Impact of Covid-19 Pandemic on DHL Delivery Service

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ARTICLE INFORMATION

ABSTRACT

The COVID-19 pandemic lockdown in the entire world has significantly affected shopping behavior. This study has tried to survey the delivery services provided by DHL which is a world-leading logistics company that provides services from domestic and international parcel delivery. The COVID-19 pandemic has spiked demand for DHL e-commerce and warehouse space due to abnormality within the global supply chain and ensures non-interruption of production. This paper aims to analyze the impact of the COVID-19 pandemic on the DHL Delivery Service. This research would be conducted by gathering secondary data from DHL's website and several statistical findings. Besides, quantitative analysis researchers would be using primary data. Further study will be carried out by collecting primary data through a questionnaire. A questionnaire survey among e-commerce customers towards their experiences will be used for data collection with an online survey. Researchers tried to reveal the delivery company services. This study provides DHL with valuable insights and guidance on the impact of the COVID-19 pandemic, leading to improved consumer intention.

Keywords: COVID-19 Pandemic, Consumer Satisfaction, Delivery, Intention, Logistic

JEL Classification: M00, L80, L84

INTRODUCTION

Coronavirus (COVID-19) has suddenly shocked the world when the rate of infected individuals increased rapidly. Not only that, the death number soared day by day across the world. COVID-19 has swept away the enjoyment of our lives in a short period. It is a challenge for every individual to adjust their life according to new norms. The pandemic has reluctantly increased the uses of e-commerce and somehow led to an increase in sales for logistic companies. The pandemic accelerated an expansion in the number of e-commerce users in general. The COVID-19 crisis has restricted people's interaction that led to ease of using online shopping in their daily life (OECD, 2020). Malaysia e-commerce has been recognized as a most fastest expanding business concept among Southeast Asia, despite the tremendous COVID-19 impact (ecommerceDB, 2019; J.P.Morgan, 2020). Moreover, India also recorded about a 17% escalation in online retailing more than 2019 and is expected to rise in the future after the COVID-19 exists (Komal, 2020). Moreover, Fintech reported India e-commerce market is expected to reach 84 percent to $111billion in 2024. Thus, it shows e-commerce is growing among people due to the COVID-19 outbreak (The Times of India, 2021).

One of the world-leading logistic companies and international express, DHL recorded a surging trend in its revenue. DHL is a worldwide and well-known logistic company that survived despite pandemic that has affected the economy globally. DHL is a Deutsche Post DHL brand founded in San Francisco, USA in 1969. DHL is specializing in express delivery, contract logistics, overland transportation, and international mail services. As a huge brand of the logistic company, DHL has expanded its business in over 220 countries and employed a huge of workers to achieve its goals and target (DHL, 2019).

Due to restrictions on movement and interaction, e-commerce has attracted users even those who traditionally prefer to buy in-store. Traditional shopping itself means an activity where consumers have the opportunity to observe, feel, and peruse goods sold (Aryani et al., 2021). Nowadays, consumer behavior has shifted as consumers are compelled to turn to the internet to fulfill their desire and buy everyday goods in a pandemic-ravaged global. They rely on the internet which can access information and products and compare the price, read the review before making a purchase online. Their order will be sent through the e-commerce delivery service within weeks. According to a report by Digital 360, consumer internet purchasing surged 44% in 2020 compared to the previous year, and merchants are swiftly adapting to keep up (Young & Reilly, 2021). Basically, e-commerce contributed to DHL's high annual operating results. Since DHL's door-to-door courier service is a merit point to be chosen by consumers, the number of profits acquired by the company shows positive progress. The number of retail stores that offer delivery by courier also increasing due to demand from consumers.

Deutsche Post DHL reported the company has achieved the best annual operating results in 2020 as their revenue rocketed up due to consumers' demand for e-commerce and express delivery during pandemic COVID-19. Thus, the expected annual operating profit for 2021 has been set up to reach $6.6 billion (Knowler, 2021). According to the press released by DHL, DHL e-commerce is the highest growth rate within DHL Group. They can grow dynamically because of the significant increase in their profitability in the international parcel business (DHL, 2021).

