



Research Paper

## Perceived risk and online purchase intention for shopping goods: Evidence from an emerging country context

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### ABSTRACT

Despite the growth of online shopping and the increased reliance on the internet for communication and business globally. Consumers are often wary of its inherent risk and sometimes avoid using the channel. This study examines this perception of risk on consumers' purchase intentions for shopping goods. In particular the study investigates the effects of product risk, security risk, delivery risk, privacy risk, and time risk on purchase intentions for shopping goods. A survey research design was used to collect data from a cross-section of 200 young consumers conveniently selected online. Five hypotheses were formulated and tested using multiple regression analysis via SPSS version 16. The result showed that product risks, privacy risk, and delivery risk negatively affects purchase intention while delivery and time risk were non-significant at 0.05 level of significance. The effect of product risk was strongest. The study concluded that there is a perceive risks which manifest in the forms of product, privacy, and delivery risk affect consumers' online purchase intention negatively. The result implies that marketers should device strategies to tangibilize the consumers' product browsing experience by using advanced technologies such as Virtual or Augmented Reality, zooming features, and consumer reviews. Also they should take measure to safeguard customers' information and activities online such as using multiple steps verification, encryption, and secured online environment.

**KEYWORDS:** online shopping, perceive risk, purchase intention, product risk, Nigeria

Received 21 August, 2021; Revised: 03 September, 2021; Accepted 05 September, 2021 © The author(s) 2021. Published with open access at [www.questjournals.org](http://www.questjournals.org)

### I. INTRODUCTION

The advancement in information and communication technology and the unprecedented rise in the number, uses, and functions of social media has increased consumers' confidence in online shopping (Gupta, South, Su, & Walter, 2004). The increased used and reliance of the internet for communication and business globally has made online shopping is a viable preference to consumers (Ariffin, Mohan, & Goh, 2018). According to Statista, retail e-commerce sales worldwide amounted to 3.53 trillion dollars in 2019 and is projected to reach 6.54 trillion dollars in 2022 (Statista, 2021). Research showed that consumers adopt online shopping behaviours due to convenience, price and product comparison, customer empowerment and a reduction in search effort (Johnson & Ramirez, 2020), as well as potentially increased choice, and cost savings (Mahoud, 2013).

Despite this growth, consumers are often wary when shopping online and sometimes avoid using the channel, abandon their cart, and postpone their online purchase decision. Their concerns stem from ordering for one thing online and getting something else to the potential threat of being swindled or defrauded (Gupta et al., 2004). They also fear the potential loss of delivery i.e., the possibility of goods being lost on transit, damaged or

sent to the wrong place/customer, or delivered late. They also express concerns about potential loss of control over their personal data/information or the misuse of their personal data as witnessed with Cambridge analytics and Facebook. Thus, given that perceived risk is a critical indicator of online transactions, understanding the influence of the dimensions of perceived risk on consumer behaviour warrants further debate (Johnson & Ramirez, 2020).

The literature regarding the dimensions of risk that affects online transactions is still inconclusive (Johnson & Ramirez, 2020). Prior research on perceived risk and purchase intention has focused on how it relates to purchase behaviour (Arifins et al., 2018; Han & Kim, 2017; Suraju et al., 2017), attitude towards online shopping (Suki & Suki, 2017), continuance intention (Ryu, 2018), mediating role in perceived value (Agarwal & Teas, 2015), willingness to pay (Ibrahim et al., 2014), and frequency of purchase (Forsythe & Shi, 2003). To the best of our knowledge, there is paucity of studies investigating the effect of perceived risk on purchase intention for shopping goods in an emerging country context. Given that emerging economies, Nigeria in particular, have an underdeveloped e-commerce sector and an online order value of about USD 40 or less and generally below the world average of USD 79 (www.picodi.com). It is important to understand the impact of perceived risk on purchase intentions for shopping goods in an emerging country context. Specifically, the present study seeks to examine the effects of product risk, security risk, delivery risk, privacy risk, and time risk influences purchase intentions for shopping goods.

