

The Importance of Logistical Factors in Online Shopping Behaviour

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ABSTRACT

E-commerce is growing more rapidly and globally. The ever-growing online shoppers prefer the comfort of their private home due to many challenges in modern world retailing. The increasing trend of e-commerce and the necessity of logistics competencies in supporting the online shopping experience has become prevalent than before. The article explains the critical factors in logistics competencies over online shopping behaviour (OSB). In this study, there are five dimensions of logistics competencies which consist of order accuracy, order condition, timeliness; visibilities, as well as reverse logistics, have been adopted from previous studies. And the studies focused on millennial consumers (university students) were used as respondents. Using a survey design to address the research questions and the results indicated that the five dimensions of logistics competencies are considered significant to the changes in online shopping behaviour.

Keywords: E-commerce, logistics, online shopping behaviour.

I INTRODUCTION

Online shopping is the process a customer takes to purchase a service or product over the Internet (Cheawkamolpat, 2018). In other words, a consumer may buy at his or her leisure visit web stores from the comfort of their homes and shop from an online store. Thananuraksakul (2018) and Ariff and Colleagues (2014) have examined that online shopping has become one of the most popular Internet activity, followed by e-mail using, instant messaging and web browsing in Thailand and Malaysia respectively. Accordingly, it is imperative for the practitioners to understand online shopping behaviour (OSB) in this competitive and rapidly growing virtual marketplace. The OSB is also known as online buying behaviour and internet shopping behaviour, in which these terms refer to the consumption process of buying products or services over the web (Cheawkamolpat, 2018).

When studying OSB, there is one undoubted fact that everyone should bear in mind that logistics services are one of the fundamental goals for online shoppers. Usually, online shoppers make their purchasing orders at their home or office assuming

quicker delivery than offline purchasing and on time delivery at his or her convenience (Ariff, Sylvester, Zakuan, Ismail, & Ali, 2014). In contrary, the late shipment is one factor that deters online shoppers over the web purchasing. As such matter, an effective logistics competency contributes to satisfied shoppers using online transaction (Thananuraksakul, 2018). In corresponding with the increasing trend of e-commerce and globalization, it is found that logistical factors are becoming more prevalent than before in product movement (Demo, Guarnieri, & Alvarenga, 2018). Thus, the logistics service providers (LSPs) play a significant role in providing logistics support in the ever-growing online retailing.

Furthermore, the ever-growing online shoppers prefer the comfort of their private home due to many externalities that deter them from going out and shopped especially inflate petrol prices; limited parking spaces and traffic jams (Ariff et al., 2014). According to Traffic Index by TomTom in 2016, the traffic congestion increase to 13 per cent globally since 2008. For the major cities like Mexico City, Bangkok, Istanbul, Rio de Janeiro and Moscow were the most congested cities in 2015. The onset of traffic jamming leads the people to feel extreme stress as they have to waste precious time and money to carry out their daily activities such as working and shopping during peak hours. It is time-consuming, waste of money and fuel when being trapped in the traffic congestion. The ease of choosing and paying online has become staple for online shoppers which reduce their waiting time and costs of popular shopping (Thananuraksakul, 2018).

However, some shoppers hesitate to shop online due to the probability of product inaccuracy, low expectation of product condition, late delivery as well as the damaged products and the ease of returns. So, shipment of products is critical and affecting online shoppers' behaviour towards online shopping experience. There is a need for LSPs to provide the best logistics practices in fulfilling online shoppers' requirement towards product shipments. In brief, it is essential to determine the influence of logistics competencies towards OSB among online shoppers.

II LITERATURE REVIEW

Shahzad (2015) defines an OSB as a kind of individual's overall evaluation and a perception of a certain product or a service during online shopping

experience which can result in a repeated online purchasing or otherwise (Thananuraksakul, 2018). Besides, Cheawkamolpat (2018) has mentioned that the OSB is a consumers' emotional and actual behaviour based on the evaluation of purchase decisions over the internet. Also, the OSB is defined by Lee & Zhang (2002) as "consumers' psychological state regarding making purchases on the web." Therefore, understanding OSB becomes the critical element of E-retailers which focus on seeking to promote business relationships and increase long-term profitability. Through identifying the factors that influence OSB, the online retailers able to monitor and improve company's performance and encourage more customers to shop online (Demo et al., 2018). Previous studies on consumers' OSB have identified some factors that consumers consider essential in their adoption of online shopping.

