

DIGITAL CULTURE: ONLINE SHOPPING ADOPTION AMONG COLLEGE STUDENTS IN MALAYSIA

Chiun Wei Puah¹, Weng Lam Eng¹, Chun Hoong Tan¹, Shuen Chen Tan¹ and Tin Tin Ting^{2*}

¹ Faculty of Computing and Information Technology, Tunku Abdul Rahman University College,
Kampus Utama, Jalan Genting Kelang, 53300, Wilayah Persekutuan Kuala Lumpur, Malaysia

² Faculty of Information Technology, INTI International University, Negeri Sembilan, Malaysia

*Corresponding author: tintin.ting@newinti.edu.my

ABSTRACT

Online shopping is getting popular in Malaysia during Covid-19 pandemic and country lock down since 2020. Researches are important in inspecting this arising digital culture in Malaysia in order to encourage the participation of customers in online shopping and reduce their cognitive deficiencies in the e-commerce, thus promoting economy growth. The purpose of this study is to examine the factors of the college students adopting this digital culture – online shopping behaviour. The relationship between online advertisement, product risk, delivery risk and information security in online shopping behaviour among college students are examined. Online questionnaire is designed in Google Form and data collected is analysed using PSPP utilizing one-way ANOVA and Cohen's f effect size. The study revealed that online advertisement, product risk, delivery risk, and information security significantly affect online shopping behaviour of college students with large effect size.

Keywords: *Online shopping behaviour, Customer experience, Electronic commerce, Perceived risks, Online advertisement*

1.0 INTRODUCTION

Globalization, Internet access, Covid-19 pandemic, and country lock down are several main reasons that have coaxes digital culture – online shopping in Malaysia recently. The country has recorded a boost in online shoppers to 16.53 million (50% of the population) in August 2019 (ITA, 2019). The statistic continues to increase in 2020 following Covid-19 pandemic and country lock down starting in 18 March, 2020. Another main reason of the arising online shoppers is the increasing spending power of customers (Anurag and Jitesh 2019). Ease of access and ease of use have also contributed to the statistics. At the online shopping website, online customers may choose from over 30 million products in over 70 categories product. These e-retailers offer an electronic catalogue of items from which customers may choose things and compare them to other products before making a purchase.

Online shopping offers several advantages, including worldwide reach, a wide range of items, and the necessary information. It saves time while purchasing products since it removes the time spent driving to and from a physical store. Customers may acquire items at any time, at the lowest possible price, and receive offers and discounts while purchasing products online. According to previous researches, factors such as advertisement, discounts, products and delivery quality provided in the online shopping websites significantly affect online shopping behavior (ITA, 2019; Lee *et al.*, 2018; Onewo *et al.*, 2020; Yeniçeri & Akin 2013; Ganapathi and Abu-Shanab, 2020; Zamzuri *et al.*, 2018). It is an interest in this study to examine factors that might affect younger generation in Malaysia (college students) although they are not the main customers in the past due to spending power as compared to

working adults. However, the number of young customers is increasing dramatically as technology advancing (Statista, 2020).

Although online shopping brings many benefits, it also has disadvantages. For example, customer sensitive information might be exposed during the checkout session hence causing some potential danger. Customers cannot touch or feel the product they are willing to buy which makes the customers worry about paying for the wrong product and thus prefer tangible products (Mac, 2019). Meanwhile, customers might have wasted their time to search for those unrelated products or promotions that are misled by the advertisement (Kim *et al.*, 2008). There are also some bad experiences such as delivery not available in certain regions or poor delivery service. Many new online shoppers are also worried about the security of payment information or personal private information. All these negative factors will affect customers' purchase behavior and also their user experience.

The theory of planned behavior (TPB) is widely used in predicting purchase intention nowadays even among online shoppers. A person's perceived behavior control is defined as one's perception on the ease of carrying a specific behavior (Neeraj and Veena, 2016). For example, perceived ease of use is a proven factor that could predict purchase intention (Ahmad, 2017). However, the negative aspects are equally important in affecting one's decision. This study is focusing in the negative aspects of the availability of resources, mainly in the perceived risk. Based on Emad (2013) research that focus in the negative aspects of perceived risk on online shopping behavior, the four (out of six) factors that are affecting online shopping behavior are: financial risk, product risk, delivery risk and information security. However, financial risk might not be applicable to college student as financial risk is referring to online credit card usage. On the positive aspect, according to Nur et al. (2020), online advertisement factor has the highest correlation with online shopping behavior compared to accessibility and entertainment factors. Therefore, this study will focus in four factors which are *Online Advertisement*, *Product Risk*, *Delivery Risk*, and *Information Security* in order to examine the new digital culture adoption among college students.

