

**PERCEPTIONS OF *ONLINE* SHOPPING AND DETERMINANTS OF
CONSUMERS' *ONLINE* PURCHASE OF FOOD GROCERIES IN
POLOKWANE LOCAL MUNICIPALITY, SOUTH AFRICA**

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ABSTRACT

Online purchase of food groceries is a development in the food retail market that is being driven by recent advances in the Information and Communication Technologies (ICTs). Consumers are, therefore, complying with these emerging trends by testing some of the *online* shopping platforms to form a behavioural compliance as required by some cashless economic policies being implemented in some African countries. Although considered to be convenient, *online* shopping is bewildered with a lot of risks. The aim of this study was to analyse the perceptions of consumers on *online* shopping risks and determine the factors influencing them to purchase food groceries *online*. The data were collected from 173 respondents selected by simple random sampling. The data were collected using structured questionnaire that was administered by trained enumerators. Descriptive statistics and logit regression were used for data analysis. The analyses were carried out by STATA software. The results showed that 11% of the respondents were using *online* platforms to purchase food groceries, 57.2% were aware of the existence of *online* platforms to purchase food groceries, 84.4% perceived *online* purchase of food groceries as convenient, and 62.4% perceived it as risky. The results of the Logit regression model showed that delivery fee, level of education, employment status, use of phone tablets for internet browsing, use of laptops to browse the internet, perceived *online* convenience and perceived *online* risk had statistically significant relationships ($p < 0.05$) with consumers' decision to purchase food groceries *online*. It was recommended that in order to encourage active *online* sales, there is the need to educate consumers on the benefits of purchasing food groceries *online*, using broadcasting platforms such as radio, television and social media. There is also a need for the South African government to strengthen policies to reduce associated risks of *online* transactions.

Key words: Consumers, food groceries, delivery fee, *online* purchase, South Africa



INTRODUCTION

In South Africa, the development of *online* purchase has exposed quite a number of challenges to the food retail markets. According to a report by the United Nations Industrial Development Organization (UNIDO) and Information Communications Technology (ICT), consumers do not buy *online* because they are still unsure about *online* security, while others still want to touch and feel products before purchasing [1]. It had been argued that *online* consumers are faced with inadequate security [2]. Thus, there is the need for the food retail markets to protect privacy, design and develop new operating skills and strategies to meet up with the various *online* purchase demands of consumers and their challenges.

Some consumers are seriously constrained in daily allocation of time between work and daily errands. The 21st Century woman is seriously constrained in daily allocation of time between work and domestic chores. Therefore, the factor of time is important in satisfying her needs and those of her household [3]. Due to various life events that are competing for the limited time, such as the need to take care of children, caring for sick family members, work schedules and engagement with long queues during shopping, some consumers are seeking new ways of purchasing food groceries without necessarily going to the physical stores. This will save a lot of time and transportation costs. It will also in some instances enable the buyer to get some special discounts. Therefore, the more the pressure and time constraint on a consumer, the more they become impatient and more likely to consider some time saving options during their daily shopping schedules [4].

It should also be emphasized that travelling on some South African roads is becoming increasingly unsafe as vehicular accidents have become a common occurrence, especially in the Limpopo Province [5]. Therefore, given the increased risk of fatal automobile accidents, a simple trip to the grocery store may inadvertently be the last one a consumer would take. Additionally, as the population continues to grow, there is the issue of limited parking spaces in shopping malls, which now creates some anxieties for some consumers. Vehicle-related crimes such as theft and vandalism are also becoming serious concerns in South Africa [5]. Therefore, leaving a car unattended in the course of shopping can be very risky to the vehicle owner. Similarly, within the society, there are citizens who are unable to go to physical stores to buy food groceries based on physical constraints such as disabilities and other diseases which may impede free movement to shops in order to purchase and convey food groceries [6]. More recently, social distancing due to ongoing COVID-19 pandemic also contributes to desirability of *online* shopping, because it minimises human contacts in shopping malls and stores.