According to Thananuraksakul, (2018) identified demographic characteristics of online shoppers have a significant influence on online purchase frequency. Demographic characteristics factors can be categorized as gender, age, education level, occupation, income, race, religion, nationality, family size and family life cycle (Kotler, 1982). Besides, Ariff et al., (2014) also stated that convenience is the primary motivation for online buying due to the consumer can shop anytime-anywhere and having bundles of items delivered at their doorstep. Similarly, a study conducted by Yasmin and Nik (2010) also shows that website features have a significant influence on online shopping activities. The excellent quality of website design can guide the customers for successful transactions and attract the customers to revisit the site. Furthermore, Demo et al., (2018) highlighted that logistics services factor has a significant effect on consumers' behaviour towards online shopping. They actively to support that online shopping cannot be completed without efficient and effective logistics service.

The delivery service is the primary element that online retailers need to achieve the delivery of goods bought by consumers. Moreover, online shoppers also concern with logistics information such as the location of products, quality of products and order status. Also, communication between logistics service provider and online shoppers also directly influence consumers' OSB. The standardized operation and procedures of LSPs may reflect the professionalism and reputation of online retailers. It is another dimension of logistics service has effects on the customers' psychology. Therefore, efficient and effective logistics service will contribute to consumers' satisfaction with online shopping (Demo et al., 2018).

A. Logistics Competencies

Logistics management is a supply chain management component that is used to meet customer demands through the planning, control and implementation of the effective movement and storage of related information, goods and services from origin to destination (Lambert, Stock & Ellram, 1998). Logistics management helps companies reduce expenses and enhance customer service. By adhering to customer needs and industry standards, logistics management facilitates process strategy, planning and implementation. According to Demo et al., (2018) stated logistics competence is a vital strategic asset for manufacturing firms to compete in the current global environment.

Logistics capability, such as customer responsiveness and competing on time, can be valuable resources for corporate strategy. Logistics competence can be divided into two types which are logistics factor competence and logistics operation competence. Logistics factor competence refers to a company used their logistical activities as means to address efficiency and effectiveness of the product movement (Dubey & Samar, 2013). Same goes for the LSPs; they possess logistics factor competencies for instance vehicles, warehouses, handling equipment, drivers, deliveryman, capitals, order and delivery information to manage various retailers' online shopping activities. There are five specific logistics competencies aspects which included orders accuracy, order condition, timeliness, visibility and reverse logistics are the focal points in the study.

B. Order Accuracy

Order accuracy refers to how closely products match customers' orders upon delivered (Demo et al., 2018). It involves the right order, the correct quantity of goods and no substitutions for products ordered. Besides that, Rahmat & Faisal (2015) describe order accuracy is the goods received from LSPs or online retailers to the consumer is expected accurate. Hence, manufacturers always conduct internal inspection towards orders to prevent inaccuracy and erroneous order handling (Demo et al., 2018).

In Rapee, Peng & Lee (2014), order accuracy is essential and influence to consumers' behaviour toward online shopping. They strongly endorsed the order accuracy can be used to identify the level of logistics competencies to achieve customers' satisfaction in online purchasing experience (Thananuraksakul, 2018). Indeed, wrong item deliveries also contributed to customers' dissatisfaction and further prompt a switch to the other competitors in the online industry. Also, a study conducted by Lee (2014) in Taiwan found that

order accuracy has a significant impact on consumers' OSB. The author shows that the Taiwanese are always less satisfied with the products they purchase online due to they did not receive the right product from the LSPs. Thus, order accuracy has been shown to influence whether or not a consumer will continue to shop online.

C. Order Condition

Order condition addresses the damage levels of the products due to handling throughout the door-to-door services (Ariff et al., 2018). Thus, it explicitly defined in term of logistics as a free damages good delivered is considered competence logistically. In other words, a damaged product will lose its intrinsic value since customers will not be able to use it and it may need to undergo some after sales services which included reverse logistics (Demo et al., 2018).

According to Yuan (2006), the customer survey report proved that a high consumer satisfaction on online shopping is based on order condition, order accuracy and order completeness. LSPs and online retailers mitigate by using safeguarding materials and provide some training to drivers regarding the methods to load and unload the products incorrect protocol.