This study will review the impact of the COVID-19 pandemic on DHL delivery service. The services offered by DHL during a pandemic are slightly different as they took a cautious step to provide a safe delivery to consumers. A company should always prepare hand sanitizer to minimize the risk of virus spread and for couriers that share vehicles, it is recommended to always disinfect the keys. This research was also conducted to figure

out the company's performance during the pandemic (DHL, 2020). Performance on services provided can be evaluated by collecting consumers' opinions on DHL's services.

LITERATURE REVIEW

Overview of Logistic Delivery Service
Logistics delivery, being a critical component of value chains both within and beyond international boundaries, encourage trade and commerce and assist firms to reach their products to consumers. Logistics, as defined by the Council of Supply Chain Management Professionals (CSCMP, 2013) are functions that involve the design, implementation, and management of the movement and storage of commodities, services, and associated information. It connects companies to the market by offering a range of services, including multimodal transportation, freight forwarding, warehousing, and inventory management (Twinn et al, 2020). According to the Allied Market Research website, the international logistics company was valued at $7,641.20 billion in 2017 and is predicted to peak at $12,975.64 billion by 2027, rising at a compound yearly rate of increase 6.5 percent between 2020 and 2027 (Halmare, Jawarkar, & Mutreja, 2021). Statistics show that with the fast expansion of the global e-commerce market, the logistics industry will expand in the next 6 years because it will become an essential part of e-commerce.

Consumer's Intention to Use Delivery Service
E-commerce has exploded in all nations and throughout the globe with the development and widespread adoption of multi-channel sales tactics. Logistic delivery service is a significant part of entrepreneurs (HANHAA, 2021). The transition from chain stores to e-commerce has raised the complexity of the logistics industry and consumers are tending to use logistic delivery services. The holiday discount seasons and festivals are hectic times as consumers are likely to online purchase or send parcels to family, relatives, or clients as gifts. Since the e-commerce industry is booming fast in the past decades, consumers' expectations have expanded simultaneously. Tipping and Kauschke (2016) have stated that consumers and companies alike anticipate receiving items more quickly, with greater flexibility, goods received are in good condition and at a cheap shipping cost.

Perceived Usefulness (PU)
Perceived usefulness is the most influential in other construct models as its impact is greater on a technology's behavioral intentions to be used technology (Davis, 1987; Gefen & Straub, 2000; Venkatesh & Davis, 1996). Davis (1898) indicated in his idea that perceived usefulness may be used to quantify a user's belief in a certain application's ability to boost company performance. A technology that is classified as high in perceived usefulness is usually to be trusted by users of its existence, resulting in a favorable use-performance connection (Davis, 1989). Positive action would occur if the consumer benefited from the delivery service. Therefore, the hypothesis can be posited as follows:
H1: Perceived usefulness is positively related to intention to use DHL Delivery Service.

Perceived Ease of Use (PEOU)
Davis (1989) revealed that perceived ease of use (PEOU) is the degree and extent does one thinks that adopting a certain system is simple. Various types of billing and payment systems will make it easier for consumers to manage and pay efficiently, conveniently, and securely. Hence, it can be concluded PEOU is the evaluation made by consumers about the technology that they are trying to adopt. This implies that perceived ease of use is predicted to have a positive influence on the consumer satisfaction of the logistic companies.
H2: Perceived ease of use is positively related to intention to use DHL Delivery Service.

