with a density function $f(\beta_n | \theta)$, whereby θ are the parameters of the distribution, e.g. its mean and variance. The ε_{int} is an unobserved random term assumed to be identically independently distributed (IID). Conditional on β_n, the probability that individual n chooses alternative i in choice situation t is given by:

$$L_{\text{int}}(\beta_n) = \frac{\exp(\beta_n X_{\text{int}})}{\sum_{j \in C} \exp(\beta_n X_{jnt})} \tag{2}$$

Let $i(n,t)$ denote the alternative chosen by individual n in choice situation t. The probability of individual n's observed sequence of choices, conditional on β_n, is simply the product of standard MNL models.

Assuming that the individual tastes, β_n, do not vary over choice situations for the same individual in repeated choice tasks, but are heterogeneous over all individuals, this probability is expressed as:

$$G_n(\beta_n) = \prod_t L_{\text{int}}(\beta_n) \tag{3}$$

The unconditional probability of the sequence of choices made by individual n is expressed as:

$$P_n(\theta) = \int G_n(\beta_n) f(\beta_n | \theta) d\beta_n \tag{4}$$

There are two noteworthy sets of parameters in this expression: β_n is a vector of parameters specific to individual n representing the individual's tastes, which vary between people, and θ are parameters that describe the distribution of the individual-specific estimates, such as the mean and covariance of β_n. The objective in RPL is to estimate the θ. This is usually done through simulation of the choice probability, because the integral in Equation 4 cannot be computed analytically due to the lack of a closed mathematical form. The log-likelihood function is expressed as:

$$LL(\theta) = \sum_n \ln P_n(\theta) \tag{5}$$

The $P_n(\theta)$ is approximated by a summation over randomly chosen values of β_n. For a selected value of the parameters θ, a value of β_n is drawn from its distribution, and $G_n(\beta_n)$, i.e. the product of standard MNL models, is computed. Repeated calculations are done for several draws and the average of the $G_n(\beta_n)$ is considered as the approximate choice probability, as expressed in equation 6 below:

$$SP_n(\theta) = \left(\frac{1}{R}\right) \sum_{r=1}^{R} G_n\left(\beta_n^{r|\theta}\right), \tag{6}$$

where R is the number of draws of β_n, $\beta_n^{r|\theta}$ is the r-th draw from $f(\beta_n | \theta)$, and SP_n is the simulated probability of individual n's sequence of choices. Following Train (2003), the simulation was based on Halton intelligent draws, which have been shown to yield more accurate results compared to independent random draws. Up to 100 Halton draws were used in the simulations. The simulated log-likelihood function was constructed as:

$$SLL(\theta) = \sum_n \ln\left(SP_n(\theta)\right) \tag{7}$$

The estimated parameters are those that maximise $SLL(\theta)$. With price as one of the fair-trade attributes in the X vector, the consumers' marginal WTP, or 'part worth', for each of the other non-price attribute levels was computed as:

$$WTP = -1 * \left(\frac{\beta_k}{\beta_p} \right), \tag{8}$$

where β_k is the estimated coefficient for a fair-trade attribute level in the choice set, and β_p is the marginal utility of the price attribute (Hanemann 1984). Discrete choice analysis of individual preferences was undertaken using *NLOGIT* econometric software (Greene 2007).

3. Results and discussion

3.1 Respondents' characteristics and goat meat consumption

Slightly more than half of the respondents were male with a college level of education, and had completed 13 years of formal schooling on average (Table 3). This is consistent with the national statistics, which show that 84% of people in Kenya have completed primary education (KIPPRA 2018). The average age was 34 years, indicating that they were in the economically active age bracket, hence a key segment of the meat-consuming population in Kenya's urban areas. Taylor and Boasson (2014) also noted that younger consumers with more education are more likely to fancy credence attributes and thus pay more for fair-trade products.

