

DOI: <https://doi.org/10.5281/zenodo.5037795>

CONSUMERS' WILLINGNESS TO PAY DELIVERY FEES FOR ONLINE SHOPPING OF FOOD GROCERIES IN POLOKWANE LOCAL MUNICIPALITY, SOUTH AFRICA

Sepuru Cindy Chokoe & Abayomi Samuel Oyekale

Department of Agricultural Economics and Extension

North-West University Mafikeng Campus

Mmabatho 2735 SOUTH AFRICA

asoyekale@gmail.com

ABSTRACT

Online purchase of food groceries has experienced notable development in the past few years. However, the potentials of online purchase of food groceries have not been fully explored given retailers' charging of some delivery fees. This paper analyzed consumers' willingness to pay some specified delivery fees for online food groceries' shopping. Data were collected from 173 households using pre-tested structured questionnaire and analyzed with Logistic regression using the double bounded dichotomous choice approach. The results showed that majority of the respondents were from rural areas (71.0%), single (74.0%), had at least primary education (99.4%), had access to a computer or mobile phone connected to the internet (86.7%) and aware of online shopping of food groceries (57.2%). The results further revealed that a high percentage of respondents (76.3%) was willing to pay R50 as delivery fee. The Logit regression results showed that age, location, level of education and perceived online risk had a statistically significant relationship ($p < 0.05$) with consumers' willingness to pay delivery fees. It was among others recommended in order to facilitate online shopping, adequate trainings on delivery modality and utilization of online platforms would increase consumers' knowledge and reduce their levels of perceived risks.

Keywords: Contingent valuation method; double bounded dichotomous choice; online delivery fees; willingness to pay.

INTRODUCTION

The world is currently experiencing one of the most dynamic transitions; the shift to an internet-based shopping platforms. Nearly everything at home, in educational institutions, in government, and even entertainment, is now done using the internet (Turban *et al.*, 2002). A report by Nielsen (2012) revealed that 49% of the people in the world use the internet to purchases food groceries online, while only 37% purchases online more often. Nielsen (2008) also revealed that more than 85% of people around the globe have used the internet before to purchase some items online, whereas over 50% of the population of internet users are frequent shoppers, who buy online more than once in a month.

As the world is advancing in technology, new retailing outlets are formed online, which provide consumers with a new medium to purchase what they want, including food groceries (Ali *et al.*, 2017). As an alternative to physical retail stores, food groceries and non-food products are

purchased through the internet, and have to be transported to the end-consumers (Banerjee & Siemens, 2015). Internet-based retailers, such as Amazon, have also exploited their online shopping skills to build some online shopping stores, thereby extending available options for consumers to participate in internet shopping (Kang *et al.*, 2016).

Online purchase of food groceries is described as the internet trading of food, beverages and goods, bought for home consumption (Peball, 2017). It has several names such as online retailing, e-tail, e-shopping, virtual shopping, online purchase, electronic shopping and web shopping, among others (Alexander & Mason, 2017; Clemes *et al.*, 2014; Shelly & Vermaat, 2011). Online purchase of food groceries has also experienced notable development in the past, largely due to its advantages. Starting some decades ago, the growth in use of internet by retailers has transformed the manner in which consumers and retailers make business transactions (İlhan & İşçioğlu, 2015). A study by İlhan & İşçioğlu (2015) highlighted that consumers are able to save time, remove geographical limitations and reduce their transportation costs.

Moreover, the need for home delivery service has been acknowledged by Snyman (2014) as a crucial motive for the willingness to purchase food groceries online. Through home delivery, consumers are able to purchase and acquire products easily and effortlessly, without having to visit physical stores. It is also convenient for consumers who have transport issues, physical impairment and necessity to look after children (Yunus *et al.*, 2016). Saranya (2014) stated that online purchase has not only changed how consumers purchase online, it has also improved retailers' image, and reduced the cost of creating, processing, distributing and retrieving paper-based information (Turban *et al.*, 2002). Other benefits include increased sales and turnovers (Schneider, 2015).

For consumers, the online market is considered to be more comfortable than going to a physical store, which may be far and tiring to access (Islam *et al.*, 2011). Turban *et al.* (2002) stated that purchasing online may result in less traffic on the roads as well as reduce air pollution. Moreover, Turban *et al.* (2002) further added that some products are less expensive online, which allows people with lower income to buy in order to improve their standard of living. Online shopping also closes the digital gap, through provision of services to consumers in rural areas (Turban *et al.*, 2015). Online purchase also offers personalized and high quality service to consumers (Deitel *et al.*, 2001).

Majority of current predictions have shown that online shopping has the potential to grow (Chan *et al.*, 2001). According to Urban Studies (2016), the European online market sales were estimated to be €250 billion in 2017 followed by the United States, which was projected to be \$400 billion in 2017. It had also been noted that the level of online transactions in South Africa is still low, with a projected sale of around R8.9 billion annually. This study assesses consumers' willingness to pay some specified delivery fees. Understanding the factors influencing consumers' willingness to pay food grocery delivery fees is vital in strengthening policies for developing initiatives to promote online retailing. It is therefore important to evaluate more specifically the amount of money consumers would be willing to pay as delivery fees based on ongoing transformation of online retailing which now incorporates purchase of several food items.