Perceived Trust (PT)
The degree to which a person trusts another entity to carry out planned actions without taking advantage is referred to as perceived trust. Ben-Gal, Shay, and Simon (2015) mentioned that the perceived trust established that actionable trust was a critical component of service effectiveness, emphasizing the need of focusing on the relationship side of service interactions in research. Security and data privacy of customers will tend to their overall level of satisfaction and customer loyalty which is a crucial aspect in defining the success or failure of a logistics company. The perceived trust will include the customers' assessment of the dependability of the various security mechanisms in use on the logistic service. Trust is the main factor since the consumer has no direct influence and faces limitations over the vendor's behavior. It is depending on the other party's integrity in serving their services (Roca, Garcia, & De la Vega, 2009).
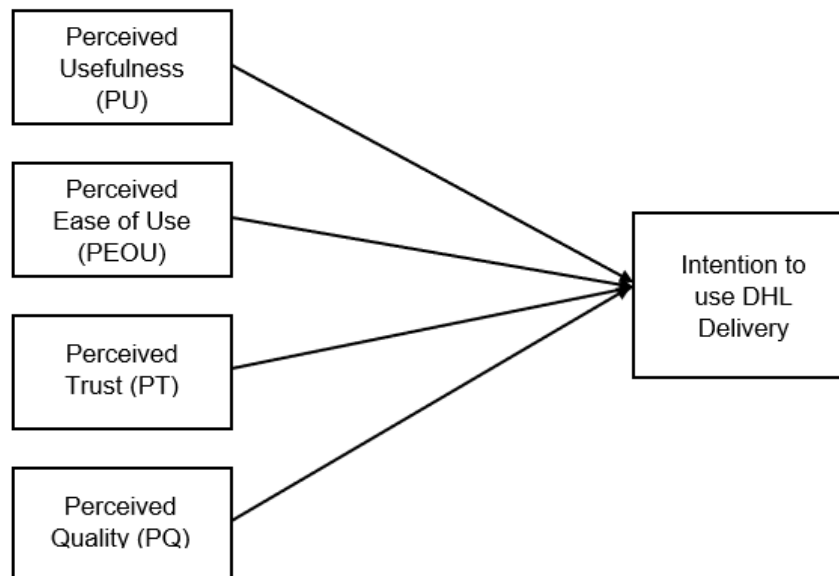**H3**: Perceived trust is positively related to intention to use DHL Delivery Service.

Perceived Quality (PQ)
Customers' perceptions of quality are crucial in their decision-making. Hence, consumers will assess the perceived quality of alternatives within a category in relation to their price. Perceived quality is about the judgment of consumers on an entity or services either regarding its excellence or lacking point (Zeithaml, 1988). According to Rowley (1998), the attitude that is connected to contentment is perceived service quality, but it is not the same as satisfaction. Moreover, perceived quality is a result of a comparison between expectation and perception (Rowley, 1998).
H4: Perceived quality is positively related to intention to use DHL Delivery Service.

Figure 1. Research conceptual framework

Hypotheses
H1: Perceived usefulness is positively related to intention to use DHL Delivery Service.
H2: Perceived ease of use is positively related to intention to use DHL Delivery Service.
H3: Perceived trust is positively related to intention to use DHL Delivery Service.
H4: Perceived quality is positively related to intention to use DHL Delivery Service.

RESEARCH METHOD

This research approach with qualitative and quantitative mode. A survey is conducted with questionnaires to gather information for research from 105 respondents from

Malaysia, China, and India which these countries have an equal number, 35 respondents filled out Google Form. The target audience is identified as present DHL delivery customers and a mix of people with gender and areas of the living who had the experience of using DHL delivery service are gathered as the research sample. This sample of respondents experiences the delivery service, which is suitable as a sample of research. Through this survey, researchers are able to evaluate customers' opinions on DHL delivery service and the impact of pandemic COVID-19 on DHL delivery service. Secondary data is also gathered from literature, journals, and other internet sources to support the data findings.

Measurement
To evaluate the variables of the study, researchers used seven-section questionnaires. These variables are used to measure the consumer intention to use DHL Delivery Service by using the 5-Point Likert Scale, which is 1 "Very Poor", 2 "Poor", 3 "Average" 4 "Good" and "5 "Excellent". Collected data will be analyzed and interpreted in depth using SPSS.

Demographic analyses are determined by using nominal questions to gain background information and analyze the variation between these groups, such as gender, age, areas of living, and nationality. Customer Behaviour Towards DHL Delivery Service. Researchers used nominal questions with category groups and closed-ended questions to access the customer's behavior on delivery service.

Independent Variable:
Perceived Usefulness (PU). The respondents' perception of the indicator was measured by a 4-item scale created to access the perceived usefulness of customers towards DHL Delivery Service.

