

## **Effectiveness of E-Commerce Platform Among Millennials During Pandemic**

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**Abstract.** This study aims to evaluate the effectiveness of e-commerce platforms among millennials during pandemics. A quantitative approach was employed, and the structural relationship of constructs was examined using PLS-SEM to determine the effectiveness of the e-commerce platform. Online questions were created using Google Forms to collect data, and the research constructs' scales were updated and adapted from earlier studies. The sample consisted of internet users who used the online marketplace during the Covid-19 epidemic from March to December 2021. A total of 226 respondents were asked to measure the effectiveness of the e-commerce platform during the pandemic. According to the study, customers relied more on the e-commerce platform for transactions involving trust-building and online protection. The study identified that customer service, trustworthiness, platform usability, and delivery service significantly affect e-commerce platform effectiveness. The Covid-19 pandemic caused a significant shift in the retail industry, indicating areas for improvement in e-commerce. This study contributes to developing e-commerce platforms by identifying significant avenues for millennials to perform their e-commerce transactions. This information can be useful for e-commerce platforms to improve their sites and services.

**Keywords:** e-commerce, millennials, Covid-19 Pandemic, online shopping, shopping behaviour.

## **1. Introduction**

The outbreak of Covid-19 has caused most parts of the world to go to a movement control order (MCO) in 2020 to control the spread of the infection. Malaysia is also one of the earliest Asian countries to announce MCO from March 2020. This pandemic has drastically changed our lifestyles. The new norm of staying at home, working from home, and social distancing further pushed consumers to shop online (Bhatti et al., 2020). The outbreak had an impact on e-commerce globally, including the segmentation of electronics, personal care, healthcare, beauty, and others, due to uncertainty in consumer demands and supply chains across the globe.

The driving factors for the growth of the e-commerce market during this pandemic are increased internet users and awareness of online shopping (Tiptono et al., 2020). Moreover, the expanding number of products on the market and the lower prices of products due to direct distribution contribute to the growth of the e-commerce market not only in Malaysia but also globally (Ali & Bhasin, 2019). In Malaysia, RM1000 has been allocated to 10,000 e-commerce entrepreneurs, and RM20 million has been given to MDEC (Malaysian Digital Economy Corporation) to transfer rural internet centres into e-commerce hubs (Shah et al., 2020) for enabling consumers to get used to and familiarized with online shopping.

There are several e-commerce platforms in Malaysia including Shopee, Lazada and Zalora. Most Malaysian consumers browse and purchase products from their phones instead of using a computer or laptop (Subramaniam, 2022). Smartphones are easier to use and faster than other devices for them. Due to staying at home they often buy products online compared to normal situations, before the existence of Covid-19 (Bhatti et al. 2020; Poovenraj, 2020). To cope with the changing normal situations these commercial platforms have also redesigned the online shopping experience in different aspects like product variety, services, and delivery (Tran, 2021).

During the Movement Control Order, e-commerce platforms became a crucial tool since consumers became familiar with these platforms (Bhatti et al., 2020). However, some issues like delivery time, delivery cost, product prices, customer services, product variation, trustworthiness, usability and feasibility of the platform are the main concerns when determining the e-commerce platforms effectiveness (Qalati et al., 2021; Leo et al., 2012; Song et al., 2016; Wilson & Christella, 2019). Millennials in Malaysia are currently one of the major age groups representing 29% of the total population of 32 million (DOSM, 2020) with a monthly income of around RM1315 million (Tjiptono et al., 2020). 50% of Malaysia's working population are tech-savvy Millennials who demand innovative fintech solutions daily (Subramaniam, 2022). Therefore, increased adoption of technology and demand for transparency and accessibility is crucial for any digital platform to be efficient in meeting the needs of this generation.

Due to pandemic-induced restrictions, the digital generation has become more reliant on digitalization. Therefore, this study aims to find out:

- What extent do Millennials shift to e-commerce platforms in Malaysia during Covid-19?
- What is the impact of e-commerce platform availability and product variation on the satisfaction and loyalty of millennials in Malaysia during Covid-19?

Moreover, it assesses the impact of customer service, platform trustworthiness, platform usability, and delivery services on the effectiveness of e-commerce platforms during Covid-19.

## **2. Literature Review**

Millennials or Generation Y is a group of people born from 1980 to 2000, that is, people aged 22 to 42 years old (Rainer & Rainer, 2011). Millennials are not similar to other youth generations in each timeframe.

Howe et al. (2009) explain that millennials are more numerous than other youth generations; they are prosperous, better educated, and more technically diverse. This generation is the first generation to grow up with digital media (Raines, 2002). According to Stein (2013), millennials are equipped with an information revolution that empowers them with the technology to compete against gigantic corporations. This includes bloggers against newspapers, Youtubers against Studios, and hackers against corporations. Howe et al. (2009) emphasized that millennials have enormous buying power and influence them as they have big spending power. They exhibit a higher level of shopping enjoyment, market enthusiasm, and recreational shopping tendency than other generations.

