The Role of Food Apps Servitization on Repurchase Intention: A Study of Foodpanda

Abstract

With the exponential growth of smartphone applications (apps), companies have embraced the new concept of platform service supply chain (PSSC). The food industry in particular has quickly adopted this concept through the use of food apps, such as Foodpanda, which is becoming popular among consumers when it comes to ordering food in Malaysia. As such, this study investigated the relationships between factors that drive customer repurchase intention in food delivery apps within the context of Malaysia. Data were collected from 250 respondents between October 2019 and January 2020. This study will employ a non-probability purposive sampling. In this study, two statistical analysis techniques were used for data analysis and testing of hypothesis, namely, Statistic Package for Social Science (SPSS) version 25 and Partial Least Square Structural Equation Modeling (PLS-SEM) version 3.2.9. As a result, perceived usefulness, social influence, and trust displayed a significant and positive influence on customer repurchase intention for food apps. The outcomes retrieved from the importance-performance matrix analysis (IPMA) revealed that both importance and performance of perceived usefulness highly contributed to customer repurchase intention for food apps. This research has important implications for Foodpanda to continuously improve its food delivery apps service platform and achieve customer satisfaction, leading to repurchase intention. Having that said, this study sheds new light on the platform serviceability within the food industry.

Key words: Servitization, Repurchase intention, Platform service supply chain, Food apps

1. Introduction

Since the 18th century, the initial industrial revolution has highlighted the crucial role of technology in various industries. In many aspects, technology has substituted human work due to its ability and versatility in generating quick and efficient productivity with fewer resources, and in many cases, a safer environment for employees. Technology usage has facilitated multiple industries to increase their output with fewer resources and minimum raw materials or ingredients.

Needless to say, the Internet has led to a new paradigm shift towards the use of technology when most industries have begun adopting automated machinery to manage their daily operations more efficiently, as well as to reduce risks and wastage. The rapid growth of the Internet and technology as the new global market has bridged the gap between time and space. Information integration among supply chain members has become increasingly important in today's Internet era (Zhou, Chong & Ngai, 2015). As depicted by Kian, Loong, and Fong (2018), the Internet has opened a window of opportunities to communicate with people across the world without time or geological restriction, thus providing everyone with the capacity to conduct feasible and direct business opportunities via a virtual platform. With the rapid advancement and use of the Internet, consumers' online purchase (e-purchase) behaviour (also known as electronic commerce (e-commerce) has spiralled upwards as consumers begin to realise that the power of e-purchase is just a click away. They are able to make better choices by comparing products and prices, all of which were unattainable prior to the digital age. Despite the similarities shared between conventional businesses and online shopping, the Internet offers distinctive features, such as low search costs, easy price comparison, time saving, and endless varieties (Shimi & Michael, 2018). With growing customer expectations for price and quality, service providers today can no longer rely merely on cost. Still, they need to be able to manage the supply chain proficiently and to understand better the demands of their customers (Chong and Zhou, 2014).

With the boom of the Internet, smart phones have become more common and ubiquitous. More companies have begun utilising this benefit to reach out to as many consumers as possible through mobile applications (apps) (Islam & Want, 2014). The growth of mobile apps has an integral role in creating vast opportunities for businesses, especially in the food delivery industry. For instance, the revenue of food delivery segment in the USA had achieved USD 358 million in 2018 (Statista, 2018). Food delivery service refers to an online platform or application, where consumers can order their meals to arrive at their location and in their preferred free (Dazmin & Ho, 2019). Online ordering service apps have helped consumers eliminate unnecessary process through food delivery from a specific restaurant to the desired location. As such delivery service saves time; consumers have more time to perform other significant tasks (Dazmin& Ho, 2019).

In Malaysia, Foodpanda is the first food delivery company established in Malaysia. To date, Hirschmann (2020) reported that approximately 75 percent of the Malaysians are in favour of using Foodpanda food delivery app. Foodpanda is a worldwide online food ordering and delivery marketplace that operates in 43 countries. Foodpanda has cooperated with more

than 45,000 restaurants worldwide and has never ceased to grow rapidly (Mainuddin Hassan, 2018). Food delivery app and service have gradually influenced the industry of food and beverage, mainly because of the growing potential of delivery service that can ensure employee productivity, delivery order accuracy, and creation of customer database (Moriarty, 2016). Foodpanda operates based on the online-to-offline (O2O) business model, along with the existence of the platform service supply chain (PSSC).

Due to the increasing demand in the food ordering apps services from consumers, the product service system (PSS) has laid a strong foundation of the servitisation concept (Kim et al., 2019). The literature has used a range of terms to explain the servitisation concept, namely PSS, product and service integration, as well as hybrid offerings. As for this present study, servitisation and PSS are used interchangeably. Kastalli and Van Looy (2013) illustrated servitisation as the shift of a company's focus from selling core products to offering augmented products. Servitization grants producers the opportunity to satisfy consumers' needs and desires by selling their products with a combination of services (Kim et al., 2018). Vandermerwe and Rada (1988) testified that businesses were enhancing their services by increasing competitiveness and strengthening their power in the marketplace. They deliberate the growth of servitisation as companies improve their portfolios from mere products or services to added value offerings with support, knowledge, and self-service. Businesses that adopt the servitisation concept, basically, add value by offering additional service to their existing core product. Based on the business outcomes, some companies appear to struggle with the servitisation concept (Kohtamäki, Einola, & Robetino, 2020).

Global researchers have widely focused on online shopping behaviour, but not much has been studied in the field of food apps servitisation (Yeo et al., 2017). Therefore, it is noteworthy to highlight here that limited studies have comprehensively assessed the factors that affect the role of food apps servitisation on repurchase intention of Foodpanda in the growing Malaysia market. Hence, this present study bridges the gap and spearheads an empirical investigation regarding the factors that influence consumers' repurchase intention on the role of food apps servitisation in Malaysia. The findings from this study will be a source for the company to understand better their consumer behaviour and on how to optimise their market share through consumer repeat purchase. In precise, the following factors were assessed: effort expectancy, perceived usefulness, information quality, perceived risks, social influence, and trust. This paper continues with the literature review and hypotheses development. The following sections outline the methodology and the results. Lastly, this study is concluded with a discussion of results and several implications.

