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THE ERA OF TRANSFORMATIVE MARKETING: SERVICE QUALITY OF MOBILE APP BASED TAXI SERVICES IN KUALA LUMPUR

Abstract: *This study is aimed to measure and compare the service quality of mobile app-based taxi service companies in Kuala Lumpur Malaysia. For mobility in Kuala Lumpur, there are multiple options, e.g., Meter taxi, Transportation Network Companies (TNC) like Grabe and public transportation services. The latest, most often used service in urban areas are mobile app-based taxi services. The newest cab service has multiple benefits over traditional taxi service, which mainly includes convenience and security. However, in literature, There are very few studies focused on service quality of these companies. Very few studies already conducted has used old service, quality models. the newest service quality models are least validated in the context of mobile app-based taxi service companies. Therefore , this study has selected EtailQ model to measure the service quality of the companies. An online questionnaire adapted from eTailQ provided was designed and shared with the user of the top two taxi service providers, Grabe, and My car. The study has investigated four quality parameters: website design, reliability, privacy/security, and customer service. The study contributes to academia to validate the ETailQ model. The practitioners of the industry will also find it useful to improve the essential parameters of service quality as per the expectations of their users.*

Keywords: *eTailQ, Service Quality, Kuala Lumper, Website Design, Service Quality, Reliability*

1. Introduction

The digitization has revolutionized the world. It has impacted all walks of life. The internet-based companies have disrupted many traditional businesses; the transportation industry today was entirely different from the transportation 20 years ago (Muhammad Farooq, Muhammad, Raju, Kalimuthu, & Qadir, 2019; Muhammad Farooq, Zareen, Younas, Khalil-Ur-Rehman, & Yasmin, 2018; Muhammad Farooq & Raju, 2019). All the development in the technology has empowered the end user, and end users are demanding the quality service(Farooq et al., 2019). The transport industry is no exception. Today, the passenger has several options. Therefore the ones who are providing the best service can

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only survive in the market.

As the digitalization and usage of mobile apps have increased, several mobile app-based taxi services started providing services. In Kuala Lumpur, mainly there are two mobile app base taxi service providers. These companies are least studied before, which creates a gap in the existing literature. The service quality earlier studies have one limitation which is that they have used traditional SERVQUAL model given by Parasurman in 1988. The traditional service quality model was given in the context of retail. There were very no smartphones. The dynamics of service quality has changed now; therefore, in this study, we aimed to validate the E-tail model given by Wilfred and Gilly in 2003. In particular, the research is aimed to answer the following Research Question's (RQ's).

RQ1: What is the role of Website and app design on service quality of My car and Grab in Kuala Lumpur

RQ2: What is the role of Reliability/fulfillment on service quality of My car and Grab in Kuala Lumpur

RQ3: What is the role of privacy security on service quality of My car and Grab in Kuala Lumpur

2. Brief Literature Review

The traditional taxi service has been replaced by mobile app-based taxi services. Customers of today are more aware and sensitive. The users of every product are concerned about the environment and pollution. The researchers today are more researching and finding out the transportation means which impact less on the environment. The governments, all over the world in urban areas encourage people to share the rides and reduce the consumption of petrol which ultimately also pollutes less the environment. In this regard, the ride-sharing the concept of mobile app-based taxi services has been adapted and appreciated all over the world. On one side the ride-sharing has economic and environmental aspects , while in other hand is also the issues like privacy concerns of the riders and time delays (Dills & Mulholland, 2018; Dong, Wang, Li, & Zhang, 2018; Fernández, González, & Rodríguez, 2018; FINK, 2017; GEVERO, ALVES, & DURANTE, 2015; He et al., 2018; Lokhandwala & Cai, 2018; Long, Tan, Szeto, & Li, 2018; Stiglic, Agatz, Savelsbergh, & Gradisar, 2015; Wang, Agatz, & Erera, 2018).

3. Website and app design and Service Quality

In the digital era, ease of use is the top most important factor in any service. Customer must be able to use the website or mobile app without any assistance (Lee & Lin, 2005; Tamer H. & Abeer A., 2015). Based on this argument for mobile app-based taxi services it is important to have a good web design or mobile app design. This argument creates, the first hypothesis of our study which is:

H1: *Website and app design has a significant relationship with the Service Quality of Grabe and My car*.

