Determinants of household beef purchase intention: An application of the extended theory of planned behavior

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Abstract

There is an increase of the global demands for animal meat due to population growth, urbanization and rising income, especially in the developing countries. This study aims to apply and extend the extended theory of planned behavior (ETPB) in determining the factors that influence household beef purchase intention from a survey in Kano State, Nigeria. The study used primary survey data which was conducted between the months of January and April 2019. The data were collected with the aid of a questionnaires using face to face interview with 445 household heads. The multiple regression method was used to identify the crucial factors that influenced household beef purchase intention. The key findings revealed more than half (58.7%) of the respondents reported daily beef purchase and the general market was the main meat shopping place for majority (62.7%). The average monthly beef expenditure of the respondents was \$24.5. Meanwhile, about 47.2% of the sample spent less than \$13.9 monthly on meat substitutes. Moreover, the respondents gave much attention to freshness and taste before purchasing. About 76% of the respondents expected to increase their future beef purchase. The extended TPB variables explained 69.5% of the variation in the intention to purchase beef, with the variables showing strongly positive relationship including: attitude $(p < 0.01, \beta = 0.097)$, subjective norm $(p < 0.01, \beta = 0.114)$, perceived behavioral control $(p < 0.05, \beta = 0.069)$, habit $(p < 0.01, \beta = 0.642)$ and perceived health risk $(p < 0.1, \beta = 0.057)$. Surprisingly, personal norms negatively affect household beef purchase intention at $(p < 0.01, \beta = -0.113)$. The overall findings show that the beef market in Nigeria has not been exploited to its full potentials. The findings would be useful to policy makers, industry experts and practitioners in meeting existing and increasing consumer demand for beef and beef substitutes.

Keywords: Determinants, household, beef purchase intention, Nigeria, theory of planned behavior

1. INTRODUCTION

Prior to the discovery of oil in the early 1970's, the Nigerian economy is hugely agricultural dependent. The country is the leading producer of livestock in the West and Central African regions, with 25% of livestock herds in the sub-region (FAO, 2018). Livestock plays a vital role in supporting the livelihood of people mostly living in the rural communities as well as provision of food security (J. Ali, 2016; Sohaib & Jamil, 2017). Despite the fact that Nigeria is the leading producer in the region, the demand for meat especially beef in the country is still on the rise (Chinda *et al.*, 2015). The country's cattle herd was estimated to be over 16 million heads, far ahead of their neighboring countries Niger (8.7 million), Mali (8.2 million) and Chad (7million). Cattle production in Nigeria is hugely supported by short-cycle livestock farming, approximately 33.8 million sheep and goats, and 175 million domesticated fowl.

Livestock production is important to the household level due to its multidimensional contributions, it's attractive to households in rural areas as it provides income and fulfil some of the daily needs of the households, such as milk and meat (Steinfeld *et al.*, 2006). Livestock operations contribute only about 8% of the total Nigerian GDP, whereas agriculture as a whole contributes 38.46% of GDP (NBS, 2019).

Nigeria is undergoing a historic population growth and a spectacular change in food habits. With a population growth increasing at nearly 2.8% per year, the country's own domestic production of meat is far from being able to meet the requirements for the country. The demand for meat in the Southern Nigerian is relatively high while production of livestock is low. However, more than 80% of the meat produced in the country is from the Northern region (Adetunji & Rauf, 2012).

A number of previous researchers have successfully applied the extended theory of planned behavior (hereafter, ETPB) as a theoretical framework to determine purchase/consumption intention such as (Seo *et al.*, 2014; Sherwani *et al.*, 2018). Therefore, the study model used in this paper was based on ETPB the as shown in figure 1. Similarly, there are numerous studies such as; (Arenas de Moreno *et al.*, 2020; Janssen, 2018; Zhang *et al.*, 2018) explaining household food purchase behavior. However, the majority of these studies focused on the developed countries, perhaps due to the demand being more in those countries. Nevertheless, growing meat consumption in developing countries is increasing the need to investigate the consumer's

behavior towards purchase intention in the developing countries most especially in African countries. The current analysis of household beef purchase intention would provide valuable insights to individuals, those working in beef industry as well as the policy makers. Understanding the factors affecting consumers purchase intention could help policy makers understand their purchase behavior, so that they can more efficiently develop policy and marketing strategies (Jitrawang & Krairit, 2019).