Some studies have examined the association between socio-economic characteristics of consumers and purchasing food groceries *online*. Another study revealed that various demographic factors significantly influence consumers to purchase *online* [7]. It is evident in empirical studies that the age of consumers could play a significant role in the potential of consumers to purchase *online*. In Malaysia, it was found that the age of consumers had a significant relationship with the intention to purchase *online* [8]. It



was also found that being female increased the probability of purchasing *online*. This can be explained by the fact that females are primarily known as people who are responsible for grocery shopping, therefore this can result in increasing their intention to purchase *online* [9]. Another study found that having a higher number of people in the household increases consumers' chance of purchasing *online* [10]. Therefore, larger households may be able to buy in bulk and get the benefit of free delivery. However, İlhan and İşçioğlu [3] found that household size negatively affected consumers' decision to purchase *online*.

A study conducted by Kavitha [7] in India found that the level of monthly incomes significantly affects consumers' choice to purchase *online*. Banerjee *et al.* [11] also conducted a study in Spain which revealed that consumers with high income are more likely to purchase *online* than those with low-incomes. Kavitha [7] also found that being married increases the chances of consumers purchasing food groceries *online*.

Clemes *et al.* [12] obtained similar results in Beijing and concluded that single (unmarried) respondents had a higher probability of purchasing *online*. Long [13] found an association between consumers' employment status and *online* shopping. Different studies have revealed that the level of literacy influences consumers' commitment to purchase groceries *online*. Ali *et al.* [14] also found that education status influences consumers to use *online* payment systems.

Liao and Cheung [15] found that the number of times spent using the internet has a positive influence on consumers' intention to shop on the internet. The probable explanation is that consumers may take those hours to try and learn about *online* shopping which can eventually increase their probability of purchasing *online*. Kim and Hong [16] found a positive and significant relationship between *online* visit frequency and consumers' intention to purchase *online*. Consumers with a lower frequency of *online* visitation were not willing to purchase *online*. This is because a higher frequency of *online* purchase may also increase the level of satisfaction of consumers and *online* payment experiences. A lower frequency of *online* purchases could result in consumers anxiety, doubts and low level of satisfaction about *online* purchases, thus leading to a lower commitment to purchase food groceries *online*.

Some studies found that convenience was the main reason why consumers chose to buy *online* [17]. Gordon and Bhowan [18] also submitted that convenience is an important factor promoting consumers' decision to purchase *online*. Kang *et al.* [19] found that convenience is insignificantly associated with consumers' intention to purchase *online*. There are also some concerns about some risks that are associated with *online* purchases [20]. Khan *et al.* [21] also considered perceived risk as a crucial element that affects consumers' intention to purchase *online*.

The study was motivated by the fact that there is scanty information on the subject in South Africa and the need to identify the reasons for slow uptake of *online* purchase of food groceries despite some perceived conveniences. The following questions were answered: What are the perceived conveniences of *online* purchase of food groceries? What are the perceived risks of *online* purchase of food groceries? What are the factors

influencing consumers to purchase food groceries *online*? Two research hypotheses were tested. First, it was hypothesised that there is no statistically significant relationship between perceived convenience of *online* shopping and *online* purchase of food groceries. Second, it was hypothesised that there is no statistically significant relationship between perceived *online* risks and *online* purchase of food groceries.

MATERIALS AND METHODS

The Study area

The study was carried out in Polokwane Local Municipality (Figure 1). Polokwane Local Municipality is located approximately midway between Gauteng Province and the Zimbabwean boarder, at a distance of 300 kilometres and 217 kilometres, respectively. The municipality is the central economic development hub in the Limpopo province and is situated in the Capricorn District of the Province. The municipality comprises of six main groups of settlements which are Polokwane City, Seshego, Mankweng, Dikgale, Ga-Maja and Moletjie Areas. It covers an area of 3,766 square kilometers and has a population of 628 999 [22,23].

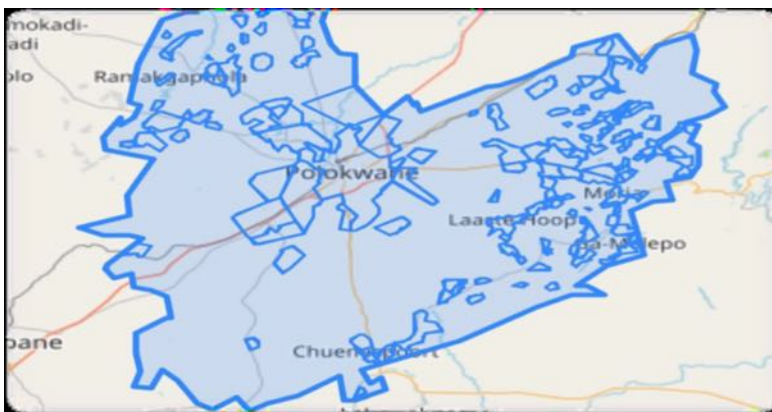


Figure 1: Map of Polokwane Local Municipality

Source: Polokwane Local Municipality [22]