Table 3: Respondents' characteristics, goat meat purchase and consumption behaviour

Variable	Statistic (n = 270)
Male (% of respondents)	56.10
Education level (% of respondents)	
Primary	14.40
Secondary	28.30
College	57.30
Average age (years)	33.56
Average years of formal schooling	13.16
Average household monthly income (Kshs)	39 400
Frequency of goat meat consumption	
At least daily	5.60
At least weekly	37.20
A few times a month	57.20
Form of goat meat purchased	
Live goat	1.70
Roasted	10.60
Boiled/fried/stewed	78.60
Slaughtered fresh	8.90
Units purchased	
Quarter of a kilogram	23.30
Half a kilogram	40.60
One kilogram	34.40
Whole goat	1.70
How goat meat is consumed	
With carbohydrates (maize meal/rice/chips/chapatti)	90.00
With beer/wine	6.70
Goat meat only	3.30

Moreover, the average monthly household income of Kshs 39 400 (about USD$380) in this study is three times higher than the minimum wage of Kshs 13 572 (USD$130) (KNBS 2019b). This shows that the sample of consumers interviewed were relatively able to afford goat meat and even pay for fair-trade attributes. This is consistent with the observation by Garcia-Yi (2015) in Peru that, as people's incomes increased, their WTP for yellow chilli peppers grown without pesticides increased considerably.

Given the luxury nature of goat meat for urban dwellers, less than 10% of respondents reported that they consumed it daily, while one third and slightly more than half consumed it weekly and a few times a month respectively. More than three-quarters of the respondents purchased goat meat in cooked forms, such as boiled/fried/stewed or roasted. The popular quantity bought was half a kilogram (41% of respondents). Nearly all the meat bought was consumed with carbohydrates such as maize meal, rice, chapatti or chips.

3.2 Consumer awareness and perceptions of fair trade

More than half (55.6%) of the consumers were aware of the fair-trade concept (Table 4). It was noted that fair-trade activists are the main source of information on this issue, while researchers are not very active in disseminating such information. Results also show that television is the main channel through which most respondents (30%) get information on fair trade. Surprisingly, despite the wide reach of radio and the growing popularity of the internet as communication channels in Kenya, their use in communicating fair-trade information is low.

Table 4: Fair-trade awareness and sources of information

Variable	% of respondents (n = 270)
Awareness of fair-trade concept	55.6
Source of information on fair trade	
Government institutions	25.0
Fair trade activists	45.0
Researchers	19.0
Farmers	11.0
Main channel on which fair-trade information was received	
Radio	18.0
Television	30.0
Verbal messages	22.0
Internet and social media (e-mail, Skype, websites)	13.0
Print media	17.0

Consumer perceptions play a big role in validating the inferences derived from their choices of product attributes and WTP estimates (Wu *et al*. 2019). In this study, consumers were asked about their perceptions of stages in the value chain at which fair-trade violations occur/are likely to occur. They noted that the violations occurred mainly at open-air markets (42.2% of respondents), on farms (24.4%) and in hotels/restaurants/food kiosks (21.7%). Only a few respondents reported that fair-trade violations in goat meat value chains occurred in supermarkets (6.1%) and in residential areas (5.6%).

Further, the relative importance of fair-trade activists, farmers, traders, consumer organisations and government institutions as key stakeholders in championing compliance with fair-trade practices in goat meat value chains was perceived to be over 90%. The role of other stakeholders, such as food scientists, processors, media, individual consumers, transporters and environmental organisations, in ensuring fair-trade compliance was perceived to range from 80% to 90%.

In terms of certification as fair trade in goat meat production, about two-thirds (65%) of the respondents expressed the view that this role should be performed by public agencies instead of being left to consumer groups (16.1%), by self-regulation carried out by producers (11.1%) or by traders/buyers (7.8%). This observation is consistent with that of Otieno and Nyikal (2017), who found that public-private partnerships for enforcing compliance with standards provide win-win outcomes for stakeholders. The logic here is that rational individuals will only be motivated to comply with regulations that do not adversely affect their self-gains from trade, while governments

might force compliance to protect wider societal interests, regardless of economic returns to individuals. The WTP for specific fair-trade attributes is discussed in the next section.

3.3 Willingness to pay for fair-trade attributes

Prior to the CE questions on preferences for fair trade attributes, consumers were asked if they would generally pay more for fair trade-compliant goat meat. About two-thirds (64.2%) of them expressed willingness to pay more, on average Kshs 105 (USD$1) per kilogram. The results of consumer preferences for fair-trade attributes relating to goat meat are shown in Table 5.

