A Study of Stakeholders Perception of Factors Affecting Online Food Delivery Service Industry in the Philippines

SeonJae Lim and Marvin I. Noroña
School of Industrial Engineering and Engineering Management
Mapúa University, Manila, Philippines
sjlim@mymail.mapua.edu.ph, minorona@mapua.edu.ph,

Abstract

The online food delivery service is in the limelight nowadays as the O2O e-commerce industry is extending its range to the food. Beyond the food ordering system where only fast food was accommodated to be delivered to customer's doorstep, thousands of different foods from various restaurants can be delivered with just one click through the online food delivery (OFD) App. Together with its fast growth, it is inevitable to avoid some issues that happen among the major stakeholders - the App firm, couriers, and customers. In this study, the Business Model Canvas (BMC) and factorial Uni-variate analysis of variance (ANOVA) was used to identify the significant factors that affect the OFD industry. Using the tests of Between-Subjects effects, independent variables (Ease of Use, Responsiveness, Assurance, Safety, Reliability, Convenience) that has a value less than a p-value of 0.05 were selected as the significant factors. The study showed from each of the stakeholder's approach that timeliness and convenience are the most significant factors and suggested the improved integrated system based on the significant factors identified. Finally, the study would be able to contribute to the enhancement of the OFD industry itself where all three stakeholders can have mutually beneficial relationships.

Keywords
Online Food Delivery Service, timeliness, convenience

1. Introduction

The convenience of using O2O platforms for e-commerce activities rode on the boom of smartphones and mobile applications with millions of downloadable from the Android Play Store, Google Play Store, and Apple Store (Online Food Delivery – Philippines: Statista Market Forecast, 2019). This development and rapid adoption of mobile applications on smartphones changed consumers' buying habits and brand interaction (Kapoor and Vij, 2018) and has become a basic part of people's lifestyles, particularly on foodservice preference and food consumption.

Regarding the emergence of new generation technologies, the situation during the COVID-19 outbreak forced the service providers to offer innovative ideas to limit human contacts for food delivery (Karim et al. 2020). As people stayed at their homes, they are more likely they use online food delivery services to avoid human contact. It gives the online food delivery service industry a great opportunity to increase demand during the pandemic (Kim et al. 2021).

Online food delivery service assists not only the customers by connecting them to courier to have the ordered item but also the couriers by reimbursing in his payment upon receipt of items at his doorsteps (Ray, et. al, 2019). Moreover, the same study cited that customers value the app features of ease-of-use, real-time tracking with the map, and suggested options upon restaurant search and fast and fresh food delivery, which were positively associated with intentions to use the food delivery service apps. During the service, it is inevitable to have issues on ordering and payment system and courier-related categories that will prevent the achievement of two main OFD achievements which are convenience and timeliness. It is in this light, that this research study aims to explore what plausible changes in the business model and service operating system will benefit app firms, partner couriers, and customers collectively.

Along with this overall aim, the study intends to achieve the following objectives:

1. To review and assess the business model and current practices affecting the three major stakeholders: app service firms, partner couriers, and customers;
2. To determine the significant factors that affect customer experience and partner courier relationships and transactions and;
3. To develop an improved integrated system from order placement, order fulfillment or cancellation to payment of food delivery services incorporating business model reviews and stakeholder interests for mutually beneficial relationships.

The research will provide insights on how to improve service quality, chain partners' collaboration, and customer retention with an innovation point of view, drawing away from the common approach in maximizing one's benefits to one that caters for the mutual benefit of the major stakeholders of the foodservice delivery industry. Moreover, the undertaking can prompt policymakers and industry leaders to set the tone for change for the overall improvement in today's excellent value-seeking society with new generation technologies and emerging markets.

2. Methodology

2.1 Conceptual Framework

The main objective of the study is to investigate the factors behind major issues confronting foodservice delivery app firms, partner couriers, and end consumers or app users who are the three major stakeholders of the industry to come up with an integrated system improve ordering, delivery, and payment processes for the mutual benefit of said stakeholders. Thus, the following conceptual framework is drawn to guide the conduct of the study:

