*Research article*

# Consumers' willingness to pay for packaged chicken eggs in Lagos State, Nigeria

**Olubunmi Lawrence Balogun[1],\*, Martha Dupe Olumide[1], Opemipo Oloruntosin Gbaiye[1], Taofeek Ayodeji Ayo-Bello[1], Oladele Timothy Akinwole[1] and Kayode Ayantoye[2]**

[1] Department of Agriculture & Industrial Technology, School of Science & Technology, Babcock University, Ilisan-Remo, Ogun State
[2] Department of Agricultural Economics & Extension, College of Agriculture & Veterinary Medicine, Kwara State University, Malete, Kwara State

**\* Correspondence:** Email: blarrybunmi@gmail.com; Tel: +2348023841788.

**Abstract:** Chicken egg packaging and labeling are considered attributes of enhancement of the product and a lot of effort is put into adding value for certain attributes that attract consumers and assure their satisfaction. Hence, consumer's willingness to pay for packaged chicken eggs in Lagos state, Nigeria was investigated. A multistage sampling was employed for the study to obtain relevant information from consumers of packaged chicken egg. Three divisions were purposively selected because of the popularity of packaged chicken eggs in their stores. In the second stage of sampling, a local government area (LGA) was selected from each division. In the last stage, 50 consumers of chicken egg were randomly selected from each LGA. Contingent valuation method was used to elicit information from selected 134 egg consumers which were used for analysis. Data were analysed using descriptive statistics and probit regression model. Mean age and monthly income of egg consumers were $38.51 \pm 11.75$ years and ₦96,179.10 respectively. Household size was 4 members. The mean willingness to pay (WTP) for packaged eggs were ₦968, the premium accounts for 7% in the WTP estimate. The WTP for packaged eggs decreased as the consumers' grew older ($p < 0.1$). Being male increased the WTP by 13.4% and respondent being married increased WTP by 15.8%. Additional naira to consumers' income increased WTP by 0.8% while respondents that patronized supermarkets WTP increased by 15.8%. The study recommends a multiple streams of income and a closer retail stores for better accessibility for packaged chicken egg consumers.

## 1. Introduction

Poultry production is one of the largest and fastest growing agricultural businesses worldwide this is due to its economic and health benefits. Its contribution to the Gross Domestic Product and provision of employment opportunities, poultry production is a major source of protein in the country [1]. Poultry business has been considered to be very lucrative and good source of income because of the rising demand for poultry products as meat and chicken eggs [2]. This rising demand stems from the fact that poultry products are a rich source of animal protein especially micronutrients like iron, selenium and zinc [3].

In recent years, a rapid growth has been witnessed in chicken egg consumption worldwide [4]. However, Food and Agriculture Organization [5] reveals that between 1961 and 2000, annual world chicken egg production rose by more than 3.5 times to reach about 55 million tonnes, about 6% were used for hatchling production. This substantial increase in production was due to the rapid boost in chicken egg production of developing countries [6]. Currently, Nigeria is rated as a leader in Africa with respect to chicken eggs production even though its supply is not meeting up with the quantity demanded annually [6–8]. Despite this constant increase in chicken egg production, the demand and supply gap for animal protein intake is so high. The FAO recommends that the minimum consumption of protein by an average person should be 65gm daily; of this, 36gm (i.e., 40%) should come from animal sources.

Currently in Nigeria, a series of problems face the chicken egg production unit of the poultry industry, they include; unhygienic production, processing, irregular sorting and grading, marketing, absence of producer labels, safe packaging and scarcity or absence of safety certification of products by regulatory authorities [9].

Consumers make the decision on consumption with regards to the level of information they have in order to maximize utility [10]. Unfortunately, reverse is the case in Nigeria perhaps due to the poverty level because consumers have little or no information to guide their perceptions and willingness to pay for safe poultry products [11]. Also, poultry chicken eggs are subject to external shock due to illumination and dampness and are often lost in the course of transportation, handling and storage. Chicken egg packaging is designed to reduce considerably the losses as a result of the aforementioned problems.

Chicken egg packaging and labeling are considered attributes of enhancement of the product and a lot of effort is put into adding value for certain attributes that attract consumers and assure their satisfaction [12]. In recent times, there has been a considerable increase in consumers' demand for packaged products. The reasons for this increase are not farfetched as the media has played a huge role in creating awareness on food safety and the importance of consuming well packaged food and food products.

