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DETERMINANTS OF ACCEPTABILITY OF CRICKET CONSUMPTION AND ADOPTION FOR IMPROVED FOOD SECURITY AMONG RIPARIAN COMMUNITIES OF THE VICTORIA BASIN, KENYA

Oyaro HO[1]*, Gor CO[1], Ocaido M[2], Okul EO[3] and E Okuto[4]

Oyaro Hagai Ongecha

*Corresponding author email: hagaioyaro@gmail.com

[1]Department of Agricultural Economics and Agribusiness Management, School of Agricultural and Food Sciences, Jaramogi Oginga Odinga University of Science and Technology, P.O. Box 210 – 40601, Bondo, Kenya

[2]Department of Wildlife and Aquatic Animal Resources, School of Veterinary Medicine and Animal Resources, College of Veterinary Medicine, Animal Resources and Biosecurity, Makerere University, P.O. Box 7062 Kampala, Uganda

[3]School of Open and Distance Learning, the University of Nairobi, Kenya, P.O Box 84 - 40123, Kisumu, Kenya

[4]School of Mathematics and Actuarial Science, Jaramogi Oginga Odinga University of Science and Technology, P.O. Box 210 – 40601, Bondo, Kenya

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ABSTRACT

The dynamics of weather variation have overstretched animal protein from already overburdened environment; malnutrition is likely to be on the rise with human population growth projected at 9.7 billion by 2050. This has seen cricket consumption for household food security increasing in the past decade. Cricket *(acheta domesticus)* farming can contribute positively to solving malnutrition problems being experienced among the riparian communities in the Kenyan Lake Victoria Basin. Cricket farming presents a livelihood diversification strategy that can help buffer rural households against food insecurity and provide an alternative source of income. However, its adoption as an alternative source of protein for improved household food security has remained low among smallholder farmers. The study investigated determinants of acceptability of cricket consumption and its influence on adoption for farming as an alternative source of food. The study employed a mixed methods research approach to collect quantitative and qualitative data from 120 trained cricket farmers from selected riparian counties including Siaya, Kisumu and Homa Bay in Kenyan Victoria basin. Descriptive statistics and logistic regression model were used to summarize quantitative data while content analysis was used to analyze qualitative data by thematic arrangements and similarities across different investigation areas. Based on data analyzed, the results indicated that cultural beliefs, perception and attitude such as *cultural value attached to cricket consumption ($p = 0.021$), crickets are sweet and tender than poultry ($p = 0.037$)* as well as age with a $p<0.028$, had statistical significance on acceptability to cricket consumption. On the other hand, regression β coefficient of awareness, access and availability were found to have no association with the adoption of cricket farming. The study recommended that: first, the government formulates a policy on farming edible insects as mini-livestock and improved food security. Secondly, further study is needed to determine possible strategies for changing attitude towards cricket consumption for increased adoption by smallholder farmers.

Key words: Food security, malnutrition, cricket, acceptability, consumption, culture, attitude, communities, adoption

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INTRODUCTION

Malnutrition is a global health emergency with a triple burden of under nutrition, micronutrient deficiencies, overweight and obesity. Food and Agriculture Organization projects a global population increase to 9.7 billion by 2050, which will increase food and feed demand [1]. This calls for a need to change to more environmentally friendly, promising and sustainable diets such as edible insects, to address existing macronutrient deficiencies due to lack of essential nutrients such as protein [2].

While food consumption remains an old practice by humankind, the prevailing climate change has created evolution in diet that does not meet human dietary needs hence people have opted to new food sources for nutrients [3]. Edible insects are an alternative source of the much-needed protein. Although insect consumption is cited throughout religious literature in the Jewish, Islamic faiths, and Bible, which speaks about, desert locusts as food in the book of Leviticus [4]. The practice of insect consumption as the alternative source of food for food security has not gained acceptance [5]. However, the knowledge regarding consumer acceptance of insect consumption is not only a threat to food security but also a challenge to utilization of potential new food resources [6].