3.1. Reliability and Service Quality

As the internet is expanding all over the world, most of the customers, do the transaction online. E-commerce companies like Alibaba and Amazon are fulfilling daily million orders. These companies have shown over the years the ability to fulfill the customer's request. The fulfillment capacity is one of the key indicators in the success of any company.(Almutawa, Muenjohn, & Zhang, 2018; Kumar, Kee, & Charles, 2010; Psomas & Jaca, 2016). These results also apply to mobile app-based taxi services, as customers have to rely on the company to

bring its desired service. Therefore, based on these studies are results, in this research, our second hypothesis was:

H2: *The reliability/ ability to fulfill the customer request has a significant relationship with the Service Quality of Grabe and My car.*

3.2. Privacy Security

Companies all over the world collect customers data. Customer data help the company to work in a better way. However, with increased internet expansion, it has also created privacy and security-related concerns(Tamer H. & Abeer A., 2015). In the case of mobile app-based taxi services, the argument is important, as customers provide their location data besides their personal data. Therefore, the third hypothesis of our study is

H3: *The privacy security has a significant relationship with the Service Quality of Grabe and My car.*

3.3. Instrument selection

For all three variable as mentioned above, the question was selected from the study of (Wolfinbarger & Gilly, 2003) (Table 1).

Table 1. Question selected from the study of (Wolfinbarger & Gilly, 2003)

Variable	*Research items*
Website Design	1.Quick and easy to book the ride
	2.App has good sections
	3.App has a good level of personalization
	4.The app does not waste time while booking aride
Reliability	5.You Got what you ordered
	6.The car comes on time as promised
	7The same Car comes which is shown on the app
Privacy Security	*8.The safe transaction with the site*
	9.My privacy is protected
	10.Adequate safety procedures
Overall Service Quality	*11.Sincere interest in customers issues*
	12.The company is willing to respond to customers
	13.Adequate safety procedures

3.4. Data Collection and Analysis

All internet products are popular in digital natives. Digital natives are people who are born in the era of digits. Most of the university students and people who have smartphones are digital natives. In many studies it has been concluded that digital natives prefer to buy and use digital services; therefore in our study, the questionnaire was designed online. Through snowball sampling, we requested all digital natives to fill the survey. All the reliability and visibility parameter was tested first. It was observed that all the variable were meeting the threshold of validity and reliability. The snapshot from structural equation modeling validate the results. In total total of 172(85.6%) males and 29(14.4%) females participated in this survey. In total 23(11.4%) participants were below 20 years of age. 155(77.1%) had 20-25-year-age and 23(11.4%) were 26-30-year-old. In this survey 105(52.2%) were grab's customer and 96(47.8%) My car's customers.

Table 2. Independent Samples Test

Latent Construct	Levene's Test		t-test for equality means			Status
	F	Sig.	t	df	Sig.	
Web Design	3.755	.054	1.954	199	.052	No Diff.
Reliability	5.281	.023	1.965	183.160	.051	No Diff.
Privacy/Security	.263	.609	2.038	199	.043	Diff.
Service Quality	3.413	.066	2.128	199	.035	Diff.

Results show that the web design value of independent sample t-test p>0.05, illustrated no difference in Grab and My car's web design. Reliability value also p>0.05 testify no difference between them. Contrarily, Privacy/security and service quality value <0.05 which shows a significant difference in Grab and My car's privacy/security and service quality. Findings illustrated there is no difference in web/app design and reliability of both services. Diversely, there is a significant difference in privacy/security and service quality of Grab and My car.