Malaysian millennials are the generation that grew up with the internet and the most digitally engaged generation. Highly reliant on their phones and social media, they usually spend around 8 hours daily on the Internet (Tjiptono et al., 2020). They have an exceptional capacity to process and split through vast amounts of information and to seamlessly navigate between online and offline worlds (Yusop & Sumari, 2013). They are willing to use the mobile payment service (Mun, 2017) since they know it will benefit them more than other methods.

## **2.1 E-Commerce and Pandemic**

E-commerce can be defined as a business process carried out by employing information technology and the internet that relies on these technologies (Malitska & Melnyk, 2018). Associated services include Internet technology, electronic fund transfer, online transactions, supply chain management, inventory management systems, internet marketing, electronic data interchange, and automated data collection systems (Kwilinski et al., 2019). In addition to purchasing or selling goods and services, many people use the online platform to gather information about the latest products before purchasing online or offline (Kwilinski et al., 2019).

With eBay Malaysia's debut in 2004, Malaysia's experience of e-commerce began. A C2C website called Lelong.com.my came next in 2007, with more than 9.56 million monthly visits. Lelong was recognised as being at the forefront of Malaysia's e-commerce sector and held sway over the market for a while before Fashionvalet.com and Mudah.my joined it in 2011. The Malaysian e-commerce sector began in 2012 when two significant competitors, Lazada and Zalora, opened operations there. Shopee then entered the market in 2015 after a brief hiatus. By 2020, Malaysia's e-commerce sector will be valued at US\$ 4.3 billion, doubling to US\$ 8.1 billion by 2024 (14% of the compound annual growth rate) (Aprameya, 2020). A rising number of middle-class consumers adept at using technology and seeking excellent discounts and access to international brands are Malaysia's main drivers of e-commerce growth.

The global Pandemic and the resultant MCO situation have brought an upward trend in online shopping worldwide (Tjiptono, 2020). Perceived health and safety benefits compared with traditional shopping have increased consumers' purchase intentions toward e-commerce (Tran, 2021). Major changes in consumer behavior in shopping are observed among Malaysians also. Before the pandemic, where 30% of Malaysians preferred to go online shopping, now it has reached 73% who have a positive or favourable attitude towards online purchase (Al- Bakry et al., 2020). Consumer fear of the Covid-19 pandemic has also boosted the intention to buy online (Tran, 2021).

In Malaysia, consumers spend more online and explore more categories online (Poovenraj, 2020). According to Poovenraj (2020), digital consumer spending has exceeded expectations. Consumers prefer shopping from online channels, and e-commerce has become a platform to seek, search or do intentional buying.

## **2.2 Effectiveness of E-commerce**

Even though e-commerce is a relatively new business process, its influence and diffusion have been unforeseen, and the marketing and distribution paradigms have penetrated and fundamentally altered. The

business scale created by e-commerce is multiplying exponentially. For Malaysian businesses, the success of internet marketing is too plain to disregard or dismiss the potential and benefits of such a technology (Khatibi et al., 2003).

There are many dimensions to determine the effectiveness of an e-commerce platform. Online retailers have implemented various ways and strategies to attract and retain customers. The present study explores five dimensions: product variation, customer service quality, trustworthiness from the customer's perspective, the usability and feasibility of the e-commerce platform, and the delivery services proposed from previous researchers' findings.

### **2.2.1 Product Variation**

Product variation and diversification in online businesses are a great way to stabilize earnings and increase business profit (Wilson & Christella, 2019). Online platforms nowadays offer many products in one place. This expansion of the current product offering can increase sales. Though e-commerce platforms increase sales (Lee et al., 2018), it does not allow the consumers to physically examine the product leading to uncertainty about the product (song & Geng, 2020). However, website design, pricing, and service quality play an important role in minimizing uncertainty about the product (Song, 2016; Leo et al., 2012). According to Leo et al. (2012), considerable product uncertainty has a detrimental influence on consumer happiness and the efficiency of online purchases. Service quality, customer reviews, and Logistics services can mitigate the effect of product uncertainty (Song et al. 2016).

Besides, online shopping is one of the great sources to find any products that are no longer available in the market and have been liquidated in the past season. Owning this type of product allows retailers to sell the product longer, keeping the profit margin and keeping the customer base happy without worrying about trying on any current product in the market that might not be suitable for them or their liking.

Shopping online is also one way to save money if online shoppers combine it with the promotions available, like free shipping offers, deals of the day, and online saving codes. Furthermore, retailers achieved their customers' needs by not having the brick-and-mortar store and saving the payment for rent, payroll, electricity, and fixtures by running the business online (Qalati, 2021; Moore, 2020) even during the MCO period. Thus, making them pass the savings to their customers by reducing the price of the products. This brings to the hypothesis development as below:

H1. Product Variation has a relationship with the effectiveness of e-commerce platforms during the pandemic Covid-19 in Malaysia

### **2.2.2 Customer Services**

Customer service is a significant factor in the adoption and success of e-commerce businesses (Moore, 2020; Rahi et al., 2020). E-commerce customer service is how online businesses assist their customers with each step of decision-making on their online purchase. They give solutions to any customer issues while making a seamless web experience across the platform (Moore, 2020). Furthermore, studies (Cao et al., 2018; Kutz, 2016) found that to achieve customer satisfaction in future purchase intentions and be successful in e-commerce along with products, fast delivery, low prices, and effective complaints management are the crucial steps to generate greater customer satisfaction. Moore (2020) also stated that millennials are willing to pay up to do business with companies with great customer service.