According to [4], consumers' purchasing decisions are made to maximize utility derived from a good. Many consumers seek food safety and are willing to pay higher prices for healthy products, since they increase their utility level and reduce health risks. Knowledge on consumer willingness to pay and product attribute preferences can help the poultry industry make innovations that improve

food quality and safety [13]. Consumers of particular product (poultry products inclusive) are more willing to accept premium prices for well packaged products [14].

Several studies [14–16] have shown that consumers are willing to pay a significant premium for food that are healthier, safer and palatable. Consumers' are more willing to pay premium prices for well packaged products and try to avoid attributes that are dangerous to their health. The broad range of economic, social, cultural and environmental benefits attached to uniquely and hygienically package chicken eggs has promoted global acceptance of this food product. In this regards, it becomes pertinent to:
• Know the socio economic characteristics of chicken egg consumers and their level of awareness of packaging as a quality attribute;
• Estimate average maximum amount that consumers in the study area are willing to pay and the factors influencing the consumers' willingness to pay for packaged chicken eggs.

## 2. Theoretical/Conceptual framework and literature review

Labeling plays a key role in allowing consumers to make informed choices about foods with enhanced health attributes. According to [17], labels can effectively bridge the informational gap between producers and consumers, satisfy consumer demand for broader and more stringent quality assurance criteria, and ultimately create value for both consumers and producers. The principal role of food labels is therefore to disseminate accurate information at the point of sale, where most of the food choices are made, and thereby inform consumer choice

Consumers' willingness to pay for a commodity or service is a function of knowledge, attitude, and intention [18]. Available information influences both knowledge and attitude toward the proposed commodity [2]. Lee, Repkine, Hwang and Kim [19] describe consumer willingness to pay as the amount of money an individual is willing to pay for an improvement in the attribute of an item. It implies the maximum amount that a person would be willing to sacrifice or exchange in order to obtain an increase in utility or avoid something unwanted. The notion of willingness to pay could be defined as a sum of money representing the difference between consumers' surplus before and after enhancing a food product attribute [20]. Consumer purchase decisions are largely affected by personal factors such as the consumer's age, number of dependents and life style [21]. Many consumers' desire food safety and are willing to pay extra for an improved attribute since their level of satisfaction will be increased. According to Goldberg and Rosen [22], consumers are unable to ascertain certain food safety before purchase, the most important constraint to economic efficiency in the production and marketing of food safety. Since some of these health risks benefits are hard to assess, a method commonly applied to determine food safety benefits is providing additional information through labelling, however it is worthy of note that the additional information would imply additional search costs. It is pertinent to estimate the margin arising from packaging and know the amounts that consumers are able and willing to part with for the additional search costs.

Consumer's concern and awareness of food quality have undoubtedly been increased by large increases in real per income and how safe the foodstuffs really are. There is correlation between consumers' employment status, price, health benefit and label and their willingness to pay for organic vegetables [23]. However, Adeyonu, Oyawoye, Fabiyi and Owolabi [24] assessed urban households' willingness to pay for Nigeria Processed Chicken (NPC) in Kwara State and found that literate level and current income of the consumers are important determinants.

Due to increasing consumer demand for healthier and environmentally friendly food products, the use of food labeling has become increasingly important in willingness to pay for products. Obayelu, Adeoti, and Akinlade [25] examined the perceptions and attitude towards consumers' willingness to pay for labeled and certified moringa products (tea, spice and oil) in Ogun state, Nigeria. The result indicates that attitude towards a product, attitude towards labelling and assurance, current purchasing and consumption patterns significantly affected the respondents' willingness to pay a premium. Labelling reduces the consumers' uncertainty about the product and increases their willingness to pay. The result of Akerele, Akinbode and Dipeolu [26] on willingness to pay for the safety of kilishi in Sokoto state, Nigeria indicated that most consumers of kilishi perceived the preparation of the product as unsafe for consumption and were willing to pay a premium for its safety.