To the best of our knowledge no prior studies have investigated the major determinants of household beef purchase intention in Nigeria by applying the ETPB. Against this backdrop, we aimed to apply and extend the (ETPB) in determining the factors that influence household beef purchase intention from a survey in Kano State, Nigeria. Our specific objectives were to:

1. Apply and extend the (ETPB) in determining household beef purchase intention.
2. Identify the factors that affect household beef purchase intention in Kano, Nigeria.
3. Provide theoretical support to the use of ETPB in determining consumers purchase intention.

The paper is structured as follows. The next section details the data sources, framework, hypotheses and research methods. The section three presents the main results and discusses the findings in light of the prior studies and reports. Findings from the testing of the proposed hypotheses are reported in this section. Finally, the fourth section provides some concluding remarks and study implications.

2. METHODOLOGY AND DATA

2.1. Theoretical Framework

The theoretical framework of this study is based on the extended Theory of Planned Behavior (hereafter ETPB). TPB model was found to be productively estimator of halal food purchase intention among consumers in Malaysia. In the TPB, the behavioral intention is dominated by dynamic mix of attitude, subjective norms and perceived behavioral control variables (Bray, 2014). Giampietri *et al.* (2018) used TPB in scrutinizing the role of trust in consumers purchasing decision related to short food supply chains and found that, consumer's rural residence and fair-trade purchasing habits, in addition to intention and perceived behavioral control, influenced the behavior. Yousuf *et al.* (2018) examined the consumer's preferences and intention of seafood purchase in Oman using (TPB) and the results found that attitudes, consumer's behavior and facilitating conditions were significant determinants of seafood purchase.

Similarly, Ukenna and Ayodele (2019) applied and extended the TPB in predicting sustainable street food patronage in developing countries, their result revealed that past experience does not necessarily cannot patronize the sustainable street food consumption. However, the study also validates the utility of e-TPB for the prognosis of emerging consumer behavior. Wang (2016) stated that gender, educational level, income, attitude and perceived behavioral control were the significant predictors of future consumption intentions.

Yarimoglu and Gunay (2019) also provided a supports for the usage of the e-TPB in context of Turkish consumers visit intention to green hotels. A. Ali *et al.* (2018) disclosed that the use of the expanded theory of planned behavior to predict Chinese muslims halal meat purchase intention reported a personal positive attitude toward halal meat consumption, motivation to comply, personal conviction perceived control over consuming halal meat and perceived availability of halal meat predicts the intention to consume.

Seo et al. (2014) determined the factors that influenced processed food consumption behavior using (TPB), the result revealed that there is need for adequate information on food additives and also proposed an increasing needs for nutrition education on the appropriate use of processed foods. Sherwani et al. (2018) revealed that there is positive personal attitude toward halal meat consumption, comply by motivation of others, the perceived control over halal meat consumption and the availability of the meat contributed to the predicted intention of consuming meat. Plows *et al.* (2017) stated that the theory of planned behavior (TPB) emerged as a major framework for understanding, predicting and changing human social behavior. The intention to consume beef precedes before the actual consumption. Intention reflects future behavior. TBP has made significant progress since the introduction of the theory two decades ago (Ajzen, 2011).

TPB has been applied in a lot of fields such as in social science: marketing (Alavion *et al.*, 2016), source of separation (Alhassan *et al.*, 2018), halal meat purchase and consumption (Khalek & Ismail, 2015; Shah Alam & Mohamed Sayuti, 2011; Sherwani et al., 2018; Tieman *et al.*, 2013) food supply chain (Giampietri et al., 2018).

2.1.1 Behavioral Intention

Behavioral intention is a situation whereby a person have the skills, resources and other prerequisite needed to perform a certain behavior (Bray, 2014). We measured behavioral intention using 5 point *Likert scale*. The respondents were asked to rate on 5 point Likert scale the following question. When you think about consuming beef regularly how do you feel? (Very sad, Sad, Neutral, Happy and Very Happy) (Ajzen, 2002).

2.1.2 Attitude

In general attitude represent a summary of evaluation of a psychological object captured in such attribute dimensions as pleasant-unpleasant, good-bad, harmful-beneficial and likable-dislikable (Ajzen, 2011;

Ajzen & Dasgupta, 2015). According to Ajzen (1996) in TPB if a person feels negative attitudes toward a behavior, the intention of his/her attitudes will be negative also, and vice versa.

2.1.3 Subjective Norm

Subjective norm is the perceived reckoning from others that effect a user to execute a particular behavior. It makes a social burden about to perform or not to perform this specific behavior (Ajzen, 2011; Heiny *et al.*, 2019). Two items were used to measure subjective norms (e.g., "People who are important to me (e.g., family and friends) expect that my household is not consuming beef as it should be.