## **II. LITERATURE REVIEW**

*Perceived Risk:* Bauer (1960) first proposed the concept of perceived risk and suggested that when the consumer makes a purchase decision, they are unable to predict the consequence of the decision. Perceived risk is defined as a belief about possible negative uncertainty from an online commerce transaction (Han and Kim, 2017). It is the subjective determination of the loss, which plays a more significant role in customers' decision-making than the perceived value (Li & Yuan, 2018). Perceived risk is a multidimensional construct composed of two components including uncertainty about and consequences of an action (Lin & Fang, 2006). Thus, when the uncertainty about the consequences of an action is high in a purchase situation, perceived risk becomes also higher (Hong & Cha, 2013). Online shopping is associated with higher risk compared to traditional channels (Ko, Jung, Kim, & Shim, 2004). Online shoppers perceive more uncertainties and risks such as delivery and return concerns, privacy concerns and computer security concern (Li & Yuan, 2018).

In general, the online environment does not provide sufficient chances for consumers to physically inspect the products, which increases information asymmetry and, in turn, escalates the consumption uncertainty (Park & Nicolau, 2015). The limited interaction with service providers causes consumers to feel insecure of potential deception and difficulties to reclaim flawed products in an online system (Bhatnagar & Ghose, 2004). Therefore, perceived risk of online transactions reduces perceived behavioural and environmental control and, subsequently, the lack of managerial control negatively affects usage of online technology for shopping. According to Stone and Gronhaug (2013), perceived risk contains six dimensions including performance risk, physical risk, financial risk, psychological risk, social risk, and time risk adequately explaining 88.8% of the construct.

*Purchase Intention:* Purchase intention is the measure of one's resolve to perform a specific behaviour or make the decision to buy a product or service. In the context of e-commerce, it is defined as a consumer's inclination to make a purchase from the online seller (Rosillo-díaz, Blanco-encomienda, & Crespo-almendros, 2020). According to the theory of planned behaviour (Ajzen, 1991), the most influential predictor of behaviour is behavioural intention (Lu, Fan, & Zhou, 2016). Pavlou (2003) observed online purchase intention to be a more appropriate measure of intention to use a web site when assessing online consumer behaviour. To achieve greater acceptance of e-commerce, it is essential that consumers intend to use e-commerce platforms and obtain the information necessary to perform the transaction when purchasing a product or service (Rosillo-díaz et al., 2020).

### *Dimension of perceived risk and Hypotheses*

*Product risk:* This refers to customers' concerns for about a product fitting the purpose of its use. It is the loss customers suffer when the product does not perform as predicted (Grewal et al., 2003). Product risk is also the probability of receiving a defective product or one that is different from the one advertised on the website (Ham & Kim, 2015). Product risk can also be explained as functional or performance risk which involves the consumer's belief that a purchased service or product will not offer preferred benefits or will not perform as expected to a consumer (Kim L, Kim D, & Leong, 2005).

Product risk is more prevalent in the online shopping context due to consumers' inability to physically evaluate the quality of the product before purchase. It is impractical to touch, feel and experience the product or service during online shopping. Though, online retailers often provide information and use advanced

technologies such as webrooming, zooming features, and online reviews to mitigate the perception of product risk, the available information may not be adequate and product mismatch may happen. Product risk may also be reduced when a detailed product information together with refund policy, reviews, warranty and after sale service are conspicuously featured on an online shopping site (Suki & Suki, 2017). Previous studies showed that product risk affect customers' attitude toward online behaviour (Suki & Suki, 2017) and negatively affect online purchase (Masoud, 2013). Dai et al. (2014) reported negative effect of product risk on online purchase intention for digital products but was insignificant for non-digital products. Han and Kim (2015) found a negative effect on purchase intention for a high and low involvement product. Accordingly, we propose that product risk will negative affect online purchase intention among Gen Y and Z consumers.

H<sub>1</sub>: Product risk will negatively predict purchase intention.