However Alimi, Oyeyinka and Olohugbebe [27] investigated the socio-economic characteristics and willingness to pay for the safety of fura (a semi-solid cereal-based dumping) and nunu (West African yoghurt) in Ilorin, Nigeria using primary data obtained through the use of structured questionnaires and interviews. The result revealed that the consumers of the product were willing to pay a premium for safety intervention because of the desire to protect their health. Oyekale, Ayegbokiki and Oyekale [28] assessed the awareness and perception of IFSERAR's Pasteurized milk, respondents' willingness to pay per litre and factors influencing willingness to pay in Odeda local government area of Ogun state, Nigeria. The study revealed that the level of awareness of IFSERAR's milk was very low and factors such as age, sex, and household size, knowledge on the benefit of pasteurized milk, price, flavor and shelf life influenced the willingness to pay.

Packaging is a concept of value addition that makes a product more attractive and assures consumers' satisfaction. In another study, Adesope, Awoyemi, Falusi and Omonona [29] examined the willingness to pay for safety label on sugar and vegetable oil among 370 households in Southwestern Nigeria, the result indicated that consumers' willingness to pay for safety label increased with buying from a registered shop and having high income.

## 3. Materials and methods

### 3.1. Study area

The study was carried out in Lagos state located on longitude 6.5244 °N, 3.3792 °E in the Southwest region of Nigeria. Lagos state is on the Atlantic coast in the Gulf of Guinea, west of the river Niger and on a narrow coastal plain of the Gulf of Benin. It is bounded in the North and East by Ogun state, on the west by the Republic of Benin and in the south by the Bight of Benin. Lagos which is one of the thirty-six Nigerian states was created May 27, 1967. The state is the most populous urban agglomeration in Africa and the sixth global megacity. It has an estimated population of 9,113,605 people and a land area of 3,577 square kilometers out of which 786.94 square kilometers is covered with creeks and lagoon [30].

Administratively, Lagos' state capital is Ikeja with a structure of 20 Local Government Areas (LGAs) and 37 Local Development Council Areas (LDCAs) in accordance with the principle of decentralization and the imperative of grass root development. The state was selected because it is one of the fastest growing cities in the world as well as one of the most important regions as regards products consumption in Nigeria with the highest number of food retail outlets [11].

## 3.2. Source of data

Primary data were collected for the purpose of this study using structured questionnaire to elicit information from chicken egg consumers in Lagos state. Information collected include: socio-economic characteristics of the respondents, their perception of packaged chicken eggs and issues about willingness to pay for a packaged chicken eggs.

## 3.3. Sampling procedure

The sample was designed as a stratified multi-stage probability sample of packaged chicken eggs consumers. Lagos state is administratively structured into five divisions. Three divisions were purposively selected because of the popularity of packaged chicken eggs in the stores within those areas. In the second stage of sampling, a local government area (LGA) was selected from each division. In the last stage, consumers of chicken egg were randomly selected from each LGA for interview using a structured questionnaire. The final sample contained 150 packaged egg consumers and only 134 consumers which completely filled their questionnaire were used for analysis.

### 3.3.1. Estimating the WTP

Contingent valuation dichotomous choice methodology was employed to elicit consumers' willingness to pay for packaged chicken eggs. According to Hanemann [31], consumers' willingness to pay (WTP) for a product is measured using the direct valuation method: contingent valuation (CV). A mixed questioning procedure, normally called closed-ended with follow-up was used. This procedure has significantly efficiency gains than other elicitation methods. It consists of a dichotomous choice question (YES or NO) and a maximum willingness to pay question. In the dichotomous choice question, consumers are asked whether or not they are willing to pay a premium for packaging. The amount is a percentage over the price of the conventional product. The premium differs across consumers. Consumers responses are YES if they are willing to pay any premium X for packaging of chicken eggs or NO, they are not willing to pay a premium for packaging of chicken eggs. Consumers are then asked for the exact premium they are willing to pay.

Before asking respondents, the researcher defined the different price premiums (so called "starting points"). The last option, which is "questions based on effective prices at the survey points" was applied in this study, it is assumed that if the respondent answers the questions in the supermarket or retail store where he/she is shopping, the different price premiums will be on the basis of the prices charged by such supermarket or retail store. One potential drawback of contingent valuation method is related to bias which may come from the starting point of the bid.

$$\text{Mean WTP} = \frac{1}{\beta_1} \times \ln(1 + \exp\beta_2) \tag{1}$$

## 3.4. Analytical tools and models

This study employed a number of analytical tools based on the objectives of the study. The tools are descriptive statistics and probit regression.