2.1.4 Perceived Behavioral Control

Perceived behavioral control is the ability of a person's anticipation that execution of behavior is within his/her control (Petrovici & Paliwoda, 2008). Perceived behavioral control is the product of control beliefs and has interior control factors such as feelings and exterior control factors such as chances and dangers in the marketplace. When consumers can control a specific behavior that has ease of access. Then, the consumers perceive high control (Yarimoglu & Gunay, 2019).

2.1.5 Perceived of Health Risk

Health consciousness is the degree to which health concerns are included into person's daily activities. Health concern was also deemed as one of the most important factors while purchasing meat and meat products. Perceived health risks when consuming beef products were measured using two items (e.g., "I think consuming beef is completely harmless."). Previous studies also used this items to measure perceived health risk (Schmidt, 2019; Visschers *et al.*, 2016). Consumers who are health conscious always try to purchase fresh beef.

2.1. 6 Personal Norm

Perceived norm was measured using the statement '' No matter what will happen or what people say or think due to my principles, I feel it is compulsory for me to purchase beef for the household (Khalek & Ismail, 2015). It is expected that participants would show higher tendency of personal norm or pro-social behavior. However, Příhodová & Preiss, (2020) argued that the same response would not be obtained if we target a negative personal norm.

2.1.7 Habit

The study also attempted to establish the moderating role of habit in the meat purchase intention. The inclusion of "habit" as a construct to the ETPB model was to advance the predictive power of the model. Nonetheless, the strength of habit has the potentials to reduce the deliberative processes associated with intention to purchase meat. Thus, increasing the likelihood of intention behavior (Hashim *et al.*, 2014). The respondent's habit of beef purchase was measured by the item (it is part of our culture to buy meat for my family I have excess income. Similar method has been adopted by (Schmidt, 2019; Shahriar, 2019).
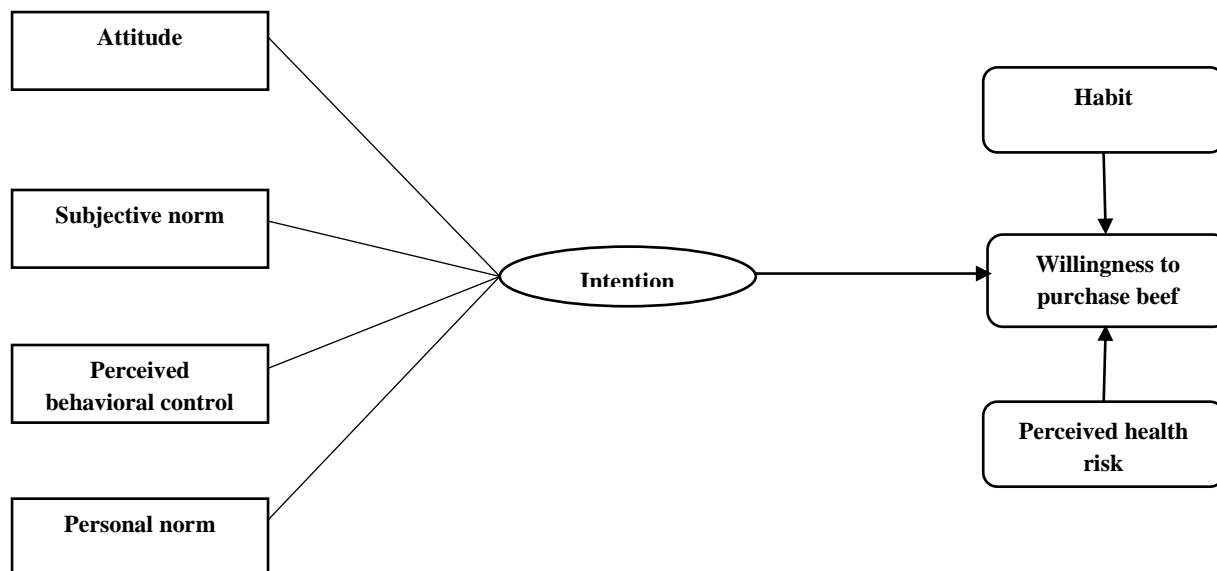