CONCEPTS AND LITERATURE REVIEW

The significant role of consumers' willingness to purchase a certain product is to estimate consumers' real purchasing activities (Ariffin *et al.*, 2018). However, Zhu and Lei (2016) argued that majority of consumers consider willingness to purchase as a cognitive activity. Thus, the process of retailers embracing online shopping plays a significant role in the food retailing industry and economic growth (Mthembu, 2016; Seitz *et al.*, 2017). Purchasing food groceries online provides unrestricted shopping hours and improved consumers' services (Teng & Kwan, 2017). The development of online purchase of food groceries has increased the significance of standard home delivery services (Al-Nawayseh, 2012). Food retailers are now giving consumers the opportunity to order products online in their own home or a designated pick-up location (Stanton, 2017). Turban *et al.* (2002) remarked that the standardized home delivery service is the most common model of online retailing. Pan *et al.* (2017) considered home delivery as the process of transporting goods from a retail storage point to a consumer's home.

Musikavanhu (2017) provided a summary of the list of retailers of online food groceries in South Africa, their delivery time and the amount they charge for delivery (see Table 1). The Table shows that online retailers such as Pick n Pay, Woolworths and Checkers are click-and-mortar organizations. This is because they use both the physical and virtual store approaches rather than going 100% online (Turban *et al.*, 2002). This is the most common retail model unlike Expat Shop, Gourmet Food Shop and Saffa Trading, which only operate online. Moreover, the retailers also offer different types of online purchase models. These models include standard home delivery services, home delivery through a third party, and the Click and Collect option (RetailNet Group, 2015).

Table 1: Retailers of online food groceries in South Africa

Retailers	Online model	Delivery time	Delivery fee
Woolworths	Home delivery	48 hours delivery time from order	Between R50 and R95
	Click and Collect from nearby retail store		
Pick n Pay	Home delivery (third party)	1 hour window period, delivery until 8 pm	R50
	Click and Collect from nearby retail store		
Expat Shop	Home delivery	10 to 15 working days	R55
Gourmet food shop	Home delivery	3-4 days from order	R100 delivery fee (for places far from the store) Free for orders over R1000
	Click and Collect from the warehouse		
Saffa trading	Home delivery	2 days a week	Depends on the type of delivery method chosen and the weight of the good ordered.
	Home delivery(third party)		
Checkers	Collecting from nearby retailer	24 hours collecting time from order	Free, only available for platters, fruit basket and alcoholic drinks.

Source: Adapted from Musokavannu (2017)

The standard home delivery model is used by online retailers to carry purchased goods from a retailer's shop to a consumer's home (Pan *et al.*, 2017). The home delivery system is used by Woolworths, Pick n Pay, Expat Shop, Gourmet Food Shop and Saffa Trading. Another model of online purchase as shown in Table 1 is the Click n Collect method (from the warehouse), which is used mainly by the Gourmet Food Shop. The Gourmet Food Shop does not have a physical store. Thus, online-based retailers typically use this type of model.

Several online retailers are starting to impose a price for services that were previously offered free of charge and it is also uncertain that online shoppers are prepared to embrace them (Ye *et al.*, 2004). Online retailers impose a price for online shopping due to their delivery service convenience. This is because there are a lot of processes that take place before delivering the product to a consumer's home, such as picking and packing of the ordered food by a shopping personnel and the team that organizes and delivers the ordered food to consumers.

Haung and Oppewal (2006), studies the association between delivery charge and online shopping adoption for food. The result of the study reveals that among the situational variables, even though delivery has an effect, it was further established that online delivery was not the top-most vital factor. Zaini *et al.* (2011) investigated vital factors in online retail services and find that the cost of delivery has an effect on willingness to purchase online. Alqahtani *et al.* (2012) identify the fact that online awareness influences consumers' willingness to purchase online. Ocloo *et al.* (2018) pointed out that lack of awareness about online grocery shopping constitutes the main reason why consumers are not motivated to buy food groceries online. Nabareseh *et al.* (2014) in Ghana reveal that young consumers are likely to buy online compared to older consumers. A study conducted in local areas of Texas by Hiser *et al.* (1999) reveal an association between gender of a consumer and willingness to buy grocery online. In a similar study by Nabareseh *et al.* (2014), it was found that female consumers in Ghana were more likely to buy online compared to their male counterparts. It is acknowledged in empirical studies that the size of households of consumers has a crucial impact on their potential to purchase online. Furthermore, Prasad and Raghu (2018) also indicated that households with children are more likely to purchase food groceries online. Kavitha *et al.*, (2015) found that household size significantly influences consumers' willingness to purchase online. However, a study by Hiser (1999) did not reveal any relationship between size of household and consumers' willingness to purchase food groceries online.

Clemes *et al.* (2014) and Lubis (2018) find that income is positively related to consumers' willingness to purchase online. The results were contrary to those of Hiser *et al.* (1999), who observe that income was not a crucial determinant of consumers' willingness to purchase grocery online. McKinsey and Company (2014) opined that an increase in the level of income and growth have an important effect in increasing the number of online sales.

Place of residence, employment status and educational levels may also influence decision to shop online. İlhan and İşçioğlu (2015) revealed that living in urban areas had a positive significant relationship with willingness to buy online. Clemes *et al.* (2014) found that in China, employment status was positively associated with consumers' willingness to purchase online. Priluck (2001) and Teng and Kwan (2017) state that the level of education influences consumers' intention to purchase food groceries online while Hiser *et al.* (1999) found that consumers with low level of education are less likely to use the online system to shop.

However, a study by Lubis (2018) reveal that the level of education had no significant relationship with consumers' willingness to purchase online.

In another study, Keaveney and Parthasathy (2001) revealed that there is a significant link between the numbers of times a person visits online and willingness to purchase online. Therefore, an increase in the frequency of online visitation could result in a higher willingness to purchase groceries online. Possessing of some internet accessing devices has been found to influence online shopping. Hartman Group (2011) remarked that tablet enhances access to the wireless internet connectivity. Thus, having an internet-enabled device allows consumers to purchase food from any location.