*Security Risk:* The concerns for losing personal and financial information while shopping online often leads to consumers abandoning their shopping carts (Davari, Iyer, & Rokonuzzaman, 2016). This is conceptualized as security risk and defined as the potential loss due to fraud or a hacking that compromises the security of information and financial transactions on a shopping website (Ryu, 2018). Security risk also refers to a possibility that an online shopping mall may not follow security requirement, such as encryption or authentication (Han & Kim, 2017). Such lack of encryption or authentication can cause monetary loss and violating of users' privacy arising from hacker intrusion, fraud, and phishing of personal data. It can also manifest in the form of swindlers posing as sellers to defraud customers online. Security risk is often used interchangeably with financial risk and physical risk in the literature. In this study we examined security and privacy risk independently.

Security risk is an important predictor of online shopping behaviour. The internet is perceived to have low level of security that can make consumers skeptical of providing their online financial information or disclose their personal data (Pallab, 1996). Consumers' sense of insecurity concerning online credit card usage is an impediment to buying things online (Ariffin et al., 2018). Security risk is therefore a potential threat that could undermine customers' intentions to shop online (Ariffin et al., 2018; Davari et al, 2016). Previous studies report negative effect of security risk on consumer behavior (Ariffin et al., 2018; Han & Kim, 2016; Ryu, 2018). (Ariffin et al., 2018) found that purchase intention declines as security risk increases. Han and Kim (2016) found an insignificant effect of security risk on purchase intention. Ryu (2018) found that security risk was the second most important predictor of perceived risk and that perceived risk negatively affected fintech continuance intention.

H<sub>2</sub>: Security risk will negatively predict online purchase intentions.

*Privacy Risk:* To complete online transactions, consumers need to provide personal information such as their e-mail addresses, home address, debit or credit card information among others. These information are considered private and confidential. Therefore, consumers worry that they can get into the hands of unauthorized users stalling or stealing their online presence. Akhter (2009) add that privacy risk relates to consumers not knowing how their personal information will be protected and used. Lenhart (2000), report that about 8% of internet users left the online world because of privacy issues and 54% of people have never gone online because they believed that the internet is dangerous. Privacy risk can affect consumers' intention to make purchases over the internet (George, 2000). Privacy risk refers to the degree in which consumer may lose their personal information when doing an e-commerce transaction (Bhatnagar, Misra, & Rao, 2000). It is also the possibility that online shoppers will provide their private information during online transactions and its potential loss to identity theft (Han & Kim, 2017).

Han and Kim, (2017) found that privacy risk neither predicted trust or purchase intention. Also, Nawi et al., (2019) found an insignificant relationship between privacy online purchase behaviour in Malaysia. Akhter (2009) found that negative and significant effect of privacy risk on the frequency of online transactions. Dai (2007) found a negative and significant effect of privacy risk on online purchase intention and also found significant difference between male and female perception of risk. Accordingly, we hypothesize as follows:

H<sub>3</sub>: Privacy risk will negatively predict online purchase intention for shopping goods.

*Time risk:* As time becomes increasingly scarce, consumers avoid time-consuming efforts especially when shopping online. Time risk is the difficulty consumers experience during online transactions that are often caused by the struggle of navigation and/or submitting the orders and delays of getting the products (Johnson & Ramirez, 2020). It also relates to the inconvenience incurred due to the difficulty of finding a website, navigating through the website, the speed of checkout, and time involved in receiving the order (Davari et al.,

2016; Forsythe & Shi, 2003). Online transactions fail when there are delivery errors, slow internet connections and website navigation and extended periods of information search (Swiegers, 2018). Time risk also includes when products did not meet consumers' expectation levels and consumers have to return the product for a new replacement (Ariffin et al., 2018). Therefore, online shopping activity that is perceived as complex and inconvenient will negatively affect patronage intention.

Previous studies report mixed result for time risk on consumer behaviour (Ariffin et al., 2018; Forsythe & Shi, 2003; Suki & Suki, 2017; Ibrahim, Suki, & Harun, 2014). Forsythe and Shi, (2003) found that time/convenience predicts the frequency of searching with intent to buy and frequency of purchasing online. Ariffin et al. (2018) found that time risk has a negative relationship with online purchase intention. Similarly, Suraju, Olawore, & Odesanya, (2019) reported that perceived time risk negatively predicts internet shopping. However, Suki & Suki, (2017) found that time risk had an insignificant effect on consumers' attitudes toward OGB. Also, Ibrahim, Suki, and Harun, (2014) reported an insignificant effect of time risk consumers' unwillingness to buy home appliances online. Therefore, we argue that time risk will negatively predict purchase intention for shopping goods.