Figure 1. *Conceptual framework*

2.2 Study Area

The present study was conducted in Kano, Northwestern Nigeria. Kano is a capital city of Kano State, Northern Nigeria with population of over 9 million people (NPC, 2006). The city of Kano is where more than 45% of the state population live. Kano city is made up of 8 Local Government Areas (hereafter L.G.A) namely: Kano Mucicipal, Dala, Gwale, Tarauni, Fagge, Nasarawa, Ungoggo, and Kumbotso. The state is the second largest in the country and has been regarded as the commercial center of Northern Nigeria.
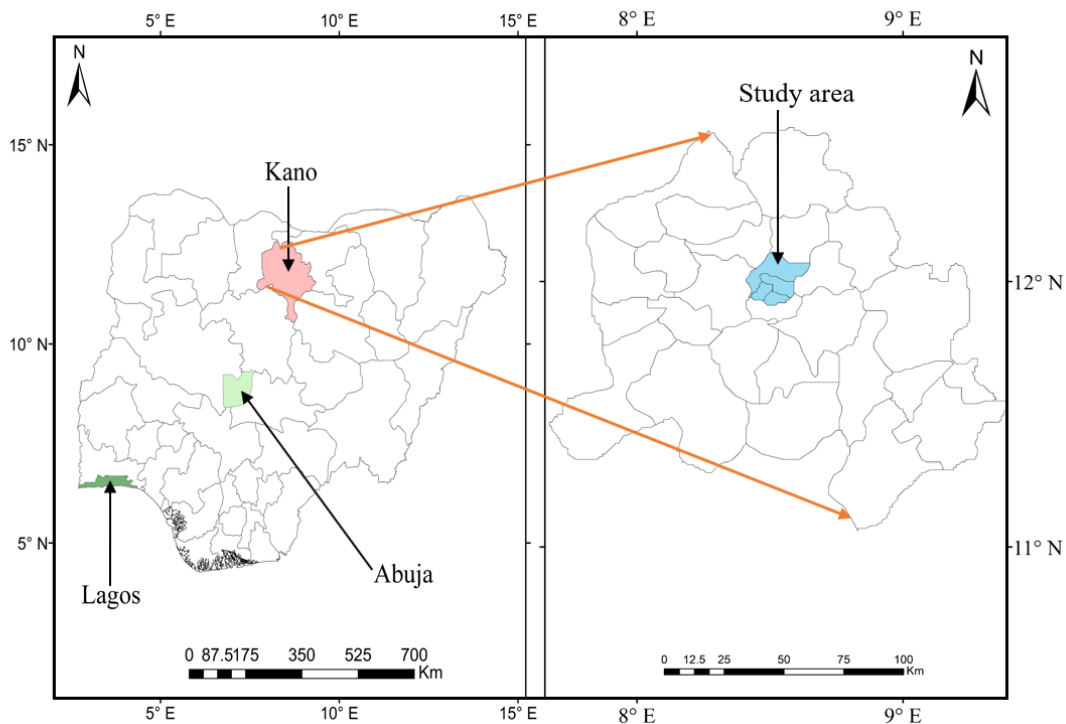
Figure 2. *Location of the study in Nigeria*

2.3 Sample and Procedure

The data for this study were collected using structured questionnaires and then face to face interview with the respondents took place within the period of 2nd January, 2019 to 30th April, 2019. The sampling technic involved two steps. First, five (L.G.A) (i.e Fagge, Gwale, Dala, Kano municipal and Tarauni) out of the total of 7 L.G.A that made up Kano city were selected based on market size, availability of beef and the concentration of buyers. Second, we made a random selection for the respondents were made for this work. The total of questionnaires recorded were 475 respondents but only 445 (93.7%) were found valid questionnaires for the present analysis (*figure 3*).

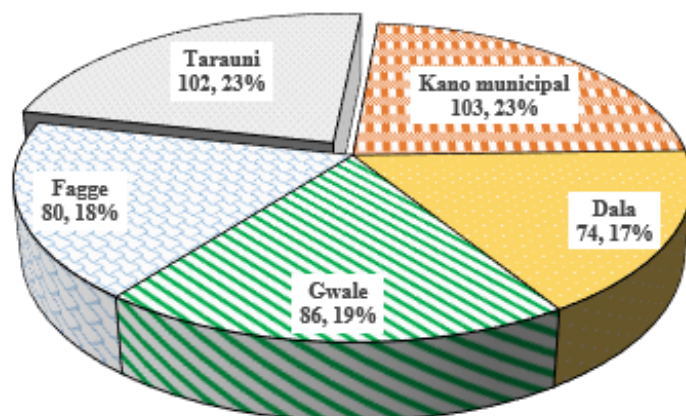**Figure 3.** *Number and percentage of the respondents along with their respective (L.G.A) used for analysis in this study*

2.4 Model

The multiple regression model was employed to determine the proposed relationship between the dependent variable (beef purchase intention) and the independent variables (attitude, subjective norm, perceived behavioral control, perceived health benefit, personal norm and habit) (Wooldridge, 2016).