Moreover, research results by Tanadi *et al.* (2015) reveal that perceived online risk influences consumers' willingness to purchase online. Akram (2018) revealed that perceived risk has a negative correlation with consumers' willingness to buy food groceries online. Thus, perceived online risk could cause consumers to hesitate and lead them to request suggestions with regard to purchasing certain products (Dowling & Staelin, 1994). Different authors also report that South Africans are more concerned about perceived online risk (De Swardt & Wagne, 2008; Snyman, 2014).

Materials and Methods

The study area

This study was conducted in the Polokwane Local Municipality, Capricorn District, Limpopo Province, South Africa. The Polokwane Local Municipality is situated in the central part of the Limpopo province. It is the largest metropolitan complex in the province. It also have Polokwane International Airport where several commercial flights enter and exit the town of Polokwane (StatsSA, 2017). The municipality has institution of learning such as Tshwane University of Technology, University of Limpopo and University of South Africa. Majority of people in the municipality (71.1%) lives in rural areas and merely (29%) live in urban areas (Polokwane Local Municipality, 2019).

Sampling methods

To select a sample size, the study used multistage stratified random sampling. The following are six main clusters in Polokwane Local Municipality: Polokwane City, Seshego, Mankweng, Dikgale, Ga Maja and Moletjie Areas. At the first stage, Polokwane Local Municipality was divided in to five (5) different strata, represented by the (Five) 5 clusters of the Municipality. The second stage involved the random selection of respondents in each of the 5 (five) strata. The study selected a sample of 173 respondents. Data were collected on the socio-characteristic of the respondents, online awareness of online purchase of food groceries, perceived online convenience, perceived online risk and their willingness to pay delivery fee.

The double bounded dichotomous choice using Logit model

The Contingent Valuation Method using Double Bounded model was applied in this study. With the DC model, there is an addition of a higher price offer. Hanemann and Carson (1985) are the first authors to propose this model. According to Hanemann (1985), when estimating an individual's WTP for the change in certain goods and services using DC with follow-up questions, if a respondent says 'yes' to the initial price offered, a greater price than the initial

amount is given; if the answer to a greater price to the initial price is ‘no’, then the respondent has a WTP that is lower than the second bid but higher than the first one.

In the context of this study, respondents were required to respond with ‘yes’ or ‘no’ to a stated fee for home delivery service. Regarding the ultimate purpose of the DC model, Copper and Loomis (1993) acknowledge that including higher bid prices could be vital to properly evaluating mean WTP. In addition, the double–bounded method increases the rate of responses, while decreasing the random answering from respondents (Hoyos and Mariel, 2010; Pearce and Ozdemiroglu, 2002; Werner, 1999). The technique also helps to improve the statistical information provided by the data. According to Venkatachalam (2004), DC requires a bigger sample size. Some scholars argue that its data might offer less information than an OE question setup for consumers’ WTP. Moreover, the technique is also biased because the answers depend on the first price given by the interviewer. According to Jeanty (2007), the DBDC approach has also received criticisms caused by lack of behavioural and statistical consistencies among the initial and follow-up answers.

Mitchell and Carson (1989) also gave an overview of disputes surrounding the usage of CVM, using the DB method. The author maintained that consumers tend to overprice WTP; this happens if consumers are trying to satisfy the questioner by stating higher WTP prices. Carson (2000) states that respondents might as well under-price the amount they are willing to pay. This happens when they take the WTP amount down, even though their WTP could be higher than the agreed bid.

DBDC model using Logit was used to analyze factors influencing consumers’ WTP for delivery fee. DBDC approach was necessary because it provided respondents the chance to choose the value they were willing to pay (Mamat *et al.*, 2013). The approach involved asking the respondents whether they were willing to pay R50 in order to get a home delivery service. The study used R50 as premium delivery fee according to South African online food retailers. Based on the answer to the initial bid given (R50), a second price was then given. If respondents answered ‘yes’, then, the follow-up price was a greater price than the initial bid (R50). Moreover, if the answer was ‘no’, then, the follow-up amount offered was lower than the initial bid (Hanemann, 1985). With the double bound method, WTP can be expressed as:

$$Y_i = X_i \beta + \mu_i \quad (1)$$

Y_i is the exact respondent’s WTP for home delivery fee. X_i is the vector of covariates, β is a vector of the parameter that will be evaluated then, μ_i is an error term. Through the double bound approach, the study was able to predict and bring four possible results with the following probabilities:

$$\Pr ('yes', 'yes') = \Pr (Y_i \geq t_i \geq t_i^u) = 1 - F(t_i^u) \quad (2)$$

$$\Pr ('no', 'no') = \Pr (t_i \leq Y_i \leq t_i^l) = F(t_i^l) - F(t_i) \quad (3)$$

$$\Pr ('no', 'yes') = \Pr (t_i^l \leq Y_i \leq t_i) = F(t_i) - F(t_i^l) \quad (4)$$

$$\Pr ('yes', 'no') = \Pr (Y_i \leq t_i^l \leq t_i) = F(t_i^l) \quad (5)$$

Table 2: Description and measurement of consumers WTP a delivery fee using DBDC Logit model

