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Factors Affecting Consumer's Loyalty in Food Delivery Application Service in Thailand

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Abstract

The study investigates factors affecting the loyalty of Food Delivery Application (FDA) service in Thailand. This study employs quantitative research methodology with a non-probability sampling method to draw 510 FDA samples from the FDA users in Thailand. The online questionnaires with a Cronbach's alpha coefficient of 0.886 were used as a research tool to collect data from samples. By using the Structural Equation Modeling (SEM) to analyze data, the results show that trustworthiness, social influence, system design, and task-technology fit affect the user's technology acceptance, which also show the significant relationship with the loyalty of FDA users in Thailand. The study checks the harmony with the statistics; $\chi^2 = 258.686$, $df. = 160$, $\chi^2/df. = 1.616$, p -value = 0.050, $CMIN/DF = 1.616$, $GFI = 0.960$, $AGFI = 0.969$, $TLI = 0.953$, $CFI = 0.965$, $RMSEA = 0.047$, significant level at 0.05, along with testing the weight factor. In conclusion, the research model was harmonious with the empirical data at the significant level 0.05. The finding of this study suggested that the FDA service provider might apply this research finding to develop a greater understanding of the FDA's customer loyalty, as well as determine marketing strategies, identify opportunities, and create a competitive advantage in the future.

Keywords: Food Delivery Application, Trustworthiness, Social Influence, Task-Technology Fit, Technology Acceptance Model

JEL Classification Code: M10, M12, M14, M15

1. Introduction

According to a report by Allied Market Research, the global Food Delivery Application (FDA) market size was valued at \$3,120 million in 2016, and is projected to reach 16,605 million USD by 2023, and growing at a compound annual growth rate of 27.9 percent from the year 2017 to 2023.

This was the result of the increase in usage of smartphones, easy availability of open-source deployment platforms, and technological advancements of the smartphones (Sahoo & Sonawane, 2017). In Thailand, Kasikorn Research Center (2020) showed that there was an exponential growth rate of FDA platform due to the COVID-19 outbreak in 2020, which results in a 78–84 percent increase, reaching 66–68 million of transactions compared to the previous year. FDA has continued to grow at an average of 10% per year that resulted in the change of consumer behavior that emphasizes more convenience and time saving; thus, most FDA service providers tried to create tools and features especially for being at the top of in the mind of the consumer and the top of choice in order to build consumer loyalty (Plodmeechai, 2019). Many factors, namely, customer satisfaction, perceived task-technology fit, trustworthiness, performance expectancy, and social influence also showed a strong positive impact on behavioral intentions and loyalty to use online FDA especially in the COVID-19 pandemic period (Annaraud & Berezina, 2020; Zhao & Bação, 2020). Unfortunately, despite the increasing number of users every year, 86 percent of new users will stop using a FDA service

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within two weeks of the launch (Klein, 2019). Therefore, the objectives of this research were to identify the factors that affect the user's technology acceptance and loyalty of FDA service in Thailand.

2. Literature Review

2.1. Food Delivery Application (FDA)

Food Delivery Application (FDA) is an emerging mobile technology platform that provides a service channel between restaurants and consumers by integrating online order system and offline delivery services to the customer (Ray et al., 2019). In the COVID-19 outbreak in 2020, FDA service providers play an important role as a service platform between consumers and restaurants, with the advantages of FDA service as an application that makes it easy for consumers to eat meals and enables restaurants to keep operating during the COVID-19 shutdown. FDA platforms also provide a variety of functions which offer consumers a wide variety of services and food choices, such as taking and relaying orders to the restaurants, payment services, and tracking capability (Li, Miroso, & Bremer, 2020).

2.2. Trustworthiness

Trustworthiness (TW) is acknowledged as the characteristic of service provider that is worthy of trust in term of honesty, compliance with their commitments, and providing a reliable service in delivering the promises (Chen & Dhillon, 2003). The FDA's trustworthiness was the most important attribute for the FDA service provider, which impacts on user attitudes, user perceived value, and intention to continuously use the service, compared to other quality attribute which were convenience, design, price, and variety of food choices (Cho, Bonn, & Li, 2018). Thus, the TW has shown a positive impact on the technology acceptance, leading to customer loyalty (Winnie, 2014).

H1: Trustworthiness has a significant impact on technology acceptance.