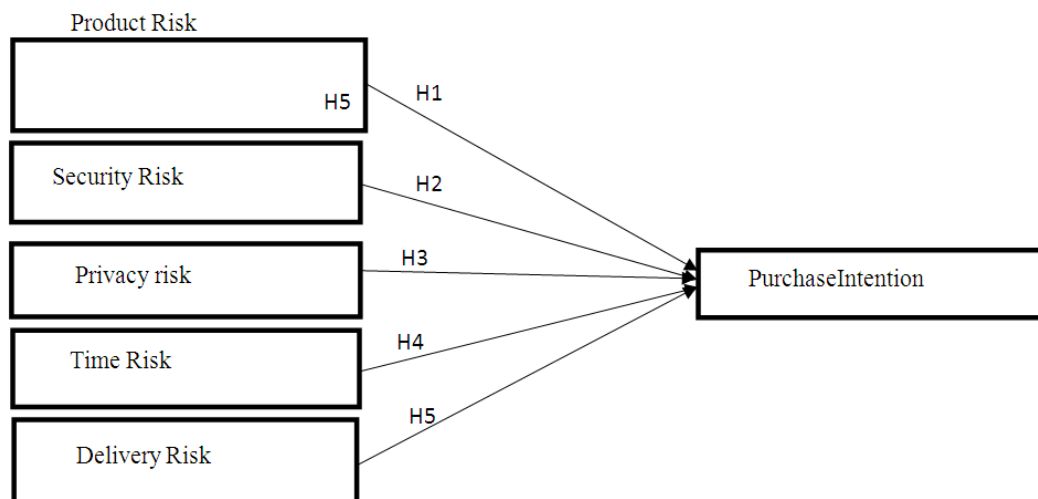
H4: Time risk will negatively predict online purchase intention for shopping goods.

*Delivery Risk:* The place function of marketing entails that consumers take delivery of goods at the right place, right time, and in good condition. Accordingly, online shoppers expect to receive their goods timely and in good condition. Unfortunately, many consumers avoid shopping online because of problems related to product delivery and return policies (Swiegers, 2018). Delivery risk is the potential loss of delivery, non-delivery, damaged delivery and delivery sent to the wrong place (Zhang, Tan, Xu, & Tan, 2012). It also includes the risk of delayed delivery or not even receiving the product at all. Though online retailers often use third-party logistics firms and order tracking technology, consumers still express concerns over delivery risk.

Delivery risk has been found to negatively affect consumer shopping behaviour (Makhitha & Ngobeni, 2018; (Nawi, Mamun, Hasliana, Hamsani, & Nazri, 2019; Suraju et al., 2019; Zhang, Tan, & Xu, 2012). Suraju et al., (2019) found that perceived delivery risk had a negative and significant effect on internet shopping in Southwest, Nigeria. Nawi et al., (2019) found no significant effect of delivery risk on online purchase behaviour. Makhitha and Ngobeni, (2018) also found an insignificant effect of delivery risk on attitude towards online shopping. However, Masoud (2013) report that perceived delivery risk predicts attitude behaviour towards shopping online.

Accordingly, we hypothesize thus:

H5: Delivery risk will negatively predict purchase intention for shopping goods.



*Fig. 1 Research Model*

### III. RESEARCH METHOD

#### *Sample and Design*

An online survey was conducted using social media platforms to collect data from a total of 200 consumers recruited online. The self-administered questionnaire were conveniently advertised on social media accounts and groups of the researchers between March and June, 2021 and no incentives was provided for

participation. Of the 200 responses, 174 were complete and valid representing 87 percent response rate. The dataset for this study, show that the majority of the respondents are between 20 and 29 years, while about 27 percent are between 30 and 39 years. More than 90 percent are single. Majority are female (62%) with a Bachelor's degree or its equivalent (76%) and earning between 100,000 and 250,000 Naira monthly.

