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LGT4208 LMS Capstone Project

(DR. Peter Lee)

Final Report:

The application of e-service quality model to the Hong Kong last-mile logistics sector

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Abstract

The rise of the instant delivery services providers, GoGoVan and Lalamove gradually reshapes the last-mile logistics sector. This service utilise a smartphone application to handle delivery orders and maintain its service, which is becoming prevalent in practice. However, the relationship between e-service quality model and customer satisfaction of instant delivery services with app-based and on-demand characteristics is not thoroughly and investigated. This study collect 210 questionnaires to conduct correlation and regression analysis. The results reveal that app design, customer service, and security/privacy contribute to customer satisfaction of this service. This research contributes to helping service providers to utilise a multidimensional model to achieve better customer satisfaction.

Acknowledgments

We would like to express our very great appreciation to Dr. Peter K. C. LEE for his constructive comments and insightful suggestions during the planning and development of the research work of our group's final year project. His willingness to give his time and patience so generously has been very much appreciated. Our grateful thanks are also extended to Dr. Sunny Yeung as the moderator of our team for his efforts in reviewing our project's result and provide useful suggestions.

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Introduction

GoGoVan and Lalamove are innovative ridesharing companies who distribute costs and benefits by linking passengers and drivers through a mobile application (Bell, Castillo, Rodrigues, & Rose, 2018). In urban region including Hong Kong, on-demand logistics service companies are in significantly high popularity with the growing customer need on efficiency, low cost and flexibility. GoGoVan and Lalamove as its major competitors have occupied over 90% of the local market share of van booking service (Yang, 2017).

In the last-mile delivery service sector that generally refers to the deliveries to final destination, GoGoVan and Lalamove are instant delivery service providers. These companies, in higher level, match users and drivers to provide same day delivery and on-demand delivery service through mobile application (Arvidsson et al., 2017). GoGoVan and Lalamove offer instant deliveries services providing on-demand delivery within short time through GPS system. GoGoVan and Lalamove's van contain GPS system locating registered drivers within five-kilometre or ten-kilometre radius of the specified pick-up location and send notification automatically to these drivers' smartphones to reduce average lead-time for a customer to find a driver for 20-30 minutes than through a call centre (Yang, 2017). GoGoVan and Lalamove claim that their companies exercise strict screen tests for all registered drivers and effective rating systems for drivers' performance that low ratings drivers would be suspended automatically by the system. GoGoVan and Lalamove utilize information technology takes advantage of well design, faster response time, more route available, and flexible provision of on-demand logistic service.

Several studies have investigated into the context of e-commerce, which refers to the development of an e-service quality model based on multiple constructs for measuring customer satisfaction of online channels (Blut, Brock, Chowdhry, and Mittal, 2015; Blut, 2016; Gilly & Wolfinbarger, 2003; Goodhue, Loiacono, & Watson, 2002; Malhotra, Parasuraman, & Zeithaml, 2005). The rise of instant delivery service (i.e. GoGoVan & Lalamove) with the smartphones applications gives this study a chance to further explore the context of e-commerce and transportation management by focusing on this new online channel and industry. As a result, we discover a research gap related the linkage of e-service quality model and customer satisfaction of instant delivery service in the relatively traditional context.

A quantitative research was conducted in this study. 11 constructs are categorised into four dimensions including app design, delivery fulfillment, customer services, and security/privacy were considered. The factors and dimensions were assumed to affect the e-service quality outcomes of the crowdsourcing company including customer satisfaction, reorder intention, and word of mouth. Data was collected from questionnaire survey based on these hypotheses. Generally, statistical analyses through SPSS was conducted to test their correlation.

This study aims to develop and examine a conceptual model on driving forces (or antecedents) leading to superior service quality for app-based and on-demand delivery services in Hong Kong. This model's development is based on the existing e-service quality (eSQ) model in the e-commerce literature, with the support of constructs from various relevant studies.

Our specific objectives are as follows:

1. To identify the driving forces (i.e., app design, delivery fulfillment, customer service, and security/privacy) leading to superior service quality for app-based and on-demand delivery services in Hong Kong.
2. To develop the multi-dimensional constructs for such driving forces.
3. To test the relationships between the driving forces and customer satisfaction.

Our specific contributions are as follows:

1. Managerial contribution:
   Offering precise guidelines to app-based and on-demand delivery service providers to manage app design, delivery fulfillment, customer service, and security/privacy in order to achieve better customer satisfaction, word of mouth and reorder intention.
2. Theoretical contribution:
   Offering new conceptual insights concerning the multi-dimensional nature of successful driving forces in the context of app-based and on-demand delivery services to the literature of e-commerce and transportation management.

Our specific research question is as follow:

1. Does the e-service quality model explain the relationship between app design, delivery fulfillment, customer service, security/privacy, and customer satisfaction toward service providers of app-based and on-demand delivery?

The rest of the paper is an organised documentation of our study. We will demonstrate the report in an order of literature review, methodology, results, and discussions. Eventually this study reveals its conclusion and offers recommendations.

Literature Review

Last mile delivery, more accurately speaking, refers to the movement of goods from a transportation hub to the final delivery destination on logistic sector (Lee, Liu, Shen, Wang, & Zhang, 2016). In a more general view, it can be regarded as the deliveries to the final destination (Arvidsson et al., 2017). Our study will adopt the more general definition of the last mile logistics. The reason is that the rise of the instant delivery gradually reshapes this sector in recent years by offering on-demand delivery within two hours via a digital platform (Arvidsson et al., 2017). As a result, "on-demand" and "app-based" are two characteristics in satisfying customers' requirement in this context. The characteristics give us direction to explore the instant delivery under the last mile logistics sector.

This literature review will discuss the construct of customer satisfaction and its relationship with the multidimensional e-service quality model. This relationship will reveal the research gap in the context of e-commerce and transportation management. After that, literatures related to the constructs of each dimensions will be discussed and led us to the formulation of the respective hypothesis.

E-service quality model and customer satisfaction

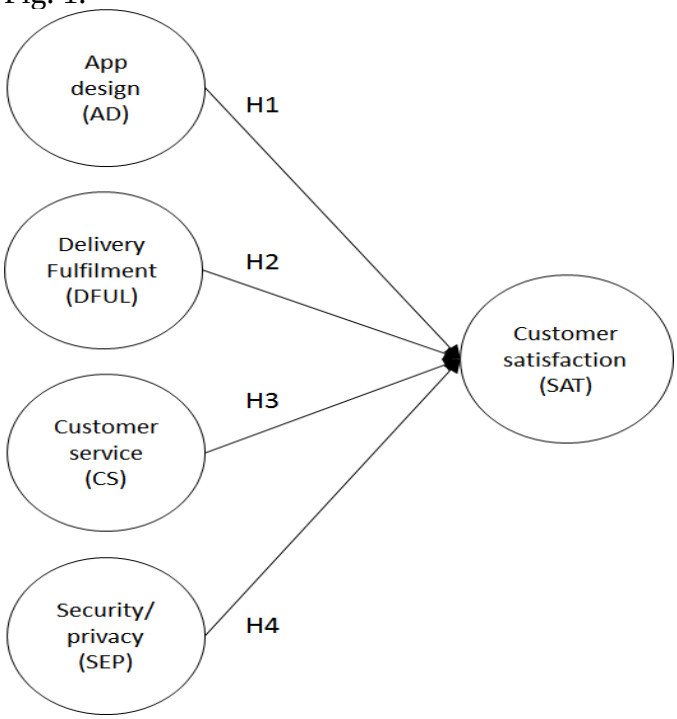
The context of e-commerce that has been explored by several scholars, especially in its e-service quality aspect. Regarding customers' perception on various constructs of e-service quality, Blut et al. (2015) have explored a multidimensional conceptual model for measuring customer satisfaction in e-commerce. Blut (2016) further extends their research results to the development of the e-service quality model in the context of online shopping in which the relationship between customer satisfaction and this customer's perception based model is explored. Their research also compare the findings with previous models (Gilly & Wolfinbarger, 2003; Goodhue, Loiacono, & Watson, 2002; Malhotra, Parasuraman, & Zeithaml, 2005). As a result, the context of e-commerce has been explored, especially related to the literatures of customers' perception on online shopping and customer satisfaction.

