



AgEcon SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.



Consumer Willingness to Pay for Fair Trade Attributes of Goat Meat in Kenya

D. Otieno;

University of Nairobi, Agricultural Economics, Kenya

Corresponding author email: jakinda1@yahoo.com

Abstract:

Fair trade is an important ethical concern in food value chains. However, there is a dearth of empirical insights on consumer preferences for this critical aspect especially in the domestic markets of developing countries. The current study analyzed consumer willingness to pay (WTP) for fair trade attributes in goat meat value chain in the capital city of Kenya, Nairobi. Choice experiment data from 270 consumers was analyzed using the random parameter logit (RPL) model. The results showed 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 in goat meat value chains. 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 the disabled people as part of corporate social responsibility. These findings should be integrated in the goat meat value chain in order to make the enterprises more responsive to the ethical concerns of various stakeholders. Key words: fair trade, consumer willingness-to-pay, goat meat, Kenya.

Acknowledgment: The author appreciates useful insights from colleagues at the University of Nairobi.

JEL Codes: Q18, C35

#1142



Consumer Willingness to Pay for Fair Trade Attributes of Goat Meat in Kenya

Abstract

Fair trade is an important ethical concern in food value chains. However, there is a dearth of empirical insights on consumer preferences for this critical aspect especially in the domestic markets of developing countries. The current study analyzed consumer willingness to pay (WTP) for fair trade attributes in goat meat value chain in the capital city of Kenya, Nairobi. Choice experiment data from 270 consumers was analyzed using the random parameter logit (RPL) model. The results showed 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 in goat meat value chains. 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 the disabled people as part of corporate social responsibility. These findings should be integrated in the goat meat value chain in order to make the enterprises more responsive to the ethical concerns of various stakeholders.

Key words: fair trade, consumer willingness-to-pay, goat meat, Kenya.

1. Introduction and Problem Statement

Red meat value chains are important to the livelihoods of many producers, consumers and other stakeholders in Kenya. With increased urbanization and modernization of lifestyles, the consumption of red meat (mainly roast beef and chevron/goat meat – popularly known as ‘*nyama choma*’) has grown considerably in urban areas of Kenya, especially in the capital city Nairobi. Such value chains can contribute to equitable sharing of returns among those who participate in them if procedures and practices used are compliant with fair-trade principles and codes of conduct that advocate for ethical consumption behaviour. Thus, 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; for instance, use of child labour, poor agrarian wages and dangerous working environments. Some of the most cited cases in the literature of ethical concerns by consumers include boycott campaigns against *Nike* due to alleged labour abuses and *Nestle* because of suspected poisonous infant formula. According to Howard and Allen (2008), fair trade is a food-labelling scheme that is primarily designed to support social justice and ecological sustainability and it is based on price premiums to improve living conditions of producers and workers. The standards governing this notion advocate for fair-trade floor price that must be paid for a product. Such price is determined through summation of production cost, living cost and cost of complying with fair trade standards. In hired-labour scenarios, fair employment conditions include international labour organization (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); organization 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; ecological and ethical quality standards. At the consumer level, fair trade practices include transparency in product transformation procedures to allow traceability; production of certified quality products; providing awareness of labelling and monitoring processes. Fair trade also entails an emphasis on participatory governance, inclusion and capacity building of the poor and marginalized groups in value chains (Blowfield and Dolan, 2010). As noted by Browne et al. (2000), fair trade is mainly concerned with producers' and workers' treatment within farming systems, and other social and environmental criteria not normally associated with conventional trade. Willingness

to pay 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 (Depelsmacker et al., 2005).

Fair trade works well if all value chain actors are aware of and demand for 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. The fair trade concept has received wide attention focusing on imported food products in developed countries, especially in Europe where it was introduced in 1988 and in the United States of America (USA). In Germany for example, Paustian et al. (2016) noted that consumers were more concerned about origin, production and handling processes used in the regional meat products. However, little research exists on fair trade concerns within domestic markets of developing countries yet the principles of fair trade (fair price, fair labour conditions, direct trade, democratic and transparent organizations, community development and environmental sustainability) are quite relevant to the well being of stakeholders in such markets (Howard and Allen, 2008).