2. Literature review and hypotheses development

2.1 Effort expectancy and repurchase intention

Effort expectancy refers to the ease of using a service when making use of the service or the technology. Venkatesh et al. (2003) described effort expectancy as the level of easiness while utilising a system. Meanwhile, Zarrad and Dababi (2012) asserted that surfing difficulties can lead to the barrier of e-purchase. Thus, a supplier cannot build a system that is difficult to understand and use. Pham and Ahammad (2017) reported that the convenience and ease of use of a website or app can enhance purchase intention amidst clients. They depicted that a poor app that fails to meet customers' expectation of ease of use will not fulfil the customers' satisfaction to purchase using the app. An app that is easy to use will achieve customers' satisfaction and make them happy when using the system. Chen et al. (2018) proposed that a mobile app with a higher level of ease of use is more likely to create cheerful consumer emotion, which induces consumers into the purchase process.

Effort expectancy also refers to apps that stimulate purchasers to continue using the website or app stemming from engaging experience (Vivek et al., 2019). Good experience of effort expectancy leads purchasers to continue using the technology system. If purchasers have a poor experience with the service system, their intention to purchase using the system may change and eventually switch to another platform. Silas and Lizette (2019) stated that a system has no significance of simplicity if it offers confusion, complication or pointless steps to complete the purchase task on that system. If a system requires clients to make countless efforts to execute and complete the required task, the system is considered to be technologically complex. It may serve as a deterrent amongst users. In most cases, simplicity is essential to improve consumers' interaction, experience, and satisfaction towards the system. Visual of the technology is also an essential factor in attracting clients' perception of the system, so as to guide them easily to use the technology.

Ray et al. (2019) claimed that perceived ease of use affects people's choices to adopt food delivery apps. The study discovered that perceived ease of use shared an essential association with buyers' purchase intention to adopt food delivery apps. Similarly, Lau and David (2019) found the positive impact of perceived ease of use on Malaysian customers' behaviour intention towards online food ordering service. Such a positive effect was noted due to the efficient use of the app. Those who often use online food ordering systems seek apps that are easier to use with less effort. Mohd et al. (2011) asserted that convenience to use can significantly affect perceived usefulness. Davis (1989) mentioned that if a specific innovation is helpful to the system; its users can trust that the innovation is not difficult to use. Hence, perceived ease of

using an app may affect one's purchase intention towards food ordering apps, such as Foodpanda. Referring to the overall research review, effort expectancy has a significantly positive relationship with improving user experience. As such, the following hypothesis is proposed:

H1: There is a significantly positive effect of effort expectancy on customer repurchase intention in Foodpanda delivery app.

2.2 Perceived usefulness and repurchase intention

Perceived usefulness refers to users' perception if purchasing at the website, online or app is more effective than in-store purchase (Koufaris, 2002). Perceived usefulness has significantly influenced consumers' intention to buy through the Internet, besides being positively related to consumers' behaviour and attitude (Monica et al., 2016). To date, many companies and marketers have attempted to create functional websites and apps to increase their customers' perceived usefulness and convenience towards using their systems.

According to Mazzini et al., (2016), perceived usefulness denotes the users' beliefs that when using a medium, such as the Internet, a website or an app, it will improve their performance and efficient productivity, apart from increasing their satisfaction and enhancing their experience. An efficient app offers multiple benefits for consumers to enjoy while using it. If online shopping is not beneficial, users would not adopt such system. Thus, the usefulness of an online food ordering app can influence consumers to adopt the app to order food online. Dachyar and Banjarnahor (2017) depicted that the use of online transaction can help customers accomplish their shopping faster than the conventional mode of transaction. A useful app assists users to save their time and to browse with enjoyment. Piyanath and Suthawan (2013) stated that perceived usefulness is affected by perceived ease of use through the lens of the Theory Acceptance Model. Put simply, effortlessness in using a system will motivate users to adopt it. Senhui et al. (2018) found that the capabilities and usefulness of a system can affect user gratification. The design features of a system, such as search engine, link, menu, and graphics, can enhance user experience (Song & Zinkhan, 2003). As for food ordering apps, their features can influence consumers' usability and satisfaction in using the system. Perceived usefulness reflects the needs and awareness of consumers towards a website or system in order to add value and improve services (Hu et al., 2019). As Kim and Song (2010) defined,

perceived usefulness is the efficiency usability to the user, such as the advance search engine, or the customisation service provided to a consumer.

The usefulness of a system or a network infrastructure is amplified when the information addresses the demands of the beneficiaries. In this era of advance technology, a technology system that can meet the demands and desires of consumers is deemed as a system that has usefulness. A system that is both convenient and useful will encourage consumers to exhibit buying behaviour through that system. The system should be updated to the latest version to meet user expectations consistently. Clients also consider an informative app or website as part of perceived usefulness. A website or app with more data instructions in the web-based business enables clients to compare price and items, thus increasing purchasers' perception of usefulness. This is bound to build their shopping pleasure and allow them to make a better buying decision (Tien, Rivas & Liao, 2019).

Nedra, Hadhri and Mezrani (2019) asserted that consumers would highly consider purchasing from a certain website or app upon discovering the usefulness of the online system for them. Thus, perceived usefulness can create purchase intention when the technology innovation offers benefits to the clients. Pee, Jiang, and Klein (2019) explained perceived usefulness as an assessment of the utilitarian parts of online stores (e-stores) through the evaluation of the fulfilment of objectives, such as shopping efficiency and viability. When a website or app evaluation has gained customers' interest, more repurchasing is expected from this group of consumers, thus increasing more loyal consumers.

Monica et al. (2016) and Moslehpour et al. (2018) found that perceived usefulness can significantly influence consumers' e-purchase intention. The cutting-edge technology has generated vast competitors in the e-commerce platform. Perceived usefulness has turned into a common feature that enhances one's experience to purchase through the online platform. Perceived usefulness has been identified as one of the main factors that attract customers towards online food ordering process (Mohamed, Hussein, Zamzuri, & Haghshenas, 2014). Several scholars have highlighted the positive relationship between perceived usefulness and consumers' purchase intention through food deliver app. As such, the following is hypothesised:

H2: There is a significantly positive effect of perceived usefulness on customer repurchase intention in Foodpanda delivery app.