### 3.4.1. Descriptive statistic

Descriptive statistic such as mean, median, standard deviation, percentages and range for investigating the socio economic characteristics of packaged chicken eggs consumers in the area.

### 3.4.2. Probit regression model

Probit regression model was used to estimate the factors that influence willingness to pay for packaged chicken eggs by consumers. The study adopted the model from [32]. In the binary probit model, consumer WTP for packaged chicken eggs was taken as 1, while 0 is for consumer not WTP for packaged chicken eggs. It is assumed that the ith consumer obtains maximum satisfaction from packaged chicken eggs. The probability $p_i$ of choosing any alternative over not choosing it can be expressed in equation 2.

$$Pi = \text{Prob } [Y_i = 1/X ] = \int_{-\alpha}^{X_i'\beta} (2\Pi)^{-1/2} \exp(-\frac{t^2}{2})dt \tag{2}$$

$$Y^* = \text{Prob } [Y_i = 1/X ] = \Phi(\beta X_i') \tag{3}$$

where $\varphi$ represents the cumulative distribution of a standard normal random variable [33]. The relationship between a specific variable and the outcome of the probability is interpreted by means of the marginal effect, which accounts for the partial change in the probability. The marginal effect associated with continuous explanatory variables $X_k$ on the probability Prob (Yi = 1|X), holding the other variables constant, can be derived as follow: [33].

$$\partial pi/\partial x_{ik} = \varphi(X_i'\beta)\beta k \tag{4}$$

where $\varphi$ represents the probability density function of a standard normal variable. The marginal effect on dummy variables should be estimated differently from continuous variables. Discrete changes in the predicted probabilities constitute an alternative to the marginal effect when evaluating the influence of a dummy variable. Such an effect can be derived from the following:

$$\Delta = \Phi(\bar{X}\beta_i d = 1) - \Phi(\bar{X}\beta_i d = 0) \tag{5}$$

$Y^*$ = Responses of household willingness to pay which is either 1 for Yes or 0 for No;
$\beta_0$ = Intercept (constant);
$\beta_i$ = Coefficient of the price that the respondents are willing to pay for packaged chicken eggs;
$X_i$ = Independent variables;
$e_i$ = Error term;
The independent variables are:
$X_1$ = Age of consumers (years);
$X_2$ = Gender (female = 1; male = 0);
$X_3$ = Marital status (married = 1; otherwise = 0);
$X_4$ = Income (in Naira);
$X_5$ = Household size (number);

$X_6$ = Consumers' travel experience (yes = 1; no = 0);

$X_7$ = Level of education (years);

$X_8$ = Point of purchase (supermarket = 1; others = 0).

## 4.  Results and discussion

Profile of socioeconomic characteristics of the chicken egg consumers in the study area is presented in Table 1. The Table shows that majority (60.5%) of the egg consumers falls within age group 30–40 years old while the 20.9%, 6.7% and 11.9% consumers are in age group less than 30years, 41–50 years and >50 years respectively. The mean age of egg consumers is in the study area is 38.51 ± 11.75 years. The implication is that most egg consumers are youths, and the need to meet their protein requirement for growth and development. It can also be connected to the consciousness of elderly about cholesterol levels in egg that can affect their health adversely.

The table also shows that most (66.4%) of the egg consumers are female suggesting that women are mostly egg consumers and buyers in the study area. It can also be attributed to the fact that women are generally home keepers and responsible for egg purchase in most African households. The result shows that majority (63.4%) of egg consumers are not married (single, divorced or separated) while the rest are married. The result infers that unmarried or divorced individual's buy more eggs compared to the married respondents because of the ease of cooking and the small amount required to purchase eggs for supply of the needed protein in their diets than more expensive sources of protein like beef, chicken and pork.

About 12.7% of the egg consumers earned less than ₦20,000 while 43.2% and 26.8% of packaged egg consumers earned between ₦50,000–₦100,000 and more than ₦100,000 respectively. The mean chicken egg consumers' income is ₦96,179.10. The result indicated that the majority (64.92%) of the poultry egg consumers have household sizes between 1–4 persons with mean household size of at 3.8 ± 2.1 members. A moderately number in a household is perceived consciousness that part of disposable income will be needed to meet the protein needs of the household members.