Speed and convenience are what e-commerce is all about. Online shoppers who choose to shop online rather than go to the physical stores are assumed to have a prompt reply and fast reaction to their inquiry. Lack of speed will cause customer frustration. Customer service needs to maintain a consistent level of their quality in a short period of time while serving the customers (Moore, 2020), and the team must balance their convenience and speed to be a well-performing team. This brings to the hypothesis development as

below:

H2. Customer Services has a relationship with the effectiveness of e-commerce platforms during the COVID-19 pandemic in Malaysia.

### **2.2.3 Trustworthiness**

Trust, in general, is one of the important factors involving uncertainty and dependency in many social and economic interactions (Hosmer, 1995) that affects important technological decisions (Fukuyama, 1995). As e-commerce is growing exponentially, one of the main factors influencing the proliferation of e-commerce successfully is people's trust (Gajewska et al., 2019; Gefen, 2000). There are some reasons for people do not buy online. Their concern is about the companies' reliability, online payment security, and the lack of privacy policy.

Literature also found that personal information leakage has a strong negative effect on online transactions (Hubert et al., 2017). Nowadays, e-commerce platforms collect customer information and track it for internet marketing that is not adequately safeguarded (Bandara et al., 2020). Positive perceptions regarding online safeguards increase customers' intention to re-purchase and post positive reviews of products (Hubert et al., 2017; Kaur et al., 2020; Qalati et al., 2021) since the safeguards of personal and financial information are crucial (Liao & Yang, 2020; wang et al., 2019).

In a relationship with a customer, a seller can build value by cultivating the confidence and trust of the customers and turning them into loyalty. By establishing customer loyalty, a business can increase its revenue (Ohene, 2008). Paynter and Lim (2001) stated that aside from security, consumers are also concerned more about the reliability of the business owner. They are concerned about dealing with disreputable and dishonest vendors. This brings to the hypothesis development as below:

H3. Trustworthiness has a relationship with the effectiveness of e-commerce platforms during the Pandemic Covid-19 in Malaysia

### **2.2.4 Platform Usability**

The site's usability is vital as a website that is not easy to navigate will affect user experience and impact lower conversion and higher bounce rate (Cai et al., 2018; Konradt et al., 2012; Mominzada et al., 2021). Usability considers manageable interfaces, multiple languages, and easy payment options to be able to handle and use the websites or the e-commerce platform with little knowledge of computers. Customers should feel at ease in accessing and using the e-commerce site that will keep their attention and make their shopping experience pleasant and easy-going.

Nowadays, digital devices such as tablets and smartphones are enough for one to shop online instead of a laptop or desktop (Subramaniam, 2022). The usage of smartphones, along with social media, gives providers and vendors an opportunity to improvise their performance, set up new designs, and increase their customer base while at the same time keeping up with current trends (Al-Bakry et al., 2020). If the overall design is not user-friendly and difficult to navigate from one page to another, the website will fail. This brings to the hypothesis development as below:

H4. Usability and Feasibility relates to the effectiveness of e-commerce platform during the pandemic Covid-19 in Malaysia.

### **2.2.5 Delivery Services**

Delivery is the one thing to consider when running an e-commerce business. Delivery services include how efficiently the product is delivered in terms of time, accuracy, and care (Wilson & Christella, 2019). Consumers demand a quick and reliable delivery service (Wilson & Christella, 2019). Research finds that delivery quality significantly impacts the customer's perceived value and repurchase intentions (Ali &

Bhasin, 2019).

Nowadays, delivery methods have many options as technology evolves. This has resulted in a complete shift in attitude about how delivery should operate. Deliveries on the next day are not a bonus anymore, they are actually predicted. In some geographic areas, some companies provide same-day delivery. Delivery price also plays an important role as customers will appreciate more if the company gives them free or discounted delivery options. Special delivery price is often offered to encourage additional spending among customers, which will likely increase sales. This brings to the hypothesis development as below:

H5. Delivery Services has a relationship with the effectiveness of e-commerce platform during the COVID-19 Pandemic in Malaysia.

Figure 1 presents the research framework of the study.

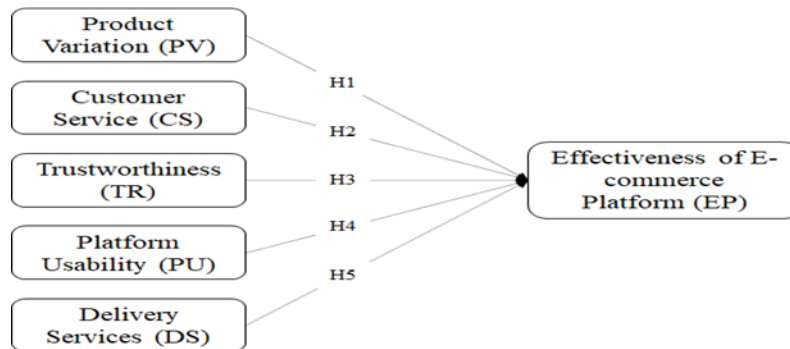


Fig.1: Research Framework

### 3. Methodology

The study was focused on the millennial generation of Malaysia, who was from the age of 22 to 40 years. In Malaysia, the population aged 20 to 40 is 9.2 million (DOSM, 2020). According to Krejcie and Morgan (1970), the sample size needed for this population is 385. However, after filtering on the basis of nationality and questionnaire completeness, a total of 226 samples were obtained. This sample size is acceptable by simple rules of thumb suggested by Roscoe (1975) “approaching the problem of sample size with the following rules of thumb, believed the sample size more than 30 and less than 500 to be appropriate for most of the behavioural research”.