Although there are many researches done on the factors affecting online shopping behavior, there is a limitation in a study that focus in college students. According to a survey on 5623 respondents, more than half of the respondents from age group 16 to 24 (56%) purchased more (Statista, 2020). Therefore, this group of customers are potential players in e-commerce. This study will analyze the possible factors affect online shopping behavior among college students (age 16 to 24). In addition, effect size of the factors is answered in the analysis.

2.0 LITERATURE REVIEW

Online Shopping Behaviour refers to an individual's overall view and assessment of a product or service while buying online, which can be negative or positive (Shahzad et al., 2015). Meanwhile, *Online Advertising* is a selling strategy that involves the use of the Internet as a medium to generate website traffic and present marketing messages to the right customers (Khandare and Suryawanshi, 2016). Online advertising helps the organization or company to promote their products through brand recognition (Haider and Shakib, 2017). Vincent et al. (2018) in his research stated that the goal-oriented customers normally have a shopping plan in their minds as determination of customer purchase behaviour. Advertisement with appropriate information will provide information to this group of customers in making purchase decision. Besides that, a good advertisement is beneficial to customer's purchase decision making, and increasing customer satisfaction and brand loyalty (Chua and Sharma, 2005). Therefore, it is assumed that customers purchase behaviour will be affected by the online advertising more easily if the advertisement matched the customer's favour (Nur et al., 2020).

Product Risk is the perception that a purchased product may not work as originally anticipated (Kim *et al.*, 2008). Although online retailers are available 24/7 with all the product details, nonetheless, it is difficult for customers to analyse the real products based on the images and reviews provided and thus make a wrong judgement over the product quality (Sirkka *et al.*, 1999; Bhatnagar *et al.*, 2000). Although the customers have the higher power in the online shopping experience (evaluation and comparison of product is not affected by salesperson), nevertheless, the whole shopping process has been shifted from tangible to intangible/digital process with high product quality risk (Emad, 2013). This phenomenon has significantly affected customer shopping behaviour (Kok *et al.*, 2020; Lu *et al.*, 2016; Emad, 2013).

Delivery Risk is another common factor that happens during online shopping process which issue in product lost, damaged or sent to wrong address (Emad, 2013; Yu *et al.*, 2007; Yeniçeri and Akin 2013; Ankita and Smita, 2015). Customers are also concerned about the slow delivery, improper product packaging and handling during transportation. (Claudia, 2012). Adnan (2014) also advised that online merchants should provide insurance coverage to online buyers to compensate late delivery cases. It is assumed that delivery risk will affect customers' online shopping behaviour.

Security is an important role in the online shopping as it will affect the online shopping decisions of the customers (Emad, 2013). Customers need to fill up the banking details when purchasing online which makes them worried about their personal information getting exposed by the seller to third parties (Rasool *et al.*, 2017). There is research that found that customer attitude, perceived security and perceived trust are among the factors that affect the online shopping behaviour (Meskaran, 2015, Prasetyo *et al.* 2021). In the light of these research, *Online Advertisement*, *Product Risk*, *Delivery Risk*, and *Information Security* are selected as independent variables in this research.

3.0 CONCEPTUAL MODEL

This research modified Emad (2013) conceptual model by selecting factors that have relationship with online shopping behavior (as shown in Figure 1) with additional famous factor – online advertising. These are the four factors believed to have high influence over college students based on the literature study.

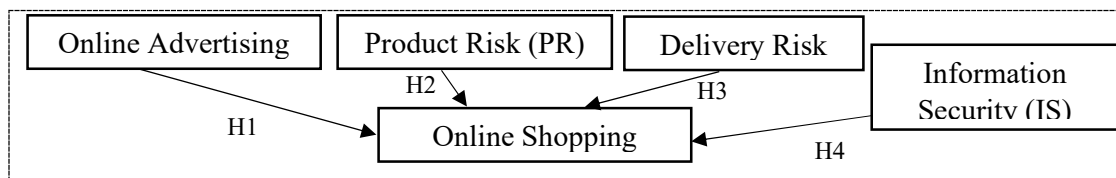


Figure 1. Research Model – factors affecting college students' online shopping behavior.

The research hypotheses are as following:

- H1: Online Advertising has significant effect on online shopping behavior among college students.
- H2: Product Risk has significant effect on online shopping behavior among college students.
- H3: Delivery Risk has significant effect on online shopping behavior among college students.
- H4: Information security has significant effect on online shopping behavior among college students.