*Measures*

The questionnaire was designed in two sections. Section A contains the demographic information of respondents such as gender, income, and education. Section B included 20 items relating to perceived risks and purchase intention. The perceived risks construct were product risk (4- items), security risk (4-items), delivery risk (4 items), privacy risk (3 items), and time risk (4 –items). Purchase intention which is the dependent variable was measured with (3 – items). All the variables were measured on a 5 point Likert scale anchored on a scale of 5 = strongly agree to 1 = strongly disagree while the dependent variable was measured with a different scale ranging from very likely to very unlikely. All measures were adapted from existing literature. See Appendix.

**Table 1.** Demographic profiles of respondents

Variable	Profiles	Frequency	Valid Percent
Sex	Male	66	37.9
	Female	108	62.1
Age	Below 20 years	22	12.6
	20- 29 years	106	60.9
	30-39 years	48	27.5
Educational Background	O'level	6	3.4
	BSc/HND	132	75.9
	Postgraduate	36	20.7
Marital Status	Single	162	93.1
	Married	12	6.9
Income	< 100,000	75	43.8
	100,001 – 250,000	66	37.9
	250,001 – 500,000	21	12.1
	500,001 – 1million	8	5
	>1 million	4	2
	Total		174

*Statistical Technique*

The data were analysed using multiple regression analysis and the p-value was set at a 5% level. The analyses were performed with the aid of the computer software, Statistical Package for Social Sciences (SPSS) 25. The multiple regression analysis tests cause and effect relationships and show the strength of each effect on the dependent variable. Regression results also provide information on a model's fit, explanatory power, and multi-collinearity. The regression model is stated as follows:

$$Y = a + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5$$

Where, Y = Purchase Intention

a = constant, X1 = Product risk, X2 = Security risk, X3 = Delivery risk

X4 = Privacy risk, X5 = Time risk

## IV. RESULTS

*Factor Analysis*

A Principal component Analysis was computed to reduce the data using varimax rotation, eigenvalue set at greater than 1, and factor loading greater than 0.5. In all, the items converge to five factors. The first factor consists of four items relating to 'product risk' and is labelled accordingly. The second factor consists of 4 items relating to time risk and labelled 'time risk'. However, one item "time involved in dealing with erroneous transactions discourages me from shopping online" had a low loading of less than 0.5 and was consequently dropped. The third factor consists of four items measuring 'delivery risk'. Two items "what I order online gets lost in transit" and "what I order online is delivered on time" with factor loadings of less than 0.5 and loading on more than one factor were dropped. The fourth factor contains four items relating to privacy risk and is therefore labelled 'privacy risk'. One item "personal experience on the loss of information shopping online reduces my willingness to shop online" with low loading was dropped. Finally, one of the four items measuring security risk

was dropped. The factor was labelled 'security risk'. Overall, the factors account for about 68% of the explained variance and the reliability measures were all above 0.70 Benchmark (Nunnally & Bainsstein, 1994). The summary of the factor analysis and reliability measurement is shown in Table 4.2 below.

*Test of Hypotheses*

To test the five hypotheses, a multiple regression analysis was performed through SPSS version 22. The result shows that the overall regression model for purchase intention produced is a good fit ( $F5, 168 = 17.51, p = .00$ ) and explained 34% of the change in the dependent variable. In addition, the Variance Inflation Factor (VIF) for the variables were all above 1, showing that the data set is free from multicollinearity problems.

**Table 3** Hypotheses test result

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Collinearity Statistics	
	B	Std. Error	Beta	t		Tolerance	VIF
1 (Constant)	1.322	.321		4.126	.000		
Product risk	-.304	.047	-.447	-6.540	.000	.839	1.192
Security risk	-.062	.039	-.102	-1.578	.117	.935	1.070
Privacy risk	-.108	.040	-.173	-2.685	.008	.943	1.061
Time risk	-.085	.048	-.119	-1.747	.082	.843	1.186
Delivery risk	-.290	.058	-.322	-4.964	.000	.930	1.075

R2 = .343  
 Adjusted R2 = .32  
 F(5, 168) = 17.51, p < 0.01  
 a. Dependent Variable: PI

Based on the regression result in Table 3. A negative and significant relationship was found between product risk ( $\beta = -.30, t = -6.54, p = 0.00$ ) and purchase intentions for shopping goods. Thus, H1 was supported. However, H2 was not confirmed as the result showed a negative and insignificant relationship between security risk ( $\beta = -.06, t = -1.58, p = .12$ ) and purchase intentions for shopping goods. H3 predicted a negative and significant relationship between privacy risk and purchase intentions for shopping goods. The result showed that privacy risk ( $\beta = .11, t = -2.69, p = 0.08$ ) relates negatively and significantly purchase intentions for shopping goods. Thus, H3 was confirmed.