In the Netherlands, consumers, especially the younger generations, have positive attitude towards familiar food products processed with insect protein [7]. In Australia, consumers are more willing to accept insects as food when incorporated into familiar products [8]. However, it was not automatic that the availability of edible insects increased acceptability for consumption [9]. In Uganda, insects are seasonal and make an important part of diets especially termites (*Macrotermes Spp*) and grasshoppers (*Ruspolia nitidula*) [10], while in Tanzania grasshoppers are considered a delicacy [11]. Insect consumption among communities has been practiced in Kenya since ancestral times [12].

Consumer non-acceptance to cricket consumption is a significant barrier in embracing insects as a source of food. Acceptance of products containing insects has been influenced by consumers' traits such as cultural exposure to insects as food [13].

Crickets are defined as cosmopolitan and omnivorous insects, which form part of the mini-livestock and can be farmed as alternative protein source [4]. Cricket consumption can contribute positively towards solving malnutrition problems especially among children in Kenya [14], due to its high protein level of 65.04% as compared to other insects such as *Ruspolia differens*, which has 44.3% [4]. A study by Physical, A. C. and Program [15], revealed that 10-35% of individual daily energy intake come from protein. Cricket as a mini-livestock enterprise has potential of being embraced by farmers in various agro-ecological conditions of the lake region in Kenya [16].

Despite their high protein content of 65.04% and economic benefits [17], acceptance for crickets' consumption and the ability to rear them has not translated into food security [16]; this is because harvesting is widely unconventional with more still being obtained from the wild [17]. There is a need to research on acceptability for insect

consumption as a sustainable food source. Studies done on acceptability indicate that biscuits containing 10% cricket (*acheta domesticus*) is comparable to milk biscuits among 5-10-year-old Kenyan schoolchildren [20]. Further studies by Meyer-Rochow *et al*. [21] revealed that acceptability of edible insects are affected by processing methods among others. A study by Hartmann and Siegrist [22] indicated that a step towards acceptability of edible insect for consumption is to provide more information on preparation and consumption. This was concurrent with Pambo *et al*. [6] study, which revealed that understanding consumers' acceptance especially in regions where insects do not form part of the traditional food is important. However, no study has been done to investigate the relationship between cricket consumption with the farmers' socio-economic, cultural beliefs, perception, attitude, awareness and their acceptability level for improved food security. Therefore, the study sought to investigate the determinants of acceptance levels of cricket consumption as an alternative source of protein among communities in the Kenyan Victoria Basin.

MATERIALS AND METHODS

The study was conducted in three counties of Lake Victoria Basin, which included Siaya, Kisumu and Homa Bay. The study adopted multistage sampling dividing counties into strata with each sub-county forming a stratum. Simple random sampling was used to select respondents for quantitative data collection; individuals with technical information were purposively sampled and interviewed using a questionnaire guide with open-ended questions to collect qualitative data on key areas of study from farmer groups, Government officials, Anglican Development Services (ADS) staff and local administration. A standardized pretested questionnaire on digital platform was used to collect quantitative data on socioeconomic characteristics, cultural beliefs, perception, attitude and awareness and how they determine cricket consumption as food among raperian communities in Lake Victoria Basin. Ethical Review Committee, Board of Post-graduate Studies approval letters from Jaramogi Oginga Odinga University of Science, Technology, and National Council for Science, Technology and Innovation permit, guided data collection. The study focused on two categories of respondents: those trained on cricket farming and those in active production in cluster counties of Siaya, Kisumu and Homa Bay. A sample size of 118 respondents was obtained and raised to 120 for even distribution from a population of 170 cricket farmers who had been trained by Jaramogi Oginga Odinga University of Science and Technology, and ADS using Cochran, W [23] formula shown below:

$$n = \frac{z^2Np(1-p)}{(e^2N)+(z^2P[1-p])} \quad \ldots\ldots (1)$$

Where:
n = Sample population.
N= Population (170)
Z = 1.96 at 95% confidence level).
P = Population sample proportion to be 0.5 (50%) to provide the maximum sample size.
e = acceptable margin of error of 5% (0.05).