Developing multidimensional models for measuring customer satisfaction of app-based and on-demand delivery service is considered a possible research gap of our study. Based on the results, Blut (2016) indicates that it is possible to extend the exploration of e-service quality model across products and markets because customers' perception may be different in various

service quality constructs. The operation of instant delivery is rooted in an urban environment with characteristics of constrained space, saturated infrastructure, and societal pressures (Arvidsson et al., 2017; Autry, Bell, Mollenkopf, & Rose, 2016). Hence, reviewing the literature of on-demand and app-based delivery by considering the urban environment paves the way to explore the constructs of our proposed model and the way to explain our study's result.

Fig. 1 summaries the multidimensional e-service quality model proposed in this study. The relationship between customer satisfaction and each dimension will be hypothesized and tested in our study. The remaining contents of the literature review will explore the meaning of each dimension and the content of constructs that support theses high-level constructs.

Fig. 1.



App design

App design refers to the design of a smartphone application (app) as a service-offering online channel (Blut, 2016; Delic, Duzevic, & Knezevic, 2016). Smartphone applications are the important online channel for e-commerce to interact with current and potential customers. There are studies related to the customer perception on designs of online channel. Blut (2016) believes that customers aggregate their experience from concrete events of multiple constructs and further link them to the abstract evaluation of company's ability to design the online channel. The aggregated customer experiences eventually construct an overall assessment of the company's performance in e-service (Holloway & Beatty, 2008). In recent years, there is the rise of delivery companies utilizing apps to offer service so researchers gradually shift their focus from the relatively traditional website to smartphone application (Blut, 2016; Delic, Duzevic, & Knezevic, 2016; Deng, Kuo, & Wu, 2009). Hence, in our study, smartphone application as an online channel of delivery service and the design of this interface to customers can be further explored, which are related to the relationship with customer satisfaction.

Constructs of online channel have been explored by some studies. They can be modified to fit in the situation of apps and the instant delivery service. Aesthetics is related to the pleasure of the channel's visual design offered to customers (Blut et al., 2015). In this study, app aesthetics related to customers' perception on the app's visual design, which will be proposed

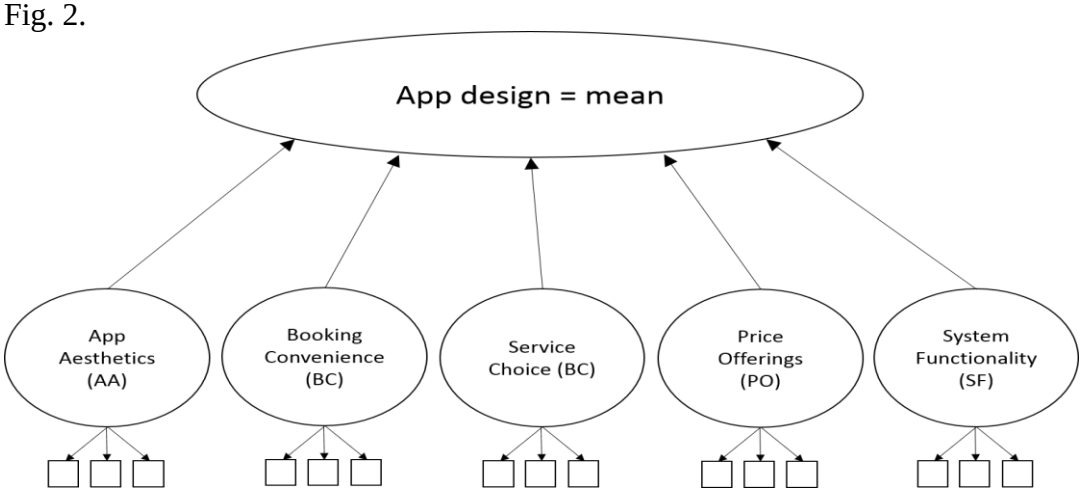
to be one of the constructs of app design. Price offerings is related to the price of service with specific benefits and discounts that foster customer to consume in the channel (Blut, 2016). In this study, price offerings refers to the customers' perception on prices and discounts of delivery services provided in the app. System functionality is related to the functionality and reliability of a device that operates the software of online channel and does not halt the online consumption process (Delic et al., 2016; Deng et al., 2009; Frederick, Jin, Lim, & Srai, 2018). In this study, system functionality particularly refers to the functionality of different smartphones in supporting the operation of the app providing delivery service in the perception of customers. Hence, app aesthetics, price offerings, and system functionality are modified from various journals to fit in the app design context of our study.

We newly add some constructs with its items in order to grasp the characteristics of the app design in the context of our study. Some studies indirectly support these constructs. Service choice is considered to evaluate the channel's provision of choices related to the delivery services to customers (Delic et al., 2016; Blut, 2016). In other words, this constructs refers to the customers' perception on the choices of delivery provided by the app including the customization of delivery and the fulfillment of choices claimed by the company. Booking convenience is considered to evaluate the channel's quality of conveniently helping consumers to navigate the content and satisfy their needs (Deng et al., 2009; Blut, 2016). In order words, this constructs refers to the customers' perception on the extent of convenience in the process of booking the delivery service. Hence, service choice and booking convenience are newly-added by us in our study.

Fig. 2 summaries the relationships between app design and the above constructs. The constructs are categorised into the app design as a high-level dimension. The change in this constructs will directly affect the value of app design. This structure paves the way to formulate the following hypothesis:

Hypothesis 1. (H1). Perceptions of app design directly contribute to customer satisfaction.

Fig. 2.