Variables	Measurements	
<i>Dependent variable</i>		
Y= WTP a delivery fee	Not willing to pay a delivery fee= (0), Willing to pay for delivery fee=(1)	
Variable	Measurements	Anticipated sign
<i>Independent Variables</i>		
X ₁ = Age	Respondents age in years	-
X ₂ = Gender	Male= (0), Female= (1)	-
X ₃ = Size of household	Number of people in the household	+
X ₄ = Monthly income	In Rands	+
X ₅ = Location	Rural area= (0), Non rural area = (1)	+
X ₆ = Marital status	Single = (0), Married/others= (1)	+
X ₇ =Employment status	Unemployed = 0, Employed= (1)	+
X ₈ = Level of education	No formal education= (0), Primary school and above = (1)	+
X ₉ =Access to a computer or mobile device with the Internet	No=(0), Yes=(1)	+
X ₁₀ = Frequency of online purchase	Never= (0) , Weekly/others= (1)	+
X ₁₁ = Using a tablet to browse the internet	No= (0), Yes= (1)	+
X ₁₂ = Using a Laptop to browse the internet	No= (0), Yes= (1)	+
X ₁₃ = Time spent on the internet(per day)	Hours	+
X ₁₄ = Access to a router at home	No= (0), Yes= (1)	+
X ₁₅ = Awareness of online purchase of food groceries	Low awareness= (0), High awareness= (1)	+
X ₁₆ = Perceived online convenience	Not convenient = (0), Convenient= (1)	+
X ₁₇ = Perceived online risk	Online purchase risky = (0), Online purchase not risky =(1)	+

RESULTS AND DISCUSSION

Table 3 presents distribution of respondent’s socio-economic characteristics. It shows that (56.6%) of the respondents were females and (43.4%) were males. Around (53.2%) of the respondents resides in rural areas, while (46.8%) resides in non-rural areas. Furthermore, the table shows that majority of respondents were single (74%), while (19.7%) of the respondents were married and (6.4%) were widowed. Majority of the respondents (99.4%) had primary school education and above, while (0.65%) of the respondents were without formal education. More than half of the respondents were employed (52%).

Table 3: Descriptive statistics of selected socio-economic variables (n = 173)

Socio-economic variable	Categories	Frequency	Relative frequency
Gender	Male	75	43.4%
	Female	98	56.6%
Location	Rural area	92	53.2%
	Non-rural area	81	46.8%
Marital status	Single	128	74%
	Married	34	19.7%
	Widowed	11	6.4%
Employment status	Unemployed	83	48.0%
	Employed	90	52.0%
Education levels	No formal education	1	10.6%
	Primary school education and above	172	99.4%

Table 4 reveals that the mean age of respondents in Polokwane Local Municipality is 31.82 years with a standard deviation of 13.12. The average age proposes that online shopping and delivery services in Polokwane local municipality is supported by younger consumers. The average household size is 5.88 with a standard deviation of 2.55. The average monthly income is R5304.39 with a standard deviation of 5627.62.

Table 4: Summary statistics of respondent’s socio-economic characteristics

Variables	Mean	Std. Dev.
Age	31.82	13.123
Size of household	5.88	2.549
Monthly income	5304.39	5627.617

Access to computer or mobile with the internet

Table 5 revealed that 86.7% of the respondents had access to a computer or mobile phone connected to the internet, while 13.3% had no access. This implied that majority of the respondents had access to a mobile phone or a computer connected to the internet. Having a mobile phone or computer connected to the internet may enable consumers to browse the internet, which could also increase the adoption of online purchase of food groceries. McKinsey and Company (2014) opined that an increase in the use of the internet on smart phones have a significant influence in increasing the number of online sales.

Table 5: Respondents' access to browsing devices and internet connectivity

Access to computer or mobile with the internet	Frequency	%
Yes	150	86.7%
No	23	13.3%
Frequency of online purchase of food groceries		
Never	154	89.0 %
Monthly	3	1.7 %
Occasionally	11	6.4%
Yearly	5	2.9%
Use of tablet to browse the internet		
No	126	72.8%
Yes	47	27.2%
Use of laptop to browse the internet		
No	136	72.6%
Yes	37	21.4%
Time spent on the internet (per day)		
< 3 hours	71	41.0%
3-5 hours	43	24.9%
6-8 hours	17	9.8%
> 8 hours	42	24.3%
Access to home router		
No	153	88.4%
Yes	20	11.6%

Table 4 further shows that 89.0% of the respondents had never purchased food groceries online, 1.7 purchased monthly, 6.4% purchased occasionally and only 2.9% purchased food groceries online yearly. The above results showed that only 11% of the respondents had purchased food groceries online. This is a serious concern, and an indication that online purchase of food groceries is not popular among the respondents. This also shows that online shopping is still a new channel of purchasing food among the residents. The results are similar to those of QWERTY Digital (2017) in South Africa which revealed that only 28% of consumers in South Africa buy online. Morganosky and Cude (2000) also find that out of 243 respondents studied in the United States of America, only 19% had purchased food groceries online.

The results also show that 13.3% of the respondents used a tablet to browse the internet. The low use of a tablet by respondents to browse the internet could be because most respondents used smart phones to access the internet. In addition, only 21.4% of the respondents had the experience of using a laptop to browse the internet. These results showed that most of the respondents did not use a laptop to browse the internet. It is also a common knowledge now that smartphones can do most of what laptops can do, and they are preferred for their portability.

Table 4 further shows that 41.0% of the respondents spent 3 hours a day on the internet, 24.9% used the internet for 3-5 hours per day, 2.4% of respondents spent more than 8 hours on the internet while only 9.8% spent around 6-5 hours on the internet. The results showed that the majority of respondents spent around 3 hours a day on the internet. Thus, spending at least 3 hours on the internet a day could be beneficial in exposing consumers to online purchase adverts through internet websites and social media platforms, hence increasing the odds of online purchase.

Table 4 shows that 88.4% of the respondents did not have access to a router at home, while 11.6% did. A survey by Statistics South Africa (2017) reveals that Limpopo Province had the lowest router access of 43.6% at home. This is an indication that most of respondents had no access to a router at home. This is a concern because respondents, who have router at home, are more familiar with the advantages associated with using the internet. A low percentage of respondents with no access to a router at home could be due to very slow internet connectivity as majority of respondents were located in rural areas.