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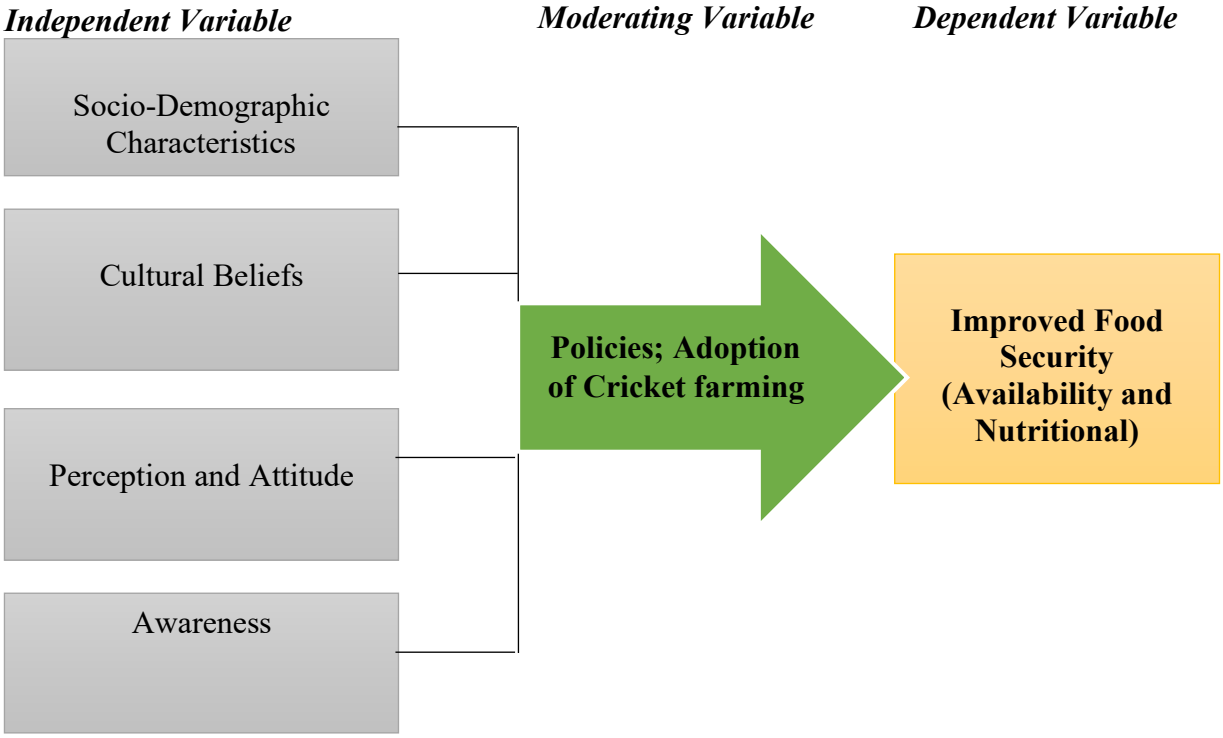
The diffusion of innovation theory by Rogers guided the study [24], which explained how and at what rate new ideas and technology spread. The study defined diffusion as a process by which an innovation is communicated through certain channels over time among members of a society. Four components of diffusion of innovation identified included innovation, communication channels, time and social system. On the other hand, adoption was noted to be a decision to fully use innovation as the best course of action available, while rejection was a decision to reject an innovation.