Most (51.5%) of respondents have travelled abroad before; therefore have been exposed to external culture and will most likely adopt innovations like egg packaging to increase their utility. Educational status of the respondent revealed that majority (94.8%) of the egg consumers were educated up to tertiary level.

Table 2 presents consumers' egg size preference and purchase form of poultry egg consumers in the study area. The result reveals that 45.5% of egg consumers in the study area preferred medium or large eggs to small-sized eggs. The reason attributed to it is that medium to large sized eggs makes it possible for consumer to maximize utility derived from products consumed. Therefore, the suppliers of packaged chicken eggs always ensure regular and consistent supply of medium to meet the demand of large sized eggs to consumers. However, most (53.8%) consumers of egg in the study area purchased unpackaged and unbranded eggs while unbranded packaged and branded packaged eggs which have uniform demand frequencies (23.1%).

**Table 1.** Profile of socioeconomic characteristics of the chicken egg consumers in the study area.

| | Frequency | Percentage (%) |
|---|---|---|
| *Age group* | | |
| <30 years | 28 | 20.9 |
| 30–40 years | 81 | 60.5 |
| 41–50 years | 9 | 6.7 |
| >50 years | 16 | 11.9 |
| Total | 134 | 100 |
| Mean = 38.51 | | |
| Standard deviation = 11.75 | | |
| *Gender* | | |
| Female | 89 | 66.4 |
| Male | 45 | 33.6 |
| Total | 134 | 100.0 |
| *Marital Status* | | |
| Single | 84 | 62.7 |
| Married | 49 | 36.6 |
| Divorced | 1 | 0.7 |
| Total | 134 | 100.0 |
| *Income (Naira)* | | |
| <₦20,000 | 17 | 12.7 |
| ₦20,000–₦50,000 | 23 | 17.1 |
| ₦50,000–₦100,000 | 58 | 43.2 |
| Greater than ₦100,000 | 36 | 26.8 |
| Total | 134 | 100.0 |
| Mean = ₦96,179.10 | | |
| SD = ₦2,283.40 | | |
| *Household size* | | |
| 1–4 | 87 | 64.92 |
| 5–8 | 44 | 32.84 |
| Less than 8 | 3 | 2.24 |
| Total | 134 | 100.0 |
| Mean = 3.8 | | |
| Standard deviation =2.1 | | |
| *Traveled* | | |
| No | 65 | 48.5 |
| Yes | 69 | 51.5 |
| Total | 134 | 100 |
| *Educational level* | | |
| No education | 7 | 5.2 |
| Primary education | 2 | 1.5 |
| Secondary education | 43 | 32.1 |
| Tertiary education | 82 | 61.2 |
| Total | 134 | 100.0 |
| Mean = 15.9, SD = 4.2 | | |

Source: Field survey, 2019.

**Table 2.** Consumers' egg size preference and purchase form of poultry egg consumers in the study area.

|  | Frequency | Percentage (%) |
|---|---|---|
| *Egg size preference* |  |  |
| Small | 12 | 9.0 |
| Medium | 61 | 45.5 |
| Large | 61 | 45.5 |
| Total | 134 | 100.0 |
| *Purchase form* |  |  |
| Unpackaged and unbranded | 72 | 53.8 |
| Packaged and unbranded | 31 | 23.1 |
| Packaged and branded | 31 | 23.1 |
| Total | 134 | 100.0 |

Source: Field survey, 2019.

Distribution of sampled respondents by sales point is presented in Table 3. The result shows that a greater number of egg consumers (47.0%) in the study area purchased their eggs from retail points while 24.6%, 22.4% and 21.6% purchased their packaged eggs from traditional open markets, supermarket and farms respectively. This was an indication that the egg consumers patronized retail point for their products of its accessibility and affordability.

**Table 3.** Distribution of sampled respondents by sales point.

| Sales point | Frequency (N = 134) | Percentage (%) |
|---|---|---|
| Supermarket | 30 | 22.4 |
| Farms | 29 | 21.6 |
| Retail point | 63 | 47.0 |
| Traditional open market | 33 | 24.6 |
| Others | 4 | 3.0 |

Source: Field survey, 2019.

