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Platform Quality and Intention to E-Commerce Cross-Border Buying: Evidence from Malaysian Public Universities' Students

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Abstract
Purpose: This research is conducted to evaluate the relationship between platform quality (system quality, information quality and service quality) and intention to cross-buy on cross-border e-commerce among Malaysian public university students.
Design/methodology/approach: Data has been collected from students from public universities in Malaysia by utilising online questionnaire. It involves 267 public university students in Malaysia and partial least square structural equation model (PLS-SEM) technique was used in analysing the data.
Findings: The findings showed that Platform Quality, which includes System Quality, Information Quality and Service Quality all have positive and significant relationships with Intention to Cross-Buy. This signifies that System Quality plays important roles in deciding the intention to Cross-Buy.
Research limitations/implications: This study will contribute to the body of research related to platform quality and intention to cross-buy on cross-border e-commerce, particularly in the setting of Malaysia.
Practical implications: This study could be used by any cross-border e-commerce companies as a reference to improve the quality of their platforms, while among cross-border e-commerce users, they could differentiate which platforms are popular and the reasons beyond the decision.
Originality/value: This study is pivotal for future studies in a way that now, the trend among Malaysian students as the findings suggest. It will provide a huge knowledge impact on the affiliation of variables towards the sample group.
Paper type: Research paper

Keywords: Platform quality, e-commerce, Cross-border buying

Introduction

E-commerce is the most rapid ecosystem to ever grow in the global economy, as it alleviates the distance between merchants and purchasers (Ding et al., 2017). Sharma and Lijuan (2015) explained e-commerce as all business transactions among buyers and sellers, and the

administrative actions are conducted over the Internet. Nevertheless, when online dealings are made across different countries or areas by utilising Information and Communications Technology (ICT), it is unquestionably no longer refers to e-commerce but rather cross-border e-commerce (Wang, 2014). Just like how e-commerce blooms globally, cross-border e-commerce also garners the world's attention across continents (Gessner & Snodgrass, 2015; Nieradka & Niedzwiecka, 2017; Su et al., 2019). This phenomenon does not exclude Malaysia. Van Heel et al. (2014) corroborated in their journal that by 2025, the total global revenue of cross-border e-commerce is expected to project between $250 billion to $300 billion. However, until now there are obstacles that still have to be resolved when involving cross- border transactions such as language, high costs of international shipments, legal regulations and payments (Strzelecki, 2019). The pace of cross-border e-commerce platforms could have gone faster without these problems.

With that being said, the substantial success factor in online retailing is customer retention (Ahn et al., 2007; Khalifa & Liu, 2007; Kumar & Anjaly, 2017). Therefore, structuring an effectual Web presence is pivotal, as a company that offers a poorly developed website or incompetent services will cost the organisation its own reputation and position in the market. According to Fang and Holsapple (2007), websites are not always pleasurable and operable as users could encounter several problems when using a website and attempting to use the features of the website. This will eventually lead to low satisfaction levels with the sites (Wolfinbarger & Gilly 2003; Lee & Lin 2005; Shin et al., 2013; Tandon et al., 2017).

The satisfaction level of customers should be protected at all costs as it will affect their intention of cross-purchasing on a platform (Ngobo, 2004), which in turn will vouch for their retention. This is supported by Mou et al. (2019) which reiterated the importance of customer satisfaction by highlighting that searching for new consumers will incur more costs to firms, and firms know that too. Hence, to maintain consistent profit growth and also share of market for cross-border e-commerce platforms, it is necessary to explore the fundamental determinants of intention to cross-buy, which in this case implies to the platform quality (Luo et al., 2019), on the ground that system quality is investigated to play a substantial role in enhancing customers' intention to buy (Szymanski & Hise, 2000).

The International Trade Administration (2019) reported that Malaysians are highly likely to shop for products from China, Singapore, Japan, the United States, and South Korea's cross-border e-commerce platforms if they need something that is not being offered on domestic e-commerce sites. It is in line with Chew (2018) who stated that the prompt growth of Malaysia's digital economy is majorly contributed by the rise in e-commerce traffic and YCP Solidiance's study which estimated Malaysia's digital economy sector to dominate 20% of Malaysia's gross domestic product (GDP) by the end of 2020 (Consultancy Asia, 2020); which amounted to approximately RM 270 billion. Statistically and economically, it significantly shows how cross-border e-commerce platforms are highly valued in Malaysia.

Thus, drawing upon Luo et al. (2019)'s study, this research was conducted to evaluate the relationship between platform quality and intention to cross-buying on cross-border e-commerce among Malaysian public university students. The most relevant dimensions of platform quality (system quality, information quality and service quality) have been selected for the study.