Conceptual framework of investigating determinants of acceptance levels for cricket consumption, how it influences adoption and consequently consumption amongst farmers is as shown in *figure 1*:



Source: Authors (2020)

Empirical Model

On quantitative data, both descriptive and inferential statistical analysis were undertaken. For inferential statistical analysis chi-square and binary logistic regression, analyses were carried out on categorical variables using SPSS software version 25.0. Categorical variables (independent variables) were identified as socio-economic, cultural beliefs, perception, attitude, awareness and availability. The dependent variable was taken as cricket consumption. Chi-square (x^2) was used to test relationships between categorical variables and levels of acceptability of cricket farming using equation [25] as given:

$$x^2 = \sum \frac{(O-E)^2}{E} \quad \ldots\ldots (2)$$

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Where:
O = is the observed frequencies
E = is the expected frequencies

Logistic regression models can be used to predict adoption rates based on different categorical independent variables [26]. A similar study by Ashraf *et al.* [27], also found logistic regression model to be suitable because the dependent variable (Y) was a dichotomous variable, which took the value "1" for adoption and "0" otherwise. Logistic regression model of acceptance level of cricket consumption for determinants such as cultural beliefs, perception and attitude, awareness and availability was done to estimate the probability of accepting or rejecting cricket consumption for food security. This was further classified statistically using SPSS to predict their level of influence on acceptance as used in the following formula.

The empirical model for the study was specified as:
Multiple logistic regression model was considered to binary dependent variables (for example Y_i= dummy (1 = acceptance; 0 =otherwise). The procedure was found appropriate where dichotomous dependent outcome variable was involved, because it describes data and explains the relationship between one dependent binary variable and one or more nominal, ordinal, interval independent variables. At the center of logistic regression, analysis is the task of estimating the log odds of an event. Logistic regression estimated a multiple linear regression function defined as:

$$log\left(\frac{p(Y=1)}{1-(p(Y=1))}\right)= \beta_O+\beta_1 x_{i1}+ \beta_2 x_{i2}+ \cdots + \beta_p x_{ip} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

The regression estimates in a logistic regression (logit model) was formulated as;

$$log\left(\frac{p(Y=1)}{1-(p(Y=1))}\right) = \beta_O+\beta_1 x_1+ \beta_2 x_2+ \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 \quad \ldots\ldots\ldots\ldots\ldots \quad (4)$$

Where: Y_i= dummy (1 = acceptance; 0 =otherwise)
X_1 = *Gender*
X_2 = *Age (years)*
X_3 = *Education level*
X_4 = *Cultural Beliefs*
X_5 = *Perception and attitude*
X_6 = *Awareness and availability*
Qualitative data were collected from key informant interviews and focus group discussions were organized and analyzed into themes. The themes were reviewed, defined and refined through thematic maps to answer the research question; this sought to understand how acceptability level influences cricket consumption for improved food security among farmers.

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RESULTS AND DISCUSSION

Socio-Demographic Characteristics

The study sought to find out how socio-economic and demographic determinants influence adoption of cricket farming among smallholder farmers. The key determinants studied included: gender, age and education levels of the respondents in cricket farming. On the basis of data analyzed, the results indicated that the majority 52.0% of respondents were male as compared to 48.0% representing female repondents. Middle age farmers of 36 - 60 years were greatly involved in cricket farming at 52.0% as compared to young farmers of < 36 years at 33.0%. The majority 42.0% of respondents had attained secondary level of education while the least 2.6% of respondents had no formal education. Additionally, based on data analyzed, the results indicated that cricket farming across the three counties was 76.0% male dominated and majority 92.0% of household respondents were identified with Christianity as a religious affiliation. Majority 73.0% of respondents were married. In addition, 53.0% of respondents had small farm sizes of < 5 hectares with 64.0% of respondents earning an estimated annual income of less than KES. 51,000 as summarized in *Table 1*.

Further analysis indicated that gender, education, household head, marital status, religious affiliation and family size had no association with acceptance of cricket consumption for improved food security (p>0.05). This was contrary to previous studies [28, 29, 30], which revealed that socio-demographic determinants such as age, education level, gender and income hold strong bonding with production practices adoption.