The mathematical expression can be written as:

$$MPI = \alpha + \beta_1 Att + \beta_2 Snorm + \beta_3 PBcon + \beta_4 PHrisk + \beta_5 Pnorm + \beta_6 Habit + \varepsilon \qquad (1)$$

Where,	BPI	:	Beef purchase intention
	Att	:	attitude
	Snorm	:	subjective norm
	PBcon	:	perceived behavioral control
	PHrisk	:	perceived health risk
	Pnorm	:	personal norm
	Habit	:	habit
	ε	:	stochastic error term
	$\beta_1 - \beta_6$	:	coefficients
	α	:	constant

3. RESULTS AND DISCUSSION

Table 1 presents the distribution of the respondents based on their socio-economic characteristics. This table shows that the sample consist of 71.5% males and 28.5% females. Nearly 73.7% of the respondents reported their marital status as married. In general terms, the city of Kano is where the majority of people live with their parents until they get married or work in different location from the parents, or any other scenario that prevent them from staying with their parents. This trend is similar across the Northern region. The mean age of the subjects was found to be 33.40 years. This indicated that, household meat shoppers are of middle aged. The majority of the respondents 47.4% have years of education between 11-15 years category with 13.14 as the mean years of education. This shows that, nearly half of the respondents obtained at least a diploma or degree certificates. About (50.8%) of the participants have family size of 5-10 persons, the mean household size was found to be 5.63 persons/house. When it comes to primary occupation, most of the respondents, 42.9% were traders. This results was anticipated because the city is regarded as the center of commerce for the Northern Nigeria. The average income of the subjects was ₦ 71,990.65 which was equivalent to $ 200.

Table 1. Socio-economic Profile of the Respondents

Variables	Frequency	Share %	Mean
Sex			
Male	318	71.5	
Female	127	28.5	
Marital Status			
Married	328	73.7	
Single	117	26.3	
Age (Years)			
Below 20	7	1.6	
20-30	198	44.5	
31-40	135	30.3	33.40
41-50	79	17.8	
Above 50	26	5.8	
Years of Education (Years)			
Below 6	8	1.8	
6-10	84	18.9	
11-15	211	47.4	13.14
Above15	142	31.9	
Household Size (person)			
Below 5	192	43.1	
5-10	226	50.8	5.63
Above 10	27	6.1	
Primary Occupation			
Trading	192	42.9	
Civil servant	137	30.8	
Farming	27	6.1	
Artisan	51	11.5	
Others	39	8.8	
Income(₦)			
Below 20,000	7	1.6	
20,000 - 50,000	165	37.1	
50,001 - 100,000	222	49.9	71,990.65
100,001-150,000	26	5.8	
Above 150,000	19	4.3	
n= 439			

Source**:** Field survey, 2019. Note: $1=₦360.

Table 2 indicated that, the majority of the respondents shop beef from the general market. More than half of the sample participants (58.7%), purchased beef on a daily basis. This was the result of the productive capacity as well as the availability of beef in the study area, while only 0.9% purchase beef on special occasions. 53.9% of the respondents were those who always shop beef for the household. Moreover, 48.5% and 20.0% prefer fresh beef and precooked beef respectively.

Table 2. *Consumers Place of Purchase, Preference, and Expenditure for Beef*

Type of meat preferred by consumers	Frequency	Share %	Mean
Consumers frequent beef shopping place			
Abattoir	120	27.0	
Supermarket	46	10.3	
General market	150	33.7	
Designated meat shop	129	29.0	
Frequency of beef consumption			
Daily	261	58.7	
Weekly	121	27.2	
Fortnightly	32	7.2	
Monthly	27	6.1	
Special occasion	4	0.9	
Beef Shopper			
Yes	240	53.9	
No	205	46.1	
Consumers preference with regards to beef product			
Processed meat	66	14.8	
Frozen meat	74	16.6	
Precooked meat	89	20.0	
Fresh meat	216	48.5	
Monthly beef expenditure (₦)			
Below 5,000	131	29.4	
5,000-10,000	240	53.9	8,815.8
10,001-15,000	39	8.8	
Above 15,000	35	7.9	
Monthly expenditure for beef substitutes (₦)			
Below 5,000	210	47.2	
5,000-10,000	168	37.8	
10,001-15,000	33	7.4	5,967.4
Above 15,000	20	4.5	
n= 431			

Source: Field survey, 2019. Note: $1 = ₦360.