Table 5: RPL estimates for fair-trade attributes

Variable	Coefficient	Standard errors	t-ratio	p-value
Fair-trade labelling (FRTRDLAB)	76.055***	26.736	2.845	0.004
Prohibit child labour (CHLDLABO)	121.675***	22.907	5.312	0.000
Medical insurance for workers (MDCLINSR)	87.207***	20.166	4.324	0.000
Support handicapped/disabled persons (DISABLED)	58.078**	22.672	2.562	0.010
Direct purchase from producers (BYNGPRDU)	78.872***	21.860	3.608	0.000
Price	-0.326***	0.066	-4.973	0.000
Standard deviations of parameter distributions				
sdFRTRDLAB	70.650***	23.212	3.044	0.002
sdCHLDLABO	111.905***	28.019	3.994	0.000
sdMDCLINSR	42.247**	18.182	2.324	0.020
sdDISABLED	17.781	12.289	1.447	0.148
sdBYNGPRDU	54.610**	26.983	2.024	0.043

Notes: Levels of statistical significance: *** = 1%; ** = 5%; * = 10%. n (respondents) = 270; n (choices) = 1 080

The RPL model provides a better model fit, as demonstrated by the improvement in the adjusted pseudo-R^2 from 26.23% in the MNL to 44.03% in the RPL, and the log likelihood of -73.48 in the RPL compared to -96.31 in the MNL. Subsequent discussions are therefore confined to the RPL results for brevity. Goat meat consumers in Nairobi, Kenya had a positive and significant preference for all the fair-trade attributes. The statistically significant derived standard deviations show that goat meat consumers in Nairobi have heterogeneous preferences for all the attributes considered in the study (except concern for disabled persons). Moreover, the statistical significance and negative sign of the price coefficient permits the computation of trade-off measures or WTP estimates that explain the monetary value that respondents attach to each attribute of fair trade.

Marginal WTP estimates are presented in Table 6. The consumers were willing to pay Kshs 95 to 372 for fair-trade labelling; Kshs 154 to 592 for prohibiting child labour; Kshs 185 to 350 to provide medical insurance for workers in the goat meat value chain; Kshs 143 to 213 for supporting disabled people; and Kshs 135 to 349 for direct purchase from producers. Compared to the current price per kilogram of goat meat, the WTP estimates show that consumers would pay a premium of 62% to prevent child labour, 45% to support provision of medical insurance for workers in the meat value chain, 40% for direct purchase from producers, 39% for fair-trade labelling and 30% to support disabled people. These values show that consumers indeed care about the inclusion of aspects of fair trade in the goat meat value chain.

Table 6: Marginal WTP estimates for fair-trade attributes (Kshs)

Variable	WTP	t-ratio	p-value
Fair-trade labelling	233.13*** (94.66 to 371.60) ¥	4.264	0.000
Prohibit child labour	372.97*** (153.65 to 592.29)	16.029	0.000
Provision of medical insurance for workers	267.32*** (184.51 to 350.13)	4.261	0.000
Support disabled persons	178.03*** (143.18 to 212.88)	3.024	0.003
Direct purchase from producers	241.77*** (134.73 to 348.81)	4.193	0.000

Notes: ¥ confidence intervals were computed from standard errors estimated using the delta method in LIMDEP version 9.0/NLOGIT version 4.0 (Greene 2007). *** = 1% level of statistical significance.

3.4 Compensating surplus estimates

Following the standard practice in recent WTP analysis (see, for example, Otieno & Nyikal 2017; Otieno & Ogutu 2020), policy scenarios were derived for different types of consumers. The incorporation of various fair-trade aspects in the value chains depends on stakeholders' contexts, personal inclinations and resource endowments. In order to understand what consumers in different contexts would be willing to pay for the inclusion of different combinations of fair-trade attributes in the goat meat value chain, compensating surplus (CS) measures were computed for various policy scenarios that reflect the expectations of different categories of consumers in meat value chains. Eight scenarios were considered:

- Scenario 1: Fairness within the value chain only (direct purchase from farmers, child rights/ prohibit child labour, workers' welfare/provision of medical insurance for value chain workers)
- Scenario 2: Pro-farmers' and workers' welfare
- Scenario 3: Origin/production focus (child rights and direct farm purchase)
- Scenario 4: Corporate social responsibility (CSR)-oriented (fairness outside value chain only – support disabled persons)
- Scenario 5: Pro-workers and CSR
- Scenario 6: Pro-worker and child rights
- Scenario 7: Child rights and CSR
- Scenario 8: Ideal situation, where all fair-trade attributes are implemented together

The results in Table 7 show that the ideal scenario (8) has the highest CS. Furthermore, scenarios that focus on ensuring fairness for direct actors in the value chain (1, 6, 3) have a higher CS than those that seek fairness for stakeholders outside the value chain (7, 2, 5, 4). Thus, consumers are willing to pay more for improvements that first provide direct benefits to those who are directly involved in the goat meat value chain before supporting CSR activities targeting those outside the value chain, such as the disabled persons. The CS estimates obtained in this study are contextually relevant, since they are based on baseline price levels that were derived from an initial validation exercise with consumers in a focus group discussion in the CE design stage. The CS estimates also represent between 1% and 3.3% of the average monthly incomes of households; this is assumed to be affordable to urban consumers. The range of CS estimates show consumer willingness to pay from about 32% to more than 216% of the current average price of goat meat; this is comparable to the range of below 40% to more than 236% reported by Otieno and Ogutu (2020) for different chicken welfare-attribute scenarios.