Further analysis was done using binary logistic regression model to test the ability of independent variables to influence dependent variables. This was in line with Lekhanya [31] study which applied binary logistic regression model to facilitate the analysis of factors influencing adoption of new farm technologies. Among socio-demographic factors *gender p<0.642, education <0.351, household head <0.785, marital status <0.989, family size <0.503 and farm enterprises income* <0.358 had no association with acceptance to cricket consumption for improved food security while age *had a p<0.028* and was found to be statistically significant to acceptability for cricket consumption (*Table 1).*

Acceptability level of Cricket Consumption

Cultural beliefs attached to cricket consumption

The study sought to determine the acceptance level of cricket consumption as an alternative source of protein among smallholder farmers. Some of the predictors studied included cultural values attached to cricket consumption, consumers' perception and attitude towards cricket consumption as food, awareness and cricket availability for consumption among farmers. The study findings revealed that 10.6% of the respondents in Siaya had cultural beliefs attached to cricket consumption while Kisumu and Homa Bay were at the same level 44.7%. The overall findings revealed that 51.0% of the respondents were in affirmative that they had cultural beliefs attached to cricket consumption. This could have largely contributed to smallholder farmers' low consumption and subsequent acceptability, with 56.0 % of the respondents saying that

they do not regard crickets as food. This was also supported by 50.0% of the respondents who reported that they had never eaten cricket because of presentation methods while the remaining proportion of 50.0% of the respondents said that crickets are unsafe to eat. Similar findings were also reported by Cerritos [32], a study in South Africa, which indicated that culture, is a major constraint to acceptability and subsequently adoption of cricket farming. On the other hand, Ogunsumi [33] corroborated the findings by revealing that culture and religious beliefs heavily influence the consumption of insects such as crickets in the world as indicated in *Table 2*.

In subsequent probing, 49.0% of respondents reported that they had no cultural beliefs attached to cricket consumption. Siaya had a paltry 10.6% of the respondents who were in affirmative that they had cultural value attached to cricket consumption, while Kisumu and Homa Bay had 44.7% of respondents who alluded to the fact that they had cultural values attached to cricket consumption as summarized in the T*able 2*.

Among the cultural beliefs attached to cricket consumption, majority 84.0% of respondents confirmed that consumption of crickets help in developing good voice for singing while a paltry 16.0% of respondents reported that crickets are only consumed by women and children. Further analysis indicated that cultural values had significant influence on the cricket consumption for improved food security (p>0.021) (*Table 2)*.

Perception and Attitude towards Cricket Consumption

In reference to perception and attitude to cricket consumption, 10.7% of respondents reported that eating cricket makes them sick, this was followed by 16.0% who said that if cricket crawls on their food they would not eat it. The findings revealed that 20.1% of the respondents agreed that eating crickets is disgusting while 36.0% agreed that crickets are sweet and tender than poultry. A paltry 5.2% of respondents strongly disagreed that crickets are better sources of protein compared to beef. In conclusion, the finding revealed that most farmers did not regard crickets as food; this could have been due to their attitude towards cricket consumption, which subsequently affected their adoption of cricket farming as an alternative source of food. The finding concurred with a study by Li *et al.* [34], which indicated that attitude influences farmers' acceptance or rejection of a new technology, this largely depends on how the technology is presented to the farmer. The finding supported Lekhanya [31] study, which revealed that positive attitudes toward technology are more likely to motivate farmers to adopt new technologies in practice. On further analysis perceptions and attitudes attached to cricket consumption had significant influence on the adoption of cricket farming for improved food security *(p> 0.037)* (*Table2)*.

Awareness and availability of cricket to households

Although the study finding indicated that all 100.0% of the respondents were aware of cricket farming, this did not translate into cricket consumption for improved food security. When asked whether they farmed crickets or not, a majority 74.7% of farmers said they were not in cricket production while 25.3% of farmers affirmed that they were in active production. The findings concurred with Hoek *et al.* [35] study which revealed that providing information and increasing awareness alone on the benefits of

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eating meat substitutes such as crickets was not effective in increasing adoption of cricket farming (*Table 2)*.