Furthermore, the findings revealed that around 53.9% of the respondents spent the amount between ₦ 5,000 to ₦ 10,000 ($13.88- $ 27.78) as monthly household beef expenditure, with a mean value of ₦ 8,815.82 ($ 24.48), while 47.2% of the participants spent less than ₦ 5,000 ($ 13.70) monthly on expenditure of beef substitutes such as; fish, peas, eggs, and so on, and the average was ₦ 5,967.42 ($ 16.57).

3.1. The Importance of Beef Attributes

Appearance, taste and texture are the most frequent used attributes to indicate perceived quality in food research. There is distinctive development of taste in food (Lin *et al.*, 2019). The consumers in the previous literature rated beef as significantly high for it taste and flavor (Aaslyng & Meinert, 2017). However, the results showed the significant of price and freshness found to be beyond previously reported attributes by different literatures.

Table 3. *Consumer's Perception on the Relative Importance of Attributes in Beef Purchase Decision*

Attribute	Relative Frequency (%)					Aggregate Score out of 5	
	1	2	3	4	5	Mean	SD
Price	7.6	19.8	25.2	32.4	15.1	3.27	1.156
Appearance	10.6	20.9	21.1	29.4	18.0	3.23	1.263
Taste	7.6	17.80	21.6	33.0	20.0	3.40	1.207
Easiness to cook	9.7	20.0	26.7	26.3	17.3	3.22	1.224
Freshness	8.5	20.0	22.7	29.2	19.6	3.31	1.234

Source: Field survey, 2019. Note that: *1 = highly important, 2 = unimportant, 3 = neither unimportant nor important, 4 = important and 5 = very important*

Table 3 the participants were asked to evaluate the significance of five attributes depending on how significant they found them before they choose and purchase beef. The highest ranked attributes were taste, freshness and price. Then, the attributes with highest score were appearance and easiness to cook.

The results from **Table 4** showed the expected beef purchase trend. Only 8.1% (36) of the respondents expected a decrease their beef purchase, the result agree with the findings of Ellies-Oury *et al.* (2019) who reported a relatively decline in beef consumption. About 16.0% (71) expected an unchanged beef purchase meanwhile the majority of the respondents 76% (338) expected an increase beef purchase in future. This implies that, the respondents are not willing to reduce beef consumption in the near future. This results justify the above findings that started 58.7% of the respondents consumed beef on daily basis. The reasons for this might be: lack of constant surplus of electricity and lack of refrigerator to store the meat.

Table 4. Expected Beef Purchase Trends

Trend	Frequency	Share %
Increased	338	76.0
Decreased	36	8.1
Unchanged	71	16.0

Source: Field survey, 2019.

Table 5, presents the mean scores and the standard deviations of the variables used in this research based on the extended theory of planned behavior (TPB). The mean scores were presented according to 5 point likert scale (1-5). The respondent's subjective norms was rated 3.42, attitudes 3.39 perceived behavioral intention 3.31 and perceived behavioral control 3.26. Subjective norms was identified with the highest mean score at 3.42. This indicates that the participants have a positive subjective norms toward beef consumption. The mean of perceived behavioral intention to purchase beef was considerably just above average (3.26), which was between neutral and happy.

Table 5. Descriptive Statistics of the Variables in the Model

Constructs	Scale	N	Mean	SD
Behavioral intention	1-5	445	3.31	1.143
Attitude	1-5	445	3.39	1.492
Subjective norm	1-5	445	3.42	1.239
Perceived behavioral control	1-5	445	3.26	1.220
Perceived health risk/benefit	0-1	445	0.55	0.498
Personal norm	0-1	445	0.52	0.706
Habit	0-1	445	0.74	0.441

Source: Field survey, 2019.

3.2. Reliability

The reliability of the variables items were verified using Cronbach's alpha test (Nunnally, 1978). Nunnally suggested that the minimum alpha of 0.6 is required to indicate consistency in the scale. For this study, the Cronbach's alpha for perceived behavioral intention was 0.731, attitude was 0.805, subjective norms was 0.719, and perceived behavioral control was 0.754. The overall Cronbach's alpha was 0.801. All the Cronbach's alpha values in this study were greater than 0.6. Therefore the constructs were deemed to have adequate reliability.