Research design and sampling procedures

This study used a descriptive and quantitative research design. The design was necessary because it allows a researcher to construct a questionnaire that was used to measure the characteristics of the respondents. It also enables a structuring of questions intended to obtain information about a sample. The approach also provides detailed information and allows the researcher to sample a larger size of the population. The municipality consists of a population size of 628 999 people. Simple random sampling was utilised to select the respondents. From a population size of 628 999, a sample size of 173 was attained by means of a Raosoft software sample size calculator, with a margin of error of 9.80% and confidence level of 99%.

Primary data were collected through face-to-face interviews with participants, using a structured questionnaire. The first section of the questionnaire had socio-economic characteristics questions. The second and third section of the questionnaire consisted of 9 perceived convenience and perceived risks test statements for respondents to select

yes (1) or no (0). The 4th section consisted of willingness to purchase food groceries *online*.

Data analysis

Logit regression analysis

In this study, Logit regression model was used to analyse the factors influencing consumers' commitments to purchase food groceries *online*. The model is mostly applied in economic research and it is easier to compute compared to other models [24]. The dependent variable was consumers' intention to purchase food groceries *online* which was coded as a binary (1 or 0) variable. The odds of observing a value are expressed as:

$$\Pr (y_i=0/x_i, \beta) = 1 - f(-x_i \beta) = \quad (1)$$

Where f is a continuous, strictly increasing function that takes a real value and returns a value ranging from zero to one. The choice of the function f defines the kind of binary model, hence this model may be extended to three or more possibilities. In this study, only two possible outcomes were considered. This was shown in Equation 2:

$$\Pr(y_i=0 /x_i, \beta) = f(-x_i \beta) \quad (2)$$

Given such a specification, the factors of the logit regression were projected using the maximum likelihood method, which is given by Equation 3:

$$l(\beta) = \sum_{i=0}^n y_i \log (1-f(-x_i \beta)) + (1-y_i) \log (f(x_i \beta)) \quad (3)$$

Signifying y as 1 or 0 yields a lot of benefits. It means that the estimated value of y is simply the likelihood that $y = 1$ as indicated in Equation 4.

$$E (y/x_1, \beta) = \Pr (y = 1 /x_1, \beta) + 0. \Pr (y_2 = 0/x_2, \beta) = \Pr (y_2 = 1/x_2, \beta) \quad (4)$$

The logit model regression is therefore expressed as Equation 5:

$$\Pr (y_i = 1 /x_i, \beta) = 1 - (e^{-x_i \beta} / (1 + e^{-x_i \beta})) = e^{-x_i \beta} / (1 + e^{-x_i \beta}) \quad (5)$$

The descriptions of the variables are as provided in Table 1.

Multicollinearity among the explanatory variables was examined using the Variance Inflation Factor (VIF). When using collinearity statistics, a tolerance value that is close to zero denotes higher collinearity, while a Variance Inflation Factor (VIF) greater than 10 indicates multicollinearity [25].

RESULTS AND DISCUSSION

Socio-economic characteristics of consumers

Table 2 shows the distribution of respondents according to age. It reveals that the average age was approximately 32 years and the majority of them were 21 years of age. The fact that the majority was young is likely to be an advantage because young people



have more tendency to try new technologies or innovations. This can also help to increase their intention to purchase food groceries *online*. The table also shows that the mean size of the household was 6, with a mode of 4. The highest number of members in a household was 13, while there was a household with only one member. The results for monthly income show that maximum income was R20000, with the majority of them earning R1000 per month with an average income of R5304.39.

Table 3 shows that 53.2% of the respondents were from rural areas, while 46.8% were from non-rural areas. Majority of the respondents (74%) were single and 48.0% were unemployed. In addition, 99.4% had at least primary education, showing that the majority had the capacity to learn and understand the use of current technological devices for making *online* purchases.