Data were gathered from a sample of internet users utilising Facebook and the cross-platform messaging service WhatsApp. Internet users are recognised as those who used the online marketplace during the Covid-19 epidemic, particularly from March through December 2021. The questionnaire was shared on the author’s Facebook wall, Messenger and multiple Facebook groups. While in WhatsApp the link was shared among multiple contacts and was asked to distribute the questionnaire link to their contacts as well. This snowball sampling is used because the population is difficult to access, identify and contact; snowball sampling can be used to recruit participants via other participants as the survey needs to be performed practically.

To gather data, a series of online questions were created using Google Forms. The research constructs’ scales were examined, updated, and adapted from earlier studies. A pilot study was conducted among 20 online users to find out any weaknesses of the instrument. This was necessary to prevent negative impacts on the survey activity like ambiguities, offensive questions, and complexities to the respondents (Blumberg, 2014). From the pilot study, not many negative comments were received, and only some parts of the question were refined and proceeded in the finalized questionnaire form.

The final questionnaire consisted of 62 questions with 48 questions to be answered on the Likert Scale. It had five scales which start from “Strongly Disagree” to “Strongly Agree.” Questions for product variation and trustworthiness were adopted from the analysis done by Rosillo-Diaz et al. (2019), and trust questions were also adopted from Gefen’s (2000) trust on e-commerce study. Questions on customer service and delivery service were implemented from Kutz’s (2016) introduction to E-commerce. Product variations were also adopted from Tran’s (2021) recent study about handling the effectiveness of e-commerce platforms in the epidemic, while platform usability questions were adopted from Mosteller et al. (2014) and Hubert et al. (2017) on the online shopping experience and acceptance of smartphone mobile shopping respectively.

Among 62 questions, 14 questions were about respondents’ demographic profiles. The rest 48 questions were in pairs that asked the respondents about e-commerce behaviour before the COVID-19 pandemic and during the pandemic Covid -19 outbreak on a Likert scale. The comparison was done to determine the impact and effectiveness of e-commerce platforms during Covid-19.

The collected data were statistically analysed by IBM SPSS Version 26. The study followed two- stage Partial Least Square (PLS) method to find the causal relationship among the latent factors (Hair et al., 2014). Through the PLS method, the data was analysed and the developed hypotheses were tested. The measurement and structural model examined the model (Hair et al., 2017).

To assure the consistency and reliability of the questionnaire reliability test is performed. It affirms that the scale is consistent and appropriately measures the constructs. Using the Chronbach Alpha, the reliability test is done. Frequency analysis was run to see the different usage of e-commerce platforms. Later, Correlation and Regression are used to know how strong the relationship between dimensions is to the effectiveness of the e-commerce platform dimension.

## 4. Results

### 4.1 Demographic Profile

Among 226 respondents, 82 (36%) were male, and 144 (64%) were female. 62.4% and 25% of the respondents have obtained graduation and postgraduation degrees, respectively. This shows that mostly the users are well-educated and knowledgeable. Most (38.5%) of the respondents are in the income group of Rm 2500 to 4850 per month (Table 1).

Table 1: Demographic Profile of the Respondent

Demographic Profile	Frequency	Percentage
Gender		
Male	82	36.3
Female	144	63.7
Highest Education Level		
PMR/SPM/STPM	5	2.2
Diploma	23	10.2
Degree	141	62.4
Postgraduate	57	25.2
Monthly Income		
< RM2,500	72	31.9
RM2,500 – RM4850	87	38.5
RM4850 - RM 10,000	59	26.1

&gt; RM 10,000

8

3.5

All income classification using the e-commerce platform during this pandemic outbreak. This indicates that millennials in Malaysia have stable monthly incomes and enable them to enjoy online shopping whenever and wherever they want.

While studying the respondent's frequency of using e-commerce platforms during the Covid-19 Pandemic and before the Covid-19 pandemic, the result shows a high rise in the use of the e-commerce platform during the pandemic period. Daily users have increased from 10% to 23%, and weekly users have increased from 25% to 45.6%. Most respondents agree that they spent more time on the e-commerce platforms since they are working and staying at home during the pandemic, giving us 150 responses with 66.4 percent.

For the reasons for using an e-commerce platform, respondents mainly chose saving time and effort 83.6%, followed with low price products (70.8%), variety of products (53.9%), seeking product information (34.9%), and fun and enjoyable (25.6%). The results revealed that online shoppers believe using an e-commerce platform saves their time and effort as they do not have to go out to shop, and the products available on the online platform are believed to have lower prices than those in the physical stores.