Distribution of sampled respondents by form of egg consumed is presented in Table 4. The result reveals that about (85.6%) of egg consumers' in the study area consumed fried eggs. This is followed by boiled eggs and scrambled eggs as represented by 75.4% and 32.1% respectively. Other forms of egg consumers in the study area are represented by poached eggs (17.2%).

**Table 4.** Distribution of sampled respondents by form of egg consumed.

| Form | Frequency (N = 134) | Percentage (%) |
|---|---|---|
| Boiled | 101 | 75.4 |
| Fried | 112 | 85.6 |
| Scrambled | 43 | 32.1 |
| Others | 23 | 17.2 |

Source: Field survey, 2019.

Figure 1 represents consumers' awareness of chicken egg packaging as a quality attribute. This result reveals that 53% and 23% of egg consumers considered were very aware while 16% were indifferent that packaging is a quality attribute respectively. However, the remaining egg consumers were considered unaware. The result indicated the fact that large numbers of the consumers are aware that packaging of eggs is a quality attribute it means that egg consumers' utility can be increased with packaging. This agrees with Ortega et al. [34]; Liu et al. [35] that increased consumers' awareness about food quality and safety promotes producer's consciousness to adopt improved packaging, and enhancement of attributes that leads to good nutrition, health and food safety.
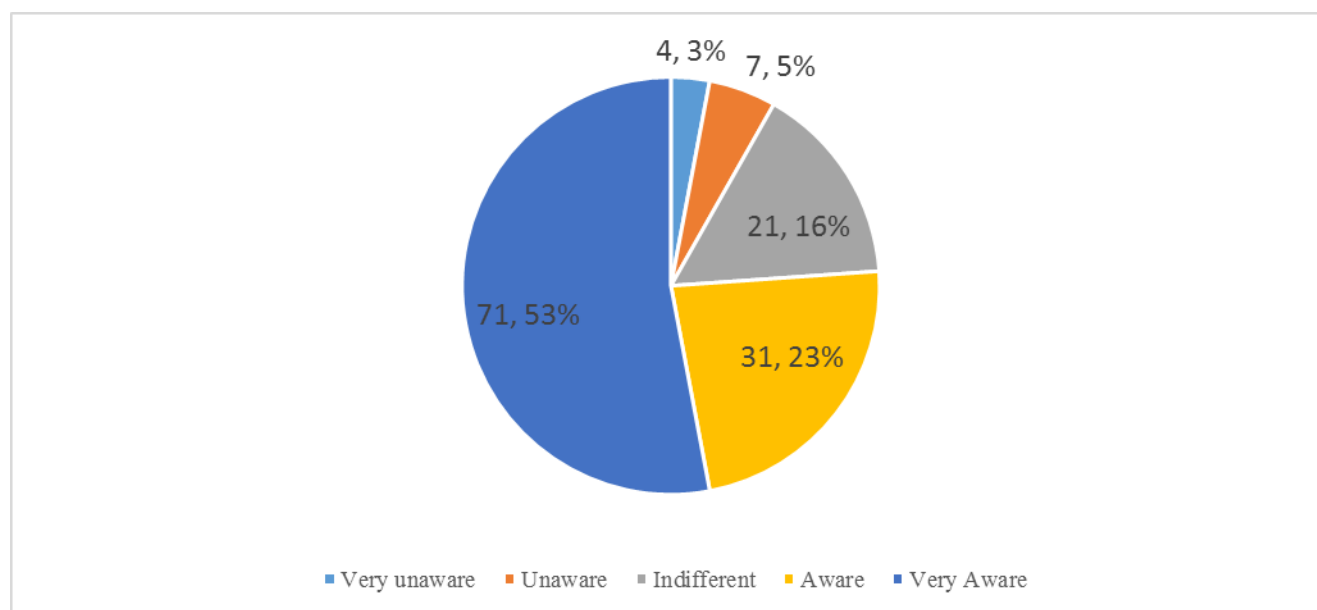


**Figure 1.** Consumers' awareness of chicken egg packaging as a quality attribute.

Table 5 represents the consumers' willingness to pay for chicken egg packaging. The result shows the mean consumer willingness to pay for packaged egg was ₦968 and premium above what consumers are currently paying equaled ₦68. This implies that, if an extra amount is to be added to eggs because of packaging, should be ₦68.