Perceived conveniences of *online* purchase of food groceries

Table 4 shows the perceptions of the respondents on the conveniences and risks that are associated with *online* purchases. The results showed that 87.7% of the respondents answered yes to the question: “I am able to purchase food groceries *online* without physically visiting the store.” Also, 88.4% answered yes to “The *online* shopping website helps me to avoid crowds and traffic,” while 80.9 responded yes to “I am able to compare prices on different websites.” The results also showed that the majority of the respondents (79.8%) also answered yes to “It is easy to access and navigate the website as well as find the desired product.” These results showed that possession convenience, access convenience and search convenience are the major components of perceived *online* conveniences. However, some respondents had a negative response with regard to their perceptions of *online* convenience statements such as: “I am able to receive everything I have purchased *online*” by 23.7% and “I am able to receive exactly the product I bought *online*” by only 22.5%. The results have shown that in line with some previous studies, convenience of access to *online* purchase platform occupies a primary place in promoting adoption of *online* payment and purchase systems [19].

Perceived risks of *online* purchase of food groceries

Table 5 also shows the responses to some questions that probed into the extent of risk perception in *online* transactions. Specifically, 76.9% of the respondents answered yes to “I am afraid to lose money over the internet during the payment for *online* shopping”. Also, 74.6% indicated yes to “I am afraid that my credit card information may be misused when I make *online* payments” and 70.5% responded yes to “I fear that my personal information may be disclosed”. The results also showed that 50.3% answered yes to “I am scared of receiving the wrong products”. Nielsen [26], in his study revealed that 64.0 % of the respondents were concerned about the quality and freshness of food purchased *online*. These results have shown that in line with some previous studies [20,21] with regard to consumers’ perceptions of *online* risk, financial, psychological and time risks were the major concerns in *online* purchases.

Consumers’ commitments to purchase food groceries *online* and associated factors

Table 6 shows the distribution of responses to some commitment statements indicating respondents’ commitment to purchase food groceries *online*. It reveals that 74.0 % of the respondents were willing to take time to learn about *online* purchase of food



groceries, while 72.3% were willing to acquire relevant internet skills such as device operation and information about the websites. Also, 65.3% of the respondents were willing to open an *online* banking account in the future. About 61.8% of the respondents indicated that they would not recommend other consumers to purchase *online*. It has been noted that word of mouth is one of the influential sources of *online* purchase of food groceries [27].

Table 6 also shows the results of the Logistic regression model of factors influencing consumers' commitment to purchase food groceries *online*. The model produced a good fit as indicated by the statistical significance of the Wald Chi Square ($p < 0.01$). The results show that the variables that influence consumers to purchase food groceries *online* are the delivery fees, employment status, level of education, use of tablets to browse the internet, using laptop to browse the internet, perceived *online* convenience and perceived *online* risk. The results show that the parameter of the delivery fees that consumers were willing to pay was statistically significant ($p < 0.05$) and had a positive relationship with consumers' intention to purchase food groceries *online*. The probability of a consumer indicating that they are intending to purchase food groceries *online*, increases by 0.216 units as their delivery fees increase by one Rand. This is expected because *online* purchase would always be associated with delivery fees.

Online retailers impose a price for *online* shopping due to their delivery service convenience. This is because there are 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 the consumer. Meixian [28] opined that the success of developing *online* shopping comes from the phenomena that consumers are willing to pay a premium for the convenience of *online* retail. Moreover, Seitz *et al.* [17] revealed that consumers are willing to pay extra money associated with home delivery. Zaini *et al.* [29] investigated vital factors in *online* retail services and found that the cost of delivery has an effect on readiness to purchase *online*. However, in some other studies, researchers found that delivery charges have been one of the actual reasons why consumers do not have the intention to purchase *online* [17].

Employment status is significant ($p < 0.05$) with negative coefficient. The probability of a respondent indicating that they are intending to purchase food groceries *online* decreases by 1.367 units as the respondent becomes employed. This indicates that employment status reduces the intention to purchase food groceries *online*. This can be explained by the fact that the advent of social media has altered the way in which people live. Unemployed consumers do not go to work and thus they have time to be on social media, retail websites and learn about current innovations.

The level of education is significant ($p < 0.01$) with a positive relationship with consumers' intention to purchase food groceries *online*. The probability of consumers indicating that they intend to purchase food groceries *online* increases by 1.0891 units if they possess primary education or more. This result is in line with the finding of Hiser *et al.* [30] who found that consumers with a high level of education are more



likely to shop *online*. This could be because literate people are more likely to have greater opportunities to learn how to use new technology than those who are illiterate.