Intriguingly, numerous Malaysian consumers appear to prefer ordering items from overseas online retailers, with 40% of those e-commerce sales being cross-border. PPRO, a fintech (financial technology) company specialising in local payment methods reported that 61 percent of cross-border e- commerce in Malaysia was from China as of January 2020 (Statista Research Department, 2020). A research by PayPal identified that Malaysians' primary motivators for cross–border shopping are cheaper prices, access to products unavailable in the nation, discover

innovative and unique items, greater product quality, and more reasonable shipping cost (Benedict, 2019).

Online shopping has now become the "new normal" and is no longer a rare occurrence for many citizens as the outbreak of Coronavirus Disease 2019 (COVID-19) prompted e-commerce platforms to boom internationally, showing that the Movement Control Order (MCO) has led Malaysian consumers to accelerate their shift towards online platforms. With travel restrictions causing many people to remain at home and work remotely, there has been a subsequent growth in e- commerce due to its value, choice and convenience (UOW Malaysia, 2020).

Unfortunately, e-commerce fraud accounted for the largest number of scams during the MCO period, with a total accumulated loss of RM17mil suffered by the victims within the timespan (The Star, 2020). Scammers are taking advantage of the growing demand for healthcare-related products such as face masks, hand sanitisers and personal protection equipment (PPE) by duping desperate and helpless buyers through a variety of internet scams. Health Director-General Datuk Dr Noor Hisham Abdullah said in a statement, "556 notices were issued to e-commerce platforms to reduce the sale of unregistered products self-claiming as COVID-19 treatment" (Muslimin, 2020).

These fraudulent cases reflect the overall platform quality of the involved e-commerce platforms. This is because these occurrences could be avoided if platforms had high system quality, high information quality and high service quality. As a result, customers may have doubts and consider not making any further purchase through the platform.

At present, cross-border e-commerce platforms in Malaysia allow oversea retailers to register directly for cross-border sales. For example, Shopee International Platform (SIP) is a new feature that allows sellers to sell across different countries or regions through the support given by Shopee Malaysia. It is a duty for the platforms to ensure that they could effectively attract many customers to buy from their foreign merchants as well as domestic merchants.

Moreover, there are gaps to be filled among the past studies that have been conducted by various researchers. For example, Luo (2019) found that one of the dimensions of platform quality which is information quality only has a relationship towards the intention of cross-buying with the help of trust as a mediator but not directly.

Therefore, this study will explore the relationship between platform quality and intention to cross-buy on cross-border e-commerce platforms from the perspective of Malaysian public university students.

The general purpose of this study is to identify if there is a relationship between platform quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students. Furthermore, it aims to; (a) identify the relationship between system quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students; (b) identify the relationship between information quality and intention to cross- buy on cross-border e-commerce among Malaysian public university students; and (c) identify the relationship between service quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students.

This manuscript contains an overview of the study's concept. The following parts discuss the empirical studies and the research framework of the topic, followed by the methodology and how the research is conducted. The following part presents the data analysis results obtained using the Partial Least Square Equation Modelling (PLS-SEM) software. Finally, the last part provides a summary of the previous parts justified by major findings and implications of the study, limitations of the study as well as recommendations for future research.

Literature Review

This study gathers platform quality data which consists of system quality, information quality, and service quality, and the intention to cross-buy on cross-border e-commerce among Malaysian public university students.

Platform Quality

Ever since the Internet thrived, shopping behaviour among customers has progressively altered from only offline to both offline and online shopping (Luo et al., 2019). Suki et al. (2008) reasoned that consumers relatively preferred purchasing products online because it is exceptionally more convenient than traditional shopping in a way that traditional shopping projects anxiety, crowds, congested traffic, time inflexibility, and parking space insufficiency. As the trend is unequivocally clear, it is only natural that the number of firms established based on e-commerce business models are soaring. There is even a rumour going around that someday, physical retail stores might vanish from the market (Jimenez et al., 2019). People cherish convenience and no one could ever change that fact. The popularity of e-commerce platforms ascends from time to time, which is why the topic is widely studied by scholars, especially regarding the platforms' level of quality (Luo et al., 2019).

E-commerce is explained by Sharma and Lijuan (2015) as all business transactions among buyers and sellers, and the administrative actions are conducted over the Internet. Platform, on the other hand is defined as a software that governs a computer's operations and commands programs' processing through storage assignment in memory and control of input and output functions, while quality depicts the "degree of excellence" (Merriam Webster, n.d.).

Congruent with these definitions, Kim et al. (2018) explained that platform quality refers to the "perceived quality of work platforms" that is made up of system quality and information quality.

Even so, the understanding of scholars regarding the dimensions that could gauge platform quality is inconsistent and diversifying (Connolly et al., 2010). According to the research of Xiao (2016), to fairly measure the quality of a website or a platform, these five dimensions must be evaluated; system availability, efficiency, privacy, website service and fairness. He explained that the website reliability and smoothness of transactions can be much ascertained if e-commerce platform owners themselves design their own security procedures, technical standards, and control mechanisms. Website reliability and smoothness of transactions influenced a website's performance.