Consumers WTP a home delivery fee

Tables 5 shows the prices that consumers were willing to pay for home delivery, which is categorised into bids 1 and 2, respectively. Consumers' WTP for a home delivery amount was estimated using the DBDC logit model. Respondents were initially requested to indicate if they were willing to pay R50 to get food delivered to them. This represented bid 1. Then, based on the first response, the price below or above the bid price R50 was asked. This represents bid 2. For bid 1, approximately 76.3% of the 173 respondents indicated they were willing to pay a home delivery of R50, while only 23.7% was not willing to pay. The Table shows that approximately 61.9% was willing to pay R60, while 14.5% was not willing to pay R60. The results are in line with those of Seitz *et al.* (2017), who found that consumers were willing to pay extra money associated with home delivery. Only 5.2 % was willing to pay R40, whereas, 18.5% was willing to pay an amount less than R40. These results showed that majority of the respondents in were willing to pay R50 as home delivery fee.

Table 5: Respondents' WTP at home delivery fee for bid 1

WTP home delivery fee category (R50) (Bid 1)	Frequency	%
Yes	132	76.3
No	41	23.7
WTP a home delivery fee (Greater or less than R50) (Bid 2)		
WTP R40	9	5.20
WTP an amount less than R40	32	18.50
WTP R60	107	61.85
Not willing to pay R60	25	14.45

DBDC logit model of the factors influencing WTP for delivery fees

Table 6 shows the determinants of consumers' WTP for online delivery fee using the Logit model. The DBDC model showed that age, location, level of education and perceived online risk were the four variables that statistically influenced WTP for delivery fee. The Table also shows that age has a statistically significant ($p < 0.1$) and negative relationship with consumers' WTP a delivery fee. This indicated that older respondents were willing to pay to a price smaller than the first bid of R50 as compared to younger respondents. This result also indicated that younger consumers are more likely to cherish online purchase delivery service more than their older counterparts. On the contrary, a study by Ye *et al.*, (2004) found that older consumers ,maybe more willing to pay fee based delivery as compared to younger ones.

The Table further shows that location of the respondents had a statistically significant ($p < 0.05$) and negative relationship with consumers' WTP for delivery fee. This indicates that, respondents residing in non-rural area were less likely to be willing to pay the delivery fee. Respondents that were residing in rural areas are more likely to pay a delivery fee, when

compared to the non-rural counterparts. This can be due the fact that the residential accommodations of non-rural dwellers are usually situated at a walking distance to the supermarkets and delivery fee may be much higher in their estimations since they leave closer to the retailers. Hence, those who are living in rural areas may better see the benefits associated with paying the delivery fee, as the costs them (in terms of energy and time) to purchase food groceries from the store may be far higher than this. Sousa *et al.*, (2020) indicated that rural consumers mostly use online shopping to access different types of product without travelling long distances. Therefore, online retailers should take notice and significantly expand their online channel to rural areas.

Level of education had a statistically significant ($p < 0.05$) and positive relationship with consumers' WTP a delivery fee. The probability of a respondent indicating willingness to pay a delivery fee is significantly higher for those with formal education. These results indicate that respondents with at least primary school education had more WTP for a delivery fee than those with no formal education. This also implies, that people with at least primary school education understood and had a greater valuation of the home delivery service. They could be more likely to have greater opportunities to learn the importance of online delivery fee than those who are illiterate. This is supported by Punj (2013), who opined that consumers with formal education are more likely to see greater need of online service delivery, as compared to those without formal education.

Moreover, there was a negative and significant relationship ($p < 0.01$) between perceived online risk and consumers' WTP for delivery fee. This indicates that, respondents who perceived online purchase of groceries as risky had a high probability of paying for delivery fee. This results could mean that consumers who are more honest about the risks such as doubts and anxiety associated with the online shopping of food groceries are able to embrace the idea of paying delivery fee better than consumers who say that online shopping is not risky. This findings opposes with those of Wang *et al.*, (2015) who found out that willingness to pay for delivery service is positively related to the fact that consumers perceive online shopping as not risky.

Table 6: Results of consumers' WTP for adelivery fee using DBDC logit model

Independent variables	Coefficient	Std. Error	p-value
Age	-.43377756	.2594756	0.092*
Size of household	-1.06389	1.061178	0.316
Monthly income	-.0000702	.0002205	0.750
Marital status	-4952395	6.464328	0.444
Location	-10,44034	5.168107	0.043**
Employment status	-9.346294	6.49122	0.150
Online purchase frequency	-2.599747	5.496515	0.636
Level of education	7.886518	3.407707	0.021**
Using a tablet to browse the internet	6.267141	5.606997	0.264
Using a laptop to browse the internet	-5.78679	6.7143379	0.389
Time spent on the Internet per day	-3.471679	2.383755	0.145
Access to computer or mobile with internet	-8.558324	8.855406	0.334
Awareness of online purchase of food groceries	- 4.878486	6.225203	0.433
Perceived online convenience	9.509701	6.140084	0.121
Perceived online risk	-21.15861	6.27799	0.001***
Constant	105.5501	22.71375	0.179
<i>Log likelihood function</i>	-165.60843		
<i>Likelihood ratio Chi Square</i>	24.67		
<i>Pseudo R Square</i>	0.0546		

Note: *** Signifies statistically significant at 1% ** Signifies statistically significant at 5% * Signifies statistically significant at 10%.

CONCLUSIONS AND RECOMMENDATIONS

This study assessed consumers' knowledge on online shopping and willingness to pay some specified delivery fee. With the growth of consumers shopping food groceries online, understanding the factors influencing consumers' willingness to pay for delivery fees is important in strengthening policies for developing strategies to promote online retailing which now incorporates purchase of several items. Majority of respondents were willing to pay a home delivery fee of R50. This shows that consumers in Polokwane Local Municipality are open to the idea of purchasing food groceries online provided the delivery fee is R50. Therefore there is a need to implement an effective marketing policy to encourage increase the use of delivery service and active online sales of food groceries within Polokwane Local Municipality.