D. Timeliness

Lee stated timeliness in logistics is being at a favorable time for the shipment (2016). It can be defined as the quality or habit of arriving or being ready on time (Merriam-Webster Dictionary, 2016). Timeliness, in the context of logistics, brings that meaning of having the right quantity of a right product at the right place at the right time with the proper condition (Logistics World, 2016). Thus, the timeliness highlighted is expressly for delivery timeliness. Concurrently, it can be understood as one of the means of reception for the order placed by the customer at the agreed moment (Thananuraksakul, 2018). Based on the client value theory, timeliness is one of the vital elements in the relationship between logistics service providers (LSPs) and customers (Rony et al. 2015). It has been found that customer satisfaction can be further improved through the given availability of flexible timeliness based on demand (Demo et al., 2018).

E. Visibility

From the perspective of e-commerce, visibility defined traceability of customer shipments along logistics pipeline (UPS, 2016; Demo et al., 2018). Between the e-retailer and customer, logistics chain visibility enables the real-time traceability and identifying product movement. Implementing track and trace infrastructure may improve the company competitive advantage (Hockenberger, 2014). In

another research which is conducted by ComScore, around 50% of the respondents think that tracking service is essential and almost half of the respondents believe that it is nice to have tracking service during online shopping (2012). This result shows the importance of visibility within the e-retailing business.

F. Reverse Logistics

According to Ergan and Akyol (2018), reverse logistics refer to the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the consumption point back to the end of origin to recapture value or proper disposal. More precisely, reverse logistics is the process of transferring goods from their typical final destination for adequate placement or, capturing value. However, in online shopping or e-retailing, reverse logistics is about the return policy which enables the customer to return the product exchange unwanted or defective merchandise that they have purchased previously (Watson, 2015). Return policy will become a significant option when the delivered goods were defected, damaged, wrong items or dissatisfied customer due to other reasons (Ergan & Akyol, 2018). According to Robinson (2014), an effective reverse logistic in e-retailing improved the overall customer satisfaction and online shopping experiences.

The past empirical studies (Thananuraksakul, 2018; Ergan & Akyol, 2018; Ariff et al., 2018; Demo et al., 2018; Hockenberger, 2014) had encapsulated the importance of logistical factors in OSB however, the studies were inconclusive in which logistical competencies that a significance influence OSB, i.e. Order accuracy; order condition; timeliness; visibility and reverse logistics over online purchasing. Hence, the study shed some of the ambiguity in OSB in the logistics perspective.

III METHODOLOGY

The study employed a quantitative approach in investigating the underpinning questions of the research. It is a descriptive study to gain the underpinning factors in understanding OSB from the logistics perspective. The study used a primary data to interpret the phenomenon in e-commerce ecosystem. Therefore, a self-administered questionnaire is used to address the research questions and objectives. The survey was structured using the 7-point Likert scales, where 1 = strongly disagree and 7 = strongly agree. The development of the items in the questionnaire was adopted from previous empirical works (Table 1).

Table 1. Questionnaire Development using Previous Studies.

Variables	No. of Item	Item	Sources
Section A: Demography Variables			
Gender	1	Section A, Item 1	
Education level	1	Section A, Item 2	
Nationality	1	Section A, Item 3	
Financial	1	Section A, Item 4	
Online frequency	1	Section A, Item 5	
Online shopping experience	1	Section A, Item 6	
Payment method	1	Section A, Item 7	
Student residential hall	1	Section A, Item 8	
Section B: Dependent Variable			
Online shopping behavior	12	Section B, Item 1-12	Forsythe et al. (2006); Karayanni (2003); Swinyard & Smith (2003); Liang & Huang (1998)
Section C: Independent Variables			
Order accuracy	5	Section C, Item 1-5	Saura et al., (2008); Bouzaabia et al., (2013); Menzyer et al. (1999/2001); Rossiter (2007)
Order condition	5	Section C, Item 1-5	Saura et al., (2008); Bouzaabia et al., (2013); Menzyer et al. (1999/2001); Rossiter (2007)
Timeliness	4	Section C, Item 1-4	Saura et al., (2008); Bouzaabia et al., (2013); Menzyer et al. (1999/2001); Rossiter (2007)
Visibility	5	Section C, Item 1-5	Kleinman (2012)
Reverse logistics	5	Section B, Item 1-5	Lewis (2006); Rossiter (2007)

The type of sampling method that applied in this research is non- probability sampling. A sample of 400 respondents within the population in higher education institution (HEI) had been selected. The sample in this research is the millennials who have the experience of online shopping. The sample is considered liable to the study due to many social sciences types of research had been using HEI as their unit analysis (Peterson & Merunka, 2014; Peterson, 2001). Hence, this study is to describe the underpinning factors in understanding OSB rather than generalize the overall findings. The conceptual framework has been developed to guide the research (Figure 1).