Cao et al. (2005) solidified the point by stating that if the performance of a site is undesirable, consumers could access other alternative sites as substitutes. There are practically no constraints to switching sites (Bhatti et al., 2000) when they have decided to averse their experiences from the first site that they intended to use. Hence, sustaining excellent platforms should be the utmost priority. Moreover, especially since customers' repurchase intentions are greatly influenced by the quality of e-commerce websites (Zamzuri et al., 2008).

Contrary to the view of Xiao (2016), Luo et al. (2019) corroborated a rather different opinion. They suggested that platform quality should be measured through these three most important dimensions; system quality, information quality and service quality. This is supported by previous studies of Jarvenpaa and Todd in 1996, Delone and Melean in 2003, Cao et al. in 2005 and Gorla et al. in 2010. These five studies employed the said dimensions to measure the quality of a platform, which is why, in this study, the very same dimensions will be used against Malaysian public university students on their intention to cross-buy on cross-border e-commerce.

System Quality

A system that is properly built, established, and executed is said to be the sine qua non before the extraction of benefits from an organisation could be done (Gorla et al., 2010). System quality, according to an early study of Delone and Mclean (1992) (as cited in Purwanto et al., 2020) is perceived as the barometer of information systems processing's performance that considers the aspects of engineering-focused assessment and evaluation from users. The claim is found to be relevant even until this decade as a similar statement is found in Gorla, Somers and Wong (2010)'s study. In addressing system quality, Peters et al. (2016) explained that the attribute is actually the IS processing's quality itself, which aside from being a measure of how the system technically sounds, it is made up of components of data and software.

An e-commerce platform requires a system to operate and a good one at that. According to Lin (2007), the overall performance of a website is an indicator of system quality. It can be further measured by customer perceptions on to what extent the shopping experience on an e-commerce platform feels user-friendly. The study finds that website system-oriented variables, such as website design, reliability, access, convenience, and ease of use are the primary factors in measuring customers' perceptions of website performance.

Past studies had researchers exploring several dimensions that measure system quality of a website by its functionality. In one study by Cao et al. (2005), search facility, responsiveness and multimedia capability are used to evaluate quality of a website's system. A good site should have a search facility, which helps users to maintain a mental map of the site, provide two-way communication, and also quick response to users' browsing needs. The proposition is favoured by Smith and Merchant (2001) who identified that online customers are very particular about easy navigation while scrolling through a website.

Different from what was suggested by Cao and colleagues, DeLone and McLean (2003) associated system quality with properties like usability, operability, dependability and adaptability. Xu et al. (2013) reiterated usability as one of the technical features of a system's quality too and added that accessibility should be included too in evaluating system quality. Nevertheless, companies should treat the system quality of their platforms seriously as any unfavourable presentation will deteriorate trust among consumers (McKnight et al., 2017).

Information Quality

According to Jeong and Lambert's (2001) observation, in the present consumer demeanor literature, commercial websites' information quality is becoming the central point. They further highlighted that the most striking determinant in forecasting consumers' decision behaviour is their perceived quality of information about the products and services sold over a website.

In explaining the phrase, Liu et al. (2020) took the liberty in their research to define information quality as the relevance of information displayed based on the user's personal perspectives and the level of how it satisfies their particular requirements at particular moments. The authors then noted that one of the predecessors to information technology adoption is usefulness, in which the statement is made appertaining to significant amounts of previous research. Usefulness in this context implies how far the information is useful to users and their needs, demonstrated in the dependability, precision, aptness and the parallelity of all the received information.

Liu et al. (2020) postulated that aside from usefulness, timeliness is also closely associated with the value of information. Timely information is indeed a salient measurement in assessing a platform's information quality, now that we are all in the Internet era. They elaborated that it is also crucial to present information that is accurately and uniquely tailored to a specific user, consistent with the advancement of content recommendation technology. These are affirmed by Wangpipatwong et al. (2005), Bailey and Pearson (1983), Rainer and Watson (1995) and

Ehikioya (1999) who unanimously stated that principally, and for the most part, the features of websites' information quality should be the timeliness, accuracy, relevance, precision and completeness.
Whatever the dimensions are, Sharma and Lijuan (2015) suggested that as long as a website is capable of delivering adequate information to users, it should be able to stimulate people to shop online. In any case, content is always king (Huizingh, 2000).