In Kenya, there is no empirical evidence on awareness, perceptions and willingness to pay (WTP) for fair trade products and services. Yet, the margins between producer prices, farm wages and consumer prices are considerably wide pointing to high possibilities of exploitation in value chains. Further, large income disparities exist in Kenya where over 75% of the population are smallholder farmers living in rural areas; with an average Gini index of 50% between 1992 to 2007 (World Bank, 2008). Moreover, those who work in lucrative value chains seldom receive equitable welfare support in terms of better housing and health insurance. Further, 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 of international fair trade products such as coffee, chocolates and strawberries that are labour-intensive and luxury products; hence consumers would be willing to pay a premium for fair trade attributes that seek to promote social justice in the

value chains (Howard and Allen, 2008). Paying attention to fair trade aspects is envisaged to be a socially-desirable intervention for reducing destitution and associated social evils in urban areas and therefore promote safe trading environments and equitable development.

2. Methodology

2.1. 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 (SP) *ex-ante* method for 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 estimation of tradeoffs among alternatives by replicating realistic purchasing scenarios and enabling 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 evaluation of consumer willingness to pay for broiler welfare in the Netherlands (Mulder and Zomer, 2017). In Kenya, the CE approach has recently been applied to analyze consumer preferences for quality and safety attributes of artisanal fruit juices (Otieno and Nyikal, 2016) and consumer preference for vitamin-A fortified sugar (Pambo et al., 2016). The present study contributes to literature through application of the CE method to understand consumer WTP for fair trade attributes in goat meat in Kenya.

2.2 Choice Experiment Design

The CE design of fair trade compliant practices involved 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 attributes identified and levels for inclusion in the design. Six attributes were selected from the validation process, for the CE design. These included: 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 below.

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 survey.

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 to 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. *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 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.

Corporate social responsibility is an important aspect of fair businesses. In this respect, the study envisaged that establishment of a fund to *support disabled persons* would help to reduce the emerging challenge of street begging and associated insecurity in urban areas of Kenya. Such forms

of social protection contribute to development of the communities where businesses operate (Biggs and Messerschmidt, 2005). *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. Price was included as a measure of the compensation for providing 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 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.

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 on a preliminary sample of 46 respondents. The information gathered from this stage was analyzed to obtain prior parameters. In the second step, the '*priors*' were used to generate a *D-optimal* CE design (i.e., a design which yields data that enable estimation of parameters with significantly low standard errors at relatively smaller sample) (Bliemer and Rose, 2010).

The design had high *D-optimality*, *D-efficiency* measure of 89.87%, and a relatively good utility balance, a *B-estimate* of 95.01%, that surpasses the minimum threshold measure of utility balance, *B-estimate* of 70%. This shows there was a very limited likelihood of dominance by any alternative in the choice situations. Further, the CE design generated had an *A-efficiency* measure of 89.03%; implying that the variance matrix could yield reliable estimates (Huber and 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 respondents is illustrated in Table 2 below.

Table 2: Example of Choice Task Presented to Respondents

Attributes	Meat type A	Meat type B	Neither A nor B
Free 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?			

2.3. Sampling and Data Collection

A random sample of 270 goat meat consumers was surveyed. Primary data was collected through focus group discussion and consumer survey using a structured questionnaire and a CE design. Respondents were interviewed at various points of red meat consumption: butcheries, supermarkets, restaurants, residential areas and open-air/roadside markets. The interviews were conducted in December 2017 purposively in two main parts of the capital city, Nairobi County where there is high meat consumption: Eastlands (Jogoo Road, Burma, Buruburu, Umoja, Kayole, Njiru and Ruai) and Westlands (Dagoreti, Kangemi and Kawangware).

2.4. Data Analysis

The CE data on consumer WTP for fair trade attributes in goat meat was analyzed 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:

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

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 slight modification of the standard multinomial logit (MNL) model as:

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

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:

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

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

$$P_n(\theta) = \int G_n(\beta_n) f(\beta_n | \theta) d\beta_n \quad (4)$$

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 over 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 lack of a closed mathematical form. The log-likelihood function is expressed as:

$$LL(\theta) = \sum_n \ln P_n(\theta) \quad (5)$$

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:

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

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 has 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 is constructed as:

$$SLL(\theta) = \sum_n \ln(SP_n(\theta)) \quad (7)$$

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

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

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

Slightly more than half of the respondents were male with college level of education; on average having completed 13 years of formal schooling (Table 3). The average age was 34 years, indicating that they are in the economically active age bracket, hence a key segment of the meat consuming population in Kenya's urban areas.