Use of a tablet to browse the internet is significant ($p < 0.05$) and had a positive relationship with consumers' intention to purchase food groceries *online*. The marginal effect indicates that consumers that were using tablets to browse the internet, had their probability of intention to buy *online* being higher by 0.1719529 when compared with those without tablets. This is because a tablet is a mobile cellular phone with the ability to connect to the internet, at an affordable rate as compared to using a desktop computer or a laptop. Additionally, a consumer can easily, conveniently and directly purchase minutes for internet use through a network provider using a tablet. Therefore, a consumer with a tablet is more probable to embrace inventions such as the *online* purchase of food groceries because they have better access to information on recent innovations, which they obtain with their tablets with the internet. On the other hand, using a laptop to browse the internet has a negative sign and significant relationship ($p < 0.05$) with consumers' intention to purchase food groceries *online*.

Access to a computer or mobile with the internet was not significant ($p > 0.05$) but had a positive impact on consumers' intention to purchase food groceries *online*. In reality it is expected that consumers who have access to the internet have higher intention to purchase food groceries *online*. In this case an insignificant relationship can be elaborated by the fact that some consumers have *online* insecurities and low knowledge level about the shopping system. In contrast, a study by Nabareseh *et al.* [31] examined consumers' readiness to use *online* shopping in Nigeria and Ghana, separately. The results of the study revealed access to the internet has a significant impact on *online* shopping.

Perceived *online* convenience had a statistically significant ($p < 0.01$) and positive relationship with consumers' intention to purchase food groceries *online*. This is an expected result, because convenience is one of the main benefits of purchasing food groceries *online*. A similar study by Tanadi *et al.* [32] in Malaysia revealed that respondents who perceive *online* purchase as convenient were keen to pay for food groceries *online* compared to those who did not perceive it as convenient. However, Table 6 shows that the perceived *online* risk has a negative coefficient and significant ($p < 0.01$) relationship with consumers' intention to purchase food groceries *online*. Instinctively, it is expected that consumers who perceive *online* shopping as risky will have a lower intention to purchase food groceries *online*. Scholars such as Tanadi *et al.* [32] previously showed that perceived *online* risk negatively influences consumers to purchase food groceries *online*.

CONCLUSION

The findings from the study showed that delivery fee, respondent's level of education, employment status, use of phone tablet to browse the internet, use of a laptop to browse the internet, perceived *online* convenience and perceived *online* risk were significant factors influencing consumers to purchase food groceries *online*. In terms of the key risks associated with *online* shopping, the majority of the respondents were concerned



about their credit card information being misused, followed by risk of losing personal information and not receiving the purchased products on the agreed time.

Therefore, there is a need to implement an effective marketing policy to encourage active *online* sales of food groceries. Majority of the respondents reside in rural areas. There is a need for the South African government to strengthen policies and actions regarding the improvement and accessibility of network infrastructure in these areas. This will contribute to an improved quality of life, as well as the equitable distribution of *online* purchase opportunities. There is also a need to promote formal education as a driver of *online* purchase of food groceries. Limpopo Provincial Government and food groceries retailers need to educate consumers about the benefits of purchasing food groceries *online*.



Table 1: Description and measurement of dependent and independent variables

Variables	Measurements	Expected Sign
<i>Dependent variable</i>		
Y= Intention to purchase food groceries <i>online</i>	Not intending = (0), intending =(1)	
<i>Independent Variables</i>		
X ₁ = Age	Respondents age in years	-/+
X ₂ = Size of household	Number of people in the household	+
X ₃ = Monthly income	In Rand	+
X ₄ = Sector of residence	Rural area= (0), Non-rural area = (1)	+
X ₅ = Marital status	Single = (0) , Married = (1)	+
X ₆ =Employment status	Unemployed= (0), Employed= (1)	+
X ₇ = Level of education	None = (0) Primary and above education = (1)	+
X ₈ =Access to computer or mobile device	No= (0), Yes= (1)	+
X ₉ = Frequency of <i>online</i> purchase	Never= (0), Weekly= (1)	+
X ₁₀ = Using a tablet to browse the internet	No= (0), Yes= (1)	+
X ₁₁ =Using a laptop to browse the internet	No= (0), Yes= (1)	+
X ₁₂ = Time spent on the internet (per day)	Hours	+
X ₁₃ = Awareness of <i>online</i> purchase	Not aware= (0), Aware = (1)	+
X ₁₄ = Perceived <i>online</i> convenience	Not convenient = (0), Convenient= (1)	+
X ₁₅ = Perceived <i>online</i> risk	Risky = (0), Not risky = (1)	+
X ₁₆ =Delivery fees	In Rand	+