2.3 Information quality and repurchase intention

Information quality, being the value and convenience of information (Negash, Ryan, & Igbaria, 2003), is an important factor that affects users' satisfaction to use food delivery app. A good design platform can assist consumers in reducing their search cost while on the other hand, can enhance the effectiveness of information processing (Xu, Zeng & He, 2020). Information quality refers to the extent to which a technology system offers its users valuable and critical information in a quick and precise manner (Zhao, 2019). Superior information quality of products and services will enhance customer's loyalty (Zhou & Li, 2020). Information quality of a technology system denotes product, website, and application information. Product information is sharing the convenience of accessible messages about the product and helping a consumer to evaluate the product (Shahzad, Yan, & Sumaira, 2015). If a food delivery app lacks product information, it may increase consumers' doubts about the product and eventually leave the system. An app with complete information will lead to better user satisfaction. Hence, a consumer's e-purchase experience is based on the website or app information.

Consumers' feedback about the website quality in terms of its features that can meet their needs with added value is vital in assessing purchase intention (Jasur & Haliyana, 2015). Users start paying attention to websites that contain sufficient quality information to facilitate in their decision-making process. Lack of information may affect consumers' intention to purchase an item from the website (Ghasemaghaei & Hassanein, 2016).

Information quality is characterised as data that are suitable for use by consumers. Information quality is data that meet a certain requirement and fulfil users' satisfaction (Nida et al., 2018). The informativeness of a food app enables buyers to compare item features, expand their shopping pleasure, and improve purchase decision, which are connected with customers' impression towards value (Tien et al., 2019). Data quality and contention quality have been viewed as significant determinants of the credibility of online information and website reviews. Marc-Julian et al., (2019) claimed that in reality, consumers often rely on the reviews given in the websites by other customers who are considered as autonomous evaluators of any product or service. Reviews on a website are a significant way to provide accurate data to consumers in making a purchase. Unreliable data and poor information quality cause consumers to leave poor reviews, and eventually, drop the system.

Chen and Chang (2018) found that information quality can influence consumers' purchase intention in Airbnb. They added that information quality has an impact on customers' satisfaction, thus affecting their e-purchase intention. Suelen (2017) revealed that information

quality has a positive and direct impact on customers' purchase intention on website. Similarly, Lee, Sung and Jeon (2019) found that the quality of information affected the clients' continuous purchase behaviour in using food delivery apps. Thus, service providers should provide a quality system that offers helpful information to meet consumers' expectations. The literature depicts that information quality has a significantly positive relationship with consumers' purchase intention in food delivery apps. Hence, the following hypothesis is proposed:

H3: There is a significantly positive effect of information quality on customer repurchase intention in Foodpanda delivery app.

2.4 Perceived risk and repurchase intention

Perceived risk refers to a buyer's belief of the uncertainty related to the outcome of the online transaction and the possible unpleasantness of the outcome (Forsythe & Shi, 2003). The risk is perceived by consumers' intention towards a specific purchase decision, and their fear of the outcome in the purchase process regardless of gain or loss. Shahzad, Yan, and Sumaira (2015) proposed that perceived risk is built by multiple factors, namely physical risk, psychological risk, product feature risk, social risk, financial risk, and transaction risk. Zhou et al. (2008) depicted that perceived risk include the inability of online buyers to evaluate the value of a product, to contact the seller, and to gain assurance about the security of payment while using the Internet. One with doubts about the purchase of a product increases his awareness of the perceived risk, which may affect his purchase intention. Thus, perceived risk may affect consumers' e-purchase.

From the stance of marketing, perceived risk is related to uncertainty with likely negative results after shopping (Luis, Angelika, & Juan, 2019). With the growth of the digital era, many perceived risks are related to the online website, app or system. Upon experiencing undesired outcome when using the system, clients are bound to use another system or app to avoid recurrence of risks. These risks lead consumers to change their purchase intention by adopting a competitor brand. The risk affects consumers' purchase action in specific brands.

There are two major types of perceived risk in customers' purchase decision process (Kian, Loong, & Fong, 2018). The first type of perceived risk is associated with products and services, which include feature loss, delivery or time loss, product peril, cash loss, and opportunities loss. Next, the second type of perceived risk is linked with online transaction, namely security and privacy risks. Fen, May, and Ghee (2012) described six types of perceived risks that can affect consumers' decision making. The first hazard is performance risk; the product fails to

meet the standard quality. The second risk is financial risk; the value of the item is not at par with the price. The third risk is functional risk; the item does not meet consumers' expectations. The fourth is social risk; choosing the product is influenced by a social problem. Physical and psychological risks are the fifth and final perceived hazards, respectively. In order to attract consumers and increase sale, food delivery companies should reduce these risks in their apps.

As mentioned by Joaquim et al. (2019), with the growing web shopping and service delivery, perceived risk has become a vital issue for online transactions. Some factors that affect clients' e-purchase intentions are risks that lead them to have fears about counterfeit products, as well as wastage of their time and money. Another factor is the risk of breaching their private data, financial information, and other capabilities of the product. Perceived risk has a negative impact on buyers' intention to adopt online payment. This factor will affect consumers to switch to other platforms to avoid online payment risk. Therefore, companies that are perceived to have higher perceived risks will face the issue of losing their current or potential consumers.

Kian, Loong, and Fong (2018) asserted that perceived risks can affect consumers' buying intention in online grocery shopping. Online shopping is similarly related to online food ordering, in which perceived risk can greatly influence consumers' buying intention in food delivery apps online. Mazzine Rohani and Salwana (2016) found that perceived risk had a negative relationship with Malaysian Generation Y in making e-purchase. Besides, perceived risk can adversely influence one's intent to perform online shopping (Moshref et al., 2012). The higher the perceived risk one faces, the lower is the satisfaction rate and purchase intention (Pires et al., 2014). Therefore, the Foodpanda app should ensure contact with less risk to attain customer satisfaction and continuous purchase using the food delivery app. A good application will not let users worry about the risks that they have to face, but to enjoy the e-purchase. Hence, perceived risk can negatively influence the customers' buying intention using Foodpanda delivery app.

H4: There is a significantly positive effect of perceived risk on customer repurchase intention in Foodpanda delivery app.

2.5 Social influence and repurchase intention

Social influence refers to the impact one's peer, family, friends, media, and society has on him or her. Within the context of this paper, Emiy, Chaaminy, Jasmine, and Yuvaraj (2018) defined social influence as how a shopper perceives the significance of other people's beliefs on the type of technology they use. Social influence includes how one is affected by other

people's opinions on whether or not to purchase via online (Saeideh et al., 2016). Social influence is a reflection of how people affect each other's behaviour to purchase using food delivery apps. Hence, social influence is a vital factor that can influence other users to become potential consumers of a company.