Delivery fulfillment

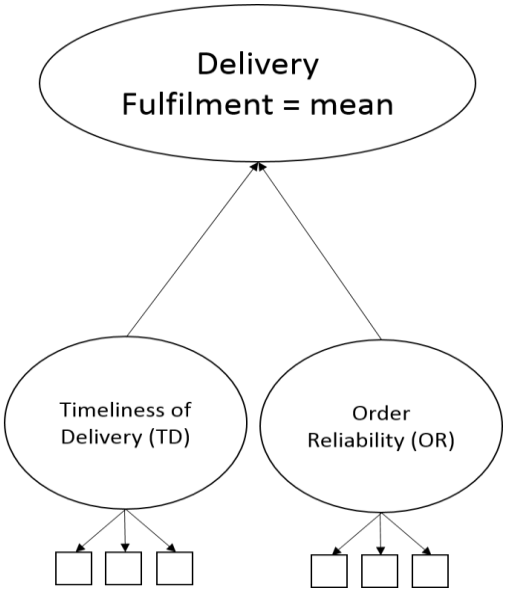
Delivery fulfillment refers to the company's ability to guarantee that customers can receive their orders as expected after utilizing the app to book the delivery service (Holloway & and Beatty, as cited in Blut et al., 2015). The importance of Fulfillment has been increasing in e-commerce logistics that offered customers three primary competitive benefits: reduced cost, faster delivery and improved reliability (Anderson, Coltman, Devinney, & Keating, 2010;

Kawa, 2017). The rise of instant delivery further emphasizes the instant fulfillment of customers demand via a digital platform (Arvidsson et al., 2017). In this service provision stage, the system of service providers receives a customer order from the customers' app platform and uploads it to the drivers' app platform, as a result, available drivers with faster response speed will gain the order and start coming to customers' specified destination to pick up and deliver items until reaching the final destination. Customer would change their customer satisfaction on the e-service provider after the fulfillment stage (Blut, 2016) Hence, in our study, the service provision stage of e-commerce can also be extended to the customers' perception on the delivery fulfillment of an instant delivery service provider.

Several scholars explored some constructs related to the fulfillment of online delivery service providers and two of them would be considered in our study. Delivery timeliness refers to the company's ability to deliver orders quickly as promised to customers (Blut, 2016). In our study, the items in this constructs take account of the urban congestion situation and the app-based and on-demand characteristics of the instant delivery (Arvidsson et al., 2016; Autry et al., 2016). Order reliability is another construct that refers to the company's ability in maintaining and fulfilling customers' specification on the delivery order with a good quality (Blut, 2016; Kawa, 2017). In other words, a good condition of the ordered items should be maintained as well as the specification including the industry requirement, the temperature, or the way to handle items when they are delivered to the final destination. These would be perceived by customers in the service provision stage. Hence, delivery timeliness and order reliability based on various literatures are included in delivery fulfillment as summarised in Fig. 3. All these arguments has supported the following hypothesis:

Hypothesis 2. (H2). Perceptions of delivery fulfillment directly contribute to customer satisfaction.

Fig. 3.



Customer service

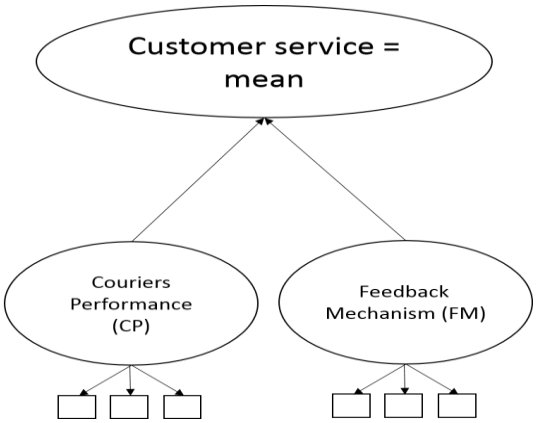
Customer service refers to the online and real-life customer support from the online channels (Blut, 2016; Göbl & Querin, 2017). During or after the sale, service level that company's reaction in responding to customer inquiries quickly is part of the perception of online customer support (Holloway & Beatty, as cited in Blut et al., 2015). In other words, the customers' perception on the online channel's responsiveness to the customers' issue were

considered as important in the context of customer satisfaction. The responsiveness is not restricted to the online channel but also the drivers and couriers. The reason is that they would deliver orders while contacting with customers simultaneously in the context of instant delivery (Arvidsson et al., 2017; Punel & Stathopoulos, 2017). Hence, in our study, we would also consider the customer service of instant delivery service providers who are supported by an app.

In this study's context, we newly add two constructs in order to fit in our study's context. Feedback mechanism evaluates to the company's ability to respond to customers regarding their feedback (Punel & Stathopoulos, 2017). Göbl and Querin (2017) uphold that response time of the feedback mechanism would be important in maintaining customers' perception on the service providers because customers' dissatisfaction would be aroused with a response time over 24 hours. In other words, this construct refers to the customers' perception on the way to handle customers' rating, complaints, and bans to the drivers each time after the delivery. Couriers' performance evaluates company's abilities in maintaining couriers performance before, during, and after the delivery service (Macharis, Merckx, Rai, & Verlinde, 2017). In order words, this construct refers to customer's perception on the way to maintain couriers' professionalism and trustworthiness to the customers during the normal delivery and the emergent situation that requires couriers prompt reaction. Hence, feedback mechanism and couriers' performance are newly-added by us into the high-level dimension, customer service. Fig. 4 summaries this structure and helps us formulate the following hypothesis:

Hypothesis 3. (H3). Perceptions of customer service directly contribute to customer. satisfaction

Fig. 4.



Security/privacy

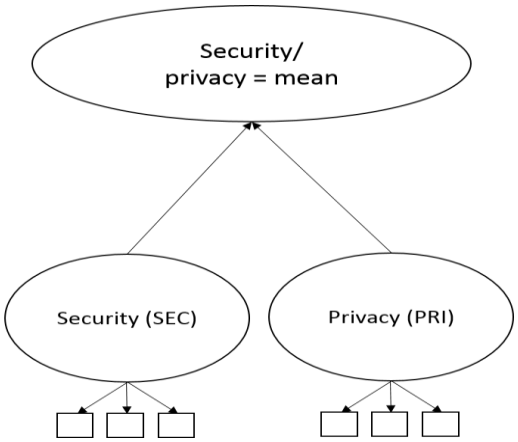
Generally, security/privacy refers to the online payment security and the privacy of shared information during and after the sale (Holloway & Beatty, as cited in Blut et al., 2015). When customers book delivery service through the app, it will involve security issues of instant information flow, especially in the process of online payment (Abu Amar Fauzi, 2018). Hence, in our study on customer satisfaction, we will consider the customer perceptions on the security of transaction and personal privacy in an app platform operated by instant delivery services providers.

Security and privacy were two constructs under the security/privacy dimension. Abu Amar Fauzi. (2018) and Blut (2016) have mentioned the construct of privacy in the context of online transportation context in which the companies need to convince that the users' personal data including their name and address are secure when they make transactions through the applications. In other words, privacy refers to the customers' perception on company's ability

to protect customers' personal data. Meanwhile, customers concern about the safe transactions in the app operated by the instant delivery service providers, especially when they make payment with their credit card (Blut, 2016). If the credit card is hacked, customers will incur monetary loss. This argument meant that security refers to the customers' perception on the company's ability to safeguard the transactional data during and after the consumption of the service. Fig. 5 summaries the structure of security/privacy mentioned in this section and help formulate the following hypothesis:

Hypothesis 4. (H4). Perceptions of security/privacy directly contribute to customer satisfaction.

Fig. 5.



Methodology

Quantitative research methods would be used in this study. We drafted a questionnaire between December, 2018 and January, 2019. After finishing the collection of questionnaire in February, several stages of analysis in March were undergo to test our hypotheses: Data from each item had its primary score according to the Likert-type scale. We summed up these item scores to calculate an average score for each construct and customer satisfaction. Then, construct scores within the same dimension will be used to indicate the four higher-order dimensions in terms of mean. After that, we used the dimension scores to test the reliability and validity of our survey instrument. Based on these results, correlations and regression between four dimensions and customer satisfaction was conducted. The result of multiple regression was used to determine the hypotheses would be supported or not.