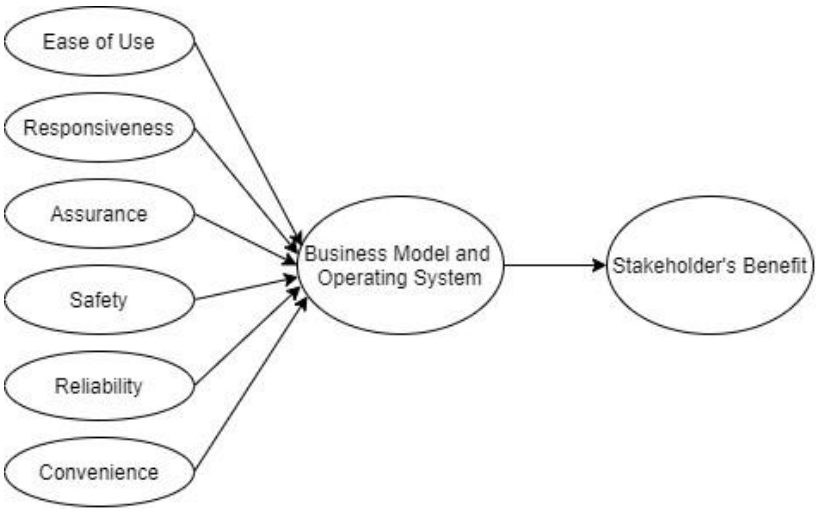

Figure 2.1.1 Conceptual Framework

Figure 2.1.1 is the conceptual framework that explains the primary aim of this study to determine the key factors and drivers significantly affecting the business model and operating system in the OFD industry that governs the mutual benefits of the stakeholders of interest, namely the customers, courier partners, and App firms. There are six (6) independent variables which are Ease of Use, Responsiveness, Assurance, Safety, Reliability, and Convenience. The business model and operating system are the intervening variables that work as a linking variable that connects the independent variables that are the dependent variable. Stakeholder's benefit is considered as a dependent variable in this study. To be able to determine the significant relationships posited by the conceptual framework, testing of six (6) hypotheses was undertaken, to wit:

Hn_0: There is no relationship between each of the 6 factors and stakeholder benefits. (where n = factors)
Hn_a: There is a significant relationship between each of the 6 factors and stakeholder benefits. (where n = factors)

On the other hand, in determining the significant relationships for the above six (6) hypotheses, table 2.1.1, 2.1.2, and 2.1.3 represents the following variables used in the conceptual framework.

Table 2.1.1 Definition of variables (Customers)

Latent Variable	Code	Description	Reference
Ease of Use	EOU1	Well-presented app features through any devices	Davis, *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. 1989* *Robey, User Attitudes and Management Information System Use.* 1979
	EOU2	ease of order placement	
	EOU3	presence of guidance if needed	
Responsiveness	RPS1	clear explanation from courier and restaurant	Sukartiko & Nugrahini, *Identification of Technical Requirement for Improving Quality of Local Online Food Delivery Service in Yogyakarta. 2018* *Parasuraman, Zeithaml, & Berry, SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. 1988*
	RPS2	courier route track	
	RPS3	courier update	
Assurance	AS1	cash on delivery payment method	Parasuraman, Zeithaml, & Berry, *SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality.* 1988
	AS2	card delivery payment method	
	AS3	compensation for wrong order	
Safety	SFTY1	well-maintained food temperature	Aprilianti & Amanta, *Promoting Food Safety in Indonesia's Online Food Delivery Service.* 2020 Wasserstrom, *The 5 Biggest Food Delivery Risks*. 2020
	SFTY2	fresh ingredients	
	SFTY3	well-maintained food packaging	
Reliability	RLB1	affordable delivery charge	Allyn, *Restaurants Are Desperate - But You May Not Be Helping When You Use Delivery Apps*. 2020
	RLB2	affordable food price	
	RLB3	well-guided aftersale system	
Convenience	CV1	order anywhere	Lau & Yat, *Online Food Delivery Services: Making Food Delivery the New Normal*. 2019 Jiang, Jiang, & Liu, *Consumer Perceptions of E-Service Convenience: An Exploratory Study.* 2011
	CV2	order anytime	
Customer Benefit	CB	Good perceived quality of service	Parasuraman, Zeithaml, & Berry, *SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality.* 1988

Table 2.1.2 Definition of variables (Courier)

Latent Variable	Code	Description	Reference
Ease of Use	EOU1	Well-presented app features through any devices	Davis, *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology.*
	EOU2	ease of order placement	