Emiy et al. (2018) reiterated that peer or friends within a social circle may influence one's behaviour to use a new system. A technology system, such as food delivery apps, can be influenced by other online comments or reviews as an encouraging variable on user behaviour towards using the system (Wakefield & Wakefield, 2016). People surrounding can directly affect one's intention to buy meals through online food ordering platforms, mainly due to the virtue of using the same technology that offers them the feeling of belonging to the same community group or social group.

Social influence is generally associated with informative and normative social impacts. Message influence is also a form of information influence that can happen when one gets and accepts information from others as proof of reality. At the point when a buyer knows a few people with information about the product, data from a reference group will work towards increasing product credibility. Exposure of information can influence buyers' evaluation of the item, wherein positive information will lead the buyers to form more favourable behaviour. On the other hand, normative influence is one's propensity to conform to the expectations of other people.

As defined by Kotler et al. (2016), netizen is an important factor to build social influence with the way of an "expressive evangelist" on the Internet. As netizens are expressive evangelists, they are passionately and emotionally committed to the brand they favour. They act as evangelists and love sharing good information about the brand they favour. Sometimes, they voice out to safeguard their favourite brand against negative comments on social network sites, such as Facebook, Instagram, and Twitter. This is an effective way to influence online users' confidence with a particular brand, along with their own beliefs that the brand is good and desired by netizens.

With the digital era, engaging online celebrities to become their digital influencer to impact consumers' buying action is becoming a trend adopted by many companies. Online celebrities have become brand ambassadors and their brand commitment for organisations typically includes free items, the guarantee of 'introduction', and the minimum entirety of costs (Duffy, 2016 cited by David & Raquel, 2019). They use the items given by companies to introduce to their audience, thus influencing them to adopt that product. Ngoc et al. (2019) highlighted the pivotal role that social influence plays in promoting peer buying intention.

Social influence refers to buyer perception of the use of web shopping by a referent group. A referent group is composed of people who share similar needs and preferences. Referent groups are important to influence peer buying action.

Kotler et al. (2016) emphasised on another source of social influence for referent groups that derive from the social environment, which is the close circle of friends and family of an influencer. Apart from that, netizens can also be influencers in the online review site. Consumers may be influenced by a brand that they have heard of before in a social media platform. Besides, consumers can be influenced by online rating systems, such as TripAdvisor and Yelp. These sources originate from the netizens' influencers. Netizens can be one of the most significant factors that drive social influencers to impact other buying behaviour.

Last but not least, the reason for clients' buying intention using food delivery apps is based on social influence at social network sites, websites or app reviews. Social influence helps customers to be more committed and to establish a psychological attachment to the new development. Hence, social influence is an important factor that allows online users to repurchase using food delivery apps.

H5: There is a significantly positive effect of social influence on customer repurchase intention in Foodpanda delivery app.

2.7 Trust and repurchase intention

Trust is to accept that somebody is excellent and fair, or that something is safe and reliable. Trust is a vital factor for companies to keep a long-term relationship between buyer and seller. Trust is one who believes that the person or an object has reliability and trustworthiness (Everard & Galletta, 2006). Trust is believing in somebody or that some service will provide security to them. Trust is built when the service provided or the system has reliability and dependability (Kim, Kim, & Kim, 2009). Also, trust is built by consumers' past purchase experience. Trust can reduce consumers' perceived risk and insecurity towards using the system.

Since the pervasive integration of the digital world and virtual environment in all aspects of commercial and economic segments, the Internet is filled with uncertainties and irrelevant information. Thus, credibility and trust have become essential factors amidst users to perform e-purchase. The more the buyers trust a system or website, the more the intention to acquire (Mansour, Kooli, & Utama, 2014; Che, Miin, Li, & Kuo, 2015). Trust has a significant role in clients' purchasing intention in online systems. Trust makes consumers feel confident about

purchasing via online website. Mazzini et al. (2016) explained that trust is consumers' willingness to rely on the seller and to make an actual purchase. Trust is a conviction that the counterparty will meet the desires without abusing the vulnerabilities of the trustee (Shahab et al., 2019). At the point when customers take part in an online transaction, trust is essential in disposing of any uncertainty or uncontrolled capacity (Zhu, Mou, & Benyoucef, 2019). Upon recognising that a system has uncertainty, both belief and trust towards the system can be adversely affected.

According to Joaqium et al. (2019), trust is fundamentally essential for e-purchase expectation. Trust is a critical factor that leads consumers to buying action by assuring that there is no risk when the purchasing process occurs. Luis, Angelika, and Juan (2019) reported that lower risks engender higher levels of trust. Accurate information and service assist vendors build trust amongst consumers. Sometimes, trust generates long-term consumers or loyalty buyers. Senhui et al. (2018) explained that trust is one's party of trustworthy towards another party or an unfamiliar partner. It is not easy for consumers to directly trust a seller. Similar to food delivery apps, it is not easy for consumers to directly trust online food delivery services, as multiple factors are weighed in prior to purchasing the food delivery service.

A study reported that trust positively influences buyers' purchase behaviour in online hotel booking (Lien, Wen, Huang & Wu, 2015). Similarly, Amaro and Duarte (2015) stressed that trust in online travel shopping exerted a positive effect on consumers' intention to purchase travel online. This firmly proves that trust is the main factor that can influence consumers' repurchase intention. Lau and David (2019) found that privacy and security increased customer trust and influenced their intention to purchase using a food delivery service. Foodpanda, thus, can build more trust element to ascertain that their customers are confident with the services. When customers are confident and satisfied with the service, they will form a loyal and long-term relationship with the vendor. Foodpanda can build their app with accurate and precise functions to avoid users feeling anxious or worried when they purchase. With that, the next hypothesis is proposed:

H6: There is a significantly positive effect of trust on customer repurchase intention in Foodpanda delivery app.

Fig. 1 presents the research model used in this study based on the literature review and hypotheses developed.