Service Quality

Customer service is very crucial within the e-commerce environment, as service quality is an important dimension of success (DeLone & McLean, 2003). Service quality evaluates the extent of support provided by the platform as a whole. Cao et al. (2005) in their research defined dimensions of service quality as trust and empathy. It was concluded that websites must offer good service to buyers. This includes protecting them legally and ethically while also offering individualised information. Utilising tools to track customer activities on websites can facilitate online personalisation.
Based on a literature review of online service quality, Lin (2007) also noted that service quality dimensions such as responsiveness, trust and empathy are critical to e-commerce success. Responsiveness is about customer perception upon the services offered by an online retailer whether they are responsive and helpful. Trust is the degree of trust mechanisms that customers perceived and obtained from the online retailer. Empathy is the care and individualised attention an online retailer gives its customers, which includes targeted email and personal attention.
Out of the three service quality variables examined in the research model, trust demonstrated the strongest impact. Online retailers should increase the instilling of trust among the customers. They have to be able to cater to customers' needs and requirements. They must also be driven to hold the customer's interests as their number one priority. Keeping the integrity of the process is also important in order to combat doubts concerning uncertainty during transactions.

Intention to Cross-Buy

Globalisation and the collapse of barriers of trade resulting from the constitution of international organisations and treaties have made international growth and product supply to foreign countries plausible (Haque et al., 2015). The increment in the plethora of available products and services caused online businesses to grow proportionally (Lin & Lekhawipat, 2014) and because of that, cross-buying is made feasible all over the world. According to Kumar et al. (2008), when consumers cross-buy, it rewards companies in a way that they would be able to yield higher profits, higher wallet share and also higher customer value.
Many series of reviews and extensions are created to investigate the notion of cross-purchase in various circumstances. However, in explaining cross-buying intention, no genuine accord has been attained until now, even though the concept was proposed by Cort and Dominguez in the trade field 43 years ago (Luo et al., 2019). The closest and the most widely used definition among scholars usually refers cross-buying as the act of purchasing supplementary products or services from the same supplier (Crosby et al., 1990; Verhoef et al., 2001). Kumar et al. (2008) then improvised the definition by adding that the act is only counted from the point of first transaction, which is approved by Luo et al. (2019).
According to Kamakura (2003), cross-buying is the opposite of cross-selling, which translates to the attempt of providers to raise the frequency of products or services consumed by customers or clients. The benefits of cross-selling and cross-selling itself could only be derived if there is an activity of cross-buying (Polonsky et al., 2000). Blackwell et al. (2006) and

Ghalandari and Norouzi (2012) postulated that, to predict customers' intentions is to understand their real behaviour. They elaborated that forecasting the intention of consumers is one of the most prevalent techniques conducted by sellers; in other words, if the sellers are able to understand their customers' behaviour, they would be able to anticipate their customers' intention to buy.

Ngobo (2004) in his research stated some of the fundamental driving forces that he found to be affecting the motivation to cross-buy, and the drivers include quality of service, perceived value, perceived convenience, retention of customer, satisfaction of customer, improvement of relationship and image conflict. He linked the key drivers with the perks of one-stop shopping. However, in the words of Palmer (2002), as long as businesses offer affordable prices, user-friendly interfaces and excellent services, customers will always prefer to come back to the same website to buy more products because of the pleasant online experience.

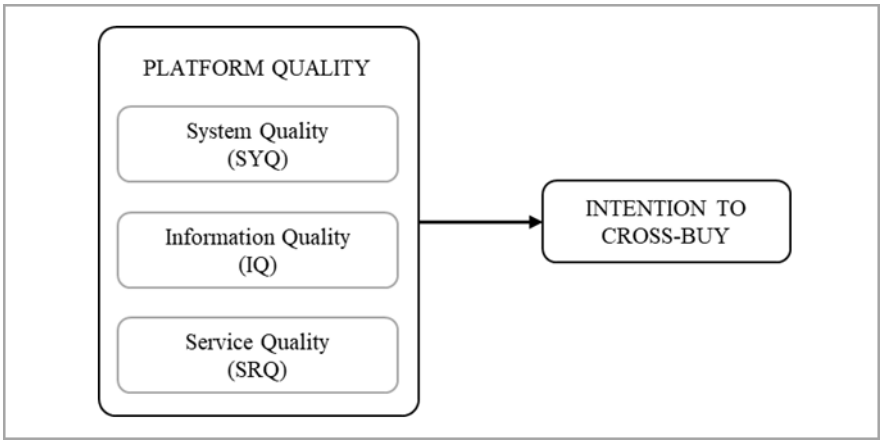

Figure 1: Theoretical Framework

Based on the literature reviews, the theoretical framework is adapted from Luo et al. (2019) in which the divisions of the platform quality are: system quality, information quality and service quality. Although there are other dimensions and factors to measure the quality of a platform, these three dimensions are highlighted in this study as to understand the correlation with the dependent variable. After all, according to Sharma and Lijuan (2015), these three dimensions are the cruxes in e-commerce website evaluation.

As represented in Figure 1, this framework is employed to investigate the direct relationship of those variables towards intention to cross-buy on cross-border e-commerce among Malaysian public university students. According to the findings of this study, system quality, information quality, and service quality all had a positive impact on Malaysian public university students' intention to cross-buy in cross-border e- commerce. In addition, this model also exhibited the ground on which the hypotheses are being extracted.