	EOU3	presence of guidance if needed	*1989* *Robey, User Attitudes and Management Information System Use.* 1979
Responsiveness	RPS1	clear explanation from customer and restaurant	Sukartiko & Nugrahini, *Identification of Technical Requirement for Improving Quality of Local Online Food Delivery Service in Yogyakarta. 2018* *Parasuraman, Zeithaml, & Berry, SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. 1988*
	RPS2	courier route track	
	RPS3	courier update	
Assurance	AS1	cash on delivery payment method	Parasuraman, Zeithaml, & Berry, *SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality.* 1988
	AS2	card delivery payment method	
	AS3	compensation for wrong order	
Safety	SFTY1	Safe delivery while carrying large amount of money	Aprilianti & Amanta, *Promoting Food Safety in Indonesia's Online Food Delivery Service.* 2020 Wasserstrom, *The 5 Biggest Food Delivery Risks*. 2020
	SFTY2	safe delivery without any injury	
	SFTY3	fair delivery system without any wage issue	
Reliability	RLB1	affordable delivery charge	Allyn, *Restaurants Are Desperate - But You May Not Be Helping When You Use Delivery Apps*. 2020
	RLB2	affordable food price	
	RLB3	well-guided aftersale system	
Convenience	CV1	order anywhere	Lau & Yat, *Online Food Delivery Services: Making Food Delivery the New Norma*l. 2019 Jiang, Jiang, & Liu, *Consumer Perceptions of E-Service Convenience: An Exploratory Study.* 2011
	CV2	order anytime	
Courier Benefit	CRB	Good perceived quality of service	Parasuraman, Zeithaml, & Berry, *SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality.* 1988

Table 2.1.3 Definition of variables (App firms)

Latent Variable	Code	Description	Reference
Ease of Use	EOU1	Well-presented app features through any devices	Davis, *Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. 1989* *Robey, User Attitudes and Management Information System Use.* 1979
	EOU2	ease of order placement	
	EOU3	presence of guidance if needed	
Responsiveness	RPS1	clear explanation from courier and restaurant	Sukartiko & Nugrahini, *Identification of Technical Requirement for Improving Quality of Local Online Food Delivery Service in Yogyakarta.*
	RPS2	courier route track	

	RPS3	courier update	*2018* *Parasuraman, Zeithaml, & Berry, SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. 1988*
Assurance	AS1	cash on delivery payment method	Parasuraman, Zeithaml, & Berry, *SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality.* 1988
	AS2	card delivery payment method	
	AS3	compensation for wrong order	
Safety	SFTY1	well-maintained food temperature	Aprilianti & Amanta, *Promoting Food Safety in Indonesia's Online Food Delivery Service.* 2020 Wasserstrom, *The 5 Biggest Food Delivery Risks*. 2020
	SFTY2	fresh ingredients	
	SFTY3	well-maintained food packaging	
	SFTY4	Safe delivery while carrying large amount of money	
	SFTY5	safe delivery without any injury	
	SFTY6	fair delivery system without any wage issue	
Reliability	RLB1	affordable delivery charge	Allyn, *Restaurants Are Desperate - But You May Not Be Helping When You Use Delivery Apps*. 2020
	RLB2	affordable food price	
	RLB3	well-guided aftersale system	
Convenience	CV1	order anywhere	Lau & Yat, *Online Food Delivery Services: Making Food Delivery the New Norma*l. 2019 Jiang, Jiang, & Liu, *Consumer Perceptions of E-Service Convenience: An Exploratory Study.* 2011
	CV2	order anytime	
App Firm Benefit	AFB	Good perceived quality of service	Parasuraman, Zeithaml, & Berry, *SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality.* 1988

2.2 Data Collection

Data collection was performed using the Likert scale from 1 to 5 with a total of three groups of respondents: App firms, courier, and customers and 200 respondents from each group answered the survey. For the App firms who are the manager and administrators of online food delivery service, six (6) safety indicators were asked including the safety indicators from both the customer and the courier. The App respondents were asked if those fixed factors of App firm benefits are well managed within their business operations. Independent variables for customer and courier groups are the same except for safety. Based on the review of the articles, safety measures different from each group. For the customers, they need to receive a safe quality of food by having fresh ingredients, well-maintained temperature food, and well-kept packaging of food upon delivery (Aprilianti & Amanta, 2020). On the other hand, the couriers, they value the safe voyage during delivery in a way that their delivery progress is without any physical or financial damage (Wasserstrom, 2020).