Table 7: Policy scenarios of fair-trade compliance in goat meat value chains

Scenario	Attribute					
	Fair-trade label	Prohibit child labour	Medical insurance for workers	Support disabled persons	Direct farm purchase	Compensating surplus (in Kshs)
1	√	√	√		√	1 115.19 (72.76)♂
2	√		√		√	742.23 (63.73)
3	√	√			√	847.87 (21.16)
4	√			√		411.16 (50.95)
5	√		√	√		678.48 (47.35)
6	√	√	√			873.42 (52.21)
7	√	√		√		784.14 (49.33)
8	√	√	√	√	√	1 293.22 (101.50)

Notes: √ indicates the presence of an attribute at the non-zero level. ♂ indicates that all the CS estimates are statistically significant at the 1% level. Corresponding standard errors are shown in parentheses.

4. Conclusions and recommendations

This study analysed consumer willingness to pay for fair-trade attributes in goat meat in Nairobi, the capital city of Kenya. It was noted that over half of the consumers were aware of the fair-trade concept and were willing to pay a premium for compliant products. In descending order of magnitude, the consumers' WTP premiums for the attributes were: 62% to prevent child labour, 45% for the provision of medical insurance for value chain workers, 40% for direct purchase from producers, 39% for fair-trade labelling, and 30% to support disabled persons in the society.

The WTP and CS estimates obtained in this study offer insights into how consumers value various fair-trade attributes in the goat meat trade. It is important to note that policy formulation for the implementation of interventions in the goat meat value chain would require consideration of these estimates, together with other contextual issues such as the existing social welfare programmes, other stakeholders' perspectives and value chain coordination mechanisms. Therefore, the recommendations made in this study should be seen as a starting point in incorporating fair-trade aspects to ensure that goat meat value chains are responsive to societal needs.

Based on the results of this study, various interventions are suggested. First, the prevention of child labour in meat production and trade is important in ensuring that all children attend school. The extra payments that consumers are willing to offer for this attribute should be integrated into the school programmes to offset the cost of learning materials and school feeding initiatives – as a complementary mechanism to ongoing public and private education support mechanisms. For extremely poor households who have been depending on child labour for upkeep, the extra payments from meat value chains can be channelled to support their subsistence in order to free children to pursue education for a better future. Starting from these small contributions, the amounts going to support education can be scaled up as the goat meat value chain becomes more commercialised and socially responsive to fair-trade aspects.

Second, there is a need to establish on-site medical facilities within their business premises for workers within the meat value chain to ensure rapid health support in the case of injuries. This will not only ensure the safety of the workers, but will also reduce the transmission of meat-borne illnesses and other ailments from workers to consumers when handling meat. Due to the scattered

nature of goat meat sales outlets in Nairobi, the enforcement of medical support would require public health officials to incorporate this aspect as part of the requirements for trade licensing and inspection. Third, the premium for purchasing directly from producers can be implemented by paying the transport costs to enable producers to bring their goats to buyers. Fourth, support for disabled persons can be offered through cash transfers and/or the provision of food packages, including meat for balanced diets. As part of corporate social responsibility, the Kenya Private Sector Alliance should sensitise meat businesses to voluntarily channel their contributions arising from fair-trade sales to the Association for the Physically Disabled of Kenya in order to support the less-fortunate persons in society. Finally, comprehensive labelling of the fair-trade attributes that have been implemented should be done in the business premises, as well as on the product packaging. Besides for the role played by government and private sector agents, effective monitoring and enforcement to ensure compliance with these attributes that consumers desire will require participation by the media and the Consumer Federation of Kenya.

The CS estimates show that the consumers of goat meat prefer the incorporation of interventions that improve the welfare of direct actors within the value chain, before benefiting outside stakeholders such as disabled persons. Further research is suggested on the preferences of other stakeholders besides consumers in order to estimate resource commitments for effective compliance.

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