Hypotheses Development

The relationships between the variables are to be validated through the following hypotheses:

General Hypothesis: There is a positive and significant relationship between platform quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students.

H1: There is a positive and significant relationship between system quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students.

H2: There is a positive and significant relationship between information quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students.
H3: There is a positive and significant relationship between service quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students.

Zamzuri et al. (2008) stated that the quality of e-commerce websites plays a crucial role in customers' repurchase intentions. This particular intention of the customer to maintain a relationship with a company in nature is dependable on one's perception of the benefits of high-quality service that provides a continuous flow of value (Patterson et al., 2006). Websites with a more visually acceptable interface often result in greater service quality and can influence a user's experience and ultimately one's long-term service provider relationship. In the context of cross-border e-commerce platforms, Luo et al. (2019) finds that both system quality and service quality enhance convenience of usage and satisfaction, which lead to cross-buying intention. However, the impact of information quality is mediated by trust. Similarly, this study will further investigate the relationship between platform quality and intention to cross-buy by focusing on the design and interactivity of website, informativeness and security, as well as responsiveness, trust and empathy through the service provided.

Methods

The key purpose of this research is to study the relationship between platform quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students. The university students that are studied in this paper are only those that are registered under Malaysia's public universities and are born in Selangor. The type of research exercised is quantitative as it is said to be unexceptionally relevant to be utilised when the sample is large where it could represent the entire population (Queirós, 2017).

Questionnaires are adapted from Lin (2007), and Vyas and Raitani (2018) before being distributed to the respondents as a method of data collection. The time frame for collecting the data is precisely four months which was from September 2020 until December 2020. The questionnaires were distributed to only Selangor students that are studying at public universities in Malaysia. Upon receiving the responses from the respondents, the data will be utilised to approve or to disapprove the suggested hypotheses of this research, whereby the independent variable is platform quality and the dependent variable is the intention to cross-buy on cross-border e-commerce.

Population and Sampling

Most of the research proposed university students as the target respondents, for example studies by Lin (2007), Cao (2005) and Kuan et al. (2008). Edmunds et al. (2010) in his study, found that university students are at the top of the list for using the Internet and have great intention towards online shopping. According to Daud (2016), Malaysia internet shoppers are relatively young, highly educated, have higher social status, and command a more favourable financial position. From these findings, university students are the most suitable candidates to be the respondents.

Therefore, the targeted population of this study focused on the number of public university students that are only from Selangor, as it is the state where most students are populated (Ministry of Higher Education, 2019). Moreover, Selangor recorded the highest average household income in Malaysia, making it just behind the federal states (Department of Statistics Malaysia, 2020).

In this study, non-probability sampling technique is utilised to accurately represent the targeted population (Vehovar et al., 2016) because it is implausible to do randomisation (Etikan et al., 2016). Moreover, according to Bhat (2018), non-probability sampling can be used to further analyse an issue, which is exactly why this technique was chosen. The type of sampling technique applied is rather one of the common methods which is judgemental sampling. Judgemental sampling is used based on the judgement of researchers to a number of involved subjects that have the attributes they desire. The attributes are usually in the form of experience, knowledge and the readiness to assist authors in studying their topics of interests (Etikan et al., 2016).

Thus, using the judgemental sampling method, the questionnaires are to be given to Selangor students that pursue their studies at public universities in Malaysia which have the elaborated following qualities:

- The participants had experienced shopping on a non-local website.
- The delivery of the purchased products is transported across national borders.
- The participants were able to identify at least one non-local website that they had used or considered using.

To further define this study, the data was collected from public university students that originated from Selangor. This specifically means that the respondents must be from Selangor and are studying in any of the 20 public universities located in any of the 14 states in Malaysia. As a guide, Sekaran (2003) corroborated that a sample size larger than 30 and less than 500 is appropriate for most questionnaire research. This study utilised the span of the test that is reasonable to use, which is 267 respondents, where it fulfilled the criteria presented by Sekaran. Sampling size is pertinent in this research because it is needed to better understand the entire population without having to accept responses from everyone in the population (Bhat, 2018).

The method chosen to get the responses from the sample size is through a web-based questionnaire. The questionnaires were disbursed accordingly to Selangor students through the inherent connections of authors via an instant messaging application and other appropriate channels. The time period of disseminating the questionnaires is four months starting from September 2020 until December 2020. Upon receiving the responses, the study was pursued by using the data gathered.

In this study, a primary data collection method was used to gather information about independent and dependent variables relating to platform quality and intention to cross-buy on cross-border e-commerce among Malaysian public university students. According to Saunders et al. (2009), primary data provides the most advanced plus timely information and responses to research questions and hypotheses.