2.3. Social Influence (SI)

Social influence (SI) has shown the most impact on consumers' aware of FDA service; the SI could be utilized by the marketer to communicate with existing and prospective customers in order to grow the number of customers, followed by the referral group, which were family and friends (Jaiswal, Sharma, & Ashwini, 2019). SI also shows a positive relationship with the Technology Acceptance Model (TAM), supported by Navavongsathain, Vongchavalitkul, and Limsarun (2020) that have studied causal factors affecting mobile banking services acceptance

by customers in Thailand. These affect the motivation to adopt new technology (Rai & Selnes, 2019). Lu and et al. (2003) showed social influence determines user-perceived usefulness in both short and long term and also determines user intention and willingness to adopt new technology.

H2: Social influence has a significant impact on technology acceptance.

2.4. System Design (SD)

A technology characteristic can be used as the beginning point to design better technologies, which effects the user experience and leads to technology acceptance, thus resistance to accepting technologies results in lower satisfaction, and ultimately leads to performance losses (Mlekus et al., 2020). Therefore, a well-designed FDA ordering system through online devices was crucial in creating consumer satisfaction, perceived value, and continuing use, leading to consumer's loyalty (Suhartanto et al., 2019). These were supported by Pei, Zhenxiang, and Chunping (2007) as well as Lee, Lee, and Jeon (2017) who found that quality system design was strongly influencing the perceived ease-of-use and perceived usefulness in the technology acceptance.

H3: System design has a significant impact on technology acceptance.

2.5. Task-Technology Fit (TTF)

The Task-Technology Fit (TTF) affirms a good fit of the information technology and its support task (Goodhue & Thompson, 1995). TTF has been developed as a verification tool to determine whether information systems meet user requirements, and has been demonstrated to have a positive impact on the effectiveness of various types of information systems (Gebauer & Ginsburg, 2009). Thus, the more TTF, the more utilization and performance (Said, 2015). Omotayo and Haliru (2020), who have studied the relationship between TTF and the acceptance of new digital libraries system, showed a positive relationship between TTF and technology acceptance; moreover users would accept and use the new technology that provide benefits and support their purposes. Thus, TTF provides a rational approach when the user makes decides to accept new technology.

H4: System design has a significant impact on technology acceptance.

2.6. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is based on behavioral science and information systems theory that modeled how users accept and use technology, as a function of

perceived usefulness and perceived ease-of-use (Davis, 1989). Many scholars have studied the TAM concept when new information system is implemented in the organization. Patma, Wardana, and Narmaditya (2020) have found that the perceive benefits and usefulness have a positive effect on the adoption of a new system. Also, Ngan and Khoi (2020) have shown the significant relationship between behavioral intentions and technology acceptance. The level of technology acceptance has a significant impact on consumer loyalty to a proposed system (Winnie, Lo, & Thurasamy, 2014).

H5: *Technology acceptance has a positive association with loyalty.*

2.7. Conceptual Framework

Results from an intensive literature review, a conceptual framework of the relationships of variable in this study was shown in the conceptual framework in Figure 1.

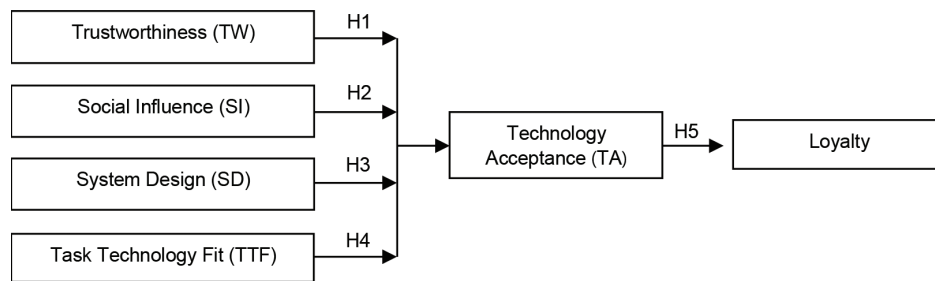


Figure 1: Conceptual Framework applied from Winnie, 2014; Cho, Bonn, & Li, 2018; Rai & Selnes, 2019; Suhartanto et al., 2019; Navavongsathain, Vongchavalitkul, & Limsarun, 2020; Omotayo & Haliru, 2020