Table 2: Descriptive statistics of respondents’ socio-economic characteristics

Variables	Mean	Median	Mode	Std. Dev.	Minimum	Maximum
Age	31.82	26.00	21	13.123	18	73
Size of household	5.88	6	4	2.549	1	13
Monthly income	R5304.39	R 2600	R1000	R5627.617	R100	R20000



Table 3: Frequency and Percentage Distributions of Selected Demographic Variables

Statements	Yes		No	
	Freq	Percentage response	Freq	Percentage response
I am able to purchase food groceries <i>online</i> without physically visiting the store.	150	86.7	23	13.3
The <i>online</i> shopping website helps me to avoid crowds and traffic.	153	88.4	20	11.6
<i>Online</i> purchase of food groceries has sufficiently tailored information on the websites.	144	83.2	29	16.8
It is easy to access and navigate the website as well as find the desired product.	138	79.8	35	20.2
I am able to compare prices on different websites.	140	80.9	33	19.1
I am able to take time, read about the product’s information, specifications and consumer reviews on the website before purchasing the product.	139	80.3	34	19.7
I am able to receive everything I have purchased <i>online</i> .	132	76.3	41	23.7
I am able to receive exactly the products I bought.	134	77.5	39	22.5
The <i>online</i> purchase of food groceries provides consumers with timely delivery.	138	79.8	35	20.2

Note: Multiple responses were allowed

Table 4: Perceived conveniences of online purchase of food groceries

Statements	Yes		No	
	Freq	Percentage response	Freq	Percentage response
I am able to purchase food groceries online without physically visiting the store.	150	86.7	23	13.3
The online shopping website helps me to avoid crowds and traffic.	153	88.4	20	11.6
Online purchase of food groceries has sufficiently tailored information on the websites.	144	83.2	29	16.8
It is easy to access and navigate the website as well as find the desired product.	138	79.8	35	20.2
I am able to compare prices on different websites.	140	80.9	33	19.1
I am able to take time, read about the product's information, specifications and consumer reviews on the website before purchasing the product.	139	80.3	34	19.7
I am able to receive everything I have purchased online.	132	76.3	41	23.7
I am able to receive exactly the products I bought.	134	77.5	39	22.5
The online purchase of food groceries provides consumers with timely delivery.	138	79.8	35	20.2

Note: Multiple responses were allowed

Table 5: Perceived risks of *online* purchase of food groceries

Statements	Yes		No	
	Freq	Percentage response	Freq	Percentage response
I am afraid that my credit card information may be misused when I make <i>online</i> payments.	129	74.6	44	22.4
I am afraid to lose money over the internet during the <i>online</i> shopping payment.	133	76.9	40	23.4
I am afraid that my identity may be stolen if I make <i>online</i> transactions.	129	74.6	44	25.4
I fear that my personal information may be disclosed.	122	70.5	51	29.5
I fear I might not receive the purchased products on the agreed time.	105	60.7	68	39.3
I have difficulties in using the website of <i>online</i> stores because the websites are not user-friendly.	89	51.4	84	48.6
I am afraid that websites might crash or freeze during transactions.	103	59.5	70	40.5
I am scared to receive the wrong product.	87	50.3	86	49.7
I fear I might not receive everything I ordered <i>online</i> .	87	50.3	86	49.7

Note: Multiple responses were allowed

Table 6: Consumers’ commitments to purchase food groceries *online*

Factors	Yes		No	
	Frequency	Percentage response	Frequency	Percentage response
I am willing to continue purchasing food groceries through <i>online</i> services.	108	62.4	65	37.6
I will use the websites more often to purchase food groceries in future.	111	64.2	62	35.8
Irrespective of any anticipated motives, I will continue purchasing food groceries <i>online</i> .	104	60.1	69	39.9
I am willing to acquire relevant internet knowledge and skills such as information about the websites.	125	72.3	48	27.7
I intend to take time to learn about <i>online</i> groceries shopping.	128	74.0	45	26.0
I strongly recommend other consumers to purchase <i>online</i> .	107	61.8	66	38.2
I am willing to open an <i>online</i> banking account in future.	113	65.3	38.2	34.7