The sample size is 267 with equal distribution of women and men. All of them are familiar with the e- commerce environment which is filtered first-hand through questions like “Have you purchased a product online that requires shipping from another country?” After an extensive review of the literature, a web-based questionnaire was developed using Google Forms tool. There are in total of 26 questions asked in the questionnaire excluding demographics information. The 5-point Likert scale was employed for the measurement of the items. Invitations to participate were distributed to the participants via an instant messaging application. The objective of the study and the time needed to finish the questionnaire were clearly stated. The consent and participant information will be embedded in the survey. Voluntary participation is practiced where individual participants are able to withdraw at any time without notice.

Partial Least Square Structural Equation Modelling (PLS-SEM) using SmartPLS (v.3.2.8) was utilised to assess the outer model and inner model suggested by previous suggestions of

scholars (Hair et al., 2017; Hair et al., 2019). PLS contains a two-step procedure as recommended by Henseler et al. (2009), which involves the evaluation of the outer measurement model and evaluation of the inner structural model. Moreover, PLS-SEM is currently known and selected within social sciences studies as a technique that is the best appropriate method for multivariate analysis (Hair et al., 2019).

Findings

A total of 368 respondents responded to the survey. However, since the study is focusing on sample from Selangor and respondents who have purchased products online that required shipping from another country, only 268 respondents (out of 368) met the required sample group. From the total of 268 respondents, 83 respondents are male (31.3%) and 184 respondents are female (68.9%). For universities, the highest number of respondents are from UITM with 88 respondents (33.0%). As for level of education, majority of the respondents are degree holder with 244 respondents (91.4%) and are in Year 3 (106 respondents). Lastly, for the type of e-commerce platform used, majority of the respondents are using Shopee with 235 respondents (88.0%).

Table 1: Demographic Profile

Characteristics	Categories	Number	Percentage
Gender	Male	83	31.1
	Female	184	68.9
University	UM	25	9.4
	UPM	38	14.2
	UITM	88	33.0
	UMT	1	0.4
	UTEM	22	8.2
	UMP	4	1.5
	UKM	10	3.7
	USIM	7	2.6
	UIAM	37	13.9
	UTM	2	0.7
	UTHM	4	1.5
	UPSI	6	2.2
	UNISZA	1	0.4
	UNIMAP	2	0.7
	UNIMAS	7	2.6
	UPNM	1	0.4
	UMK	2	0.7
	USM	4	1.5
	UMS	3	1.1
	UUM	3	1.1
Education Level	Foundation	1	0.4
	Diploma	16	6.0
	Degree	244	91.4
	Master	3	1.1
	PhD	3	1.1
Year of Study	Year 1	35	13.1
	Year 2	68	25.5
	Year 3	106	39.7

	Year 4	58	21.7
E-Commerce Platform	Shopee	235	88.0
	Lazada	18	6.7
	Ebay	6	2.2
	Hermo	2	0.7
	Facebook	2	0.7
	Alibaba	1	0.4
	Taoboa	2	0.7
	Sephora	1	0.4

Measurement Model Analysis

Following the proposed two-stage analytical procedures, the confirmatory factor analysis was first performed to evaluate the measurement model; then the structural relationships were examined. To validate the measurement model, two types of validity were validated which are convergence validity, and discriminant validity.

Firstly, for convergent validity, it was assessed by examining the internal consistency, composite reliability and average variance extracted from the measures. According to the relevant criterion, the convergent validity would be satisfied if the factor loadings of the constructs are greater than 0.70, the average variance extracted (AVE) is greater than 0.50, and reliability is above 0.70. As presented in Table 2 below, all value exceed the recommended value. Thus, this shows that the variable has adequate convergent validity.

Table 2: Convergent Validity Result

Variable	Item	Initial Model	Final Model	CR	AVE
System Quality	SYQ1	0.76	0.77	0.91	0.59
	SYQ2	0.78	0.78		
	SYQ3	0.79	0.80		
	SYQ4	0.77	0.79		
	SYQ5	0.77	0.77		
	SYQ6	0.67	Deleted		
	SYQ7	0.74	0.73		
	SYQ8	0.70	0.70		
Information Quality	IQ1	0.83	0.83	0.91	0.64
	IQ2	0.79	0.79		
	IQ3	0.83	0.83		
	IQ4	0.80	0.80		
	IQ5	0.73	0.73		
	IQ6	0.82	0.82		
Service Quality	SRQ1	0.83	0.85	0.92	0.67
	SRQ2	0.85	0.86		
	SRQ3	0.70	0.70		
	SRQ4	0.82	0.84		
	SRQ5	0.85	0.87		
	SRQ6	0.64	Deleted		
	SRQ7	0.77	0.75		
	SRQ8	0.58	Deleted		

Intention to Cross Buy	ICB1	0.87	0.87	0.92	0.76
	ICB2	0.90	0.90		
	ICB3	0.88	0.88		
	ICB4	0.83	0.83		

Note: Item removed SYQ6, SRQ6, SRQ 8, due to loading less than 0.7

Next, HTMT of correlations were performed to examine the discriminant validity. The discriminant validity criterion would be filled if the HTMT value is below 0.90 (Henseler et al., 2015). All values shown in Table 3 indicated that the discriminant validity has been ascertained, for all the HTMT values were lower than 0.90.