Next, H4 did not show support for the effect of time risk on purchase intention. Specifically, the result showed that time risk ( $\beta = -.09, t = -1.75, p = .08$ ) had a negative and insignificant effect on purchase intentions for shopping goods. Finally, H5 predicted a negative and significant relationship between delivery risk and purchase intentions for shopping goods. The result showed a negative and significant relationship between delivery risk ( $\beta = -.29, t = -4.96, p = 0.00$ ) purchase intentions for shopping goods. Thus, H5 was supported. Furthermore, the finding showed that product risk ( $\beta = .45$ ) had the strongest influence on purchase intention followed the risks associated with delivery ( $\beta = -.32$ ) whereas security risk had the least effect on purchase intention.

**V. DISCUSSION**

This study examined how product, delivery, security, time, and personal risks affect their online purchase intention for shopping goods. The result showed that perceived risk negatively affects consumers' online purchase intention. The finding confirms Ariffin et al. (2018) who found a negative effect of product risk on the online purchase intentions for apparel. It also corroborates Suki and Suki (2017) that found a similar result for perceived functional risk on consumers' attitudes towards online shopping. It, however, contradicts (Han & Kim, 2017) who found a non-significant effect for product risk for non-digital product. The effect of product risk suggest that consumers are usually wary of products that are without defects, similar to an advertised product and that matches with their expectations.

Consumers also consider delivery as an important facet of their online purchase intentions. Delivery predicted online purchase intentions confirming negatively earlier works by Masoud (2013) and Suraju et al. (2019) who found a significant negative effect of delivery risk on purchase intention. The finding contradicts Suraju et al. (2019) and Nawi et al. (2019) who found a non-significant effect of delivery risk on purchase intention. Consumers are not likely to buy online if they feel that their online orders will not be delivered in good condition or their orders sent to the wrong address. Delivery is a critical operational process of online shopping relating to potential loss due to inadequate internal processes, employees, and systems. Therefore,

customers would favour a seamless internal process, system, and employees that courteously deliver on a promise. Similarly, privacy risk has a negative effect on effect on purchase intention for shopping goods. The possibility of consumers losing their vital information not online theft or stalkers hinders their online purchase intention. This finding supports Akter (2009) who found a negative significant effect of privacy risk on the frequency of online transactions and Dai (2007) who found a negative effect of privacy risk on purchase intention. It, however, contradicts Han and Kim (2017) that found a non-significant effect for privacy risk on trust and purchase intention, and Nawi et al. (2019) that found that privacy risk did not affect the online purchase behaviour of Malaysians.

Surprisingly, the effect of security was not significant on purchase intention shopping goods. With the prevalence of online fraud, hacking, and data loss associated with online transactions, security risks were expected to affect online purchase intention. This finding supports Han and Kim (2017) who found that security risk does not predict purchase intention but contradicts Ariffin et al. (2018) who reported that purchase intention declined as security risk increases. It also contradicted Ryu (2018) who found that security risks affected Fintech continuance intention negatively. A possible explanation for the non-significant effect of security is the increased security features online stores have built into their IT infrastructure. Most online stores websites are using the security encrypted extension of hypertext transfer protocols which increases consumer confidence concerning the security of online transactions.