Questionnaire and survey sample

The target respondent of the questionnaire was the current user who is currently using the GoGoVan and Lalamove service. The questionnaire design was based on the modified conceptual framework from Hierarchical Model of E-Service Quality using the four dimensions (*App design*, *Delivery Fulfillment*, *Security/privacy* and *Customer service)* and 11 constructs to assess the consumer perceptions on service quality factors of GoGoVan and Lalamove (Blut, 2016). Each construct contains three items. The respondents was asked to fill the five-point Likert-type scale (ranged from "1" = strongly disagree to "5" = strongly agree) to record their perceptions.

The whole delivering and collection process was conducted in February, 2019. The questionnaire was made by the Google Form. Hundreds of questionnaires was delivered on the online platform and by hand like our friends, families or the groups. Eventually, 210 pieces of

questionnaire were received at the end of the survey. They were invited to participate through internet forum, Facebook and in person. Although we did not require respondents to leave their email address for validating their identity, we encouraged them in these platforms to tell us that they finished the questionnaire. Meanwhile, the system of the Google Form did not allow respondents to immediately do another questionnaire after finishing the previous questionnaire. It was hoped that the accuracy of the questionnaire could be preserved in a certain extent.

Table 1 Demographic data of the respondents

Demography	Frequency (n=210)	Percentage
Sex:		
Male	107	51
Female	103	49
Age:		
19-30	56	26.7
31-40	33	15.7
41-50	68	32.4
51-60	32	15.2
61 or above	21	10
Income:		
$10,000 or below	46	21.9
$10,000-$15,999	40	19
$16,000-$29,999	81	38.6
$30,000-$39,999	27	12.9
$40,000 or above	16	7.6
Education Level:		
Primary level or below	8	3.8
Junior secondary level	18	8.6
Senior secondary level	67	31.9
Tertiary level	54	25.7
University level or above	63	30
Occupation:		
Full-time student	22	10.5
Manufacturing industry	5	2.4
Construction industry	27	12.9
Import & export trade & wholesale industry	28	13.3
Retailing, accommodation & catering industry	35	16.7
Transportation, warehousing, express, IT industry	29	13.8
Finance, insurance, real estate & professional industry	20	9.5

Public administration, individual & medical industry	20	9.5
Educational industry	2	1
Unemployed	3	1.4
Others	19	9
Living District:		
Hong Kong Island	16	7.6
Kowloon East	35	16.7
Kowloon West	70	33.3
New Territories East	51	24.3
New Territories West	36	17.2
Missing Data	2	0.9

For the demographic data, Table 1 shows that the respondents are distributed in a relatively even way related to the personal information of sex, age, income, education, occupation and living district. Regarding the breakdown of respondent by sex, the male and female population accounted for 51 and 49 percent respectively. For the age, most of the respondents were between 41-50 years old and it accounted for around 32 percent. For the income, most of the respondent's income was between $16,000 and $29,999 and it accounted for around 39 %. For the education level, most of the respondent had achieved senior secondary level, university level or above and tertiary level education which accounted for around 32%, 30% and 26% respectively. For the occupation, most of the respondent were engaging in the retailing, accommodation, and catering industry, the transporting, warehousing, express, and IT industry, as well as the Import, export trade, and wholesale industry which accounted for around 17%, 14% and 13% respectively. For the living district, most of the respondent were living the Kowloon East and New Territories East which accounted for around 33% and 24%.

Table 2 Number of order times within one month for two companies

How many times have you used the following delivery services per month per month?	Frequency (n=210)	Percentage
Lalamove:		
0 time	157	74.8
1-3 times	26	12.4
4-6 times	16	7.6
7-9 times	11	5.2
10 times of above	0	0
GoGoVan		
0 time	12	5.7
1-3 times	65	30.9
4-6 times	53	25.3
7-9 times	68	32.4
10 times of above	12	5.7

Table 2 shows the frequency of the respondent using the delivery service regarding GoGoVan and Lalamove. For the Lalamove, most of the respondent had not used the service per month, which accounts for around 75%. For the GoGoVan, most of the respondent had

used the service between 7 and 9 times which accounted for around 32%. It showed that the respondents preferred using GoGoVan service instead of Lalamove.

Reliability test and exploratory factor analysis

Statistical analyses with SPSS were conducted after collecting sufficient questionnaires. We first tested the reliability and validity of our survey instrument. Regarding the reliability test, Cronbach's alpha was used to assess internal consistency in this study (Cheng, Lee, & Yeung, 2015). If the results showed that Cronbach's alpha of each construct increase after deleting particular item, the item will be removed. The remaining items would be used to conduct the exploratory factor analysis (EFA).

The EFA was used to test the validity of our survey instrument at the cross-constructs level. In other, 11 constructs and customer satisfaction were tested in the EFA. Items within these constructs was tested to check if they were loaded properly in their original constructs without cross loadings (Matsunaga, 2010). This process was supported by the principal component analysis as the extraction method with the varimax rotation and Kaiser normalization (Osborne, 2015). Small coefficients with absolute value lower than 0.5 would be suppressed (Chetty & Goel, 2015). For the items with cross loadings, each time one item would be removed and the remaining items would be retested until there were no item with cross loadings which loaded properly.

There was an issue regarding the sample size for EFA. There were two ways to review the adequacy of the sample size in EFA: One was to check the scale that sample size with 200 or more would be considered to have a good adequacy of the sample size; One was to check the minimum ratio of sample size to the number of items which should not be lower than five or ten in a more rigorous way (Mundrom & Pearson, 2010). In our study, each variable of the 11 constructs and customer satisfaction contained three items, which meant there were 36 items in our question. We had collected 210 sample size so it fulfilled the scale requirement of EFA and the ratio requirement by adopting the lesser requirement, 5. However, the ratio, 210:36 or 5.86 did not reached the rigorous requirement, 10. As a result, we decided not to enter all constructs for the EFA at once but separated the constructs to test the EFA for multiple times. Hence, we did not follow the requirement of eigenvalues > 1 in the EFA, instead, we restricted the number of factor to be extracted as the number of variables entered. It was hoped that our constructs would be supported by a more rigorous EFA results.

Correlation and multiple regression

Correlation analysis was conducted to measure relationships between the four dimensions (*App design*, *Delivery Fulfillment*, *Security/privacy* and *Customer service)* and that of 11 constructs. After conducting the correlation analysis, we would be able to review two correlation matrices. In the case of high correlations between dimensions, it would be possible to involve the multi-collinearity of dimensions (Blut, 2016; Cheng, Lee, Yeung, & Yeung, 2013). Hence, the results of correlation analysis would pave the way to multiple regression.

Multiple regression was conducted as the important part of our study. Using the enter method, a two stage hierarchical regression structure would be presented when adding control variables (Kim, 2016; Otchey & Turkson, 2015). Customer satisfaction was entered as a dependent variable while app design, delivery fulfillment, customer service, and security/privacy was entered as independent variables. We would reviewed the ANOVA table and the coefficients table to check the significance of the overall model fit and the dimensions by considering 0.95 as the confidence level. Significant dimensions would be used to determine the validity of the hypotheses.