2.3 Data Analysis

The factorial Univariate Analysis of Variance (ANOVA) is an extension of the one-way ANOVA in that it involves the analysis of two or more independent variables (Ho, 2000). The one-way analysis of variance only involves less than 2 independent groups and because this study handles 6 independent variables with 2 to 3 indicators, it is appropriate to use the Uni-variate ANOVA. Independent variables are called fixed factors in this data analysis tool. The study has only one dependent variable which is the benefit level of each stakeholder. The

factorial Univariate ANOVA also calculates the main effects for each independent variable and interactive effects between them, too. According to Ho (2000), the advantage of using the factorial Univariate ANOVA is that the effects of each independent variable on the dependent variable can be assessed separately. From the tests of the Between-Subjects effect, each of the fixed factors shows its significance together with the interaction values.

The factorial ANOVA has several assumptions that need to be fulfilled before running it with IBM SPSS so that the result shows the significance of each independent variable on a dependent variable. First, the dependent variable should be in metric measurement level (ratio or interval data) and the independent variables should be nominal or ordinal. As the data was gathered on the Likert scale (from 1 to 5), the data was already ready for the factorial ANOVA analysis. Second, it requires the observations to be mutually independent of each other. Fixed factors of the study were not repeated and intercorrelated which makes the variables acceptable for the analysis.

This study is to find the significant factors that affect the stakeholders' benefit and the result must show the significant relationships among independent variables (Ease of Use, Responsiveness, Assurance, Safety, Reliability, Convenience) and dependent variable (customer benefits, courier benefits, or app firm benefits). Ho (2000) stated that for the value to be considered significant, significant value (Sig.) or *p*-value should be less than 0.05 ($p < 0.05$). Therefore, *p-value* or *Sig.* the value was weighed important to know if the variable is significant to the stakeholder benefits.

3. Results and Discussions

3.1 Business Model Canvas of Online Food Delivery Service

The first objective of the study was to review and assess the business model and current practices affecting the three major stakeholders: app service firms, partner couriers, and customers. This was conducted through document research and review on various business operations of online food delivery service app firms like Grab Food, Lala Food, and Food Panda that are the Apps used by customers based on the customer survey. To assess the business model of these app firms, the business model canvas as shown in figure 3.1.1 was created. Through the analysis by Business Model Canvas, it was determined that App firms do not work alone in the industry, but has an interrelationship with key partners, the restaurants, the customers, and the couriers. Thus, it is important to look after for mutual benefits for all three stakeholders, rather than being focus on the App firms only.