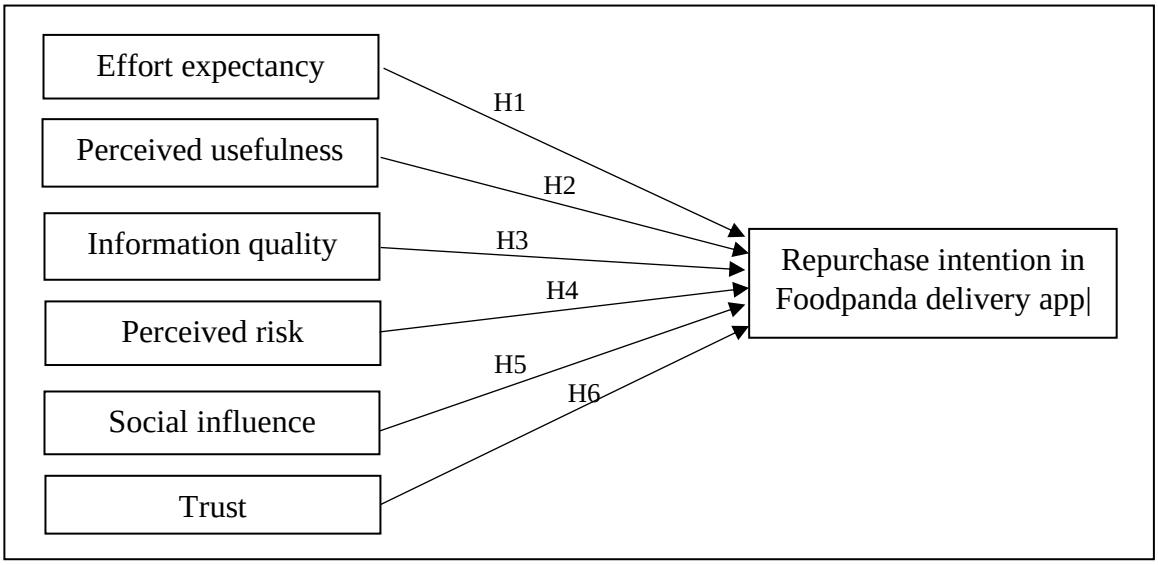

Fig. 1. Research model

3. Methodology

3.1 Research design

This study employed the non-probability purposive sampling technique. According to Sekaran and Bougie (2011), purposive sampling is confined to a specified category of people who can provide information that is sought after. The purposive sampling was deemed most suitable for this study because users of Foodpanda delivery app age 18 and above and residing in Malaysia were in a better position to provide information required for this study. The questionnaire used in this study was adapted from a past study, along with several amendments to suit the context of this study. A total of 30 items were used for this research purpose. Measures for perceived effort expectancy (5 items) was adapted from Heijden et al. (2003). While perceived usefulness (5 items) was borrowed from Chiu et al. (2005) and perceived risk (5 items) were adapted from Shim et al. (2001). Meanwhiles, social influence (3 items) and information quality (4 items) were adapted from Lee et al. (2019). Trust was measured using four items adapted from Javernpaa et al. (2000). Repurchase intention was measured by using a four-item scale that was adapted from Wang and Chu (2020) based on a well-established seven-point Likert-type scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Meanwhile, responses to the measurement of items for independent variables (effort expectancy, perceived usefulness, information quality, perceived risk, social influence, trust) were based on five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Disagree). Table 1 lists the measurement items applied in this study.

Table 1

Measurement items of the study

Constructs	Indicators	Sources
Effort Expectancy	EE1 - Learning to use the Foodpanda app is easy. EE2 - It is easy to get the Foodpanda app to do what I want. EE3 - The interactions with the Foodpanda app are clear and understandable. EE4 - The Foodpanda app is flexible to interact with. EE5 - The Foodpanda app is easy to use.	Heijden et al. (2003)
Perceived Usefulness	PU1 - Foodpanda app would be useful in ordering food online. PU2 - Advantages of ordering food online outweigh the disadvantages. PU3 - Foodpanda app makes my life meaningful. PU4 - Foodpanda app saves my time. PU5 - Foodpanda app is more convenient.	Chiu et al. (2005)
Information Quality	IQ1 - Using Foodpanda app provides accurate information IQ2 - Using Foodpanda app provides believable information. IQ3 - Using Foodpanda app provides information at the right level of detail. IQ4 - Using Foodpanda app presents the information in an appropriate format.	Lee et al. (2019)
Perceived Risk	PR1 - I do not feel comfortable giving out credit card information to make a transaction over the Foodpanda app. PR2 - I feel apprehensive about purchasing in Foodpanda app. PR3 - Purchasing in Foodpanda app is risky. PR4 - There are many uncertainties associated with purchasing in Foodpanda app. PR5 - Compared with other methods of purchasing, online food ordering is riskier.	Shim et al. (2001)
Social Influence	SI1 - People who are important to me think that I should use Foodpanda app for purchasing foods. SI2 - People who influence my behaviour think that I should use Foodpanda app for purchasing foods. SI3 - People whose opinions I value prefer that I use food delivery apps for purchasing food.	Lee et al. (2019)
Trust	TRT1- Foodpanda app is trustworthy. TRT2- Foodpanda app gives the feeling that it keeps guarantees and responsibilities. TRT3- Foodpanda app meets my expectations. TRT4- I believe Foodpanda app keeps my best selection in mind.	Javernpaa et al. (2000)
Repurchase Intention	RP1 - The probability I would consider repurchasing using Foodpanda app is high.	Wang and Chu (2020)

	RP2 - I will consider repurchasing food through the Foodpanda app. RP3 - The likelihood I would repurchase food using Foodpanda app is high. RP4 - I am willing to repurchase food from Foodpanda app.

An online invitation with a link to the questionnaire using 'Google form' was sent through WhatsApp and E-mail to all the target respondents from October 2019 to January 2020. The target population of this study refers to users of Foodpanda delivery app residing in Malaysia, particularly Kuala Lumpur, Melaka, and Johor Bahru. Based on G-power with 0.15 effect size, 0.05 alpha, and 0.8 power; the minimum sample size required was 146.

3.2 Statistical Analysis Technique

Data collected in this study were analyzed with two types of statistical softwares. The demographic data was analysed using the Statistic Package for Social Science (SPSS) version 25.0 software. The convergence validity, discriminant validity, the relationship between the variables and the Importance-Performance Matrix Analysis (IPMA) were analysed utilising Partial Least Square Structural Equation Modeling (PLS-SEM) version 3.2.9.

4. Results

4.1 Demographic

A response rate of 89% was attained after 250 out of 280 respondents completed the questionnaire with the following screening question: "do you use Foodpanda app platform for food delivery services". From the 250 usable responses, 42.8% were males, while 57.2% were females. More than two-thirds of the respondents fell in the 18-24 age group, earned below RM1000 (52.4%) a month, and were degree holders (68%). Most of the respondents (66.8%) actively sought food delivery via Foodpanda platform.