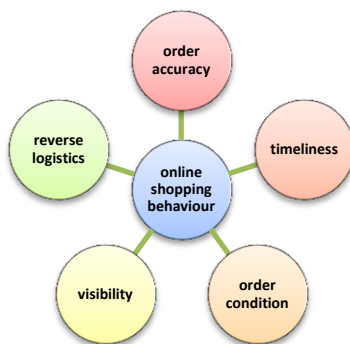


Figure 1. Conceptual Model of Millennials' Online Shopping Behaviour.

The demographic analysis had been done to see the proportion of the sample following the demographical background (Table 2).

Table 2. Demographic Analysis

Gender	n	%
Male	130	32.5
Female	270	67.5
Online Shopping Experience*	400	100
Online Shopping Frequency		
Everyday	335	83.7
Once a week	17	4.3
Once a month	15	3.8
Every 2 months	8	2.0
Occasionally	25	6.2
Payment Method		
Credit Card	48	12.0
Debit Card	232	58.0
Cash-on-Delivery	120	30.0

*Note: This item is a pre-requisite question before attempting to the next question.

The demographic analyses show almost 70 per cent of the respondents were female and most of the respondents have at least an experience of online shopping in their life. The millennial seems to browse daily to shop for their convenience (around 84% of population sample), and they preferred using their debit cards as the means of payment (almost 60% out of population sample).

IV FINDINGS

The results of the present study are analyzed. Before that, the Chi-Square test is primarily carried out to examine whether there is the difference between demographics variables. Based on the result, there is almost no difference between demographics variables in the study. Hence, it is possible for the research to extend correlation and multiple regression analysis. Based on the result in Table 3, all the items used in this study give coefficients of 0.953 in the Cronbach's Alpha test.

According to Sekaran & Bougie (2013), reliability factor that less than 0.5 are considered to be low reliability, those in 0.5-0.7 is quite high reliability, which in 0.7-0.9 is high reliability and those over 0.9 are very high reliability. Besides, based on Nunnally's Rule of Thumb (1978), the level of reliability is considered to be acceptable with the value of 0.70 or better in basic research, whereas, for applied settings, the reliability of 0.80 or even 0.90 should be better. Hence, the item within unidimensionality scales with higher reliability value requires no further test, i.e. factor analysis (Sekaran & Bougie, 2013).

Table 3. Cronbach's Alpha

Cronbach's Alpha	N of Items
0.953	36

Based on Table 4, the p-value for all the five variables is equal to 0.000 at which it is less than a value of 0.01. Thus, it indicates a statistically significant correlation between independent variables (order accuracy, order condition, timeliness, visibility and reverse logistics) and

dependent variable (online shopping behaviour). There are a positive influence and relationship between all the independent variables of millennials' online shopping behaviour.

Table 4: Correlation between independent variables and the dependent variable

Factors	Pearson Correlation						Sig. (2-tailed)
	OSB	OA	OC	T	V	RL	
OSB	1.00	0.550	0.540	0.522	0.475	0.528	0.00

Correlation is significant at the 0.01 level (2-tailed).

From the Table 5, the coefficient of multiple determinations (R²) value is 0.428 which means order accuracy, order condition, timeliness, visibility and reverse logistics explain 42.8% of online shopping behaviour. Besides that, the table shows that the set of predictors of online shopping behaviour is statistically significant at the 0.01 level ($F(5,394) = 59.005, p < 0.05$) and therefore, it confirms the fitness of the model.

Table 5: Results of Regression Analysis (Model Summary and ANOVA)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	0.654 ^b	0.428	0.421	0.788
ANOVA				
1	Sum of Squares	Df	Mean Square	F(Sig. ^c)
Regression	183.102	5	36.620	59.005(0.00 ^b)
Residual	244.528	394	0.621	
Total	427.631	399		

a. Dependent Variable: OSB; b. Predictors: (Constant), OA, OC, T, V, RL; c. Significance = 0.05

Based on the findings (Table 6), thus, it can conclude that the independent variables: order accuracy, order condition, timeliness, visibility and reverse logistics have a positive relationship with the dependent variable: online shopping behaviour. Also, it can be seen that order accuracy has the highest beta at 0.240, which indicated that this variable is the strongest factor in influencing millennials online shopping behaviour.