Perceived Ease of Use (PEOU). 4-item scales are designed to access the perceived ease of use towards DHL Delivery Service. These include billing and payment system, the effectiveness of logistics processes on the distribution, assess the response time to inquiries and parcel and tracking system provide real-time tracking and all data.

Perceived Quality. Researchers created a 7-item scale to attain the perceived quality of DHL Delivery Service. Scale items are compliance with instructions, timeliness in response to inquiries by customer service, DHL staff who treated with respectful, the courier arrived within the specified delivery time, pick-up timeliness/reliability, the packaging and product/s were undamaged, and the courier provided with the correct documentation for the goods delivered.

Perceived Trust. 2-item scales to approach perceived trust of customers towards DHL Delivery Service. The scale items are based on the quality of service and service value for money of DHL.

Consumer Intention. Consumer intention is the ideas that influence a consumer's decisions or behaviors in the direction of a certain purchase or history service. Two scale items are created as the dependent variable is based on the overall satisfaction and consumer willingness to utilize the service in the future.

RESULTS

Table 1. Summary of Respondent's Demography (N=105)

Summary of Respondent's Demography	Percentage (%)
Gender	
Male	47.6
Female	52.4
Age	
Below 20 years old	19
21-30 years old	41
31-40 years old	21
41-50 years old	10.5
50 years old and above	8.6
Nationality	
Indian	33.3
Malaysian	33.3
Chinese	33.3
Areas of Living	
Rural	19
Urban	81
Employment	
A full-time student	50.5
Unemployed	8.6
Employment	25.7
Self-Employed	15.2
Wages (USD)	
Below USD1000	53.3
USD1001-1500	21
USD1501-2000	13.3
USD2001-2500	5.7
USD2501 & above	6.7

Table 1 summarizes the respondent's demographic details. A total of 105 respondents (N=105) which 35 respondents (33.3%) for all options which are Malaysia, China, and India. and they have experience in using DHL Delivery Service. There is a slight balance between the male (47.5%) and female respondents (52.4%). In terms of age, the majority of respondents are from the 21-30 years old group, while the least is 50 years old and above (8.6%). Most respondents (81%) are living in urban areas. In addition, over half (50.6%) of respondents are full-time students by following employment (25.7%), self-employed (15.2%), and unemployed (8.6%). Among 105 respondents, more than half (53.3%) reported a monthly income below USD1000.

Table 2. Summary of Customer Behaviour Towards DHL Logistic Service (N=105)

Summary of Customer Behaviour Towards DHL Logistic Service	Percentage (%)
How often do you use courier/delivery services?	
More than once per month	49.5
Once a month	32.4
Once every three months	7.6
Once every six months	5.7
Once a year	4.8
Which logistic service that you use most often?	

DHL	43.8
Ninja Van	1.9
FedEx	15.2
GDEX	9.5
Allcargo	10.5
J&T	19
Which type of shipping do you use most often?	
Letter	14.3
Parcel	69.5
Excessive or oversized shipment	16.2
What is the main reason you choose DHL Delivery Service?	
Wide network	38.1
Varied shipping gateways	4.8
Time-consuming in delivery	21.9
Good customer service	7.6
Good value for money	8.6
Goods delivered were undamaged	19
Would recommend DHL Delivery Service to family, relatives, and others?	
Yes	92.4
No	7.6

Table 2 above summarizes the customer behavior towards DHL Delivery Service among 105 respondents. Consumer behavior entails particular decisions, actions, ideas, or experiences that satisfy the consumer's requirements and desires to purchase in the future (Solomon, M. R., 1996). The survey indicates that almost half of the respondents (49.5%) used courier service more than once per month, 32.4% use once a month, 7.6% once every three months, 5.7% once every six months, and only 4.8% respondents stated they use courier service once a year. The findings reveal that most respondents (43.8%) most often use DHL as their main logistic service while the lowest recorder is Ninja Van (1.9%). 69.5% of respondents most often use parcel type of shipping as 38.1% stated that wide network is the main reason that they chose DHL Delivery Service. As the result, the findings reveal that customer behavior is one key driver to a successful logistic delivery service as 92.4% of them indicate that they would recommend DHL Delivery Service to their family, relatives, and others despite the COVID-19 pandemic.