**Table 5.** Consumers' willingness to pay for chicken egg packaging.

| Variable | Coefficient | Standard error | Z-statistics | Probability |
|---|---|---|---|---|
| New price | 0.0310156*** | 0.0074007 | 4.19 | 0.000 |
| Constant | −30.02312*** | 7.103068 | −4.23 | 0.000 |
| Chi$^2$ (LR statistics) = 88.72 | | | | |
| R$^2$ = 64.59% | | | | |
| Significance level = 0.0000 | | | | |
| Mean willingness to pay = ₦968 | | | | |
| log likelihood = −24.32330 | | | | |

Denotes *** significance at 1% level.

Table 6 presents the determinants of willingness to pay for packaged eggs by consumers. The results shows that five variables age, gender, marital status, income and place of purchase significantly explained respondents willingness to pay for packaged egg. The coefficient of age has a negative sign and significant at 1% level. The marginal effect indicates that as respondents advance in age their willingness to pay for packaged egg decreased by 0.4%. It suggests that the older the consumer, the less he/she is willing to pay for packaging of eggs. The result disagrees with Angulo et al. [36] and Goldsmith et al. [37] that consumers' willingness to pay for food safety increases with age. It was also observed that coefficient of gender is positively related to willingness to pay for packaged egg. The result shows that being male respondent increased the willingness to pay by 13.4%. However, gender has a positive sign and significantly affected consumers' willingness to pay for packaged egg at 10% level. Being married increases the probability of willingness to pay for packaged chicken egg by 1.4%. This result is similar to Yusuf et al. [21] which also show that, willingness to pay increases with married respondents. In the case of income of egg, the variable positively sign and significant at 5% level. The result indicates that a naira increase in the income of the consumer increased the willingness to pay by 0.8%.

The place of purchase has positive coefficient and significant at 10% level. It can be inferred that the place of purchase influenced the consumers' willingness to pay for packaged eggs in a supermarket increased by 15.8%. This result agrees with Wang [38] that people living in developed provinces are willing to pay more for certified fresh food than those living in less developed regions.

**Table 6.** Determinants of willingness to pay for packaged eggs by consumers.

| Socio economic variables | Coefficients | Standard error | Marginal effect | T value |
| --- | --- | --- | --- | --- |
| Age (Year) | −0.377423*** | 0.114371 | −0.0042446 | −3.30 |
| Gender (male = 1; female = 0) | 1.371968** | 0.06264635 | 0.1340701 | 2.45 |
| Marital status (married = 0; 0 = otherwise | 1.402383* | 0.7393827 | 0.1577158 | 1.90 |
| Household size (number) | −0.1369523 | 0.1183803 | −0.015402 | −1.17 |
| Travel experience (yes = 1, no = 0) | 0.8502205 | 0.5251546 | 0.0974251 | 1.57 |
| Years in school (year) | −0.277332 | 0.057931 | −0.0031189 | −0.48 |
| Income (Naira) | 0.0733201** | 0.0353601 | 0.0082500 | 2.06 |
| Place of purchase (supermarket = 1, 0 = otherwise | 0.1993767** | 0.1075857 | 0.1575373 | 2.98 |
| Constant | −0.3103278 | 1.1839 | | |
| $R^2 = 0.1734$ | | | | |
| Prob > $Chi^2 = 0.0000$ | | | | |
| Log likelihood = −54.500 | | | | |
| *Significant at 10%   **Significant at 5% ***Significant at 1% | | | | |

Source: Field Survey, 2019

## 5.   Conclusions and recommendations

The study examined consumers' willingness to pay for packaged eggs in Lagos state, Nigeria. The results revealed that the mean age and income of respondents stood at 38.51 ± 11.75 years and ₦96,179.10 per month respectively. Most of the respondents were young adults especially women

that consume chicken egg in various forms who preferred and bought medium and large sized eggs from retail stores. Results also showed that age, gender, marital status, income and place of purchase of packaged poultry egg of respondents determined their willingness to pay. The study advocates a need to provide a conducive economic environment for the private sector to situate their businesses closer to customers for better accessibility. The government and the private sector should collaborate to increase consumers' awareness of the benefits of consuming packaged eggs. This will go a long way to increase consumer's confidence in the products and maximize the utility derive from it. The study also recommends a multiple streams of income to packaged egg consumers to increase their purchasing power and ability to buy.

**Conflict of interest**

The authors declare no conflict of interest.

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