In finding out the amount spent on the e-commerce platform, most millennials chose that they spent less than RM1000 (61.5%), and 23% spent around RM1000 to RM2000. Millennials in Malaysia afford to spend more than RM2000 to RM5000, as shown in the study for 17.5% and 4%, respectively, for RM2000-RM3000 and RM3000-RM4000 and more than RM5000.

#### 4.2 Measurement Model Assessment:

The study first assessed the construct reliability and validity through Composite reliability (CR) and Average variance extracted (AVE). Table 2 shows that Cronbach's Alpha ranges from 0.837 to 0.951, CR from 0.824 to 0.968, and AVE from 0.556 to 0.911; all meet the threshold level 0.70, 0.70, and 0.50, respectively. Thus, it confirms the indicator and internal consistency reliability and convergent validity.

Table: 2 Measurement Model Evaluation

Constructs	Factor Loading	Cronbach's Alpha	CR	AVE
Customer Service	0.909	0.931	0.951	0.828
	0.910			
	0.913			
	0.908			
Delivery Services	0.926	0.914	0.940	0.797
	0.908			
	0.916			
	0.816			
Effectiveness of E-commerce Platform	0.886	0.950	0.960	0.801
	0.890			
	0.912			
	0.897			
Platform Usability	0.845	0.921	0.944	0.809
	0.927			
	0.915			
	0.908			



Constructs	Factor Loading	Cronbach's Alpha	CR	AVE
Product Variation	0.903	0.837	0.824	0.556
	0.911			
	0.511			
	0.562			
Trustworthiness	0.948	0.951	0.968	0.911
	0.959			
	0.956			

A discriminant validity test was conducted to gauge how distinctively different the constructs were from one another. The discriminant validity test was carried out using HTMT. Table 3 presents the HTMT for the constructs in the study. From the table, it is observed that the HTMT value ranges from 0.067 to 0.830, which is  $<0.90$  and meets the criteria of being significant ( $\leq 0.90$ ) (Hair et al., 2017). Since all of the values of HTMT are less than 0.90, it indicates that the respondents understood that the constructs are different. Therefore, the discriminant validity is ascertained.

Table 3 Heterotrait-Monotrait Ratio (HTMT)

Constructs	Customer Service	Delivery Services	Effectiveness of E-commerce Platform	Platform Usability	Product Variation
Delivery Services	0.766				
Effectiveness of E-commerce Platform	0.785	0.754			
Platform Usability	0.473	0.421	0.617		
Product Variation	0.156	0.096	0.081	0.067	
Trustworthiness	0.745	0.659	0.830	0.496	0.099

### 4.3 Structural Model and Hypothesis Testing

Structural model assessment is conducted by measuring the predictive power of the model. Through  $R^2$ ,  $Q^2$ , and  $f^2$  the predictive power is measured. To be significant,  $R^2$  should be at least  $\geq 0.25$ ,  $Q^2$  should be  $>0$  (Hair et al., 2017). In our study, both  $R^2$  and  $Q^2$  achieve the criteria to be significant. For  $f^2$  it should be  $\geq 0.02$ . In our study, all of the constructs except Product variation (0.002) meet the criteria to be significant. Table 4 presents the  $R^2$ ,  $Q^2$ , and  $f^2$  values of the model.

Table 4: Predictive Power of the Model

Measure	Effectiveness of E-commerce Platform	Customer Service	Delivery Services	Platform Usability	Product Variation	Trustworthiness
$f^2$	-	0.059	0.102	0.136	0.002	0.314
$R^2$	0.755	-	-	-	-	-
$Q^2$	0.591	-	-	-	-	-

Figure 2 presents the structural model of the study. To test the relationship among variables, Hypothesis testing was performed. The minimum t-statistics value required to be significant is 1.96.

From the one-tailed t-test result (Table 5), it is observed that Customer service (t-value= 3.004, p-value = 0.003), Trustworthiness (t-value= 7.498, p-value = 0.000), Platform usability (t-value= 5.847, p-value = 0.000) and Delivery services (t-value=3.560, p-value= 0.00) have a significant positive effect on the Effectiveness of e-commerce Platform among millennials.

However, Product variation (t-value= 0.493, p-value=0.622) was insignificant to the Effectiveness of the e-commerce Platforms among millennials. Therefore, our hypothesis 1 was not supported.