Given the fact that consumers with primary school education understood and had a greater valuation of home delivery service. Polokwane Local Municipality as local government need to create initiatives to encourage consumers to invest in formal education, so that they can be part of the 4th industrial platform such as buying food groceries online. Age was found to influence willingness to pay for delivery fees. Therefore, to enable online retailers to take advantage of the potential and growth of online shopping, it should be noted that online retailers in Polokwane Local Municipality should find it more effective to target online delivery service as well as online shopping to younger consumers.

Technological progression, diffusion and marketing research are basic essentials to strengthen the food retail sector. Thus, it is the responsibility of retailers to be up-to-date with new

technological developments and new marketing strategies. It is therefore recommended that Polokwane Local Municipality retailers to offer online shopping and delivery service education and training. This will increase consumer's knowledge, while reducing their online perceived risk.

REFERENCES

- Adeogun, O. A., Ajana, A.M., Yarhere, M. T and Adeogun, M.O.2008. Application of logit model in adoption decision: A study of hybrid Clarias in Lagos State, Nigeria. *American-Eurasian Journal Agricultural & Environmental Science*, 4(4): 468-472.
- Akram, S. 2018. Drivers and barriers to online shopping in a newly digitized society. *Journal of Technology, Education, Management and Informatics*, 7(1): 118-127.
- Alexander, B. and Mason, R. 2017. The South African e-retail change agenda: A curriculum development perspective. *The Electronic Journal of Information Systems in Developing Countries*, 82(4): 1-21.
- Ali, S., Saleem, M. Ahmed, M. E., Khan, M.M., Shah, N. and Rafiq, S.2017. Models for online grocery shopping: A study of Pakistani online market. *Journal of internet and e-business studies*,1(1): 1-15.
- Al-Nawayseh, M. K. 2012. Electronic commerce logistics in developing countries: The case of online grocery shopping in Jordan. London: Brunel University. (Thesis- PhD).
- Alqahtani, M.A., Al-Badi, A. and Mayhew, P.J. 2012. The enablers and disablers of e-commerce: Consumers' perspectives. *Electronic Journal of Information Systems in Developing Countries*, 54(1): 1-25.
- Alvi, M. 2016. A manual for selecting sampling techniques in Research. *Munich Personal RePEc Archive*, 1-56.<https://mpra.ub.uni-muenchen.de/70218/1/> Date of access: 22 Jan. 2018.
- Ariffin, S. K., Mohan, T. and Goh, Y. 2018. Influence of consumers' perceived risk on consumers' online purchase intention. *Journal of Research in Interactive Marketing*, 12(3): 309-327.
- Banerjee, A. and Siemens, F. 2015. Logistical of e-groceries.de. *Innovations and Strategies for Logistics and Supply Chains*, 1:92-116.
- Bauer, R. A. 1960. Consumer behaviour as risk taking In Cox, D.F. (Ed). *Risk taking Information Handling in Consumer Behaviour*. Graduate School of Business Administration, Harvard University, 23-33.
- Carson, D. 1985. The evolution of marketing in small firms. *European Journal of Marketing*, 5: 7-16.
- Carson, R. T. 2000. Contingent valuation: user's guide. *Environmental Science and Technology*, 34:14-18.
- Carson, R.T., Mitchell, R.C., Hanemann, W.M., Kopp, R.J., Presser, S. and Ruud, P.A. 1992. A contingent valuation study of lost passive use values resulting from Exxon Valdez oil spills. Alaska Attorney General Office, Juneau.AL <https://mpra.ub.uni-muenchen.de/6984/> Date of access: 10 Jul. 2018.
- Chan, H., Lee, R., Dillon, T. and Chang, E. 2001.e-Commerce fundamentals and applications. River Street, Hoboken: John Wiley & Sons.
- Clemes, M. D., Gan, C. and Zhang, J. 2014. An empirical analysis of online shopping adoption in Beijing,China. *Journal of Retailing and Consumer Service*, 21: 364-375.