Control variables

Using SPSS as regression method to analyze demographics income and age with linear scale for control variable. For control variable income, district and age, keep constant to examine the relationship between two other variables with SPSS. Using Enter regression to conduct the procedure for variable selection that all variables in a block entered in a single step. With SPSS as regression figure out the order of importance of demographics income and age, which belong to significant or insignificant variable.

Limitation of the research method

The limitation of accessibility of information was a major limitation. GoGoVan and Lalamove were not listed companies and did not bear the responsibility to disclose its financial and managerial reports to the public. As a result, it was not feasible to review the inner documents or figures to comprehensively explore companies' internal management of service quality. This limitation had turned our study at the very beginning to the demand side of the service.

Results

In this section, we will first report the results of reliability test and exploratory factor analysis to review the related internal reliability and construct validity of the model. After that, the correlation matrix and the results multiple regression analysis will be revealed. These results will indicate that the hypotheses of our study are supported or not.

Reliability test

Table 3 Reliability test of constructs

Factors/Outcomes	Cronbach's Alpha	N of Items
App aesthetics (AA)	.922	3
Booking convenience (BC)	.886	3
Service choice (SC)	.891	3
Price offerings (PO)	.913	3
System functionality (SF)	.888	3
Timeliness of delivery (TD)	.894	3
Order reliability (OR)	.913	3
Couriers performance (CP)	.931	3
Feedback mechanism (FM)	.926	3
Security (SEC)	.911	3
Privacy (PRI)	.918	3
Customer satisfaction (SAT)	.920	3

Table 3 shows the values of the Cronbach's alpha for the dependent and independent variables measuring perceptions of service performance. The internal reliability of the variables are consistent and ranges from .883 to .931.Therefore, no items are required to be deleted.

Exploratory factor analysis

Table 4 Exploratory factor analysis of the constructs

Factor loading				
Item*	Security	Price offerings	Service choice	Timeliness of delivery
SC2			0.842	
PO1		0.856		
PO3		0.723		
TD2				0.879
SEC1	0.824			
SEC2	0.784			
SEC3	0.859			

Total variance explained: 91.544%
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 5 Exploratory factor analysis of the constructs

Factor loading				
Item*	Customer satisfaction	Feedback mechanism	App aesthetics	Order reliability
AA2			0.822	
AA3			0.656	
OR2				0.746
OR3				0.765
FM2		0.836		
FM3		0.781		
SAT1	0.805			
SAT3	0.770			

Total variance explained: 91.972%
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 6 Exploratory factor analysis of the constructs

Factor loading				
Item*	Privacy	System functionality	Couriers performance	Booking convenience
BC2				0.855
BC3				0.675

SF1		0.774		
SF3		0.798		
CP1			0.804	
CP3			0.791	
PRI1	0.835			
PRI2	0.877			
PRI3	0.801			

Total variance explained: 89.001%
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 4, 5, 6 show the result of exploratory factor analyses (EFA) by dividing the items into three sets and entering them to test the validity of 11 constructs and the construct of customer satisfaction. Each set contains items originated four constructs. Table 4 shows the EFA result of testing the validity of security, price offerings, service choice, and timeliness of delivery; Table 5 shows the result of testing the validity of customer satisfaction, feedback mechanism, app aesthetics, and order reliability; Table 6 shows the result of testing the validity of privacy, system functionality, couriers' performance, and booking convenience. All three tables show high total variance explained ranging from 89.001% to 91.972% and the range of factor loading of 0.675 (BC3) to 0.879 (TD2). The results indicated that the majority of items with high factor loadings were properly loaded in their originated construct.

For each construct, the number of items are not the same because some of the items with cross loadings are removed in the process of retesting EFA. The remaining items appropriately correspond to the constructs. However, Table 4 shows that service choice with a factor loading 0.842 and timeliness of delivery with a factor loading 0.879 only have one item left. The reason is that other items with cross loadings are deleted in the process. Single item constructs would imply low validity of the construct (McIver and Carmines, 1981). Nevertheless, instead of customer satisfaction, the 11 constructs would be further categorised into four dimensions for hypothesis testing so the issue of few constructs having single item would not be serious in this case. Hence, to a certain extent, the validity of constructs was supported and paved the way to using four dimensions for multiple regression

Correlation

Correlation analysis was conducted before multiple regression in the consideration of the case of 11 constructs and the case of 4 dimensions.

Table 7 Correlation matrix of 11 constructs

Constructs	1	2	3	4	5	6	7	8	9	10	11
1. App Aesthetics	1	0.800*	0.758*	0.808*	0.736*	0.694*	0.774*	0.720*	0.749*	0.661*	0.680*
2. Booking Convenience	0.800*	1	0.824*	0.791*	0.752*	0.595*	0.773*	0.684*	0.660*	0.654*	0.582*
3. Service Choice	0.758*	0.824*	1	0.672*	0.698*	0.603*	0.758*	0.615*	0.595*	0.620*	0.532*
4. Price Offerings	0.808*	0.791*	0.672*	1	0.830*	0.631*	0.748*	0.788*	0.729*	0.686*	0.696*
5. System Functionality	0.736*	0.752*	0.698*	0.830*	1	0.573*	0.727*	0.719*	0.690*	0.668*	0.616*
6. Timeliness of Delivery	0.694*	0.595*	0.603*	0.631*	0.573*	1	0.721*	0.696*	0.699*	0.583*	0.585*
7. Order Reliability	0.774*	0.773*	0.758*	0.748*	0.727*	0.721*	1	0.795*	0.712*	0.707*	0.623*
8. Couriers Performance	0.720*	0.684*	0.615*	0.788*	0.719*	0.696*	0.795*	1	0.743*	0.726*	0.685*
9. Feedback Mechanism	0.749*	0.660*	0.595*	0.729*	0.690*	0.699*	0.712*	0.743*	1	0.734*	0.728*
10. Security	0.661*	0.654*	0.620*	0.686*	0.668*	0.583*	0.707*	0.726*	0.734*	1	0.795*

11. Privacy	0.680*	0.582*	0.532*	0.696*	0.616*	0.585*	0.623*	0.685*	0.728*	0.795*	1

Notes: Numbers are Pearson correlations; *significant at $p < 0.01$ level (2-tailed).

Table 7 shows the values of the correlation between 11 constructs. The result showed that the 11 factors were positively and significantly correlated with each other in which the r values in Table 7 are ranging from 0.532 to 0.830. Table 7 further indicated that the correlation between price offerings and system functionality was the strongest, with the r value 0.830, while the correlation between service choice and privacy was the weakest, with the r value 0.532. Meanwhile, Table 7 summaries that the r values between constructs under app design are generally higher with r value ranging from 0.7 to 0.8. This result indicated that the correlation between constructs under app design as a higher-level constructs was generally stronger.

Table 8 Correlation matrix of four dimensions

Dimensions	1	2	3	4
1. App Design	1	0.832*	0.834*	0.753*
2. Delivery Fulfillment	0.832*	1	0.842*	0.716*
3. Customer Service	0.834*	0.842*	1	0.812*
4. Security	0.753*	0.716*	0.812*	1

Notes: Numbers are Pearson correlations; all values are significant at $p < 0.01$ (2-tailed).