Table 3: HTMT Criterion

	Information Quality	**Intention to Cross Buy**	**Service Quality**	**System Quality**
Information Quality				
Intention to Cross Buy	0.726			
Service Quality	0.844	0.734		
System Quality	0.839	0.759	0.863	

Structural Model Analysis

After evaluating the measurement model, the hypotheses were tested by using SmartPLS software with bootstrap method (5,000 re-samples). The path coefficient, standard deviation, t-value significance, and hypotheses testing results are shown in Table 4. As shown in Table 4, all three hypotheses proposed are significant. Hypotheses 1, system quality and intention to cross buy are significant with t-value=3.584***, Hypotheses 2, information quality and intention to cross buy are significant with t-value=3.648***, and lastly Hypotheses 3, service quality and intention to cross buy are also significant with t-value=2.523***. The results of the analysis are depicted in Figure 2. From Figure 2, the findings also indicates that the model explains 53.1 percent of the variance in intention to cross buy on cross border e-commerce.

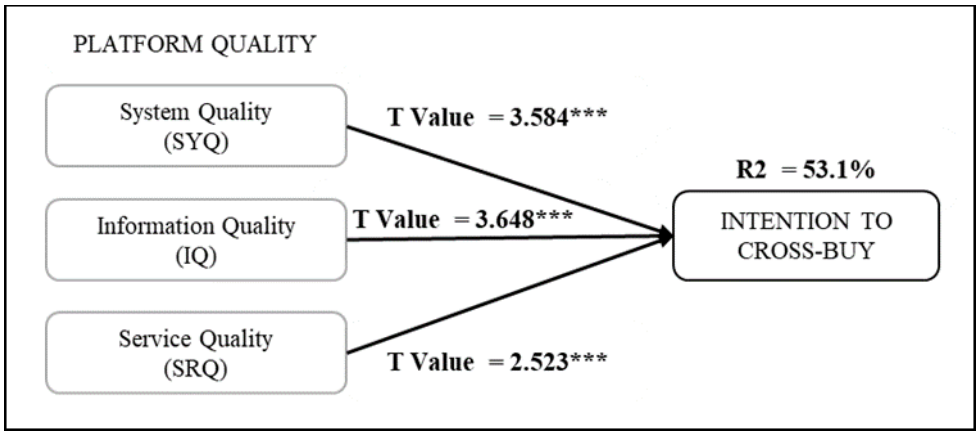

Figure 2: Result of Evaluating the Structural Model

Table 4: Hypotheses Testing

Hypotheses	Path Coeeficient	Standard Deviation	T Value	Decision	R2
System Quality -> Intention to Cross Buy	0.313	0.087	3.584	Accepted	0.531
Information Quality -> Intention to Cross Buy	0.251	0.069	3.648	Accepted	
Service Quality -> Intention to Cross Buy	0.229	0.091	2.523	Accepted	

Note: * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Discussion and Conclusion

Based on the result in Table 4, System Quality has a positive and significant relationship with Intention to Cross-Buy (r=0.670, sig=0.000), that have a magnitude of 67.0% for ICB with ρ-value being less than 0.01. There is sufficient evidence to conclude that System Quality has a significant relationship with Intention to Cross-Buy. Therefore, H1 is accepted by this research. The result is parallel with the literature review which showed that system quality will impact intention to cross buy strongly (Luo et al., 2019). The authors reasoned that a constantly upgraded system quality would be able to elevate convenience of use and better incite the intention to cross-buy. Furthermore, an excellent system quality would also certainly affect the trust of online stores' customers and lessen the perceived risk with online shopping (Ahn et al., 2007).

The result displays that Information Quality has a positive and significant relationship with Intention to Cross-Buy (r=0.645, sig=0.000), that have a magnitude of 64.5% for ICB with ρ-value being less than 0.01. There is adequate evidence to conclude that Information Quality has a significant relationship with Intention to Cross-Buy. Thus, H2 is accepted by this research. The result is consistent with the literature review which clarified that information quality has a positive relationship towards intention to cross-buy (Cao et al., 2005). The research by Li et al. (2002) and Park and Kim (2003) stated that as long as platforms supply precise, definite, apt and opportune information, it would be able to allow customers to perform comparison processes on products, which in turn would intensify their positive online buying intention.