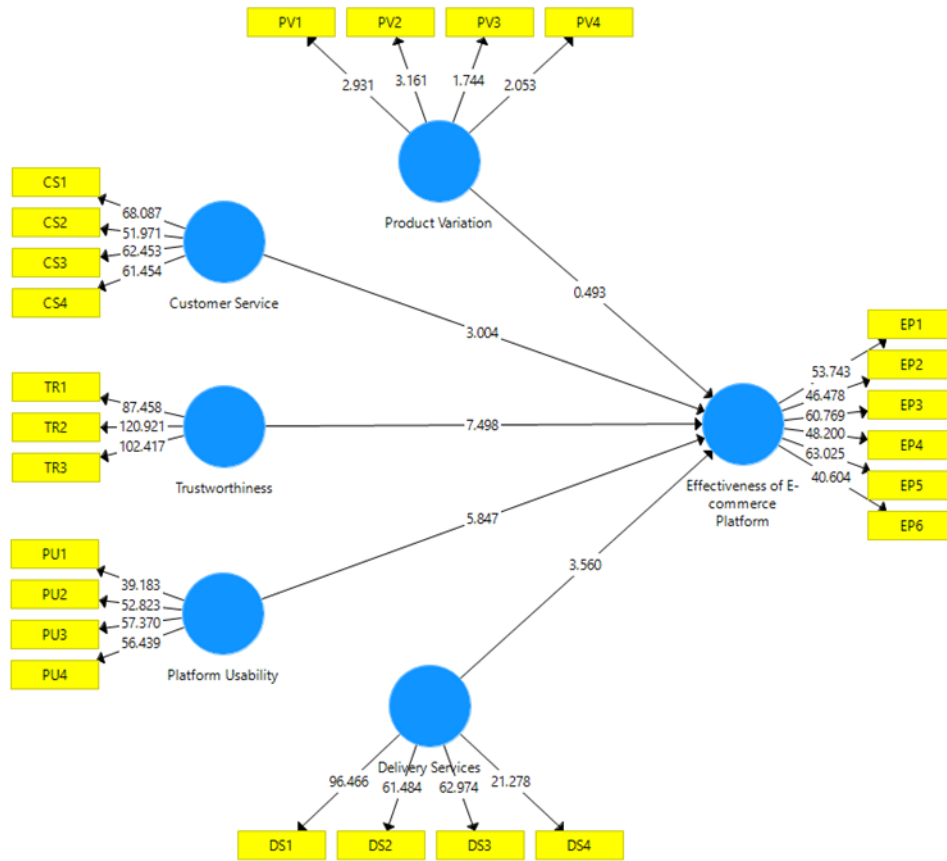


Fig.2: Structural Model

Table 5: Hypothesis Testing Result for the Model

Hypotheses Testing	Original Sample	Standard Deviation	t-values	p-values	Hypothesis Result
H1: Product Variation -> Effectiveness of E-commerce Platform	0.022	0.044	0.493	0.622	Not- supported
H2: Customer Service -> Effectiveness of E-commerce Platform	0.198	0.066	3.004	0.003	Supported
H3: Trustworthiness -> Effectiveness of E-commerce Platform	0.412	0.055	7.498	0.000	Supported
H4: Platform Usability -> Effectiveness of E-commerce Platform	0.210	0.036	5.847	0.000	Supported
H5: Delivery Services -> Effectiveness of E-commerce Platform	0.232	0.065	3.560	0.000	Supported

## **5. Discussion**

The result indicated that Millennials in Malaysia are mostly degree holders and have sufficient and stable incomes to enable them to enjoy their online shopping. Their shopping behaviour also changed during this outbreak of Covid-19. Since this group is staying and working from home, their tendency to use the online shopping platform increases. During the pandemic time, they used the e-commerce platform every week and daily. Millennials mainly use the e-commerce platform because it saves a lot of their time and effort. They are also normalizing the new norm: staying at home and purchasing everything online. For them, it was a lot more convenient and easier to use the e-commerce platform rather than going out to the mall or physical stores.

The results revealed that Customer service and Trustworthiness significantly affect the effectiveness of the e-commerce platform, which is consistent with the result of the previous studies by Moore, 2020; Rahi et al., 2020; 2019; Gefen, 2000; Gajewska et al. 2019. Therefore, prompt customer services and reliable and trustworthy platforms are very crucial for the effectiveness of any e-commerce platform. Hence, it is important for the e-commerce platforms to provide adequate assistance in each step of decision-making in online purchase and complaint management towards effective customer service and safeguarding of the personal and financial information of the customers. In addition, the study also found that platform usability and delivery services have a significant positive effect on the effectiveness of the e-commerce platform, which is in line with the studies of Cai et al., 2018 and Mominzada et al. 2021. Therefore, a manageable interface, multiple languages, easy payment options, and improvised design suitable for smartphones are the contributing factors of platform usability that have positive influences on the success of the e-commerce platform.

Besides, the current study also found that effective delivery in terms of cost, time, accuracy, and care is significant to the customer's perceived value and repurchase intention for the e-commerce platform. This finding also supports the observation of Ali & Bhasin, 2019 and Wilson & Christella, 2019. Hence, delivery quality influences the effectiveness of the e-commerce platform. However, the study has not found any significant influences of product variation on the effectiveness of e-commerce platforms among millennials during the pandemic period. This can be explained because of the availability of different platforms. Therefore, while choosing the e-commerce platform during the Pandemic, the millennials prioritized other factors like customer services, platform usability, trustworthiness, and delivery services.

Based on the above findings, it is observed that due to the Pandemic, millennials, the digital generation, have shifted more to digitalization. The restrictions imposed during the period have induced them to be more dependent on online platforms. Consequently, the rapid increases in online platforms' success are susceptible to the platform's effectiveness in terms of customer services, trustworthiness, platform usability, and delivery services.