4.0 RESEARCH METHODOLOGY

Online questionnaire in Google Form is distributed to TAR UC college students and shared in several social media platforms which are Facebook, Instagram and WhatsApp. Simple random sampling method is applied. One-way ANOVA and Cohen's F effect size calculated using PSPP and F calculator (Zhiyong et al., 2015). The questionnaire is designed in two sections: Section A that focus on demographic (age and gender), and Section B on the *Shopping Behaviour, Online Advertising, Product Risk, Delivery Risk and Information Security* as shown in Figure 2. These questionnaire items are adopted from several researches in selecting the most suitable and applicable questions for college students.

Section B:

Please express your agreement with the following statements on a scale of 1-5

Online Shopping Behavior

Q1. Do you think that you can get detailed product information when you shop online? Emad, 2013

Q2. Do you think that using the Internet for online shopping is easy?

Q3. Do you think that online shopping can give facility of easy price comparison?

Online Advertising

Q4. You often see online advertisements on social media, email and web banners.

Q5. I will pay attention to Internet advertising.

Q6. Online advertisements are informative and create awareness.

Anupkumar
and Snehal,
2019

Product Risk

Q7. Are you worried about receiving malfunctioning products?

Q8. Are you worried about didn't receiving what you ordered through online shopping?

Q9. Do you think that it is hard to determine the quality of products through the Internet?

Mohammad,
2012

Delivery Risk

Q10. You might not receive the product ordered online.

Q11. Delivery may be sent to the wrong place.

Q12. Sellers may not have timely delivery.

Q13. It is not easy to cancel orders when shopping online.

Q14. The goods returned may be waiting a long time.

Emad, 2013

Information Security

Q15. Using online shopping can make someone use your username and read your transactional information.

Q16. Using online shopping can make someone use your username and make orders.

Q17. Using online shopping can make someone steal your account information.

Chong and
Siti, 2020

Figure 2. Questionnaire Items for four independent factors – online advertising, product risk, delivery risk and information security; and one dependant factor – online shopping behavior.

5.0 RESULTS AND DISCUSSION

A total sample size of 151 was successfully collected with 53.6% female students and 46.4% male students. Based on the Cronbach Alpha's reliability test, the questionnaire items are acceptable at the index of 0.78 (Table 1).

Table 1. Reliability test

Cronbach Alpha's	Number of items retained
.78	17

Table 2. One-Way Anova and Cohen's f, Effect Size analysis.

	One-way ANOVA		Effect Size, f		
	F	Sig.	Mean	Std Dev	f
Online Advertising (OA)	2.19	0.026	3.37	0.78	0.57
Product Risk (PR)	2.23	0.023	4.13	0.67	0.43
Delivery Risk (DR)	6.04	0.000	3.65	0.90	0.60
Information Security (IS)	4.36	0.000	3.75	0.78	0.59

Dependent Variable: Shopping Behaviour (SB) Q1, Q2, Q3

Independent Variables:

Online Advertising – Q4, Q5, Q6

Product Risk – Q7, Q8, Q9

Delivery Risk – Q10, Q11, Q12, Q13, Q14

Information Security – Q15, Q16, Q17

f = 0.1 = small effects; f = 0.25 = medium effect; f = 0.40 = large effects (Cohen, 1988)

Table 2 shows the result of One-way ANOVA test of dependant variable: shopping behavior and independent variables: *Online Advertising*, *Product Risk*, *Delivery Risk* and *Information Security*. Besides, effect size of each pair OA → SB, PR → SB, DR → SB, IS → SB is calculated in Table 2. The result shows that *Online Advertising*, $F = 2.19$ and $\text{Sig} = 0.026$, has a significant effect on shopping behaviour with large effect, $f = 0.57$ ($f > .40$ = large effects). Therefore, H1 is supported. *Product Risk* also has a significant effect on shopping behaviour with $F = 2.23$ and $\text{Sig} = 0.023$. The effect size of *Product Risk* on shopping behaviour is $f = 0.43$ which is a large effect too. Therefore, H2 is supported. *Delivery Risk* and *Information Security* also show significant and large effect on the shopping behaviour based on Table 2 (*DR*: $F = 6.04$, $\text{Sig} = 0.000$, $f = 0.60$; *IS*: $F = 4.36$, $\text{Sig} = 0.000$, $f = 0.59$). Therefore, H3 and H4 are supported. Among these factors, *Delivery Risk* shows the highest effect on shopping behaviour, followed by *Information Security*, *Online Advertising*, and lastly *Product Risk* with the least effects. These results are compatible with all the previous research.