Of the respondents interviewed 29.8% reported accessing crickets from the wild, 9.0% were accessing crickets from neighbours, with majority 53.7% from their farms, while 7.5% were accessing crickets from the local market as summarized in *Table 2*.

Model Summary

Based on the values of Nagelkerke R Square (0.291) and Cox and Snell R Square (0.197), the ability of the independent variables age, cultural beliefs and crickets being sweeter and more tender than poultry in explaining cricket consumption was 29.1%. The remaining proportion could be explained by other factors outside the model. The categorical predictor variables: crickets are good source of protein than beef; eating crickets is disgusting; if a cricket crawls on my food then I will not eat it; and eating crickets make me sick; tended to exhibit lower counts of strongly disagree as compared to crickets are sweet and more tender than poultry, which strongly agreed. Increasing level of the ordinal variables tended to positively increase the level of agreement towards "strongly agree" in the variables as shown in *Table 3 and 4.*

The overall percentage was an indicator that the model's overall accuracy was 80.0%. A value of 80.0% further indicated that the logistic regression equation model could predict adoption of cricket farming and rejection of cricket farming for consumption as indicated *Table 5.*

Table Variable in the Equation showed that independent variable age is likely to increase acceptability of cricket consumption by Exp (B) 0.288, while farmers' cultural beliefs attached to cricket is likely to increase cricket consumption acceptability by Exp (B) 0.94. Likewise, farmers' perception that crickets are tender and sweeter than poultry was found statistically significant in increasing acceptability to cricket consumption by Exp (B) 0.001. This was concurrent with Lekhanya [31] study, which revealed that culture, perception and attitude are major constraints to acceptability of new farming technology such as cricket farming.

Likewise Variable in the Equation shows that the three independent variables: age with a P-value of sig Wald 0.028 <0.05, culture attached to cricket with a P value of sig Wald 0.021 < 0.05 and crickets are sweet and tender than poultry with P value of sig Wald 0.037< 0.05, had significant positive influence on cricket farming adoption in the model and consequently acceptability to consumption for improved food security. Although the overall cricket farming was very low among the smallholder farmers, three variables indicated strong acceptability for consumption statistically (*Table 6).* The logit equation then becomes:

$$Y = - 1.940 \text{ (Constant)} + -1.246 (X_1) + - 0.071 (X_2) + - 1.066 (X_3) + - 3.699(\text{Ɛ})$$

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CONCLUSION

In conclusion, the cultural value was identified as a major determinant that shapes consumers' choice to accept or reject cricket consumption as food. Although EXP (B) for three independent variables, which include age, cultural beliefs attached to cricket and cricket taste tended to indicate values < 1, their p-values expressed a stronger association to cricket consumption for improved food security. The findings indicated that independent variable age was a positive attribute, which influenced cricket consumption and subsequent adoption for farming by farmers. Similarly cultural beliefs, perception and attitude showed a strong relationship with acceptability to cricket consumption for improved food security. Few respondents who accepted to eat crickets preferred it because of its tenderness and sweeter taste than poultry. On the contrary, other respondents did not like crickets and said that if a cricket crawls on their food, they will not eat it as they found crickets to be unclean. In this regard, additional studies are required to determine possible strategies for changing the attitude towards cricket consumption for increased adoption by smallholder farmers to improve food and nutrition security in selected riparian communities in the Kenyan Victoria Basin.