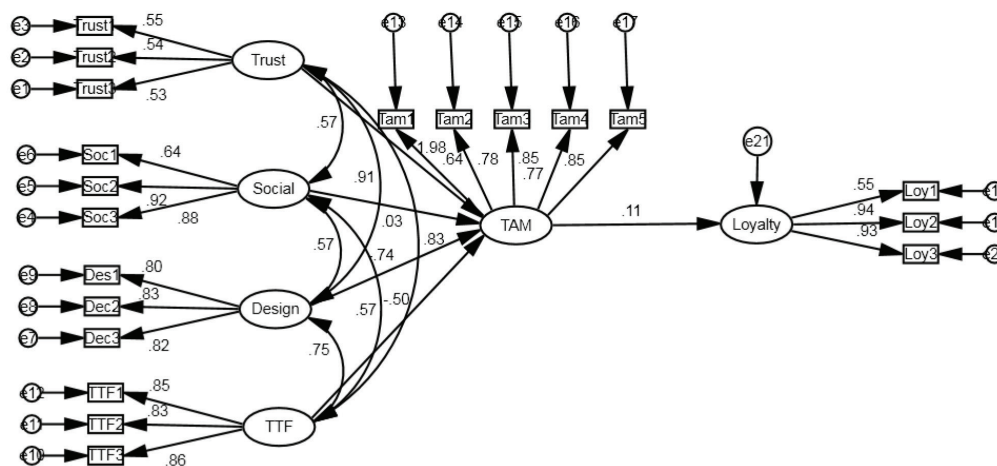


Figure 2: The structural equation model of factors affecting the loyalty of food application service users in Thailand which can be shown in the form of the following equation $\chi^2 = 258.686$, $df = 160$, $\chi^2/df = 1.616$, $p\text{-value} = 0.050$, $CMIN/DF = 1.616$, $GFI = 0.960$, $AGFI = 0.969$, $TLI = 0.953$, $CFI = 0.965$, $RMSEA = 0.047$, Significant level at 05

3. Research Methods

Quantitative research methodology was used in this research. Since the exact population was unknown, the number of samples was calculated by the Cochran formula (1977) in order to have the suitable number of samples; the proportion of the population was set at 20% with a confidence level of 95% and error value of 5%, according to the general rules for choosing the Alpha level of confidence – the acceptable error value is Alpha = 0.05 and acceptable error values of 5%, which are considered suitable values (Krejcie & Morgan, 1970). The result produced a suitable number of 384 samples. Online questionnaires were used as a research tool to collect primary data. The online questionnaire has passed the validity and reliability test. The researchers have checked the scale accuracy by five experts – three in marketing, one in information technology and one from academia. The Cronbach’s Alpha coefficient value was used to measure the reliability or internal consistency in this research.

Table 1: The results of Variable Path Coefficient on The Cause and The Verification of The Model Consistency and Empirical Data

Causal Variable	Effect Variable	Estimate	S.E.	Z-test	p	R ²
Trustworthiness	TAM	0.217	0.382	5.804	0.000	0.61
Social		0.018	0.070	0.263	0.000	
Design		0.355	0.229	2.325	0.020	
Task-Technology Fit		0.135	0.148	2.398	0.016	
Technology Acceptance	Loyalty	0.261	0.061	2.216	0.027	0.28

Table 2: Influence coefficient of the causal relationship model and results related to the loyalty of food application

Cause variable	X = TAM			Y = (Loyalty)		
	Direct Effect	Indirect Effect	Total Effect	Direct Effect	Indirect Effect	Total Effect
X ₁ = Trustworthiness	0.64	0	0.64	0	0.22	0.86
X ₂ = Social Influence	0.91	0	0.91	0	0.16	1.07
X ₃ = System Design	0.74	0	0.74	0	0.29	1.03
X ₄ = Task-Technology Fit	0.50	0	0.50	0	0.48	0.98
X ₅ = Technology Acceptance	0	0	0	0.11	0	0.11
Prediction coefficient (R ²)	R ² = 0.61			R ² = 0.28		

The Cronbach's Alpha coefficient value was 0.885, which is a mean correlation between the alpha values of 0.863 and 0.893. Therefore, the questionnaire used in this research has shown a high level of reliability. With a non-probability random sampling method, the researcher sent online questionnaires to the target group via social media channels; there were 510 respondents. Thus, the greater number of samples would bring more advantages in terms of reliability and representation based on the population (Newman & Pilon, 1997).