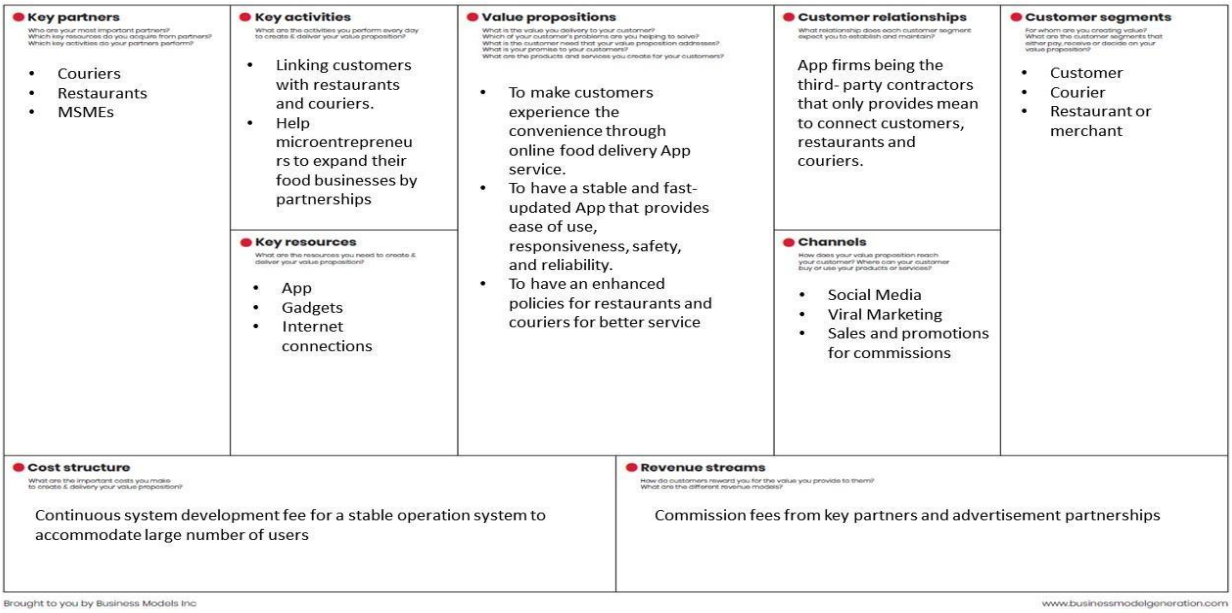

Figure 3.1.1 Business Model Canvas

3.2 Factorial Univariate ANOVA

The second objective of the study was to determine the significant affecting customer experience, partner courier relationships, and transactions, and therefore three batches of the survey were conducted with three different stakeholder groups - App Firms, Courier, and Customers. Response data from the Survey were used for data analysis through factorial Uni-variate analysis of variance (ANOVA) to test the hypotheses using IBM SPSS.

There are six (6) latent variables, Ease of Use, Responsiveness, Reliability, Assurance, Safety, and Convenience, and all of these are based on the major issues commonly experienced in the online food delivery service industry and the related studies and articles on them. Codes for each latent variable are EOU (Ease of Use). RSP (Responsiveness), AS (Assurance), SFTY (Safety), RLB (Reliability), and CV (Convenience). For the other dependent variables, AFB for App firm benefits, CRB for courier benefits, and CB for customer benefits are used. Based on the statement from Ho (2006), for the null hypothesis to be accepted, its p-value should be greater than 0.05 ($p > 0.05$). However, when the value is less than a p-value ($p < 0.05$), the alternate hypothesis will be accepted instead and reject the null hypothesis.

Table 3.2.1 Hypothesis Testing Summary

	p-value			
Independent Variables	App Firm	Courier	Customer	Hypothesis Testing
EOU1	0.423	0.003	0.288	
EOU2	0.088	0.424	0.086	
EOU3	0.196	0.000	0.228	Reject H0 (courier)
RPS1	0.849	0.000	0.118	
RPS2	0.687	0.000	0.205	
RPS3	0.759	0.105	0.313	Reject H0 (courier)
AS1	0.058	0.000	0.049	
AS2	0.124	0.001	0.061	Reject H0
AS3	0.297	0.000	0.031	(customer)
SFTY1	0.951	0.685	0.032	
SFTY2	0.993	0.671	0.445	
SFTY3	0.871	0.033	0.675	
SFTY4	0.042			
SFTY5	0.386			
SFTY6	0.007			Reject H0 (all)
RLB1	0.094	0.000	0.054	
RLB2	0.23	0.000	0.359	
RLB3	0.072	0.072	0.195	Reject H0 (courier)
CV1	0.35	0.350	0.001	Reject H0
CV2	0.893	0.893	0.006	(customer)

Based on data analysis with data from app firm group, SFTY (safety) was the most significant factor that affects the App firm benefit in the online food delivery service industry. Le Breton (2020) stated that a food delivery job is considered to be a “dirty job” as they are easily and mostly exposed to the dangers of traffic and sickness even though the delivery job is a non-qualified job which is rarely appreciated as a deliberate professional career. Especially nowadays with this COVID-19 pandemic, the use of online food delivery service usage is increasing which means to say that dangers for delivery workers are increasing, too. Thus, the app firm should improve the courier-related policies for a well-circulated service system. As SFTY4 was shown as a significant factor, the app firm should make a policy that drivers must make frequent deposits to limit the amount of cash they carry to prevent their robbery incidents (Wasserstrom, 2020). App firm could also think about ways to increase the use of card payment so that the delivery workers will not have to carry a large amount of cash on their hand.

Most of the fixed factors were weighed significant with couriers as their job is to deliver the item, working as a bridge among service provider (App firm), product or food provider (restaurant), and product or food receiver (customer). They seemed to be sensitive to their working environment compared to the other two stakeholders as they have to provide service to different groups of stakeholders. Especially, Le Breton (2020) emphasized that the COVID-19 pandemic is exposing and amplifying the stigmas scarring couriers of the platform economy and it is at the expense of the workers who get their hands dirty to complete the online food delivery service by delivering the food. Hence, the proper working environment should be guaranteed to them which would affect the benefit for all three stakeholders by prospering the industry itself with repeated business and orders.