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Table 1: Analysis of Socio-Economic Characteristics of respondents by County

Variable	*Category*	*Number of Respondents by Counties*			*N*	*%*	*Chi-square*	*p-value*
		Siaya	*Kisumu*	*Homa Bay*				
Gender	*Female*	*50.0*	*36*	*48*	*36*	*48*	*2.19*	*0.642*
	Male	*18.0*	*39*	*52*	*39*	*52*		
Age	*Young <35 years*	*28.0*	*25*	*33*	*25*	*33*	*4.874*	*0.028*
	Middle 36-60 years	*43.6*	*39*	*52*	*39*	*52*		
	Old > 60 years	*9.1*	*11*	*15*	*11*	*15*		
Education	*No formal education*	*0.0*	*2*	*3*	*2*	*3*	*1.200*	*0.351*
	Primary	*24.1*	*29*	*39*	*29*	*39*		
	Secondary	*43.8*	*32*	*42*	*32*	*42*		
	Post-Secondary	*33.3*	*12*	*16*	*12*	*16*		
Household head	*Male headed*	*33.3*	*57*	*76*	*57*	*76*	*2.173*	*0.787*
	Female headed	*35.7*	*14*	*19*	*14*	*19*		
	Youth headed	*25*	*4*	*5*	*4*	*5*		
Civil status	*Single*	*16.6*	*6*	*8*	*6*	*8*	*0.364*	*0.989*
	Married	*34.5*	*55*	*73*	*55*	*73*		
	Widow	*35.7*	*14*	*19*	*14*	*19*		
Religious Affiliation	*Christian*	*34.2*	*69*	*92*	*69*	*92*	*0.697*	*0.407*
	Others	*0*	*6*	*8*	*6*	*8*		
Family size	*Small size (<5)*	*37.5*	*40*	*53*	*40*	*53*	*2.122*	*0.280*
	Middle size family (6-10)	*31.0*	*29*	*39*	*29*	*39*		
	Large family (> 10)	*16.7*	*6*	*8*	*6*	*8*		

Source: Research Data (2020)

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Table 2: Analysis of Acceptability level of Cricket Consumption

Variable	*Category*	*% of Respondents by Counties*			*N*	*%*	*Chi-square*	*p-value*
		Siaya	*Kisumu*	*Homa Bay*				
E301-Aware of cricket consumption as food/feed	*Yes*	*33.3*	*33.3*	*33.3*	*75*	*100.0*	-	-
	No	*0.0*	*0.0*	*0.0*	*0*	*0.0*		
E302(a)- Have you eaten cricket?	*Yes*	*29.9*	*35.8*	*34.3*	*67*	*89.3*		
	No	*62.5*	*12.5*	*25.0*	*8*	*10.7*	0.780	0.380
E302(b) If no what prevents you from eating crickets	*Crickets are unsafe to eat*	*75.0*	*0.0*	*25.0*	*4*	*50.0*	1.143	0.317
	Presentation method	*50.0*	*25.0*	*25.0*	*4*	*50.0*		
E303- Where did you eat cricket?	*House*	*17.6*	*55.9*	*26.9*	*34*	*50.7*		
	Seminar	*42.4*	*15.2*	*42.4*	*33*	*49.3*	1.384	0.243
E305- How available are crickets for ease of access by your household?	*Readily available*	*28.2*	*56.4*	*15.4*	*39*	*58.2*		
	Not available	*32.1*	*7.2*	*60.7*	*28*	*41.8*	0.850	0.772
E308- Cultural value attached to cricket consumption	*Yes*	*10.6*	*44.7*	*44.7*	*38*	*51.0*	5.394	0.021
	No	*56.8*	*21.6*	*21.6*	*37*	*49.0*		
E309- Cultural values attached to cricket consumption	*Develop good voice for singing*	*9.4*	*46.9*	*43.8*	*32*	*84.0*		
	Consumed by women and children	*16.7*	*33.3*	*50.0*	*6*	*16.0*	0.038	0.848
E310 (a)- Crickets are good source of protein than beef.	*Strongly Disagree*	*100.0*	*0.0*	*0.0*	*3*	*5.2*		
	Disagree	*77.8*	*0.0*	*22.2*	*9*	*15.8*		
	Neutral	*42.9*	*28.6*	*28.6*	*7*	*12.3*	5.527	0.133