Table 3. Descriptive Statistics, Cronbach's Coefficients Alpha, and Zero-order Correlations of All Study Variables

Variables	1	2	3	4	5
1. Perceived Usefulness	**0.88**				
2. Perceived Ease of Use	.85**	**0.84**			
3. Perceived Quality	.83**	.89**	**0.93**		
4. Perceived Trust	.74**	.78**	.82**	**0.79**	
5. Intention to Use DHL Delivery Service	.67**	.73**	.81**	.81**	**0.89**
Mean	4.34	4.37	4.43	4.45	4.40
Standard Deviation	0.68	0.64	0.62	0.67	0.73
No. of Items	4	4	7	2	2

Note: N = 105; *p < .05, **p < .01, ***p < .001.Diagonal entries indicate Cronbach's coefficients alpha.

Table 3 displays descriptive statistics, Cronbach's coefficients alpha, and zero-order correlations of all study variables based on the 5-Likert scale in the questionnaire. The variables are perceived usefulness, perceived ease of use, perceived trust, perceived convenience, and consumer intention, and these are tested by using SPSS to examine

the relationship of the variable. The Cronbach's Alpha value is used to weigh the reliability of the items measuring coefficient if the variables are internal consistency reliability. The dependent variables are perceived usefulness (PU), perceived ease of use (PEOU), perceived trust (PT), perceived quality (PQ), while the independent variable is consumer intention.

The Cronbach's coefficients alpha range is between 0 and 1 of measure's reliability. Nunnally (1978) have stated that the result is reliable and valid if the value of the Cronbach's alpha coefficient is higher than or equivalent to 0.70 since the coefficient is equivalent to or surpasses the minimal threshold of 0.70. As can be seen, the coefficient's alpha of the four perceived factors falls between 0.79 and 0.93, indicating the internal consistency reliability of all variables and denoting a strong relationship between the items in each variable and it is acceptable.

Table 4: Summary of Regression Analysis

Variables	Beta
Perceived Usefulness	-.11
Perceived Ease of Use	.01
Perceived Quality	.51***
Perceived Trust	.47***
R^2	0.71
F Value	65.37
Durbin-Watson Statistic	1.92

Note: N=105; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4 indicates the summary of regression analysis. Perceived usefulness, perceived ease of use, perceived quality, and perceived trust are the dependent variable in this project. As we can see, perceived quality recorded the highest beta value (0.51) and perceived trust with the beta values of 0.47, which reflected that they are positively correlated with the independent variable as their p-value of the predictors is 0.000. As such, H3 and H4 are supported. The R^2 value is 0.71, indicating that 71% of the variation of consumer intention is explainable by the perceived quality and perceived trust and it shows a high level of correlation. Research exposed that perceived quality and perceived trust are the main component influencing consumer intention to use DHL Delivery Service. Simultaneously, perceived usefulness and perceived ease of use did not significantly impact consumer intention to use DHL Delivery Service. Besides, its p-value is higher than the significant level of 0.05, there is no significant link between the perceived usefulness, perceived ease of use, and the dependent variable that can be found. Thus, the findings show an insignificant positive relationship between perceived ease of use and consumer intention while an insignificant negative relationship between the perceived ease of use and consumer intention. This result shows that H1 and H2 are not supported and rejected. Durbin-Watson Statistic reflected that it is positive serial autocorrelation as the value is 1.92, which is smaller than 2.0.

DISCUSSION

Based on the findings, perceived quality has a significantly greater impact on the customer's intention of using the company service, while perceived trust has a direct and positive significance in comparing the value of Beta. This suggests that the degree of quality is satisfied with the courier delivery experience in predicting the potential customer's intent. The company which seeks to remain competitive must deliver high-quality services to their customer (Kemp & Rotmans, 2005). It could keep improving their delivery time and reliability in delivering parcels to the customer and the parcel delivered is in good condition and undamaged. According to Vithya (2017), consumer intention

and trust have a favorable relationship. In addition, the quality of service can be improved by investing in modern technology and keeping up to date with current issues and situations to provide the best service to customers. Researchers have revealed that technology, human resource, and logistical service quality issues can influence consumer intention and company competitiveness (Rosteck, 2012; Ramanathan, 2010; Ling, Li, & Ofori, 2012). Consequently, perceived quality and perceived trust are positively correlated to consumer intention in using DHL Delivery Service.