The most significant factor that affects the customer benefit in online food delivery service was the CV (convenience) as all variables under convenience showed significant with the values of 0.001 and 0.006. Seiders et al. (2005) stated that convenience enhances the positive effects of satisfaction on repurchase behavior and therefore system needs to achieve a certain desired level of convenience so that it could encourage the future intention of repurchase or repeat of service usage (Chai & Yat, 2019). Furthermore, convenience is one of the principal motivations for service users to adopt electronic technology because customers must be convinced of the service's value for them to acquire the willingness to use this technology (Jiang et al., 2011). Hence, the functions of online food delivery service that customers can order their food anytime and anywhere have a significant effect on the customer's benefit.

3.3 Practical Improvements

The result shows that various factors affect the online food delivery service industry from the stakeholders' perspective. As the service takes place online, not only single factors but lots of factors should be considered at the same time. However, this study aims to look for the most significant factor where the industry can focus on. The study identified that there is one most significant factor for each stakeholder's benefit and below are the recommendations to improve the system.

For the App firm's approach, safety is the most significant factor they should focus on. Especially for the safety of drivers in physical and financial way where their injuries are minimized and fair wage rights are guaranteed, there should be a stable policy and system for the couriers. Matyunina (2020) suggested adding comprehensive driver performance metrics that can measure the safety and performance of couriers. Such features will help couriers to analyze their performances and improve their productivity. Just like a reward system for the customers, it could be recommended to have a reward system for the partner delivery workers also when they have reached a certain level of safety and productivity level throughout their service. Improvement in safety with couriers would benefit the customers where they can experience the timeliness of the service which would increase the perceived quality of the service, then increase the revenue stream of the App firm.

For the courier's approach, assurance is the most significant factor. Assurance indicators also include compensation for wrong orders such as cancellation and refund. According to PhilNews in 2019, there was a famous social media post by a Grab Food driver that his order was canceled, and his canceled food purchase was supposed to be for diaper and vitamins of his baby. Moreover, Krissy Aguilar (2019) said that famous actress-comedienne Pokwang posted in her social media about one man who did not order the product ate the food that was canceled and left to the courier. It went viral that made people signed up for removing the cancellation of the order button. However, due to unavoidable situations of customers, it is hard to simply remove the cancellation function. Labaco (2019) recommended that the wireless payment system would decrease these kinds of risks as the system in the Philippines is still working with cash payment which exposes couriers to the risks. Moreover, the wireless payment system will increase the accuracy of the delivery which will lead to safety, productivity, and timeliness.

For customers' approach, convenience is the most significant factor as convenience is one of the principal motivations for the customers to adopt O2O e-commerce (Jiang et al., 2011). Except for the major online food delivery app firms, there are some small online food delivery App firms that operate in certain areas only. Actively increased partnerships with different restaurants, couriers, and other third-party companies would help them to accommodate more customers without any time and place barriers.

4. Conclusion

The rapid growth of O2O e-commerce, particularly in food, has taken its place along with the global COVID-19 pandemic where more people tend to stay home and use the service. The purpose of this study was to review and assess the business model and current practices of Philippine online food delivery App firms and this was done by Business Model Canvas. Overall business operations were understood and became the basis for data analysis. The Business Model Canvas pinpointed that it is hard to acquire and maintain a single stakeholder's benefit as all three stakeholders are inter-related in online food delivery service. Where there is an operating system that works for all, there would be a mutual benefit that will eventually benefit the whole industry.

Using the data analysis, factorial uni-variate ANOVA through IBM SPSS, the second objective which is to determine the significant factors affecting customer experience and courier relationships and transaction was

achieved. For App firms, safety was the most significant factor to improve and the addition of comprehensive driver performance metric to driver analysis App was recommended as a third objective which is to develop an improved integrated system for the operation. For courier, assurance was the most significant factor to improve with the recommended solutions of having a developed payment system that can lessen the courier risks. Lastly, for the customer, convenience was the most significant factor to improve where large and small companies should always keep their eyes on keeping the stable operation without any time and place barriers. Therefore, it was concluded that there are two major factors which are the convenience that affects the customer the most based on the statistical analysis and the timeliness which is the final benefit from improving the assurance and safety of the courier.