Table 2. Factor analysis and reliability measurement

	Component					Cronbach alpha $\alpha$	Explained variance (%)
	1	2	3	4	5		
<b>Product risk</b>						.83	31.22
The shape of the product(s) ordered online may not correspond to what I get	.90						
The design of the product(s) ordered may not match what I receive	.69						
The quality of product(s) ordered online may be different from the one delivered	.67						
The colour and style of online order may be different from was delivered	.65						
<b>Time risk</b>						.73	14.31
The time specified on the website for the delivery may not be accurate		.88					
Time involved in dealing with erroneous transactions discourages me from shopping online		.67					
The use of e-commerce channel wastes time		.61					
Shopping online may take a lot of time researching product(s) information		.61					
<b>Delivery risk</b>						.72	9.60
There is a possibility I will not receive orders as promised			.79				
My online orders may be delivered damaged or poor condition			.77				
My orders may be delivered at the wrong address			.77				
My orders may get lost in transits			.67				
<b>Privacy risk</b>						.75	7.21
My personal experience on loss of information shopping online reduces my likeness to shop online				.93			
I am concerned about the guarantee of my privacy when shopping online				.68			
Existing legal regulations for online transactions may not keep my information secured				.59			
I am concerned I will be defrauded/swindled when shopping online				-.52			
<b>Security risk</b>						.75	6.38
Shopping online can lead to identity theft					.84		
I am worried that my financial information online is not safe and can be hacked?					.80		
My preferences and products I buy online is can be shared with other people or companies?					.71		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Finally, the effect of time risk yields a result contrary to our expectations. We predicted a negative effect between time risk and purchase intention. Our result was not significant. The result supports Suki and Suki (2017) who found an insignificant effect of time risk on attitude towards online group buying, and Ibrahim et al., (2014) who found an insignificant effect of time risk on an unwillingness to buy home appliances. It, however, contradicts Ariffin et al. (2018) who found a significant effect for time risk on purchase intention, and Suraju et al. (2019) who found a significant relationship between time risk and purchase intention. Time risk is associated with the convenience of finding a website, browsing through it, and making a purchase with ease. The plausible reason for the insignificant effect of time risk is that consumers find online shopping to be convenient and time-saving. Moreover, e-commerce stores have continued to improve user interface and user experience making it easy for consumers to find products and complete online transactions. Another possible reason time is not significant is that with the algorithm that makes it easy for online stores to retarget their audience with the right products, the perception of time risk associated with browsing for products, dealing with returns, and receiving orders is rather favourable.