4.2 Measurement model evaluation

The reliability of the construct measurement was evaluated by examining composite reliability, as suggested by Gefen et al. (2011). Table 2 tabulates that the composite reliability exceeded the benchmark value of 0.70, thus demonstrating construct reliability. Out of the 30 items, 25 had loadings that exceeded the ideal level of 0.70, whereas five (EE2, EE4, IQ1, PR1, and PR5) items were greater than the acceptable level of 0.50 (Hair et al., 2017). This signified reasonable convergent validity of the measurement model constructs. Convergent validity was

established for all the constructs since the average variance extracted (AVE) met the suggested threshold of 0.50. Following this, discriminant validity was examined based on heterotrait-monotrait (HTMT) (Henseler et al., 2015). As prescribed by scholars that the acceptable HTMT values (see Table 3) should be lower than either 0.85 or 0.90 (Henseler, Ringle, & Sarstedt 2015), this study adopted the more rigorous HTMT 0.90. Taken together, these outcomes indicated that the common method bias was not a threat to this present study. Therefore, discriminant validity is satisfactory. As shown in our measurement model (see Figure 2), the R2 in this model displayed a high value of 0.597 for the endogenous constructs of repurchase intention, suggesting that 59.7% of the variance in repurchase intention in Foodpanda delivery app can be explained by effort expectancy, perceived usefulness, information quality, perceived risk, social influence, and trust. Hair et al., (2019) stated that R2 value ranges from 0 to 1 - the higher the value, the higher the predictive accuracy.

Table 2

Measurement items of the study

Variables	Items	Loadings	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Effort Expectancy	EE1	0.804	0.792	0.802	0.858	0.550
	EE2	0.622				
	EE3	0.757				
	EE4	0.686				
	EE5	0.821				
Perceived Usefulness	PU1	0.760	0.839	0.840	0.886	0.609
	PU2	0.813				
	PU3	0.752				
	PU4	0.792				
	PU5	0.783				
Information Quality	IQ1	0.687	0.764	0.783	0.848	0.584
	IQ2	0.810				
	IQ3	0.752				
	IQ4	0.803				
Perceived Risk	PR1	0.657	0.880	0.909	0.911	0.674
	PR2	0.887				
	PR3	0.903				
	PR4	0.876				
	PR5	0.657				
Social Influence	SI1	0.803	0.787	0.790	0.876	0.701
	SI2	0.859				
	SI3	0.849				

Trust	TRT1	0.799	0.821	0.829	0.882	0.651
	TRT2	0.836				
	TRT3	0.744				
	TRT4	0.846				
Repurchase Intention	RI1	0.756	0.806	0.813	0.873	0.633
	RI2	0.847				
	RI3	0.761				
	RI4	0.815				

Table 3

Discriminant Validity: HMTM

	EE	**IFQ**	**PCR**	**PU**	**PCI**	**SCI**	**TRT**
Effort Expectancy (EE)							
Information Quality (IFQ)	0.786						
Perceived Risk (PCR)	0.166	0.131					
Perceived Usefulness (PU)	0.899	0.680	0.290				
Repurchase Intention (PCI)	0.772	0.606	0.217	0.854			
Social Influence (SCI)	0.579	0.408	0.102	0.538	0.651		
Trust (TRT)	0.653	0.775	0.115	0.675	0.731	0.535	