Table 3: Respondents' characteristics

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
% of consumers aware of fair trade concept	55.60
% of consumers who would pay more for fair trade goat meat	64.20

More than half and slightly two-thirds of the consumers were aware of fair trade concept and were willing to pay more for fair trade goat meat, respectively. The WTP for specific fair trade attributes is discussed in the next section.

3.2 Willingness to Pay for Fair Trade Attributes

Results of goat meat consumer preferences for fair trade attributes are shown in Table 4. The RPL model provides a better model fit as demonstrated by the improvement in the adjusted pseudo-R² from 26.23% in the MNL to 44.03% in the RPL, and log likelihood of -73.48 in the RPL compared to -96.31 in the MNL. 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 the disabled persons). Moreover, the statistical significance and negative sign of the price coefficient permits the computation of trade-off measures or willingness to pay (WTP) estimates that explain the monetary value that respondents attach to each attribute of fair trade.

Table 4: RPL estimates for fair-trade attributes

<i>Variable</i>	<i>Coefficient</i>	<i>Standard errors</i>	<i>t-ratio</i>	<i>p-value</i>
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
<i>Standard deviations of parameter distributions</i>				
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: statistical significance levels ***1%; **5%; *10%. n(respondents) = 270; n(choices) = 1080.

Marginal WTP estimates are presented in Table 5. The consumers are willing to pay Kshs 95 to 372 for fair trade labelling; 154 to 592 for prohibiting child labour; 185 to 350 to provide medical insurance for goat meat value chain workers; 143 to 213 for supporting disabled people; and 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 the disabled people. These values show that indeed, consumers care about fair trade inclusion in the goat meat value chain.

Table 5: Marginal WTP estimates for fair trade attributes (Kshs)

Variable	WTP	<i>t</i> -ratio	<i>p</i> -value
FRTRDLAB	233.13*** (94.66 to 371.60) [¥]	4.264	0.000
CHLDLABO	372.97*** (153.65 to 592.29)	16.029	0.000
MDCLINSR	267.32*** (184.51 to 350.13)	4.261	0.000
DISABLED	178.03*** (143.18 to 212.88)	3.024	0.003
BYNGPRDU	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.

Conclusions and Policy Implications

This study analyzed 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 a descending order of magnitude, the consumers' WTP premiums for the attributes were: 62% to prevent child labour, 45% for provision of medical insurance to value chain workers, 40% for direct purchase from producers, 39% for fair trade labelling and 30% to support disabled persons in the community.

Prevention of child labour in meat production and trade is important in ensuring that all children attend schooling. The extra payments that consumers are willing to offer for this attribute should be integrated in the school programs to offset cost of learning materials and school feeding initiatives – as a complimentary mechanism to on-going public education support mechanisms. For extremely poor households who have been depending 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.

There is need to establish on-site medical facilities for meat value chain workers within their business premises to ensure rapid health support in case of injuries. This will not only ensure safety

of the workers, but will also reduce transmission of meat-borne illnesses and other ailments from workers to consumers when handling meat. The premium on direct purchase from producers can be implemented by paying the transport cost to enable producers bring their goats to buyers. Further, support for disabled persons can be offered through cash transfers and/or provision of food packages including meat for balanced diets. Comprehensive labelling of the fair trade attributes that have been implemented should be done in the business premises as well as on product packaging. Effective monitoring and enforcement mechanisms are necessary to ensure compliance with these attributes that consumers desire.

This study focused on consumer WTP for the fair trade attributes. Further research is suggested on fair trade scenarios for different market segments and other stakeholder preferences besides consumers in order to estimate resource commitments for effective compliance.