Note: Multiple responses were allowed

Table 7: Logit results of factors influencing consumers to purchase food groceries *online*

Independent variables	Coefficient	Standard error	p-value	dy/dx
Delivery fees	1.154957	0.5512563	0.036**	.2164153
Age	-0.0212439	0.0238332	0.373	-.003409
Size of household	-0.0359351	0.1015748	0.724	-.0057666
Monthly income	-0.0000215	0.0000323	0.506	.193663
Marital status	0.760674	0.6889518	0.270	.0785327
Sector of Residence	-0.0203193	0.5145918	0.969	-0.0032619
Employment status	-1.367414	0.6374113	0.032**	-1.367414
<i>Online</i> purchase frequency	-0.9302718	0.7014879	0.217	-.9302718
Level of education	1.089075	0.3616582	0.003***	1.089075
Using a tablet to browse the internet	1.18743	0.5908063	0.044**	.1719529
Using a laptop to browse the internet	-1.547282	0.7014879	0.027**	-.2927266
Time spent on the internet per day	0.2136282	0.2280025	0.349	.0289746
Access to computer or mobile with internet	0.5851059	0.819042	0.475	.0582676
Awareness of <i>online</i> purchase of food groceries	-.0287121	0.6004586	0.962	-.0086161
Perceived <i>online</i> convenience	2.362465	0.6283931	0.000***	.4942472
Perceived <i>online</i> risk	-3.179277	0.725712	0.000***	-.4437575
Constant	105.5501		0.179	.79921368
Log likelihood function	-60.81091			
Likelihood ratio Chi Square	96.23			
Number of observations	173			
Pseudo R -Square	0.4417			

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

REFERENCES

1. **UNIDO and ICT**. National report on e-commerce development in South Africa, 2017. Retrieved from <https://www.unido.org/api/opentext/documents/download/9922241/unido-file-9922241> Accessed on 21 January 2019.
2. **Gordon A and K Bhowan** Factors that influence *online* shopping behaviour. *Alternation*, 2005; **12**:143-169.
3. **İlhan BY and TE İşçioğlu** Effect of women's labor market status on *online* grocery shopping, the case of Turkey. *Eurasian Business Review*, 2015; **5(2)**: 371-396.
4. **Bashir R, Mehboob I and W Bhatti** Effects of *online* shopping trends on consumers-buying behavior: An empirical study of Pakistan. *Journal of Management and Research*, 2015; **2(2)**: 1-24.
5. **Steyn F, Coetzee A and H Klopper** A survey of car guards in Tshwane: Implications for private security policy and practice. *SA Crime Quarterly*, 2015; **52**: 15-24.
6. **Ranadive A** An empirical study on the *online* grocery shopping intentions of consumers in Vadodara City. *International Journal of Management and Social Sciences Research*, 2015; **4(3)**: 2319-4421.
7. **Kavitha R** A study on consumer awareness and determinants of *online* shopping. *International Journal of Management Research & Review*, 2015; **5(8)**: 636- 642.
8. **Nawi NC, Mamun AA, Hamsani NHB and MNB Muhayiddin** Effect of consumer demographic and risk factors on *online* purchase behavior in Malaysia. *Societies* 2019; **9(10)**: 1-11.
9. **Shi K, De Vos J, Yang Y and F Witlox** Does e-shopping replace shopping trips? Empirical evidence from Chengdu, China. *Transportation Research Part A* 2019; **122**: 21-33.
10. **Lubis AN** Evaluating the customer preference of *online* shopping: Demographic factors and *online* application issue. *Academy of Strategic Management Journal* 2018; **17(2)**: 1-13.
11. **Banerjee N, Dutta A and T Dasgupta** A study on customers' attitude towards *online* shopping: An Indian perspective, *Indian Journal of Marketing* 2010; **40(11)**: 36-42.