- Copper, J. and Loomis, J. 1993. Sensitivity of willingness-to-pay estimates to bid design in dichotomous choice valuation. *Land Economics*, 69(2): 203-208.
- Deitel, H. M., Deitel, P. J. and Steinbuhler, K. 2001. E-Business and e-Commerce for managers. Upper Saddle River, New Jersey: Prentice Hall.
- Delafrooz, N., Paim, L.N. and Khatibi, A. 2011. Understanding consumer's internet purchase in Malaysia. *African Journal of Business Management*, 5(3): 237-2846.
- De Swardt, M. and Wagner, C. 2008. Factors influencing the choice to shop online: A Psychological study in South African context. *New Voices in Psychology*, 4(2): 68-82.
- Department of Communications (DoC). 2000. A green paper on electronic commerce for South Africa, 7-136.
https://www.gov.za/sites/default/files/gcis_document/201409/electroniccommerce1.pdf Date of access: 03Apr. 2019.
- Dowling, G.R. and Staelin, R., 1994. A model of perceived risk and intended risk-handling activity. *Journal of Consumer Research*, 21:199-134.
- Hanemann, W. M. 1985. Some issues in continuous and discrete response contingent valuation studies. *Journal of Agricultural Economics*, 14: 5-13.
- Hartman Group. 2011. The online grocery opportunity: a hartman group white paper. <https://www.ruralgrocery.org/docs/HartmanGp2012OnlineGrocery.pdf> Date of access: 02 Apr.2019.
- Huang, Y. and Oppewal, H. 2006. Why consumers hesitate to shop online: An experimental choice analysis of grocery shopping and the role of delivery fees. *International Journal of Retail and Distribution Management*, 34(4/5): 334-353.
- Hiser, J., Nayga, R. M. and Capps, O. J. 1999. An exploratory analysis of familiarity and willingness to use online food shopping services in a local area in Texas. *Journal of Distribution Research*, 28(1): 78-90.
- Hoyos, D. and Mariel, P. 2010. Contingent valuation: Past, present and future. *Praque Economics Papers*, 19: 329-343.
- İlhan, B.Y. and İşcioglu, T.E. 2015. Effect of women's labor market status on online grocery shopping, the case of Turkey. *Eurasian Business Review*, 5(2): 371-396.
- Islam, A., Daud, K .A. K. AndYulihisri. 2011. Factors that influence customers' buying intention on shopping online. *Journal of Marketing Studies*, 3(1): 129- 139.
- Jeanty, P.W., Haab, T. and Hitzhusen, F. 2007. Willingness to pay for biodiesel engines: a stochastic double bounded contingent valuation survey. Paper presented at the American Agricultural Economics association annual meeting, Portland, Oregon, 23-26 July. <https://ideas.repec.org/p/ags/aeaa07/9868.html> Date of access: 10 Jul. 2018.
- Keaveney, S.M. and Parthasathy, M. 2001. Consumer switching behaviour in online services: An exploratory study of the role of selected attitudinal, behavioral and demographic factors. *Journal of Academy of Marketing Science*, 29(4): 374-90.
- Kang, C., Moon, J. Kim, T. and Choe, Y. 2016. Why consumers go to online grocery: comparing vegetables with grains. Hawaii International Conference on Systems Sciences, Koloa, Hawaii : 3604-3613
- Kavitha,R. 2015. A study on consumer awareness and determinants of online shopping. *International Journal of Management Research & Review*, 5(8): 636- 642.
- Lubis, A.N. 2018. Evaluating the customer preference of online shopping: Demographic factors and online application issue. *Academy of Strategic Management Journal*, 17(2): 1-13

- Mamat, M. P., Yacob, M. R., Radam, A., Ghani, A. N. A. and Fui, L. H. 2013. Willingness to pay for protecting natural environments in Pulau Redang Marine Park, Malaysia. *African Journal of Business Management*, 7(25): 2420-2426.
- McKinsey & Company. 2017. Offline and falling behind: Barriers to Internet adoption. <https://www.mckinsey.com/industries/high-tech/our-insights/offline-and-falling-behind-barriers-to-internet-adoption> Date of access: 05 Jul.2011.
- Mitchell, R.C. and Carson, R.T. 1989. Using surveys to value public goods: The contingent valuation method. Washington: Resources for the Future.
- Mitchell, R.C. and Carson, R.T. 1989. Using surveys to public goods: The contingent evaluation method. New York, Washington, DC: Resources for the Future.
- Morganosky, M. A. and Cude, B. J. 2000. Consumer response to online grocery shopping. *International Journal of Retail & Distribution Management*, 32(1): 5-17.
- Mohajan, H. 2017. Two criteria for good measurements research: Validity and Reliability. *Munich Personal RePEc Archive*, 17(30): 58-782.
- Mortimer, G., E. Hasan, S. F. Andrews and Martin, J. 2016. Online grocery shopping: The impact of shopping frequency on perceived risk. *The international Review of Retail, Distribution and Consumer Research*, 26(2): 202-223.
- Mthembu, S. P. 2016. Conquering barriers to e-commerce in Africa's e-tail Business: A case of Spree. Pietermaritzburg: University of KwaZulu-Natal. (Dissertation- M.Com).
- Musikavanhu, T. B. 2017. Consumer adoption of online grocery shopping in the Cape Metropolitan, South Africa. Cape Town: Cape Peninsula University of Technology. (Dissertation- MRM), 1-133.
- Nabareseh, S., Osakwe, C.N., Klimek, P. and Chovancova, M. 2014. A comparative study of consumers' readiness for internet shopping in two African emerging economies: Some preliminary findings. *Mediterranean Journal of Social Science*, 5(23): 1882-1889.
- Nielsen. 2008. Trends in online shopping: a global Nielsen consumer report. <http://tapchibanle.org/retail-lib/xu%20huong%20mua%20sam%20online.pdf> Date of access: 28 Aug. 2018.
- Nielsen. 2012. How digital influences how we shop around the world. https://www.iabaaustralia.com.au/uploads/uploads/2013-10/1382400000_09acf139c393249bec824f3778f5212e.pdf Date of access: 31 Aug. 2018.
- Ocloo, C. E., Xuhua, H., Worwui-Brown, D. K. and Addai, M. 2018. Electronic commerce adoption barriers of Ghanaian manufacturing SMES: An artificial neural network analysis. *African Journal of Multi-Disciplinary Research*, 7(1): 281-295.
- Pan, S., Goannikas, V., Han, Y., Grover-Silva, E. and Qiao, B. 2017. Using customer – related data to enhance e-grocery home delivery. *Industrial Management & Data Systems*, 10: 1 -20.
- Pearce, D. and Ozdemiroglu, E. 2002. Economic valuation with stated preference techniques: Summary guide. London: Department for Transport, Local Government and the Regions.
- Peball, S. 2017. Buying groceries online: Consumer perceptions and generational cohorts. https://run.unl.pt/bitstream/10362/23176/1/SarahPeball_2017.pdf Date of access: 18 Aug. 2018.
- Pham, Q. T., Tran, X.P., Misra, S., Maskeliunas, R. and Damasevicius, R. 2018. Relationship between convenience, perceived value and repurchase intention in online shopping in Vietnam. *Sustainability*, 10(156): 1-14.