References

- Adamowicz, W. L., Boxall, P. and Louviere, J. (1998). Stated preference approaches for measuring passive use values: Choice experiments and contingent valuation. *American Journal of Agricultural Economics*, 80: 64 - 75.
- Bateman, I., Carson, R., Hanemann, M., Hanley, N., Hett, T., Jones-Lee, M., Loomes, G., Ozdemiroglu, E., Pearce, D., Sugden, R. and Swanson, J. (2002). *Economic Valuation with Stated Preference Techniques*. A manual, Department for Transport, ISBN 1-84376-852-6, Edward Elgar, Cheltenham.
- Biggs, S. and Messerschmidt, D. (2005). Social responsibility in the growing handmade paper industry in Nepal. *World Development*, 33(11): 1821 – 1843.
- Bliemer, C. and Rose, J. (2010). Construction of experimental designs for mixed logit models allowing correlation across choice observations. *Transportation Research Part B*, 44: 720 - 734.
- Blowfield, M. and Dolan, C. (2010). Outsourcing governance: Fair trade's message for C21 global governance. *Corporate Governance*, 10 (4): 484-499.

- Browne, A., Harris, P., Hofny-Collins, A., Pasiecznik, N. and Wallace, R. (2000). Organic production and ethical trade: definition, practice and links. *Food Policy*, 25: 69-89.
- ChoiceMetrics (2009). The Cutting Edge in Experimental Design. *NGENE 1.0 User Manual and Reference Guide*.
- DePelsmacker, P., Driesen, L. and Rayp, G. (2005). Do consumers care about ethics? Willingness to pay for fair trade coffee. *The Journal of Consumer Affairs*, 39 (2): 363-385.
- Grebitus, C., Colson, G. and Menapace, L. (2012). A comparison of hypothetical survey rankings with consumer shopping behaviour. *Journal of Agricultural and Applied Economics*, 44: 35 - 47.
- Greene, W. (2007). *LIMDEP version 9.0/NLOGIT version 4.0 Econometric Modelling Guide, Econometric Software*. New York: Plainview.
- Hanemann, W. (1984). Welfare evaluations in contingent valuation experiments with discrete responses. *American Journal of Agricultural Economics*, 66: 332 - 341.
- Howard, P. and Allen, P. (2008). Consumer willingness to pay for domestic fair trade: Evidence from the United States. *Renewable Agriculture and Food Systems*, 23(3): 235 - 242.
- Huber, J. and Zwerina, K. (1996). The importance of utility balance in efficient choice designs. *Journal of Market Research*, 33: 307 - 317.
- Louviere, J., Hensher, D. and Swait, J. (2000). *Stated Choice Methods: Analysis and Applications*. Cambridge: Cambridge University Press.
- Lusk, J., Roosen, J. and Fox, J. (2003). Demand for beef from cattle administered growth hormones or fed genetically modified corn: A comparison of consumers in France, Germany, the United Kingdom and the United States. *American Journal of Agricultural Economics*, 85: 16 - 29.
- McDowall, H., Humphreys, J. and Conlon, J. (2011). A new fair trade registration scheme based on the relations of production. *Development in Practice*, 21(2): 143 - 156.

- Mulder, M., and Zomer, S. (2017). Dutch consumer willingness to pay for broiler welfare. *Journal of Applied Animal Welfare Science*, DOI: 10.1080/10888705.2017.1281134.
- Olynk, N., Tonsor, G. and Wolf, C. (2010). Consumer willingness to pay for livestock credence attribute claim verification. *Journal of Agricultural and Resource Economics*, 35: 261 - 280.
- Otieno, D.J. and Nyikal, R. A. (2016). Analysis of consumer preferences for quality and safety attributes in artisanal fruit juices in Kenya. *Journal of Food Products Marketing*, pp.1-18. ISSN: 1540-4102. <http://dx.doi.org/10.1080/10454446.2016.1164103>.
- Pambo, K.O, Otieno, D.J. and Okello, J.J. (2017). Analysis of consumer preference for Vitamin A-fortified sugar in Kenya. *The European Journal of Development Research*, 29(4): 745 - 768.
- Paustian, M., Reinecke, F. and Theuvsen, L. (2016). Consumer preferences for regional meat products. *British Food Journal*, 118(11): 2761 – 2780.
- Revelt, D. and Train, K. (1998). Mixed logit with repeated choices: Household's choices of appliance efficiency level. *The Review of Economics and Statistics*, 80: 647 - 657.
- Train, K. (2003). *Discrete Choice Methods with Simulation*. New York: Cambridge University Press.
- Yang, S-H, Hu Wuyang, Mupandawana, M. and Liu, Y. (2012). Consumer willingness to pay for fair trade coffee: A Chinese case study. *Journal of Agricultural and Applied Economics*, 44 (1): 21 - 34.