On the other hand, the perceived usefulness and perceived ease of use are deemed insignificant in defining the dependent variable, consumer intention using DHL Delivery Service. They have a comparatively smaller contribution to consumer intention with the DHL Delivery Service. Perceived usefulness has negative insignificance as the low beta values of value -0.11 while the perceived ease of use is 0.01 which is considered positive insignificant. Luarn and Lin (2005) suggested that the greater the value of perceived usefulness, the more transactions it generates. Consumers are not intended to seek the factors of perceived usefulness and ease of use because it is not critical to them. In another point of view, other logistic delivery companies may provide more convenient services and options compared to DHL Delivery Company, such as more branches near their shop or house to drop off or pick up parcels and simple billing and payment system. DHL Delivery Service can evaluate their services with feedback form or evaluation form to understand and seek information based on their point of view. Golden & Krauskopf (2016) implied that consumers may be able to simply and quickly use and navigate through applications since this can aid them in determining whether an application is user-friendly. Customers may easily digest the information and follow the instructions step by step with a good experience. Perceived ease of use is associated with the assumption that utilizing the DHL service will ease their workload. Rao et al (2011) stated when consumers are choosing a courier for their business, it will also influence their organization's performance. Thus, the decision to use DHL will affect their sales at the same time. The result has shown that perceived ease of use did not affect the intention to use DHL services. DHL offered various ways for consumers to pay the fee and arrange for shipment including online payment. This is one of the ways that DHL created for customers to easily do their business (DHL, 2021).

CONCLUSION

The two research objectives that researchers set have been achieved. Through this study, researchers were able to investigate the consumer intention in using DHL Delivery Service and identify the impact of COVID-19 on DHL Delivery Service performance. DHL Delivery Service is a world-leading logistics company and international express which provides services from domestic and international parcel delivery. The data collected from the questionnaire that researchers have gathered provided much information and valuable insights to this study. From the regression analysis by using SPSS, it is concluded that two hypotheses (H3 and H4) are supported and significantly related to the independent variable, consumer intention to use DHL Delivery Service during the COVID-19 pandemic. This proves that the quality and credibility of a logistic company do help DHL's performance during these critical years. However, perceived usefulness and perceived ease of use did not significantly impact consumer intention to use DHL Delivery Service. The coefficient's alpha of four dependent variables ranges between 0.79 to 0.93, showing that all variables indicate a strong association between the items in each variable. In addition, the data analysis shows that 43.8% of respondents most often use DHL Delivery Service, more than 90% of respondents are likely to use DHL in the near future. Besides, the wide network is their main reason for respondents to use DHL as their logistic company and parcels are the type of shipping that they often use. Service quality and trust are assuredly dominant in terms of impact on consumer intention. Therefore,

the DHL Delivery Service has to take this initiative to improve their performance and gain trust from consumers to use their service.

Nonetheless, an obvious data limitation is arising in this present study. There is a small sample size which has restricted and calculated the reliability of the factors in this study. Future research should consider a greater sample size of respondents because a small sample will increase the reliability of results, which may lead to bias. Due to the COVID-19 pandemic, the questionnaire can only be sent in Google Form and spread in online communities or social media. Low response rates and less likely to stay fully engaged for an online survey to obtain accurate insights and feedback from them have happened. It causes difficulty in reaching certain types of participants, for example, people from rural areas are unable to access the form because of no or poor internet network. Besides, the researchers also should take into consideration the perspective of sender and recipient as they experienced the different ways and prospects of their service to predict consumer intentions and behavior towards logistic delivery service. Different perspectives have different feedback and opinion about the performance of service and it may have dissimilar thoughts on it. Besides, they can use variables other than those in this study, such as perceived price and perceived convenience for more in-depth research to get more accurate results in regression. Thus, future research should address the limitations of the present research.

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DECLARATION OF CONFLICTING INTERESTS
The authors have no conflicts of interest to declare.

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