4. Results

The questions regarding the factors affecting the loyalty of food application service users in Thailand were answered with the Structural Equation Model (SEM). Exploratory Factor Analysis (EFA) using the Common Factor Analysis and Principle Axis Factoring (PAF) method analyze factors affecting the loyalty of food application service users in Thailand, including trustworthiness, social, design, task-technology fit, perceived usefulness, and perceived ease-of-use, influenced the loyalty of food application service users in Thailand. The Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were carried out. KMO values are 0.925 and Sig = 0.000 < 0.05, where values of 0 < KMO < 1 are close to 1, meaning that all variables are related and can be grouped into factors to be used for further factor

analysis. The common elements can explain the relationship between variables at a good level (Wanichbuncha, 2013). The values of $\chi^2 = 258.686$, df. = 160, the values of $\chi^2 / df. = 1.616$, p -value = 0.050, CMIN = 258.686, and CMIN / DF = 1.616, which is less than 2.0 (Schumacker & Lomax, 2010), means the structural equation model is harmonized with empirical data. In addition, it was found that GFI = 0.960, TLI = 0.953, AGFI = 0.969 and CFI = 0.965 were greater than 0.95. All values showed good consistency and found that RMSEA = 0.047 and PCLOSE or p -value = 0.000. So, the assumption was that RMSEA was less than 0.05 (Kelloway, 2015).

In conclusion, the index values check the consistency between the model and empirical data according to standard criteria and at a good level of conformity. The HOELTER 0.5 value was 274, which is more than 200, indicating that the sample set in this study was well suited. The regression coefficient from the hypothesis testing of the correlation coefficient obtained a p -value = $P = *** = 0.050$. In addition, when studying the weight of all factors, values are non-zero. All C.R. values were more than 1.96. The variables trustworthiness, social, design, task-technology fit, perceived usefulness, and perceived ease-of-use directly and indirectly affect the loyalty of food application service users in Thailand when the coefficients were added to the model using the values adjusted to the standard form (standardized) shown in Figure 2.

The factors affecting the loyalty of food application service users in Thailand, the model consistency, and the empirical data of factors influencing the loyalty of food application service users, show that the causal model of factors influencing the loyalty of food application service developed by the research team was in harmony with the empirical data. Moreover, the model with an empirical data tested the path coefficient and checked the consistency of factors affecting the loyalty of food application service users in Thailand. The analysis results are shown in Table 1.

In conclusion, the path coefficient testing of the causal factors that influence the consumer loyalty of food application usage in Thailand, shows the following details: The path coefficient is between 0.018 to 0.261, which means design has the highest path coefficient, while the least path coefficient -0.18 – was with the technology acceptance. Design factor shows a path coefficient with technology acceptance equal to 0.355, followed by trustworthiness, which shows path coefficient equal to 0.217. The technology acceptance factor shows a path coefficient with loyalty of food application service users equal to 0.261. The prediction coefficients were between 0.018 and 0.261. In addition, each conceivable factor can predict 61% of the causal relationship between factors that influence the consumer loyalty of food application usage. When considering the harmony with the empirical data, it was found that the ratio between the chi-square and the degrees of freedom is 1.616, which is less than 2. Comparative Fit Index (CFI) is equal to 0.965, which is more than 0.95. Tucker-Lewis Index (TLI) is equal to 0.953, which is more than 0.95. Root mean square error of approximation (RMSEA) is equal to 0.047, which is less than 0.05 (Wanichbuncha, 2013). Therefore, it can be concluded that the model of the causal relationship of factors influencing the loyalty of food application usage in Thailand was consistent with the empirical data shown in Figure 1. Moreover, the direct, indirect and combined influences on the acceptance of mobile banking are shown in Table 2.

The results of checking the direct influence, indirect influence and the combined influences of the factors affecting the loyalty of food application service users found that there was no direct influence on the loyalty of food application service users, but indirectly influencing the acceptance of the loyalty of food application service users, with indirect influences on four paths, namely, 1) Influence of trustworthiness (influence size = 0.22); 2) Influence of social (influence size = 0.16); 3) Influence of design (influence size = 0.29); and 4) Influence of task-technology fit (influence size = 0.48). Technology acceptance directly influences the loyalty of food application service users (influence size = 0.11) according to the research hypothesis. Trustworthiness did have a direct influence on the technology acceptance (influence size = 0.64), and social has a direct

influence on technology acceptance (influence size = 0.91). Task-technology fit did have a direct influence on technology acceptance (influence size = 0.50). Technology acceptance did have a direct influence on the consumer loyalty of food application usage in Thailand (influence size = 0.11).