Table 6: Significant Predictors of Structural Model (N=400)

Model	Coefficients				T	Sig. ^b
	Unstandardized Coefficients		Standardized Coefficients	Beta		
	B	Std. Error				
1 (Constant)	1.212	0.251			4.819	0.000
Order Accuracy	0.226	0.050	0.240		4.537	0.000
Order Condition	0.128	0.060	0.128		2.140	0.033
Timeliness	0.118	0.060	0.116		1.983	0.048
Visibility	0.105	0.052	0.104		2.014	0.045
Reverse Logistics	0.209	0.046	0.223		4.512	0.000

V DISCUSSIONS

The research framework theorized that order accuracy, order condition, timeliness, visibility as well as reverse logistics would influence millennial's behaviour towards online shopping. All logistics competencies components were significant predictors as expected. Importantly, the present study revealed that order accuracy is the strongest predictor of millennial's behaviour toward online shopping. Order accuracy exerted the strongest influence on millennial's behaviour towards online shopping ($r = 0.550, p < 0.01$), followed by order condition ($r = 0.540, p < 0.01$), reverse logistics ($r = 0.528, p < 0.01$), timeliness ($r = 0.522, p < 0.01$) and visibility ($r = 0.475, p < 0.01$). It is consistent with Demo et al., 2018 on order accuracy is the strongest predictor towards millennial's behaviour in online shopping.

From the findings of the study, order accuracy has a significant and positive effect on millennial's online shopping behaviour. This is because those with high positive order accuracy appeared to have greater intentions over online shopping which is supported by previous studies (Demo et al., 2018; Lee, 2014). The results imply order accuracy tends to satisfy the online shoppers and lead them to continue to shop online.

Moreover, from the finding of the result, there is a significant and positive relationship between order condition and OSB. A supported study by Ariff et al., (2018) identified that order condition appears to be crucial in deciding over online shopping due to it is the primary responsibility of LSPs to ensure the good condition along the logistics chain. At the same time, meant that those with high positive order condition tends to have greater intentions to shop online which is supported by previous statistics of post-purchase evaluation by Taobao. It is shown that 70% of complaints are correlated with logistics competencies, such as damaged package and poor condition of the parcel which severely affects the intention of consumers to continue to shop online.

Furthermore, the result of this study shows reverse logistics has a significant and positive effect on millennials' OSB. This finding is consistent with the literature of Robinson (2014) which stated that the online shoppers would consider the return policy before they buy something from the Internet. It meant that one tends to have stronger intentions to purchase online if the retailers offer valid return policy such as money back guarantee, free product return or free return shipment (Ariff et al., 2018).

In fact, the consumers will take consideration of reverse logistics factors before deciding to purchase online. Also, the result of this study shows that

timeliness has the significant and positive influence on OSB. This finding is consistent with the literature from Hockenberger, the study highlighted that “on-time delivery” is the most crucial component in achieving the logistics service quality (2014). Besides that, the previous study shows that the independent variable of timeliness has positive relationships with the dependent variable of customer satisfaction (Rony et al. 2015).

Timeliness able to measures the average effectiveness and success of a courier provider once they have received a customer’s order (Dubey & Samar, 2013). Once LSPs do not deliver the parcel on-time, online shoppers perhaps feel dissatisfied with the courier services and tend to affect their intentions over online shopping (Ariff et al., 2018). Hence, it shows that timeliness influences OSB. On the other hand, the results of this study indicate that visibility has a significant and positive relationship with OSB.

It is compatible with the literature of Hockenberger (2014) which mentioned that it had become a best practice for e-commerce to offer tracking option proactively since it will encourage the customers to browse the same retailers’ website to increase chances of additional purchases or cross opportunities (Yang et al., 2011). The majority of the respondents think that tracking services are essential and helpful to have over online shopping (Cheawkamolpat, 2018). With the active monitoring systems, the customers tend to increase their intention towards online shopping and become loyal to purchase over the Internet. Therefore, visibility has a significant influence on OSB.

VI CONCLUSION

The study investigated the relationship between the logistical factors and OSB. The study has supported that the order accuracy, order condition, timeliness, visibility as well as reverse logistics have a significant influence on the online shopping behaviour. From another point of view, this research verified the LSPs as an indispensable role in an online shopping experience. A shopping without borders will not able to sustain, without the support from the logistical factors provided by the LSPs. The current findings are essential for e-retailers to use as guidelines to maintain a loyal consumer and gain profit longevity. However, it is required to extend the studies to more heterogeneous samples to achieve generalizations in the millennials population.

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