Furthermore, the result shows that Service Quality has a positive and significant relationship with Intention to Cross-Buy (r=0.659, sig=0.000), that have a magnitude of 65.9% for ICB with ρ-value being less than 0.01. There is sufficient evidence to conclude that Service Quality has a significant relationship with Intention to Cross-Buy. Therefore, H3 is accepted by this research. The result is congruent with the study conducted by (Ngobo, 2004) which implied that service quality is positively associated with the intention to cross buy. This is because, according to Kim and Lee (2002) and Fang and Holsapple (2007), when customers receive high quality of service, they will continue to return to a particular e-commerce platform due to high satisfaction, and will directly strengthen the financial success of the company. After all, it is undoubtedly true that the service quality should be formulated in accordance with the marketing perspectives of customers (DeLone & McLean, 2003).

Theoretical Implications

Theoretically, this study highlights and confirms that the three important dimensions of platform quality all indicate strong relationships in influencing customers' purchasing behaviour and in this case, consumers' cross-buying intention, particularly among public university students in Malaysia. To the best of the authors' knowledge, no previous studies

involving the aforementioned constructs are conducted in the settings of Malaysia, and especially among Malaysian's university students.

System, Information and Service Quality are measured by adapting reliable sets of questionnaires and the findings depict that the higher the level of platform quality, the stronger the intention to cross-buy on cross-border e-commerce among Malaysian public university students. Thus, authors are confident that the findings from this study are pivotal for future studies in a way that now, the trend among Malaysian students is as what the findings suggested. It will provide a huge knowledge impact on the relationship of variables towards the sample group.

Practical and Social Implications

It is worth noting that this study is carried out during the COVID-19 pandemic. Hence, the data collected from respondents during this time would be different from the data that would be collected during the normal times. This is because, according to Statista (2020), Malaysians have made more online purchases since March 2020, the month when the Malaysian Government announced the Movement Control Order (MCO) (Tang, 2020). The E-commerce world grows exponentially because of the virus (Bhatti et al., 2020). The authors also corroborated that more people are starting to purchase things that they frequently buy offline, from going to traditional shopping and compact places.

As the frequency of online shopping is higher among Malaysians, they would develop a higher sensitivity towards the quality of platforms. This is affirmed by Drucker (1995) which identified that as customers perform regular online purchases, they will become better at it and begin to feel feelings of "increasing competence and ease", which will in turn cause the amplification of satisfaction level (Lin & Lekhawipat, 2014). Hence, the responses received should be able to project higher sensitivity compared to when the data is collected before or after the COVID-19 pandemic.

Practically, cross-border e-commerce enterprises could assess the findings and results of this study to improve the overall quality of their companies' platforms. This is to ensure that Malaysian university students and generally Malaysian citizens will keep on purchasing from their platforms because of the unbeatable system quality, information quality and service quality, especially when no one knows when the disease is going to stop co-existing in our societies. E-commerce companies should be able to realise that in these trying times, it is their chance to shine brighter. Of course, this benefit does not only extend in the Malaysian settings, but could also be applied by e-commerce companies from other countries, who found that the purchasing behaviour of Malaysian students are the same as their sample group.

Limitations and Suggestions for Future Research

Just like any other research, our study is not an exception when it comes to experiencing some limitations which affected the process of collecting the required data and ultimately the interpretations of our research findings.

First and foremost, the sample size parameters of the research itself. Only 267 respondents from a population of 69,731 public university students are involved in this study. The focus sample in this study particularly used public university students originated from the Selangor state only. As the total of public university students all around Malaysia actually amounted to more than 500,000, this means that it is difficult to apply the generalisability of the study findings and that it might be biased.

Additionally, the financial demographic of the public university students have not been inquired in the questionnaire. This study assumed that the respondents received allowance from their parents as Selangor recorded the highest average household income in Malaysia

(Department of Statistics Malaysia, 2020). However, during this pandemic, surely most households are financially affected with the state implementing Conditional Movement Control Order (CMCO) even before the data collection period started. This might also somehow influence the respondents' cross-buy intention.

Lastly, the questionnaire is self-reported by the respondents. No face-to-face interaction was allowed for research data collection parallel with the guidelines outlined by the university and government to prevent the transmission of COVID-19. As a result, a fully online survey questionnaire was constructed and distributed via the online medium. Thus, it has potential problems of demand effects (i.e. respondents guess the researchers' intention) or less motivation for thoughtful response (Liu et al., 2020).

As a recommendation, future research should draw upon a larger sample size to generate a more accurate and representative sample (Lim et al., 2011). Researchers need to take samples from those originated throughout Malaysia rather than just focusing on the state of Selangor.

Alternatively, samples of private university students can also be taken to make comparisons with the findings of this study. Moreover, another option would be to have a working middle-class society as a sample due to the fact that Malaysia has a growing middle class society, pursuing cheaper sources of products such as online sales (Benedict, 2019). This could provide a new perspective on customer cross-purchase intentions.

Other than that, future research could utilise actual first-time customers to measure cross-buying intentions. Researchers are suggested to focus on specific products featured on different cross-border e-commerce platforms and further analyse them to compare the across each platform.

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