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	Agree	*18.4*	*52.6*	*28.9*	*38*	*66.7*		
	Strongly Agree	*0.0*	*0.0*	*0.0*	*0*	*0.0*		
E310 (b)- Eating crickets is disgusting	*Strongly Disagree*	*17.4*	*69.6*	*13.0*	*23*	*36.7*		
	Disagree	*46.4*	*21.4*	*32.1*	*28*	*37.3*		
	Neutral	*28.6*	*14.3*	*57.1*	*14*	*18.7*	4.463	0.128
	Agree	*40.0*	*10.0*	*50.0*	*10*	*13.3*		
	Strongly Agree	*0.0*	*0.0*	*0.0*	*0*	*0.0*		
E310 (c) - Crickets are sweet and tender than poultry.	*Strongly Disagree*	*55.6*	*0.0*	*44.4*	*18*	*25.4*		
	Disagree	*62.5*	*0.0*	*37.5*	*16*	*22.5*		
	Neutral	*20.0*	*30.0*	*50.0*	*10*	*14.1*	9.355	0.037
	Agree	*0.0*	*0.0*	*0.0*	*0*	*0.0*		
	Strongly Agree	*11.1*	*81.5*	*7.4*	*27*	*36.0*		
E310 (d) - If a cricket crawls on my food then I will not eat it.	*Strongly Disagree*	*17.2*	*51.7*	*31.0*	*29*	*40.8*		
	Disagree	*40.0*	*20.0*	*40.0*	*25*	*35.2*		
	Neutral	*40.0*	*40.0*	*20.0*	*5*	*7.0*	4.351	0.055
	Agree	*0.0*	*0.0*	*0.0*	*0*	*0.0*		
	Strongly Agree	*50.0*	*16.7*	*33.3*	*12*	*16.0*		
E310 (e) - Eating crickets make me sick.	*Strongly Disagree*	*39.0*	*41.5*	*19.5*	*41*	*54.7*		
	Disagree	*33.3*	*25.0*	*41.7*	*24*	*32.0*		
	Neutral	*0.0*	*25.0*	*75.0*	*8*	*10.7*	0.729	0.577
	Agree	*50.0*	*0.0*	*50.0*	*2*	*2.6*		
	Strongly Agree	*0.0*	*0.0*	*0.0*	*0*	*0.0*		

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Table 3: Distribution of respondents in active cricket farming by County

			County			
			Siaya	*Kisumu*	*Homa Bay*	*Total*
Do you farm Crickets?	*Yes*	*Count*	*4*	*8*	*7*	*19*
		% within County	*37.5%*	*30.4%*	*32.1%*	*100.0%*
	No	*Count*	*21*	*17*	*18*	*56*
		% within County	*21.1%*	*42.1%*	*36.8%*	*100.0%*
Total		*Count*	*25*	*25*	*25*	*75*
		% within County	*33.3%*	*33.3%*	*33.3%*	*100.0%*

Source: Research Data (2020)

Table 4: Regression Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	**68.426[a]**	**.197**	**.291**

a. Estimation terminated at iteration number 3 because maximum iterations has been reached. Final solution cannot be found

Source: Research Data (2020)

Table 5: Classification table[a]

Observed		Predicted		
		Do you farm cricket?		Percentage Correct
		No	yes	
Step 1 Do you farm cricket?	no	54	2	96.4
	Yes	13	6	31.6
Overall Percentage				80.0

[a]The cut value is .500

Source: Research Data (2020)

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Table 6: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Age Category	-1.246	.981	1.613	1	.204	.288	.042	1.968
	Do you have any cultural value attached to cricket consumption?	-1.066	.661	2.604	1	.107	.344	.094	1.257
	Crickets are sweet and tender than poultry	-3.699	1.668	4.916	1	.027	.025	.001	.651
	Constant	1.940	1.410	1.892	1	.169	6.957		

[a]Variable(s) entered on step 1: (X_1)-New Age Category, (X_2)-Do you have any cultural value attached to cricket consumption? (X_3)-Crickets are sweet and tender than poultry
Source Research Data (2020)

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