5. Discussions

The results of the study found trustworthiness, social influence, system design and task-technology fit (TTF) had a significant influence on technology acceptance (TA), which were perceived usefulness (PU) and perceived ease-of-use: PEOU), these had been supported from many studies Wang and Chou (2014), Tarhini, Hone, and Liu (2015), Basak, Govender, and Govender (2016), and Sheppard and Vibert (2019). Moreover, TA (PU and PEOU) influenced the loyalty of FDA service users in Thailand, which is supported by Zhao, Chen, and Wang (2016), Sreeram, Kesharwani, and Desai (2017), and Xu and Du (2018). The results of the study found that social influence was the most influencing factor for TA in FDA application. Related to this study, social influence has been validated as significantly determining users' intention to use an online-to-offline delivery service, which is supported by previous studies in various contexts of technology adoption (Zhu, Lan, & Chang, 2017; Chopdar & Sivakumar, 2019; Roh & Park, 2019). These has been supported by Tarhini, Hone, and Liu (2015), and Hsiao et al. (2016) who found consumer's social environmental was the fundamental factor for consumers to accept to use technology, which would facilitate more efficient access to marketing information. It is followed by design, appearance, user interface, and system of FDA.

In addition, the more the quality system design meets the requirement of consumers, the more the consumer acceptance of FDA. This has been supported by Liu and Yu (2017) who pointed out that users' preference for smartphones consisted of the following nine factors: interface element design, smartphone characteristics, physical characteristics, touch feedback, operation design, display screen, connectivity, button, and application. Although there is evidence that trustworthiness, social influence, design, and task-technology fit factors had a significant influence on loyalty (Kharouf, Lund, & Sekhon, 2014; Kosiba et al., 2018). The results of this research found that, when analyzing trustworthiness, social influence, design system, and task-technology fit through TAM, the results have shown more impact on loyalty, which is considered an academic benefit. These led to the creation of a model, which used to describe the relationships among various factors that influence FDA's consumer loyalty by adopting the concept of trustworthiness, social influence, design, and task-technology fit theory applied through TA theory (the perceived usefulness: PU and perceived ease-of-use: PEOU).

The conceptual framework and results of this study could be used as a guideline for further study, which could bring administrative benefits to the applicable organizations. Moreover, the results might be the guideline for food-related entrepreneurs and others to improve their FDA service to meet the needs of consumers both today and in the future. However, this study only surveyed the FDA's consumers in Thailand. In the future, if there were any technology that applied to other consumer products, more consumer attitude studies should be conducted in order to know the achievements and obstacles arising from the use of this technology. Thus, these would provide more comprehensive information for planning and investing in technology for consumer products.

6. Conclusions

Since the COVID-19 outbreak, where people avoid going out and they isolate themselves, food-purchasing behavior has shifted to be more online. The demand for FDA with home delivery transaction has increased and is higher than ordering online and picking up at the restaurant. At this point, FDA service drivers should protect themselves and beware of COVID-19 infection by using proper equipment. FDA service providers and catering enterprises need to create appropriate marketing strategies through social networks. Social marketing should be applied to promote the benefits of FDA during the pandemic in order to establish a reliable FDA reputation and increase the number of customers' usage intention and loyalty. Moreover, FDA service providers should urgently set up effective supply chain operations, which require a proactively alignment with their suppliers regarding the production and supply quality of FDA to prepare for the rebound in both transactions and consumptions.

Not only focusing on short-term strategies, FDA service providers need long-term business development plans and foresight strategies; thus, FDA service providers need to build an omni-channel marketing and upskill employees for the technological revolution. Also, big data analytics on customer profiles and transaction and food ordering behavior would provide benefits for the FDA service providers in term of revenue forecast, consumer pattern and consumer retention with which the companies could apply suitable campaigns to increase customer satisfaction and decrease customer churn rate. Since the digital community is very popular with the new generation to express their feeling and interest, FDA service providers might consider using digital communities such as Twitter, Tik-Tok and Instagram as marketing channels in order to reach a huge pool of prospective customers by supplying them with a campaign based on their profile and lifestyle. Finally, brand awareness

also needs to be a further study and develop for the FDA service providers in order to build customers' awareness and increase the competitive advantages.

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