12. **Clemes MD, Gan C and J Zhang** An empirical analysis of *online* shopping adoption in Beijing, China. *Journal of Retailing and Consumer Service*, 2014; **21**: 364-375.
13. **Long QN** The factors that influence Australian *online* shopping adoption: An empirical analysis. 2016, Canterbury: Lincoln University. (Dissertation-Mcom).
14. **Ali S, Saleem M, Ahmed ME, Khan MM, Shah N and S Rafiq** Models for *online* grocery shopping: A study of Pakistani *online* market. *Journal of Internet and E-Business Studies*, 2017; 1-15.
15. **Liao Z and M Cheung** Internet based e-shopping and consumer attitude: an empirical study. *Information and Management*, 2001; **38**:299-306.
16. **Kim E and T Hong** Segmenting customers in *online* stores from factors that affect the customer's intention to purchase. *Journal of Psychology and Marketing*, 2010; **20(7)**:383-388.
17. **Seitz C, Pokrivcak J, Toth M and M Plevny** *Online* retailing in Germany: an explorative analysis. *Journal of Business Economics and Management*, 2017; **18(16)**: 1243-1263.
18. **Gordon A and K Bhowan** Factors that influence *online* shopping behaviour. *Alternation*, 2005; **12**:143-169.
19. **Kang C, Moon J, Kim T and Y Choe** Why consumers go to *online* grocery: comparing vegetables with grains. Paper presented at the 49th Hawaii International Conference on System Sciences, Koloa, Hawaii: IEEE Computer Society. 2016, p. 3604-3613.
20. **Belanche D, Casalo L and M Guivaliu** Website usability, consumer satisfaction and the intention to use a website: The moderating effect of perceived risk. *Journal of Retailing and Consumer Service*, 2012; **19**: 124-132.
21. **Khan SA, Liang Y and S Shahzad** An empirical study of perceived factors affecting customer satisfaction to re-purchase intention in *online* stores in China. *Journal of Service and Management*, 2015; **8**: 291-305.
22. **Polokwane Local Municipality (PLM)**. Polokwane Local Municipality 974 from census 2011. <https://www.census200.adrianfrith.com/place/974> Access on 10 May. 2020.
23. **Polokwane Local Municipality (PLM)**. City of Polokwane – Naturally progressive: 2019/20 integrated development plan, 2019. Retrieved from <https://www.polokwane.gov.za/City-Documents/Shared%20Documents/IDP/2019-2020%20Final%20IDP.pdf> Accessed on 25 Nov. 2019.



24. **Adeogun OA, Ajana AM, Yarhere MT and MO Adeogun** Application of Logit model in adoption decision: A study of hybrid Clarias in Lagos State, Nigeria. *American-Eurasian Journal Agricultural & Environmental Science*, 2008; **4(4)**: 468-472.
25. **Daoud JI** Multicollinearity and regression analysis. *Journal of Physics Conference Series*, 2017; **949**: 1-6.
26. **Makweya L and IB Oluwatayo** Consumers' preference and willingness to pay for graded beef in Polokwane Municipality, South Africa. Paper presented at the 56th annual conference organized by Agriculture Economics Association of South Africa (AEASA), South Africa, Somerset West, 25-27 September 2018.
27. **The Nielsen Company**. What is-store for *online* grocery shopping: Omni-channel strategies to reach crossover shoppers. *Nielsen Global Connected Commerce Report*, 2017; 1-37.
28. **Meixian L** Convenience and *online* consumer shopping behaviour: A business anthropological case study based on the contingent valuation method. *Anthropologist*, 2015; **21(1-2)**: 8-17.
29. **Zaini ZMM, Ramli N and FA Ghani** *Online* grocery shopping: The effect of time availability on Malaysian consumer preferences. *World Applied Science Journal*, 2011; **12**: 60-67.
30. **Hiser J, Nayga RM and OJ Capps** An exploratory analysis of familiarity and willingness to use *online* food shopping services in a local area in Texas. *Journal of Distribution Research*, 1999; **28(1)**: 78-90.
31. **Nabareseh S, Osakwe CN, Klimek P and MA Chovancova** Comparative study of consumers' readiness for internet shopping in two African emerging economies: Some preliminary findings. *Mediterranean Journal of Social Science*, 2014;**5(23)**: 1882-1889.
32. **Tanadi T, Samadi B and B Gharlegghi** The impact of perceived risks and perceived benefits to improve an *online* intention among generation-Y in Malaysia. *Asian Social Science*, 2015; **11(26)**: 226- 238.