- Pick n Pay. 2018. Integrated online shopping annual report. <https://www.picknpayinvestor.co.za/downloads/annual-report/2018/picknpay-ir-2018.pdf> Date of access: 21 Jan. 2018.
- Polokwane Local Municipality (PLM). 2019. City of Polokwane – Naturally progressive: 2019/20 integrated development plan. <https://www.polokwane.gov.za/City-Documents/Shared%20Documents/IDP/2019-2020%20Final%20IDP.pdf> Date of access: 25 Nov. 2019.
- Prasad, C.J. and Raghu, Y. 2018. Determinant attributes of online grocery shopping in India – An empirical analysis. *Journal of Business and Management*, 20(2): 18-31.
- Priluck, R. 2001. The impact of Priceline.com on the grocery industry. *International Journal of Retail & Distribution Management*, 29(3): 127-134.
- Punj, G.2013. The relationship between consumer’s characteristics and willingness to pay for general online content: Implications for content providers considering subscription-based business models.<https://ideas.repec.org/a/kap/mktlet/v26y2015i2p175-186.pdf>.Date of access:21 Nov.2020.
- QWERTY Digital. 2017. The digital landscape in South Africa 2017: A data driven look at South Africa’s relationship with Digital.<https://qwertydigital.co.za/wp-content/uploads/2017/08/Digital-Statistics-in-South-Africa-2017-Report.pdf> Date of access: 05 Jul.2018.
- Schneider, G.P. 2015. Electronic commerce.11th ed. United States of America: CENGAGE Learning.
- Seitz, C., Pokrivcak, J., Toth, M. and Plevny, M. 2017. Online retailing in Germany: An explorative analysis. *Journal of Business Economics and Management*, 18 (16): 1243-1263.
- Shelly, G.B. and Vermaat, M.E. 2011. Discovering computers 2011: living in a digital world. 20 channel center street, Boston: cengage learning.
- Shi, K., De Vos, J., Yang, Y. and Witlox, F. 2019. Does e-shopping replace shopping trips? Empirical evidence from Chengdu, China.*Transportation Research Part A*, 122: 21-33
- Sousa, R., Horta, C.Ribeiro, R. and Rabinonovian, E. 2020.How to serve online consumers in rural markets: Evidence based-recommendation. *Business Horizons*, 63: 351-362.
- Stanton, J. L. 2017. A brief history of food retail. *British Food Journal*, 129(1):172-181.
- Statistics South Africa(StatsSA). 2017. General household survey. 1-177.
- Snyman, A.N. 2014. Barriers and motivators to online grocery shopping in South Africa: A supply chain perspective. Pretoria: University of South Africa. (Dissertation – MCom).
- Tanadi, T., Samadi, B. and Gharleghi, B. 2015. The impact of perceived risks and perceived benefits to improve an online intention among generation-Y in Malaysia. *Asian Social Science*, 11(26): 226- 238.
- Teng, P.T. andKwan, L.G. 2017. Consumers’ intention to use e-grocery in Klang Valley, Malaysia. *E-Journal of the Social Sciences Research*, 267-276.
- Turban, E., King, D.,Lee, J, Liang, T. andTurban, D.C. 2015. Electronic Commerce: A managerial and social networks perspective.8th ed. Switzerland: Springer.
- Turban, E.,King, D., Lee,J., Warkentin, M. andChung, H. M. 2002. Electronic commerce 2002: Managerial perspective. Upper Saddle River, New Jersey: Pearson Education.
- Urban Studies. 2016. Online vs. in-store shopping. convenience. experience. price.1-16.<http://www.urbanstudies.co.za/wp-content/uploads/2016/11/SACSC-Research-Report-Urban-Studies-Online-VS-In-Store-Sho...-2.pdf> Date of Access: 19 Aug. 2018.

- Wang, C.L., Ye, L.R., Zhang, Y and Nyuyen, D. 2005. Subscription to fee-based online service: What makes consumer pay for online content? *Journal of Electronic Commerce Research*, 6(4): 304-311.
- Werner, M. 1999. Allowing for zeros in dichotomous – choice contingent- valuation models. *Journal of Business and Economics Statistics* 17(4): 479-484
- Yaseen, H., Dingley, K. and Adams, K. 2015. The government's role in raising awareness towards e-commerce adoption: The case study of Jordan. European conference on e-government, University of Portsmouth, England, Portsmouth: Research: 1-9.
- Ye, L.R., Zhang, Y, J. Ngueya, D. and Chiu, J. 2004. Fee-based online service: Exploring consumers' willingness to pay. *Journal of Technology and Information Management*, 13(2): 133-141.
- Yunus, N. S. N. M., Ghani, N. M. A. and Rashid, W. E. W. 2016. The acceptance and intention of online groceries shopping in Malaysia. *Journal of Applied Environmental and Biological Sciences*, 6(6S): 29-34.
- Zaini, Z.M.M., Ramli, N. and Ghani, F.A. 2011. Online grocery shopping: The effect of time availability on Malaysian consumer preferences. *World Applied Science Journal*, 12: 60-67.
- Zeithaml, V. A., Parasuraman, A. and Malhotra, A. 2002. Service quality delivery through websites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*, 30(4): 362-363.
- Zhang, L., Tan, W., Xu, Y. and Tan, G. 2012. Dimensions of consumers' perceived risk and their influences on online consumers' purchasing behaviour. *Communication in Information Science and Management Engineering*, 2(7): 8-14.
- Zhu, Q. and Lei, M. 2016. The impact of characteristics of B2C retailer on purchasing intention-based on TAM model. *Open Journal of Business and Management*, 4: 784-798.