References

Aguilar, K. (2019, June 18). Pokwang asks GrabFood users not to cancel orders. Retrieved December 21, 2020, from https://entertainment.inquirer.net/334223/pokwang-asks-grabfood-users-not-to-cancel-orders

Aprilianti, I., & Amanta, F. (2020). Promoting Food Safety in Indonesia's Online Food Delivery Services. doi:10.13140/RG.2.2.29722.67524

Chai, L., & Yat, D. (2019). Online Food Delivery Services: Making Food Delivery the New Normal. Journal of Marketing Advances and Practices, 1(1).

Ho, R. (2000). Handbook of univariate and multivariate data analysis and interpretation: An SPSS approach. Rockhampton, Qld.: Robert Ho, printed by Central Queensland University Publishing Unit.

Jiang, L., Jiang, N., & Liu, S. (2011). Consumer Perceptions of E-Service Convenience: An Exploratory Study. Procedia Environmental Sciences, 11, 406-410. doi:10.1016/j.proenv.2011.12.065

Kapoor, A. P., &; Vij, M. (2018). Technology at the dinner table: Ordering food online through mobile apps. Journal of Retailing and Consumer Services, 43(C), 342-351. doi:10.1016/j.jretconser.2018.04.001

Karim, W., Haque, A., Anis, Z., Ulfy, M.A., 2020. The movement control order (MCO) forCOVID-19 crisis and its impact on tourism and hospitality sector in Malaysia. Int. Tour. Hosp. J. 3 (2), 1–7.

Kim, J. J., Kim, I., & Hwang, J. (2021). A change of perceived innovativeness for contactless food delivery services using drones after the outbreak of COVID-19. International Journal of Hospitality Management, 93, 102758. doi:10.1016/j.ijhm.2020.102758

Labaco, C. (2019, June 17). Netizens urge Grab Food to remove Cancellation due to increasing Grab Food drivers cancelled: News and Reviews. Retrieved October 31, 2020, from https://hungrygeeks.ph/netizens-urge-grab-food-to-remove-cancellation-due-to-increasing-grab-food-drivers-cancelled/

Le Breton, C. (2020, April 16). Lockdown: Food-delivery couriers more dehumanized than ever. Retrieved October 31, 2020, from https://medium.com/makerstories/lockdown-food-delivery-couriers-more-dehumanized-than-ever-927ef3dd3bc

Matyunina, J. (2020, October 28). Why Do Food Delivery Startups Fail? Retrieved October 31, 2020, from https://www.mobindustry.net/why-do-food-delivery-startups-fail/

Online Food Delivery - Philippines: Statista Market Forecast. (2019). Retrieved October 31, 2020, from https://www.statista.com/outlook/374/123/online-food-delivery/Philippines

PhilNews. (2019, June 18). Concerned Netizen Calls Grab's Attention Over Pitiful Situation of Grab Food Drivers. Retrieved December 21, 2020, from https://philnews.ph/2019/06/18/concerned-netizen-calls-grab-attention-over-pitiful-situation-grab-food-drivers/

Ray, A., Dhir, A., Bala, P. K., & Kaur, P. (2019). Why do people use food delivery apps (FDA)? A uses and gratification theory perspective. Journal of Retailing and Consumer Services, 51, 221–230. doi: 10.1016/j.jretconser.2019.05.025

Seiders K, Voss GB, Godfrey AL, Grewal D, 2005. Do satisfied customers really buy more?.Examining moderating influences in a retailing context. Journal of Marketing. 69(4): 26-43

Wasserstrom. (2020, May 29). The 5 Biggest Food Delivery Risks. Retrieved from https://www.wasserstrom.com/blog/2018/10/12/food-delivery-risks/

Biographies

SeonJae Lim is a graduate of Mapua University with a degree of Bachelor of Science in Service Engineering and Management. She joined organizations such as the Operations Research Society of the Philippines (ORSP), Mapua Engineering Management Organization (MEMO), and Production and Operations Management Association of the Philippines (PROMAP). She is a diligent, goal-driven, and passionate individual with strong

problem-solving skills using different statistical tools. Her interests are on statistical planning and management, project management and system engineering.

Marvin I. Noroña is the Managing Partner and Senior Consultant of the Socio-Economic and Empowerment Development Solutions (SEEDS), Inc. and currently a faculty at the Mapua University School of Industrial Engineering & Engineering Management and School of Graduate Studies. He earned his BS Industrial Engineering and MBA degrees from University of the Philippines and is a Doctor in Business Administration candidate finishing his thesis in lean and green manufacturing. His research interests are in the areas of sustainability, supply & operations management, production & service systems improvement, strategic planning and management, lean six sigma, and design thinking.