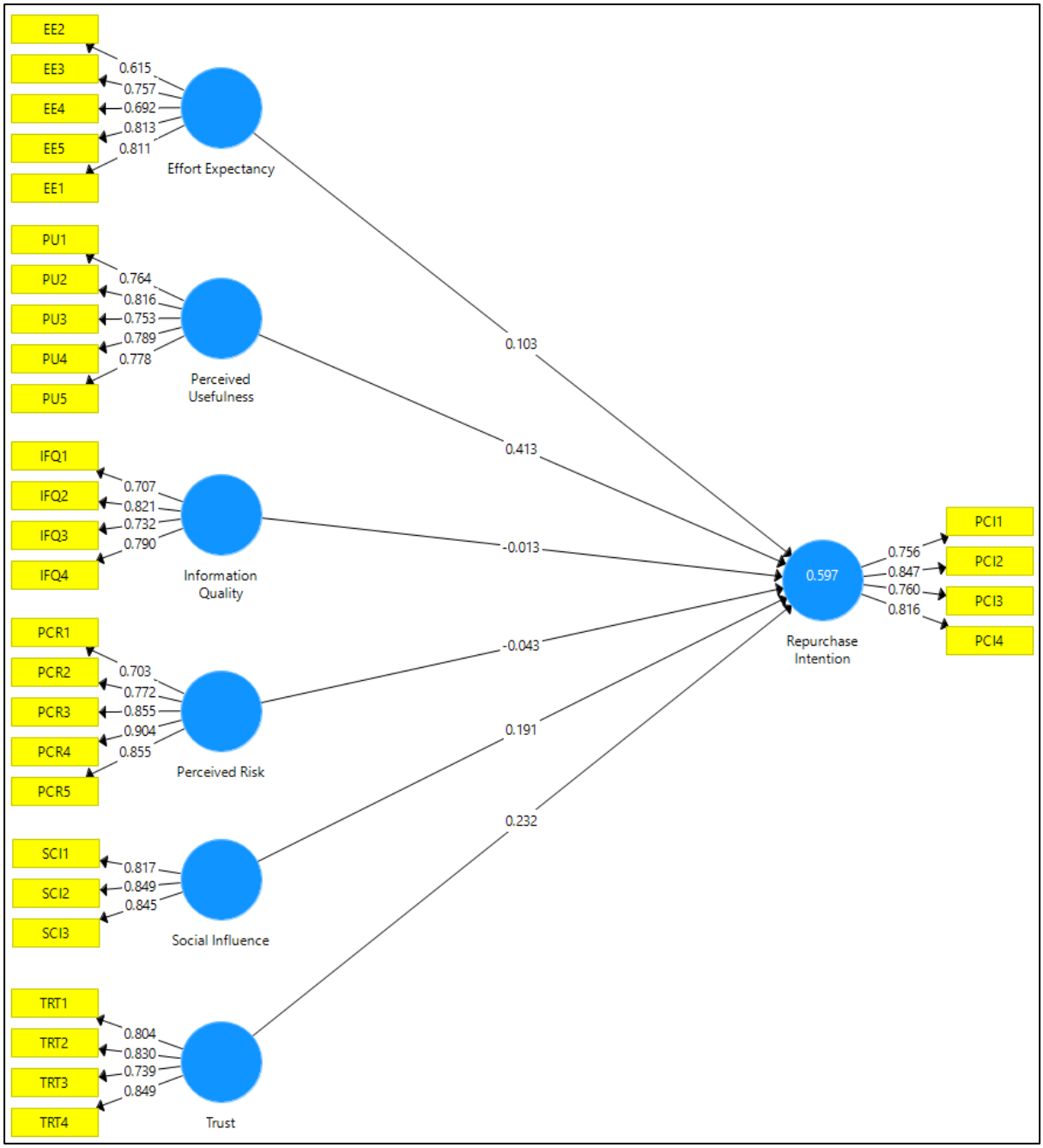

Fig. 2. Measurement Model

4.3 *Structural model evaluation*

The structural model represents the relationships between the constructs or latent variables hypothesised in the research model. The bootstrapping analysis was performed on 5000 subsamples to test the significance of the regression coefficients, which can be applied to determine if the proposed hypotheses were significant or otherwise. From the initial set of paths, three were revealed as significance at the 0.01 level and the remaining were insignificant (see Table 4). The path coefficients of repurchase intention with perceived usefulness, social

influence, and trust were 5.769 ($p < 0.01$), 3.713 ($p < 0.01$), and 3.017 ($p < 0.10$), respectively, hence supporting H4, H5, and H6. Nevertheless, constructs effort expectancy, information quality, and perceived risk did not affect repurchase intention. Thus, H1, H2, and H3 are not supported (see Table 4).

In order to assess the overall model fitness, the standardised root mean square residual (SRMR) had been determined based on the root mean square discrepancy between the observed correlations and the model-implied correlations (Henseler et al., 2015). According to Hu and Bentler (1999), the rule of thumb is that SRMR values should be ≤ 0.08. Hence, the model estimation showed that the SRMR value for the composite factor model was 0.072; denoting a fair fit (Browne & Cudeck 1993).

Table 4

Results of Hypotheses Testing

Hypotheses	Path	Std Beta	Std Error	t-value	Confidence Interval (95%) Bias Corrected	Remarks
H1	Effort Expectancy -> Repurchase Intention	0.103	0.087	1.185	[-0.044, 0.278]	Not supported
H2	Information Quality -> Repurchase Intention	-0.013	0.057	0.221	[-0.120, 0.108]	Not supported
H3	Perceived Risk -> Repurchase Intention	-0.043	0.046	0.929	[-0.155, 0.031]	Not supported
H4	Perceived Usefulness -> Repurchase Intention	0.413	0.072	5.769**	[0.269, 0.543]	Supported
H5	Social Influence -> Repurchase Intention	0.191	0.052	3.713**	[0.100, 0.296]	Supported
H6	Trust -> Repurchase Intention	0.232	0.077	3.017**	[0.068, 0.360]	Supported

Notes: ∗∗ $p < 0.01$; ∗ $p < 0.05$

4.4 The Importance-Performance Matrix Analysis (IPMA) Results

The IPMA of path modelling for customer repurchase intention was performed to extend the results of the structural model by taking into consideration the performance of each latent variable on a scale from 0 to 100. According to Hair et al. (2017), relatively high importance and relatively low performance on a particular endogenous latent variable determine areas that require management attention. Turning to this study, both importance and

performance of the latent exogenous variables on the endogenous variable (repurchase intention) were measured. The results are illustrated in Table 5.

Table 5

Importance-performance matrix analysis (IPMA) results for repurchase intention

Latent variable	Patient Loyalty	
	Direct effect (importance)	**Index value (performance)**
Effort Expectancy	0.103	83.649
Information Quality	-0.013	75.398
Perceived Risk	-0.043	19.973
Perceived Usefulness	0.413	86.999
Social Influence	0.191	80.214
Trust	0.232	76.154

The IPMA results for the endogenous variable of repurchase intention are presented in Fig. 3. Based on the IPMA map, perceived usefulness has the highest in both performance and important. Effort expectancy, on the other hand, has little relevance because it has low importance even though it has relatively high performance compared to social influence. In addition, trust was the second most important after perceived usefulness, but it was recorded as the fourth lowest in terms of performance. It implied that one point increase in trust, the customer repurchase intention is expected to increase by 0.232 of the total effect. It is of primary importance for improving customer repurchase intention. Likewise, it was observed that of all the dimensions analysed, the information quality and perceived risk were the aspects of minor importance for the sample in general. The results suggested that the company should pay less attention to the perceived risk as this is the least priority area for improvement, it has low importance (-0.043) and low performance (19.973). The results from the IPMA analysis describe that the areas that need improvement with regards to the factors that drive customer repurchase intention in food delivery apps within the context of Malaysia are social influence and trust.