3.3. Normality and Multicollinearity of Data

This study comprised of a relatively larger sample size (445 participants) and therefore, the central limit theorem could be applied and therefore the normality of the data was confirmed. To identify the existence of multi-collinearity between independent variables, the following two methods were applied. (i) calculation of both variance inflation factor (VIF) and (ii) tolerance test (Wooldridge, 2016). The results of this test were presented in Table 6. As can be observed from the table:

This study comprised of relatively larger sample size (445 participants) and therefore, the central limit theorem could be applied and hence there is no doubt about the normality of the data. To identify the occurrence of multicollinearity among independent variables, the two major methods were utilized in this study. These methodologies involved calculation of both variance inflation factor (VIF) and tolerance test (Wooldridge, 2016). The result of this test was presented in Table 6. As can be seen from the table:
All VIF values were below 10 and None of the tolerance level is ≤ 0.01.

We also tested for the multi-collinearity. The acceptable range for Durban Watson is between 1.5 and 2.5. In this study, Durbin-Watson value of 1.891 which is within the accepted range This indicates that there was no problems of auto correlations in the data used for this research.

Table 6. *Test of Collinearity*

Variables	Tolerance	VIF
Attitude	0.666	1.502
Subjective norm	0.481	2.080
Perceived behavioral control	0.578	1.730
Perceived health risk/benefit	0.699	1.430
Personal norm	0.771	1.298
Habit	0.416	2.403

Source: Field survey, 2019.

3.4. Pearson Correlation of the ETPB variables

Table 7 is the result of a Pearson correlation test used to examine the correlation among the constructs of the ETPB variables. This result showed that the higher intention, attitude, subjective norm and perceived behavioral control led to the higher rates of meat purchase, as explained in the propositions of the theory. All the correlation coefficients of the variables were strong and significant at $p < 0.01$. Likewise, table 8 presents results a multiple regression analysis used to identify the strength of the relationship.

Using a multiple regression estimation model following the guidelines organized by (Joseph *et al.*, 2014) with beef purchase intention as the dependent variable. The results obtained from table 8 revealed that all the variables were found to be significant in the estimation model and have positive impact, expect personal norm that negatively influence beef purchase intetion. However, the relationship between habit and intention to purchase beef has the strongest impact among the relations in the research model (see Table 7).

Table 7. *Correlation Coefficients of the Variables*

Constructs	1	2	3	4	5	6	7
Behavioral intention	**1.00**						
Attitude	0.505*	**1.00**					
Subjective norm	0.602*	0.459*	**1.00**				
Perceived behavioral control	0.522*	0.397*	0.612*	**1.00**			
Perceived health risk/benefit	-0.339*	-0.181*	-0.149*	-0.143*	**1.00**		
Personal norm	-0.414*	-0.104**	-0.403*	-0.353*	0.193*	**1.00**	
Habit	0.801*	0.510*	0.568*	0.489*	-0.513*	-0.362*	**1.00**

Source: Field survey, 2019. Note**:** variables significant at * $P < 0.01$; ** $P < 0.05$.

3.5. Multiple Regression Analysis
3.5.1. Determinants of Beef Purchase Intention

The study used the ETPB to investigate the intention to purchase beef among the respondents living in Kano, Nigeria. In the current study, we focus on the impact of the ETPB variables (attitude, subjective norm perceived behavioral control perceived health risk, personal norm and habit) on beef purchase intention. The result shows that an extended TPB could explain 69.5% of the variance in the intention to purchase beef. The model coefficients were significant and the results demonstrates, once again the robustness of the ETPB for helping to explain household beef purchase decision. Previous studies have also successfully used the ETPB as a theoretical framework from which to examine purchase/consumption intention such as (A. Ali et al., 2018; Kassem, 2003; Seo et al., 2014).

Table 8. *Multiple Regression Results for the Extended TPB variables*

Variables	β	T- value	P- value
Constant		9.988	0.000*
Attitude	0.097	2.980	0.003*
Subjective norm	0.114	2.978	0.003*
Perceived behavioral control	0.069	1.973	0.049**
Perceived health risk/benefit	0.057	1.802	0.072***
Personal norm	-0.113	-3.761	0.000*
Habit	0.642	15.677	0.000*

Source: Field survey, 2019. Note: significance at * $P < 0.01$; ** $P < 0.05$; *** $P < 0.10$; $R^2 = 0.695$.