Table 8 shows the values of the correlation between 4 high-level dimensions (App design, Delivery Fulfillment, Security/privacy and Customer service). The result showed that the four dimensions were significantly correlated with each other in which the r values representing the coefficient of Pearson correlations in Table 8 is all greater than .757, ranging from .757 to .893. Table 8 further indicates that the correlation between customer service and delivery fulfillment was the strongest, with the r value 0.893, while the correlation between security/privacy and booking app design was the weakest, with the r value 0.757. As shown in Table 8, the r value of these dimension is generally greater than 0.7 and is significant at $p < 0.01$ level. Hence, significantly high correlations between four dimensions indicated that it was possible to cause a multi-collinearity issue in multiple regression analysis so more statistics would be needed to double this issue.

Multiple regression

Table 9 Collinearity Statistics of four dimensions

	Collinearity Statistics	
Variables	Tolerance	VIF
App design	0.235	4.258
Customer service	0.180	5.558
Delivery fulfillment	0.320	3.123
Security/privacy	0.235	4.250

Table 10 Durbin-Watson Test of the regression model

Regression model (with control variables)	Durbin-Watson Test Statistic

Between customer satisfaction and four driving forces	2.001

Multiple regression analysis was used to test if app design, customer service, security/privacy, and delivery fulfillment significantly predicted customer satisfaction by controlling the effect of age and monthly income.

There are some statistics related to the assumptions of conducting multiple regression. Regarding the investigation of the issue of high correlation between four dimensions in last section, Table 9 shows the collinearity statistics of this regression model that the tolerance level of the four dimensions are higher than 0.1 and their VIF values are between 1 and 10. These results indicated that the multi-collinearity issue were not very serious as the collinearity statistics were within the acceptable range (Laerd Statistics, 2018; Mason & Perreault, 1991). Furthermore, Table 10 shows the Durbin-Watson test statistic of this regression model with the value 2.001 which is within the range of 1.5 to 2.5. The result showed that there was no autocorrelation in residuals so it satisfied the assumption of independence of residuals in multiple regression (Stephanie, 2016). Hence, the fulfillment of some assumption of multiple regression indicated that it would be feasible to further conduct this analysis.

Table 11 ANOVA of the hierarchical regression model

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.134	2	4.567	6.953	0.001[b]
	Residual	135.972	207	0.657		
	Total	145.106	209			
2	Regression	113.333	6	18.889	120.68	0.000[c]
	Residual	31.773	203	0.157		
	Total	145.106	209			

a. Predictors: (Constant), Age, Monthly Income, Security/Privacy, Delivery Fulfillment, App Design, Customer Service

b. Predictors: (Constant), Age, Monthly Income

c. Predictors: (Constant), Age, Monthly Income, Security/Privacy, Delivery Fulfillment, App Design, Customer Service

A two stage hierarchical regression structure is shown in Table 11 and Table 12. By using the enter method, customer satisfaction is entered as the dependent variable. For independent variables, two control variables are entered at stage one to control for the effect of the respondents' age and monthly income. Following stage one that controls two variables, the four dimensions including app design, delivery fulfillment, customer service, and security/privacy are entered at stage two to explore their regression with customer satisfaction.

Table 11 shows an ANOVA table that the regression and residual degree of freedom (df), the F value and the significance of the model in Table 11 reveal the major findings. With the support of R^2 shown in Table 12, the variance explained by the model is further revealed. By reviewing both Table 11 and Table 12, it was revealed that the overall model at stage one with two control variables was a significant predictor of customer satisfaction ($F(2, 207) = 6.953$, $p < 0.05$) and explained 6% of the variance (R^2). By further reviewing both Table 11 and Table 12, it was revealed that the overall model at stage two with both control variables and four

dimensions was a significant predictor of customer satisfaction ($F(6, 203) = 120.68$, $p < 0.05$) and explained 78% of the variance (R^2).

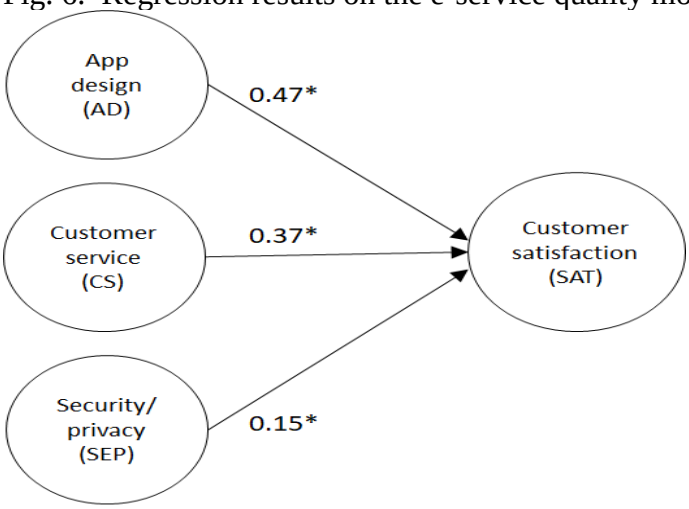
Table 12 Coefficients table of the hierarchical regression model

	Model 1					Model 2				
Relationship	B	SE	Beta	Sig.	R^2	B	SE	Beta	Sig.	R^2
Monthly Income	0.17	0.05	0.23	0.00*	0.06*	-0.01	0.03	-0.02	0.68	0.78*
Age	0.04	0.04	0.06	0.40		-0.03	0.02	-0.04	0.21	
App design → Customer satisfaction						0.49	0.07	0.47*	0.00	
Customer service → Customer satisfaction						0.37	0.08	0.37*	0.00	
Security/Privacy → Customer satisfaction						0.16	0.06	0.15*	0.01	
Delivery fulfillment → Customer satisfaction						-0.04	0.07	-0.04	0.61	

* Significant at p<0.05 level.

Table 12 reveals the contribution of each variables in two stage of multiple regression that tests hypotheses 1-4. Beta represents the strength of effect of each variables and sig. relates to their significance that is compared to $p < 0.05$ level, which reveals the major findings. At stage one, it was found that monthly income (Beta = 0.23, $p < 0.05$) was a significant predictor of customer satisfaction but age (Beta = 0.06) was not a significant predictor of customer satisfaction at $p = 0.5$. At stage two, it was found that app design was a significant predictor of customer satisfaction (Beta = 0.47, $p < 0.05$), as did customer service (Beta = 0.37, $p < 0 .05$) and security/privacy (Beta = 0.15, $p < 0.05$. However, the results indicated that delivery fulfillment (Beta = -0.04) was not a significant predictor at $p = 0.05$. As control variables, both age (Beta = -0.02) and monthly income (Beta = -0.01) at $p = 0.05$ did not shown significant results. Thus, most of the dimensions were significant in predicting customer satisfaction.

Fig. 6. Regression results on the e-service quality model



* Significant at p<0.05 level.

Based on the above results, Fig. 6 shows a multidimensional model with significant dimensions. As shown in Fig. 6, the Beta of app design (0.47), customer service (0.37), and security/privacy (0.15) are both significant at $p = 0.05$ so the hypothesis 1, 3, and 4 are supported. However, as shown in Table 12, the p-value of delivery fulfillment (Sig.) is 0.61, which is higher than 0.05, so this dimension does not show a significant result to support hypothesis 2. In other words, hypothesis 2 is rejected.

Discussion

The result of the study showing that app design, customer service and security/privacy were significant predictor of customer satisfaction while delivery fulfillment does not show a significant prediction to customer satisfaction. Hence, except delivery fulfillment, the e-service quality model including app design, customer service, security/privacy contribute to customer satisfaction of app-based and on-demand delivery service providers.