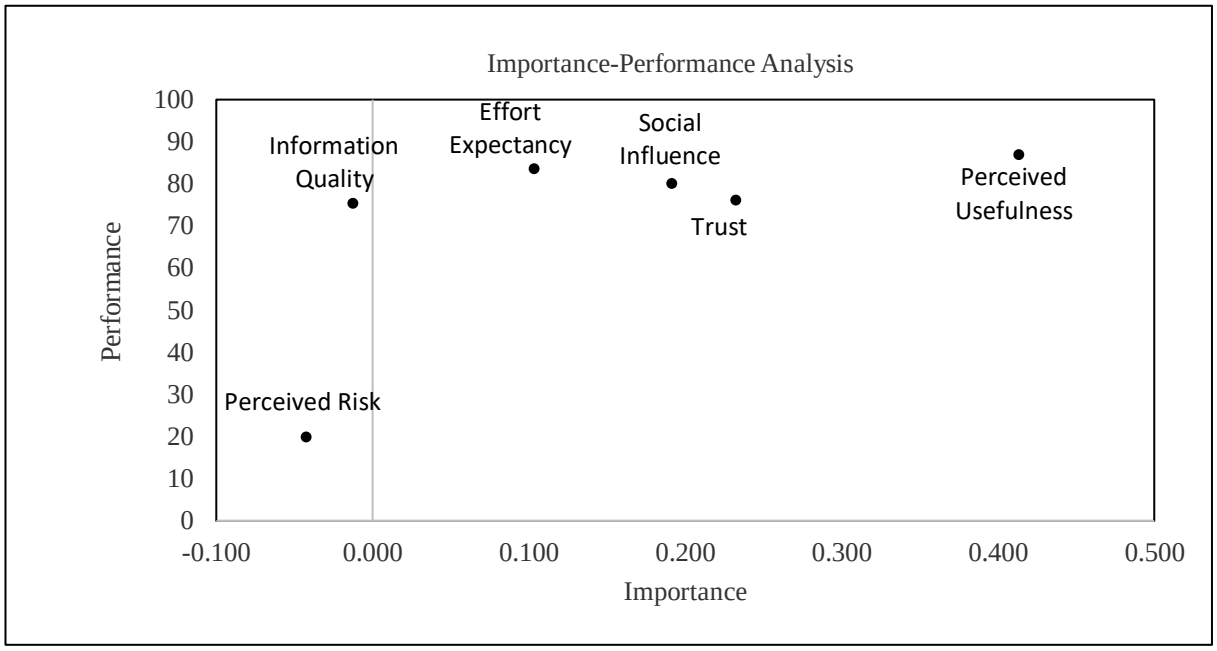

Fig. 3. IPMA for repurchase intention

4. Discussion

The R-square value of 0.597 showed that the factors in the present model can explain 59.7% of the variance in repurchase intention. Thus, the research model exemplified an appreciable explanatory power that may serve as a robust framework for investigating repurchase intention in the subject area of PSSC in future. The following discusses the study implications.

Given the increasing demand for ordering food delivery via Foodpanda app among customers, companies need to pay adequate attention, in order to satisfy the escalating needs and to retain their customers. The results revealed that the effect of perceived usefulness was significantly stronger than the other factors. It demonstrated that perceived usefulness emerged as a vital element in influencing repurchase intention, which is in line with that reported by Markun et al., (2019) and Kian, Loong, and Fong (2018). Kian et al. (2018) concurred that perceived usefulness of an online platform can influence customers' intention to perform online grocery shopping. Perceived usefulness, which reflects more perceived benefits to consumers from using the Foodpanda app platform, can increase their intention to reuse the app as a PSSC.

Next, social influence appeared to be a potential factor that led to repurchase intention. This finding is consistent with prior studies pertaining to online and offline PSSC (Kian et al., 2018; Lee et al., 2019). The main difference between this present study and past studies is that the latter seemed to focus on the importance of social influence in adopting online apps for

different business segments. However, this present study displayed that social influence is likewise significant when companies embrace the apps as a PSSC. One must understand that social influence can be an influential factor, especially when customers trust that their family and friends would approve of them using food delivery apps. Approving social influence can positively increase the likelihood of consumers to reuse food apps as a PSSC.

More importantly, this study found that trust was an important influential factor in achieving repurchase intention. Some evidence seems to support the significant link between trust and repurchase intention (see Joaquim et al., 2019; Lau & David, 2019). Therefore, trust is a significant factor that can be applied to build consumer repurchase intention in the Foodpanda app platform. Upon having good security experience in the purchasing process, consumers will trust the service providers and become loyal customers. The study outcomes were verified by the IPMA, which exemplified that the importance and performance of perceived usefulness had highly contributed to customers' repurchase intention for Foodpanda app platform in Malaysia. Despite being the second highest level of importance in light of repurchase intention, trust had the third lowest level of performance among the other factors. This signified that Foodpanda might have overlooked the aspect of building trust with their consumers, which can increase their brand reputation and concurrently achieve higher customer repurchase intention by using the app. The outcomes suggested that the company PSSC should pay less attention to perceived risk as this emerged as the least priority area for improvement. As pointed out by Mazzine Rohani and Salwana (2016), perceived risk has a negative impact on Malaysian Generation Y in purchasing via online platform.

Effort expectancy, information quality and perceived risk are not significantly related to the repurchase intention. The influence of effort expectancy does not have a strong influence on repurchase intention as this could be that most of the Foodpanda apps users have had got enough experience from their previous usage of the apps. Therefore, the users are more likely to use the apps without stumbling upon any difficulty. Furthermore, information quality was found to have no direct effect on the repurchase intention, implying that the accuracy and reliability of information has no effect unless their usefulness is perceived by the user. Similarly, the findings showed no significant relationship between perceived risk and repurchase intention of food delivery apps of Foodpanda. The result of this study differs from previous studies (Kian et al., (2018), which suggested that perceived risk, such as gaining assurance about the security of payment while using the Internet. An interpretation of this result indicates that it is not a great concern for the consumers in sharing their personal information while ordering their food through the food delivery apps.

5. Conclusion

The study of PSSC and servitization is a topic that is drawing the attention of academics and researchers. Several important contributions have made to this study. This study investigated the relationships between factors that drive customer repurchase intention in food delivery apps of Foodpanda within the context of Malaysia. Understanding and involving customers is eminent to achieve servitisation, especially when it means giving value proposition to a company's offerings. The competency of a company can be further improved based on its PSSC by making full use of the technology infrastructure to become more effective and efficient. The study results may serve as a guideline in assisting food delivery companies, such as Foodpanda, to comprehend and explore the essential factors that can influence customers to repurchase using their apps. In order to compete with contenders and establish connectivity with consumers, this study can facilitate companies upon identifying the most important reason that influences customer intention to purchase using their food delivery apps. This present study prescribed that companies should focus on the problem they face, while simultaneously overcoming their shortcomings. Such improvement will lead companies to more easily understand the needs of customers and achieve their satisfaction when they apply the food delivery apps service platform. This helps a company to earn profile, reap larger market share, and gain loyal customers. Seemingly, the concept of food apps servitisation is direct and is indeed substantial for the food delivery business, wherein enhancing customers' engagement increases profit.

Despite meeting the study objectives, some limitations were noted in this present that could have generated a different outcome. First, the target sample derived from only three states located in Malaysia (Kuala Lumpur, Melaka, and Johor Bahru). Therefore, the findings cannot be generalised to the entire population of Malaysia. Second, this study only focused on respondents in Malaysia. Perhaps, future studies may probe into the Asian context, such as Indonesia, Singapore, and Thailand. Collecting data from multiple respondents from various countries can improve the validity of the research model. Third, the authors recommend that future research may consider a qualitative study on food apps delivery users' experiences in Malaysia. An in-depth description of the experience will be useful to explore deeper into the issues of the importance of food apps delivery services provided to the user from their own words and experience. Lastly, the data were collected from respondents who used the Foodpanda app. Hence, future studies may incorporate data from other food apps delivery users, such as GrabFood and LOLOL, so as to enable a comparison between different food app delivery companies.

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