The present study reported that attitude has a positive and significant effect on beef purchase. Ajzen (1996) attitude is an important factor influencing purchase intention to execute a behavior. He also emphasized on the fact that consumers' favorable attitudes concerning a product are positively correlated to the intention of buying that product. The result agreed with those of (Dunn *et al.*, 2011; Shah Alam & Mohamed Sayuti, 2011), who reported a positive relationship between attitude and intention to fast food consumption and halal meat purchase.

The findings are also consistent with the studies of (Asif *et al.*, 2018; Higuchi *et al.*, 2017). Our findings also revealed that subjective norm was significantly associated to beef consumption with positive coefficient. The study also affirmed other studies such as (Janssen, 2018; Khalek & Ismail, 2015), who found subjective norm to be an important factor in beef consumption preference, but contrary to the findings of (Yang *et al.*, 2018), who reported a negative relationship between sustainable consumption and subjective norms.

Moreover, according to the present findings, perceived behavioral control was also a moderate predictor of behavioral intention (p <0.049). However, this result was in opposite direction to that of (Heiny et al., 2019; Hrubes & Ajzen, 2001; Sharifirad *et al.*, 2013), who found that consumers are willing to put considerable effort in consuming preferred meat. Thus perceived behavioral control has a positively significant effect on beef purchase intention (Heiny et al., 2019).

Furthermore, the results of multiple regression also indicating that personal norm had a negative influence on respondent willingness to purchase beef. The results did not agree with the findings of Schmidt (2019) who reported positive relationship between these variables. Perceived health risk and habit had a positive influence on respondents willingness to consume beef at P < 0.1 and P < 0.01 respectively. Previous literatures also reported similar results (Higuchi et al., 2017; Schmidt, 2019; Soorani & Ahmadvand, 2019).

The current study contributes theoretically by establishing the moderating role of the e-TPB variables in beef purchase intention. Considering the previous study in the area of household consumption, we proposed an extended form of the well-established TPB as a suitable comprehensive theoretical model to explain the determinants of household beef consumption intention. The study also provide an insight on how the consumers allocate their resources to consuming goods. Secondly, the study also explains how consumers place value on beef attribute which directly affect their intention to purchase beef. Further study can also be enhanced to have more representation of other population groups and by increasing sample size.

4. CONCLUSION

This paper aimed at applying and extending the theory of planned TPB in determining the factors that affecting meat purchase intention of the respondents living in the Kano state in Nigeria. The results showed that 71.5% were male with 33.14 years and 13.13 as their average years and years of education respectively. Majority 42.9% of the respondents were traders with average household income of ₦ 71,990.65 ($200). Additionally, 47.9% of the respondent purchase beef more among other meat, and their average monthly meat expenditure was N 8,815.8 ($24.5). Moreover, the respondents gave much attention to the attributes such as; freshness and taste before purchase decision, also 76% of the respondents were expected to increase their future meat purchase.

The analysis indicated that an ETPB was useful in estimating the main factors that have an impact on meat purchase intention. This study was the first of its kind to use an ETPB in determining the household meat purchase intention in a Nigerian state. Attitude in the TPB model, subjective norms perceived behavioral control and habit were found to be most decisive determinants of meat purchase intention. The innovation of this study could be found in our empirical analysis of the field data collected directly from Kano state in Nigeria. Compared with the previous studies in the area of household expenditure, we proposed an extended form of the well-established TPB as a suitable comprehensive theoretical model to explain the determinants of household meat purchase intention. The study also provide an insight on how the consumers allocate their resources to consuming goods. Secondly, the study also explains how consumers place value on beef attribute which directly affect their intention to purchase beef. Further study can also be enhanced to have more representation of other population groups and by increasing sample size.

The majority of the respondents preferred beef, the expected increase most expected meat purchase. Based on the findings, a few recommendations could be suggested: First, the policymakers and meat industry experts may play a role in meeting the existing and future consumer demand for meat and substitute protein products. Second, the current meat handling directives issued by the National Agency for Food and Drugs Administration Control (NAFDAC) should be reviewed so as to maintain the consumers trust and confidence in the sector. Third, meat is a great source of protein and vitamins, but the increasing amount of red meat consumption could have some negative impacts on health and well-being. Therefore, the policymakers could initiate an awareness-building campaign to make the consumers aware of the dire health consequences of too much red meat. Fourth, this study suggests the direction for future research regarding consumers' willingness to change protein consumption".

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