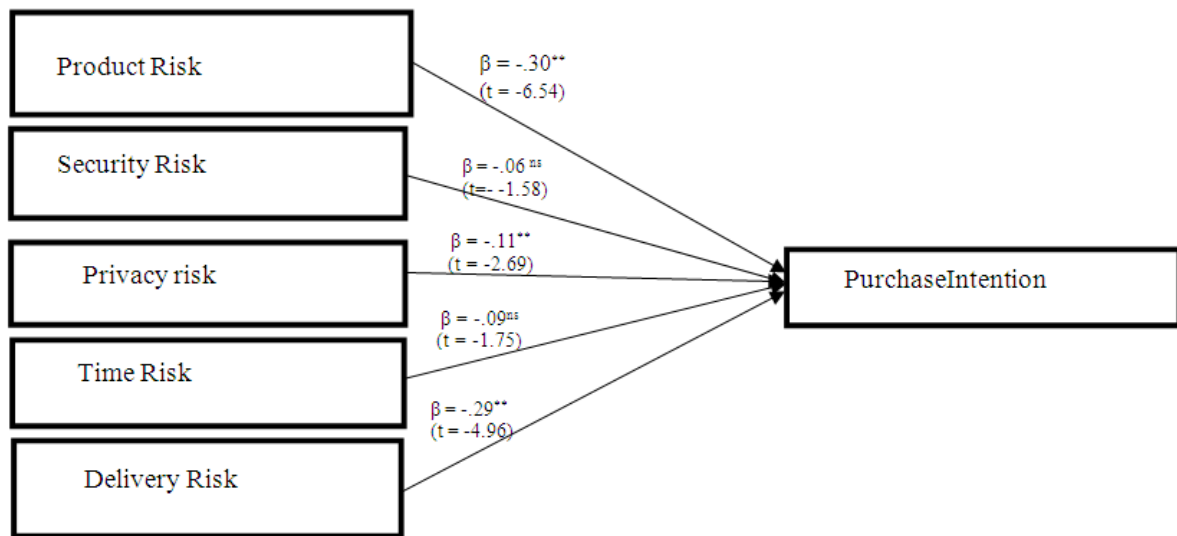


Fig. 2. Hypotheses result

Note: \*\* p < 0.001; \* p < 0.05; ns = not significant

## VI. CONCLUSION

The present study sought to understand how the perceived risk associated with online shopping affects purchase intention for shopping goods. The result showed that consumers are more concerned about the product and delivery risk associated with online shopping than they worry about the security risk. Security risk and time risk do not significantly affect their intention to shop online. Importantly, the risk associated with the performance of goods bought online affects consumers' evaluation of online purchases more than the concerns they have over the security of their data or the time spent online for browsing, purchasing, and taking delivery of purchased items.

### Practical Implications

To ensure that online stores maximum their full potential, the following recommendations are proffered based on the findings of this study. The most negative effect is from product risk. Therefore, online stores should devise strategies to *tangibilize* the consumers' product browsing experience. First, the products displayed should not differ from what the consumers get. When there are variations in colour, size, and other physical properties, this information should be displayed for consumers to see and make their choice. Recent advances in the e-tailing business such as augmented reality, showrooming, zooming in and out features should be used to enhance customers' product experience and reduce the associated risk.

Delivery risk is another important facet of risk that affects consumers' online purchase intention. Since delivery relates to internal and external processes involving systems, employees till customer get their orders. Online retailers must train their delivery employees on courtesy and time management. They should also institute systems and processes that will facilitate the ordering, logistics, tracking, receipt, and confirmation of delivery. And customers should be able to access these systems and devices seamlessly.



Since customers are also concerned about their privacy online, online retailers should take measures to safeguard customers' information and activities online. The policy and regulatory framework to protect customers from third parties should be communicated to customers to boost their confidence in online shopping. Finally, though the security and time risks were not significant, they however, contributed to the model. Thus, online retail managers should improve their transaction security mechanisms and internet technology to dwindle consumers' perceived time risks.

### **Limitation and Suggestion for further studies**

The study focused on perceived risks and online shopping for shopping goods. Studies have shown that perceived risk differs by product and consumer characteristics. Therefore, future studies can examine generational cohorts and other consumer characteristics such as self-efficacy, innovativeness, and personality types, and consumers' perception of risk. Also, other facets of risk such as performance, legal, financial, and system risks can be examined in future studies.

Future studies can compare the perceived risks and consumer behaviour among different generational cohorts using a more advanced statistical technique such as a multiple group analysis via structural equation modelling. Finally, while the present study is cross-sectional future studies can conduct a longitudinal study to see how the perception of risks changes over time following the advances in information and technology systems and changes in consumers' tastes and trends.

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## Appendix

Rate the risk perceptions on each scale item using a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

No      Statements      SA=5      A=4      N=3      D=2      SD=1

### **Product Risk**

- 1 The shape of product ordered online matches what I get.
- 2 The quality of product ordered online is the same as one delivered.
- 3 The design of products ordered matches what I receive.
- 4 The colour and style of what I order online is the same as what was delivered.

### **Security Risk**

- 1 You are worried that your financial information online is not safe and can be hacked
- 2 Shopping online can lead to identity theft.
- 3 Fear of being defrauded/swindled makes me not to shop online
- 4 Existing legal regulations for online transactions can keep my information secure

### **Privacy Risk**

- 1 Personal experience on loss of information shopping online reduces my willingness to shop online
- 2 My privacy shopping online is guaranteed.
- 3 My preferences and products i buy is not shared with other people or companies.

### **Time Risk**

- 1 The time specified on the website for delivery is accurate
- 2 Time spent in researching product information online is reduced
- 3 The use of e-commerce channels waste time
- 4 Time involved in dealing with erroneous transactions discourages me from shopping online

### **Delivery Risk**

1. What I order online gets lost in transit.
2. What I order online is delivered in good condition.
3. What I order online is delivered on time.
4. What I order online is delivered to the right address.

### **Purchase Intention**

- 1 I am likely to shop online in the future
- 2 I will probably shop online in the future
- 3 I am willing to shop online in the future