The research result clearly stated that *Online Advertising* does affect college students' shopping behavior and they agree that these advertisements are informative and helpful in their shopping process (Mean = 3.37). Student is also worry about incorrect product received or no product is received after placing order (Mean = 4.13). Besides, most of the students also agree that *Delivery Risk* is a concern in their shopping experience (Mean = 3.65). Students nowadays also has high *Information Security* awareness and they agree with the risk of sharing personal information in the shopping process (Mean = 3.75). Among these factors, *Product Risk* has the highest concern among students, followed by *Online Advertising*, *Information Security*, and *Delivery Risk*.

It is interesting to see that although most of the students are most concerned about *Product Risk* (Mean = 4.13) but this factor brings the lowest effects in the shopping behavior ($f =$

0.43). This shows that product information is important in making purchase decision yet it will not stop people from buying it even if the information is not sufficient. This might be due to the availability and ease of access of information in the Internet and customer does not merely depend on one platform to get the full details of a product before purchase from one platform. *Online Advertising* shows the lowest agreement (Mean = 3.37) but it affects the shopping behaviour with high effect size ($f = 0.57$). This shows that customers pay attention to the advertisement and get influenced unconsciously in their shopping behaviour. As for the *Information Security* and *Delivery Risk*, students have high awareness and both has high impact on the shopping behaviour. As a conclusion, students nowadays are smart customers who are aware of many considerations during online shopping instead of focusing in advertisement only. This is the development of new digital culture among youngster due to the advancement of the Internet and technologies.

Additional analysis is conducted to test whether gender shows different result in each pair OA → SB, PR → SB, DR → SB, IS → SB and the result is shown in Table 3. The result shows that there is not much difference between male and female customers in the shopping behaviour except for *Delivery Risk* which shows significant effects ($F = 2.71$; Sig = 0.004).

Table 3. Two-Way ANOVA analysis.

<i>Two-way ANOVA</i>		
	<i>F</i>	Sig.
Online Advertising (OA) x Gender	0.48	0.924
Product Risk (PR) x Gender	0.15	0.997
Delivery Risk (DR) x Gender	2.71	0.004
Information Security (IS) x Gender	0.66	0.762
Dependent Variable – Shopping Behavior (SB)		
Independent Variables: OAxGender; PRxGender; DRxGender; ISxGender		

6.0 CONCLUSIONS

Factors that affect online shopping behavior are considered an important issue in e-commerce. This research proves that online advertisement, product risk, delivery risk and information security significantly affect college students' online shopping behavior. To reduce the negative aspect of the associated factors that affect online shopping behavior among college students and to increase the possibility of experience among college students, e-marketers and e-retailers should examine into these concerns. For example, improving advertisement information, product information, delivery service, and secured information would definitely increase customers' trust and thus reduce its negative impact on the online shopping behavior. Therefore, this study is important in contributing to the e-commerce development especially among e-retailers who are targeting on younger generation.

There are several future works or recommendations that can be done in the future to improve the research study. Firstly, other associated variables/factors also can be analyzed in future research such as health risk, quality risk, social risk, time risk and etc. In addition, this research shows the need for further research to examine the influence of respondents' characteristics such as gender and experience on the composition of various associated factors dimensions and analyses their various influences on online customers' purchasing decision makings.