Explanation of possible reasons and comparison with previous findings

Regarding the result app design, we believe that app is a critical intermediary of the instant delivery service. A smartphone application as a kind of online channel offers direct consumption experience that the attractive design of the mobile app can affect the preferences of the customers and make them enjoying using the app (Chan & Lee, 2015). This explains that app design including the app aesthetics, booking convenience, service choice, price offerings and system functionality contribute to customer satisfaction on the e-service quality. This result is consistent with the previous research related to the positive relationship between design of an online channel and customer satisfaction (Blut et al., 2015; Blut, 2016; Delic, Duzevic et al., 2016; Deng et al., 2009; Holloway & Beatty, 2008). Therefore, app design is a significant predictor of customer satisfaction of the instant delivery service.

Regarding the result of customer service, we believe that couriers performance and feedback mechanism of customer service are emphasized by customers. They offers direct interactions with couriers and the experience of company's prompt response to customers (Chan & Lee, 2015; Punel & Stathopoulos, 2017). Whether a company provides reliable service support and communicative return policy would be an important dimension affecting the customer satisfaction. This explains that customer service including couriers' performance and feedback mechanism contributes to customer satisfaction on the e-service quality. This result is consistent with the previous research related to the positive relationship between customer service of an online channel and customer satisfaction (Arvidsson et al., 2017; Blut, 2016; Göbl & Querin, 2017; Punel & Stathopoulos, 2017). Therefore, customer service is a significant predictor of customer satisfaction of the instant delivery service.

Regarding the security/privacy, we believe that the quality of this dimensions is related to customer's confidence in consumption. If the quality of security/privacy is enhanced, it can foster customers to have higher confidence in consumption. This result is consistent with the previous research related to the positive relationship between security/privacy of an online channel and customer satisfaction (Abu Amar Fauzi, 2018; Blut et al., 2015; Blut, 2016). Among the previous findings, Abu Amar Fauzi (2018) emphasized that the more secure the app is, the more willingness of the customers using the app. Thus, security/privacy is a significant predictor of customer satisfaction of the instant delivery service.

Regarding the delivery fulfillment, Blut (2016) has mentioned that the accuracy of order fulfillment, order timing and the condition of delivered products are of paramount importance and it represents a major determinant of customer satisfaction. In this study, delivery timeliness and order reliability have been selected as the attributes measuring the delivery fulfillment. According to the study result, delivery fulfillment is a less important dimension contrary to previous findings and it is not significant enough to predict customer satisfaction in this study. The possible reason may be the admission of urban traffic congestions that hinder delivery from the customers. There are over 20% of the respondents in the question TD2 realized that the traffic congestions should not be put into the consideration of the company's delivery fulfillment (see appendix Table A1). It can be interpreted that Hong Kong people is more open-minded and tolerant towards traffic congestion so delivery fulfillment does not has significant

impact to the customer satisfaction in this study.

Theoretical implications

For theoretical implications, our project's findings offer researchers insights of four service quality determinants of app design, customer service, delivery fulfilment, security/privacy in the context of app-based and on-demand delivery service. The e-service quality model explains the relationship between app design, customer service, security/privacy, and customer satisfaction of app-based and on-demand delivery service providers. Based on this finding, our study identifies multi-dimensional measurements of these determinants which are supported by multiple constructs.

These constructs are either originated from various journals and newly-added by our team after considering the context of this industry with multiple journals. Remarkably, couriers performance and feedback mechanism were two newly-added constructs. They constitute to customer service which is the second most significant dimension in the multiple regression analysis of our study. Meanwhile, service choice and booking convenience are two newly-added constructs constituting to App design which is the most significant high-level dimension in predicting customer satisfaction. Hence, the results of exploring the multidimensional model supported by multiple constructs offer researchers' insight of the driving force of customer satisfaction to the literature of e-commerce and transportation management.

The on-demand logistics companies with superior delivery service and higher customer satisfaction are in high customers' concern in urban logistics. With our findings, this study will contribute to the growing area of research by exploring the rise of on-demand and app-based delivery in the context of e-commerce and transportation management.

Managerial implications

For managerial Implications, our project's findings provide insights of improving specific dimensions to enhance company's customer satisfaction. Through analysing questionnaire, our group discovers that app design, customer service, security/privacy are three relatively more important predictors driving customer satisfaction. This result implicates that customers have higher expectations on app design, customer service, security/privacy that require companies to put more efforts and budgets on improvement to enhance its customer satisfaction.

Our study also offers companies an insight to draft annual customer satisfaction survey based on the e-service quality of as a guideline. Our study provides the benchmark of a specific evaluation model of e-service quality for app-based and on-demand delivery service. Service providers can utilise the model to understand which indicators of service are specifically valued by customers. This insight is supported by the recent study that explore the relationship between customer value and customer satisfaction (Russo & Confente, 2017). The implication is that high scores on specific indicators in the Likert-scale could reflect that these indicators are more valued by customers. Hence, the model offers some potential directions for the company to improve and invest in.

Limitation

As instant delivery companies, the internal management approach, principle, culture and structure of GoGoVan and Lalamove are not explored in this study. It seems that it is difficult to find the research paper that has investigated the related aspects of GoGoVan and Lalamove. Since GoGoVan and Lalamove are not the listed company, they do not release annual report every year with general corporate information, corporate governance information and Chairperson's statement with lower transparency. Due to the limitation of accessibility of information, it's not feasible to review the inner documents or figures to comprehensively explore companies' internal management of service quality. GoGoVan and Lalamove refuse our group's email request for any interviews as undergraduate student finishing final year project with introduction to companies' internal management with confidential for business secret.

As a result, our group does further explore in GoGoVan and Lalamove 's internal management without interviewing the companies' representative. More importantly, as our group's topic is related to the customer satisfaction of service quality, this characteristic related to the customer perception has driven to the demand side of the company. Hence, rather than the customer perceptions on these service providers in different place with unique environment and features, GoGoVan and Lalamove 's internal management are not explored in our capstone project.

Future work

As our study reveals the significance of app design, customer service, and security/privacy in contributing to customer satisfaction of the app-based and on-demand delivery service, there are some directions of future research.

The high significance of customer service in our study's result is out of our expectation. It is possible to further explore couriers performance and feedback mechanism as the composition of customer service. One of the possible future research work is related to how GoGoVan and Lalamove utilize the mode of operation in couriers and its feedback mechanism in satisfying customer demand. Crowdsourcing is one of the mode of operations rising in recent years. Crowdsourced logistics (CL), as a business practice of sharing economy, becomes popular in Hong Kong last-mile logistics sector. Crowdsourced logistics (CL) is a concept in which everyday people undertake the role of a carrier for small fees (Frehe, Mehmann, & Teuteberg, 2017). Sharing economy is an economic model that facilitates consumptions through rental, sharing, and exchange without permanent shift of resources ownership, which are based on the services provided by the crowd with the use of information technology (Araz, 2017). Hence, the non-permanent ownership of resources is key of showing the benefits of this model. In the business context of sharing economy, the concept of CL is further extended. Crowd logistics emerge as a support of technical infrastructure and a competitive alternative of traditional delivery service (Frehe, Mehmann, & Teuteberg, 2015)

The use of the term crowdsourced delivery puts more emphasis on the supply of transport rather than on the demand side that consumers requesting instant delivery service (Arvidsson et al., 2017). However, our group's topic is related to the customer satisfaction of service quality, this characteristic related to the customer perception has only driven to the demand side of the company. Therefore, our group does not explore crowdsourced logistics in this capstone project. Instead, crowdsourcing will be the future research direction for researchers to explore. In order to investigate the crowdsourcing delivery for logistics, interviews regarding companies' internal operation and their managerial issues are necessary for understanding the supply side. It possible that GoGoVan and Lalamove are more willing to accept the interviews proposed by the postgraduate or master level researchers. Therefore, crowdsourcing delivery will be the direction of future work for researchers in higher academic levels.