## **6. Conclusion**

E-commerce growth was an inevitable change, and the arrival of the Covid-19 outbreak has already triggered some drastic changes in consumer behaviour. In this study, we identified what matters most to millennials in Malaysia when it comes to choosing the right e-commerce platform to be effective and efficient. Millennials are willing to utilize the e-commerce platform when they find out this alternative has more advantages during the Covid-19 outbreak than going out.

Customers increasingly rely on e-commerce platforms during the Pandemic for transactional activities involving trust-building and online protection. The study found that millennials' shopping behaviour changed during this outbreak. E-commerce platforms increased significantly due to restrictions imposed and saving time and effort. As a digital generation, it was more convenient and easier to use online platforms.

Moreover, the study found that customer service, trustworthiness, platform usability, and delivery service all play an important role in the effectiveness of an e-commerce platform among millennials.

As such, online platforms need to enhance security for end-to-end purchases. Consumers also focus on lower prices for their own economic benefit when purchasing online. E-commerce platforms should focus more on consumer savings, such as providing discounts and free delivery or a lower delivery fee on certain amounts to improve performance and efficiency indirectly.

Every effort was made to ensure this study was as comprehensive as possible. However, there were certain limitations, such as the study's sample size. Due to the time constraint, an unequal number of respondents from each state in Malaysia was surveyed, which may impede the generalization of the findings. Moreover, respondents' self-rating on the questionnaires might not reflect their definite perceptions of the questionnaires, which might lead to biases in the survey data. Future exploration may examine the perceptions of the platform managers, not only the consumers, as well as the factors affecting the choice of the e-commerce platform following the pandemic.

## References

Al-Bakry, A. M., Al-Dhaibani, J. A., Al-Mamory, S. O., Sahib, M. A., Hasan, H. S., Nayl, T. M., & Oreku, G. S. (Eds.). (2020). *New Trends in Information and Communications Technology Applications: 4th International Conference, NTICT 2020*, Baghdad, Iraq, Proceedings (Vol. 1183). Springer Nature.

Ali, A., & Bhasin, J. (2019). Understanding customer repurchase intention in e-commerce: Role of perceived price, delivery quality, and perceived value. *Jindal Journal of Business Research*, 8(2), 142–157.

Aprameya, A. (2020). E-commerce in Malaysia: Growth, Trends & Opportunities. Capillary, available at: <https://www.capillarytech.com/blog/capillary/ecommerce/ecommerce-in-malaysia-growth>, accessed on July 5, 2022.

Bandara, R., Fernando, M., & Akter, S. (2020). Explicating the privacy paradox: A qualitative inquiry of online shopping consumers. *Journal of Retailing and Consumer Services*, 52, 101947.

Bhatti, A., Akram, H., Basit, H. M., Khan, A. U., Raza, S. M., & Naqvi, M. B. (2020). E-commerce trends during COVID-19 Pandemic. *International Journal of Future Generation Communication and Networking*, 13(2).

Cai, L., He, X., Dai, Y., & Zhu, K. (2018). Research on B2B2C E-commerce website design based on user experience. *Journal of Physics: Conference Series*. 1087 (6).

Cao, Y., Ajjan, H., & Hong, P. (2018). Post-purchase shipping and customer service experiences in online shopping and their impact on customer satisfaction: An empirical study with comparison. *Asia Pacific Journal of Marketing and Logistics*, 30 (2).

Department of Statistic Malaysia. (2020). Current Population Estimates, Malaysia, 2020. <https://www.dosm.gov.my>

Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity*. New York: Free press.

Gajewska, T., Zimon, D., Kaczor, G., & Madzik, P. (2019). The impact of the level of customer satisfaction on the quality of e-commerce services. *International Journal of Productivity and Performance Management*, 69(4).

Gefen, D. (2000). E-commerce: the role of familiarity and trust. *Omega*, 28(6).

Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. Sage Publications.

- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2).
- Hosmer, L. T. (1995). Trust: The connecting link between organizational theory and philosophical ethics. *Academy of Management Review*, 20(2).
- Howe, N., Strauss, W., & Matson, R. J. (2000). *Millennials rising: The next great generation*. Vintage Books.
- Hubert, M., Blut, M., Brock, C., Backhaus, C., & Eberhardt, T. (2017). Acceptance of smartphone-based mobile shopping: Mobile benefits, customer characteristics, perceived risks, and the impact of the application context. *Psychology & Marketing*, 34(2).
- Kaur, P., Dhir, A., Chen, S., Malibari, A., & Almotairi, M. (2020). Why do people purchase virtual goods? A uses and gratification (U&G) theory perspective. *Telematics and Informatics*, 53, 101376.
- Khatibi, A., Thyagarajan, V., & Seetharaman, A. (2003). E-commerce in Malaysia: perceived benefits and barriers. *Vikalpa*, 28(3).
- Konradt, U., Held, G., Christophersen, T., & Nerdinger, F. W. (2012). The role of usability in E-Commerce services. *International Journal of E-Business Research (IJEER)*, 8(4).
- Kutz, M. (2016). *Introduction to E-Commerce: Combining Business and Information Technology*, Book Boon.
- Kwilinski, A., Volynets, R., Berdnik, I., Holovko, M., & Berzin, P. (2019). E-Commerce: Concept and legal regulation in modern economic conditions. *Journal of Legal, Ethical and Regulatory Issues*, 22.
- Lee, J. Y., Fang, E., Kim, J. J., Li, X., & Palmatier, R. W. (2018). The effect of online shopping platform strategies on search, display, and membership revenues. *Journal of Retailing*, 94 (3).
- Liao, S. H., & Yang, L. L. (2020). Mobile payment and online to offline retail business models. *Journal of Retailing and Consumer Services*, 57(102230).
- Luo, J., Ba, S., & Zhang, H. (2012). The effectiveness of online shopping characteristics and well-designed websites on satisfaction. *MIS Quarterly*, 36(4).
- Malitska, H.H., & Melnyk, O.I. (2018). Features of the electronic commerce and the state of its development in the current economic conditions of Ukraine. *Efektivna Ekonomika*, 12(2).
- Mominzada, T., Abd Rozan, M. Z. B., & Aziz, N. A. (2021). Consequences of User Experience in A Gamified E-Commerce Platform. *International Journal of Electronic Commerce Studies*, 13 (1).
- Moore, K. (2020). 7 Best Practices for Effective E-commerce Customer Service. Help Scout, available at <https://www.helpscout.com/blog/ecommerce-customer-service/>, accessed on 25 June 2022.
- Mun, Y. P., Khalid, H., & Nadarajah, D. (2017). Millennials' perception on mobile payment services in Malaysia. *Procedia Computer Science*, 124.
- Ohene-Djan, J. (2008). *Electronic commerce Undergraduate study in Computing and related programmes*. The University of London.
- Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. Routledge.
- Paynter, J., & Lim, J. (2001). Drivers and impediments to e-commerce in Malaysia. *Malaysian Journal of Library & Information Science*, 6(2).
- Poovenraj. (2020). Digitalisation and Covid-19 lead the way on consumer behaviour changes in Malaysia. *Business Today*.

- Qalati, S. A., Vela, E. G., Li, W., Dakhan, S. A., Hong Thuy, T. T., & Merani, S. H. (2021). Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping. *Cogent Business & Management*, 8(1).
- Rahi, S., Ghani, M. A., & Ngah, A. H. (2020). Factors propelling the adoption of internet banking: the role of e-customer service, website design, brand image and customer satisfaction. *International Journal of Business Information Systems*, 33(4).
- Rainer, T. S., & Rainer, J. (2011). *The millennials*. B&H Publishing Group.
- Raines, C. (2002). *Managing millennials. Connecting Generations: The Sourcebook*, 16.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences*, John T. Roscoe.
- Rosillo-Díaz, E., Blanco-Encomienda, F. J., & Crespo-Almendros, E. (2019). A cross-cultural analysis of perceived product quality, perceived risk and purchase intention in e-commerce platforms. *Journal of Enterprise Information Management*, 33(1).
- Shah, A. U. M., Safri, S. N. A., Thevadas, R., Noordin, N. K., Abd Rahman, A., Sekawi, Z., ... & Sultan, M. T. H. (2020). COVID-19 Outbreak in Malaysia: Actions Taken by the Malaysian Government. *International Journal of Infectious Diseases*, 97.
- Song, G., Zhan, Y., & Guo, Y. (2016). "The effectiveness of online shopping characteristics and logistics service on satisfaction" 13th International Conference on Service Systems and Service Management (ICSSSM).
- Song, W., Li, W., & Geng, S. (2020). Effect of online product reviews on third parties' selling on retail platforms. *Electronic Commerce Research and Applications*, 39(100900).
- Stein, J. (2013). Millennials: The me me me generation. *Time magazine*, available at <https://time.com/247/millennials-the-me-me-me-generation/>, accessed on July 4, 2022.
- Subramaniam, P (2022). Trend: Millennials and Gen Z reshaping asset management industry, *The Edge Malaysia*, available at: <https://www.theedgemarkets.com/article/trend-millennials-and-gen-z-reshaping-asset-management-industry>, accessed on July 4, 2022.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, Vol. 2, No. 53.
- Tjiptono, F., Khan, G., Yeong, E. S., & Kunchambo, V. (2020). Generation Z in Malaysia: The Four 'E' Generation. In *The New Generation Z in Asia: Dynamics, Differences, Digitalisation*. Emerald Publishing Limited.
- Tran, L. T. T. (2021). Managing the effectiveness of e-commerce platforms in a pandemic. *Journal of Retailing and Consumer Services*, 58 (102287).
- Wang, Y., & Herrando, C. (2019). Does privacy assurance on social commerce sites matter to millennials. *International Journal of Information Management*, 44.
- Wilson, N., & Christella, R. (2019). Empirical research of factors affecting customer satisfaction: A case of the Indonesian e-commerce industry. *DeReMa Jurnal Manajemen*, 14(1).
- Yusop, F. D., & Sumari, M. (2013). The use of social media technologies among Malaysian youth. *Procedia-Social and Behavioral Sciences*, 103.