REFERENCES

- Ahmad T (2017) Perceived usefulness and perceived ease of use of electronic health records among nurses: Application of Technology Acceptance Model. *Informatics for Health and Social Care* 43(4):379-389, <https://doi.org/10.1080/17538157.2017.1363761>.
- Ankita P and Smita M (2015) Factors of perceived risk affecting online purchase decisions of customers. *Pacific Business Review International* 8(2): 49-58.
- Anupkumar D and Snehal G (2019) A descriptive study of the effectiveness of Internet Advertising on customer buying behavior in Nagpur city. *International Journal of Latest Engineering and Management Research* 3(5).
- Anurag P and Jitesh P (2019) Factors affecting customer's online shopping buying behavior. *Proceedings of 10th International Conference on Digital Strategies for Organizational Success*, <http://dx.doi.org/10.2139/ssrn.3308689>.
- Chakraborty D (2016) Factors affecting customer purchase decision towards online shopping: a study conducted in Gangtok, Sikkim. *Adarsh Business Review* 3(1), 11-18.
- Chiu HC, Hsieh YC, Li YC and Lee M (2005) Relationship marketing and customer switching behavior. *Journal of Business Research* 58(12): 1681-1689.
- Chong SX and Siti AS (2020) The relationship between security and online shopping intention. *Research in Management of Technology and Business* 1(1): 28-40.
- Cohen J (1988) *Statistical power analysis for the social sciences*. Hillsdale, New Jersey, Lawrence Erlbaum Associates.
- Emad YM (2013) The effect of perceived risk on online shopping in Jordan. *European Journal of Business and Management* 5(6): 76-88.
- Ganapathi P and Abu-Shanab EA (2020) Customer satisfaction with online food ordering portals in Qatar. *International Journal of E-Services and Mobile Application* 12(1):23, <https://doi.org/10.4018/IJESMA.2020010104>.
- Haider T and Shakib S (2017) A study on the influences of advertisement on consumer buying behavior. *Business Studies Journal* 9(1).
- ITA (2019) *Malaysia e-commerce*. ITA, Washington, DS, USA.
- Khandare AU and Suryawanshi PB (2016) Studying the impact of internet advertising on customer buying behaviour. *International Journal of Basic and Applied Sciences* 1(1): 28-33.
- Kok W, Omkar D, Zainudin J and Nurlida I (2020) Perceived risk factors affecting customers' online shopping behaviour. *The Journal of Asian Finance, Economics and Business* 6(4): 246-260.
- Lee JE and Jessie HCY (2018) Effects of price discount on customers' perceptions of savings, quality, and value for apparel products: mediating effect of price discount affect. *Fashion and Textiles* 5(13), <https://doi.org/10.1186/s40691-018-0128-2>.
- Lu MH, Wan FWZ and Nurul HH (2016) The impact of perceived risks towards customer attitude in online shopping. *International Journal of Accounting, Finance and Business* 1(2): 13-21.
- Mae SA (2019) *Factors influencing Japanese customers' purchase intention of subscription streaming services*. Ritsumeikan Asia Pacific University. Beppu, Ōita, Japan.
- Meskaran F (2015) The effect of perceived trust, perceived security and attitude on online purchase intention. *Proceedings of the International Conference on Electronic Business*: 417-426.
- Mohammad HMJ, Hossein RD, Mojtaba N, Amir P and Ahmad RA (2012) An analysis of factors affecting on online shopping behavior of customers. *International Journal of Marketing Studies* 4(5).

- Neeraj G and Veena B (2016) Application of decomposed theory of planned behavior for m-commerce adoption in India. *Proceedings of the 18th International Conference on Enterprise Information Systems 2*: 357-367.
- Nur N, Azlinah M and Syaripah RSA (2020) Online advertising on customer purchasing behaviour: effective elements and its impact. *Proceedings of the 3rd International Conference on Networking, Information Systems & Security*: 1-7, <https://doi.org/10.1145/3386723.3387875>.
- Onewo TT, Morakinyo DA and Akintan AA (2020) Effect of online advertising on customer buying behaviour of Internet users in Lagos state. *Ilorin Journal of Human Resource Management* 4(1): 1.
- Prasetyo YT, Tanto H, Mariyanto M, Hanjaya, C, Young MN, Persada SF, Miraja BA and Redi AANP (2021) Factors affecting customer satisfaction and loyalty in online food delivery service during the Covid-19 pandemic: its relation with open innovation. *Journal of Open Innovation: Technology, Market, and Complexity* 7(1): 76.
- Rasool A, Gupta V, Slathia B, Mahajan G (2017) Online shopping adoption and influencing factors: a study in Karnataka. *Journal of Management Sciences and Technology*: 29–40.
- Shahzad KA, Liang Y and Sumaira S (2015) An empirical study of perceived factors affecting customer satisfaction to re-purchase intention in online stores in China. *Journal of Service Science and Management* 8(3): 291–305.
- Sirkka LJ, Noam T and Lauri S (1999) Customer trust in an Internet store: a cross-cultural validation. *Journal of Computer-Mediated Communication* 5(2), <https://doi.org/10.1111/j.1083-6101.1999.tb00337.x>.
- Statista (2020) Impacts of Covid-19 pandemic on the online purchase behavior among consumers in Malaysia as of May 2020, by age group. Hamburg, Germany.
- Vincent O, Andrew N, Alfa H (2018) Effects of online advertising on customer buying behaviour: study of Nigeria police academy cadets. *Polac International Journal of Economics and Management Science* 4(1).
- Yu D, Dong T and Liu R (2007) Study of types, resources and their influential factors of perceived risks in purchase online. *Journal of Dalian University of Technology* 28(2): 13-19.
- Zamzuri NH, Kassim ES and Shahrom M (2018) Entertainment gratification, informative gratification, web irritation and self-efficacy as motivational factors to online shopping intention. *Management & Accounting Review* 17(3): 95-108.
- Zhiyong JZ, Ke-Hai Y, Yujiao M, Meghan C, Han D, Ge J, Haiyan L, Agung S, Miao Y and Xinyi W (2015) Effect size calculator for one-way Anova. Notre Dame, Indiana.