Conclusion and Recommendations

In recent years, the app-based and on-demand instant delivery service become more advanced and in a quick development, whereas GoGoVan and Lalamove are two market leader. Under this circumstance, our group explores and tests the relationships between the driving forces and customer satisfaction, while develops multidimensional constructs for driving forces to measure customer satisfaction. According to all our findings, we have found that the three relatively important predictors including app design, customer service, and security/privacy drive customer satisfaction. For our own contribution, we offer a guideline for companies to follow and get easily to manager their service in Hong Kong. Furthermore, we have a new conceptual insight in this context to the literature of e-commerce and transportation management. Thus, by referring to the research question at the beginning, it can be said that

the e-service quality model explains the relationship between app design, customer service, security/privacy, and customer satisfaction toward service providers of app-based and on-demand delivery.

There are recommendations to the managerial team of on-demand logistics companies. Through statistical analysis, our group discovers that app design, customer service, security/privacy are three relatively more important predictors driving customer satisfaction. Instant delivery service providers should put more budgets and investments on their service related to app design, customer service and security/ privacy as all these aspects will significantly increase customer satisfaction towards delivery services.

Service providers should further improve and modify the features and design of current application in terms of different constructs. Service providers should add some buttons or functions in the apps for instant connecting to the customer services hotlines for enquiries. As are result, users will receive replies faster to solve their difficulties at once without limitation of the service consultation hours; it will enhance customer satisfaction with the faster response rate in terms of app design, system functionality. Meanwhile, for enhancing user-friendliness of the application in terms of booking convenience, service providers should add more features such as voice-guidance function especially to the disabled. Some blind users may not be able to use the apps easily. By creating the voice-guidance function in the apps, it enables blind users to handle the apps in a more convenient way and enjoy using with it. In terms of service choice, by adding functions of nearby drivers will let users easily locate the driver, notice how many drivers are nearby and provide more options for them to select drivers randomly as they like. Thus, these measures will enhance and smoothen the order process.

Service providers should further offer more services in customer service. Putting more budget on customer-based feedback mechanism or extra customer experience will be beneficial to the company and enhance customers' impression. Currently, GoGoVan and Lalamove only provide enquiries and assistance through mobile app and hotline. GoGoVan and Lalamove should offer more instant customer service to answer enquiries and offer assistance connect mobile app with popular social media — WhatsApp and Line, with more function like sending words, pictures and live chat, the use of more measures will involve more company's interaction with customers. Thus, the suggestion on measure related to feedback mechanism will support service providers to fulfil customer requirements as to raise the customers' perception on customer service and customer satisfaction of them.

GoGoVan and Lalamove could put more resources on maintaining and further improving the quality of security/privacy. Putting more investments to building up a strong security network and system will increase trust and satisfaction from customers as their personal information will be more secure and highly be protected. As we believed that security and privacy would enhance customers' confidence to choose the service, GoGoVan and Lalamove can choose famous information-technology security firms for further improving security and privacy of companies' app.

With our e-service evaluation model, service providers should conduct customer survey regularly to evaluate e-service quality with objective measurement. They could utilize customer survey to explore and discover area of improvement to enhance the customer satisfaction towards them. With the benchmark and guideline for customer satisfaction survey which are based on the study's model, service providers could further conduct Customer Value Anticipation (CVA), in an attempt to discover, understand and satisfy the latent need to customers through delivering greater value for proactive market orientation (Flint, Blocker & Boutin, 2011). In other words, the CVA could be treated as a supplementary measure of our model. By periodically conducting the survey based on the e-service quality model, on-demand delivery companies will understand the change in specific quality values perceived by customers, which is critical to review the effectiveness of companies' policy and further enhance their ability to deliver customer value. Thus, based on the e-service quality model, on-demand delivery companies can identify customers' unexpressed and changing needs and make improvement through conducting an annual customer satisfaction survey.

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Appendices

Table A1 Survey questions

Dimensions	Constructs	Items
App design (AD)	App aesthetics (AA)	AA1 The app is visually pleasing.
		AA2 The app displays a visually pleasing design.
		AA3 The app is visually appealing.
	Booking convenience (BC)	BC1 It is easy to navigate the booking related information in the app (e.g., instructions, price, …)
		BC2 The app has no difficulties with booking and paying a delivery service.
		BC3 This app makes your order match with drivers and couriers available for delivery within a suitable time frame.
	Service Choice (SC)	SC1 The app has the choices of delivery service available that the company claims to have.
		SC2 This app has a good selection of delivery services that fits my requirement of order (e.g. order volume and/or mode of delivery, ...)
		SC3 The app has a wide variety of customization within the choices of delivery services that interest me
	Price offerings (PO)	PO1 The app offers discount.
		PO2 The app offers low prices of delivery services.
		PO3 I am generally satisfied with the price of delivery services offered by the app
	System functionality (SF)	SF1 The app is able to operate smoothly in my smartphone.
		SF2 When I use the app, there is very little waiting time between my actions and the app's response.
		SF3 The app is able to track my order from placement to delivery.
Delivery fulfillment	Timeliness of delivery	TD1 The service order is processed by the time promised by the company wherever the pick-up and the delivery location

(DFUL)	(TD)	is.
		TD2 The delivery service is not hindered or interrupted by urban traffic congestion.
		TD3 Generally, the company quickly delivers what I order.
	Order reliability (OR)	OR1 The service order were performed according to my requirement.
		OR2 The items were delivered according to my required specification.
		OR3 The items arrived in a good condition.
Customer service (CS)	Couriers performance (CP)	CP1 The company offers professional drivers and couriers
		CP2 The company offers trustful delivery service provided by drivers and couriers
		CP3 Generally, the company is able to maintain the performance of couriers.
	Feedback mechanism (FM)	FM1 The customer service representatives and rating system are sufficient to reflect my opinion on drivers and couriers
		FM2 The company is able to utilise the rating mechanism in further arranging my delivery orders to the specific drivers
		FM3 Generally, The company solves my problem in a prompt and satisfactory way according to my ratings and comments.
Security/privacy (SEP)	Security (SEC)	SEC1 I feel safe in my transactions with the app.
		SEC2 The app has adequate security features.
		SEC3 This app protects information about my online payment accounts.
	Privacy (PRI)	PRI1 I trust the app to keep my personal information safe.
		PRI2 I trust the app administrators will not misuse my personal information.
		PRI3 It protects information about my app-ordering behavior.
Customer satisfaction (SAT)		SAT1 I am satisfied with the company.
		SAT2 The company is getting close to the ideal

	crowdsourced delivery service provider.
	SAT3 The company always meets my needs.