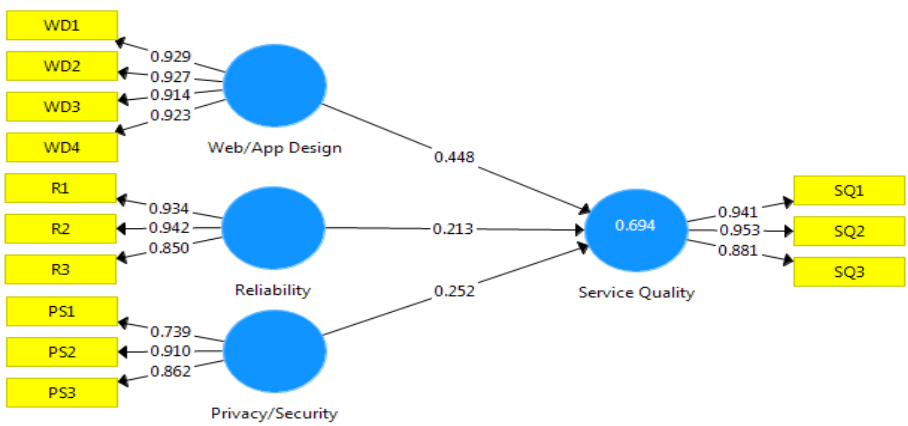

Figure 1. Measurement Model

Above measurement illustrated that the three exogenous variables (web design, reliability, privacy/security) influence on the endogenous variable (service quality). Each latent construct has different loading which is an influence on the beta value and r-square value. There are different criteria for outer loadings >0.50, >0.60, 0.70, but present study follows >0.70 criteria. Outer loading values <0.70 omitted because of no contribution to the framework.

The above statistics show confirmatory factor analysis of giving a framework. All indicator has >0.70 outer loading value which means all indicators contribute to the model. According to Nunnally (1978) internal consistency value >0.70 acceptable. Hence, the current framework has no reliability issue. Composite reliability value >0.70 and average variance extracted value >0.50 is acceptable (Hair, 2006). According to statistics, the current framework has no reliability and validity issue.

Table 3. Confirmatory Factor Analysis

Indicators	Factor Loading	Cronbach's Alpha	rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Privacy/Security 1	0.739				
Privacy/Security 2	0.910				
Privacy/Security 3	0.862	0.788	0.816	0.877	0.706
Reliability 1	0.934				
Reliability 2	0.942				
Reliability 3	0.850	0.895	0.900	0.935	0.828
Service Quality 1	0.941				
Service Quality 2	0.953				
Service Quality 3	0.881	0.916	0.916	0.947	0.856
Web Design 1	0.929				
Web Design 2	0.927				
Web Design 3	0.914				
Web Design 4	0.923	0.942	0.944	0.959	0.853

Table 4. Farnell and Larcker Criterion

	Privacy Security	Reliability	Service Quality	Web Design
Privacy/Security	**0.840**			
Reliability	0.731	**0.910**		
Service Quality	0.728	0.737	**0.925**	
Web Design	0.714	0.758	0.790	**0.923**

The above table demonstrates that all diagonal bold value should be greater from vertical and horizontal values (Fornell and Larcker, 1981). Farnell and Larcker criterion show that privacy/security, reliability, service quality, and web design has no discriminant validity issue.

Table 5. Heterotrait-Monotrait Ratio

	Privacy Security	Reliability	Service Quality	Web Design
Privacy/Security				
Reliability	0.878			
Service Quality	0.847	0.812		
Web Design	0.816	0.823	0.848	

The above analysis is the new method to measurement the discriminant validity. According to Gold et al. (2001), construct value > 0.90 shows no discriminant validity issue. Results testify that privacy security, reliability, service quality, and web design have no discriminant validity issue.

Table 6. Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Privacy/Security -> Service Quality	0.252	0.249	0.068	3.685	0.000
Reliability -> Service Quality	0.213	0.217	0.077	2.780	0.006
Web Design -> Service Quality	0.448	0.447	0.067	6.642	0.000

Statistics illustrate that privacy/security has a significant influence on service quality (βa =0.448, $p<0.05$). Reliability also has a significant and positive impact on service quality (β=0.213, $p<0.05$). Web design significantly influences on service quality (β=0.252, $p<0.05$). t-value >1.96 also demonstrate the significance value.

4. Discussion and Conclusion

The study has concluded that Wilfred & gilly framework of e-mail can be implemented in the context of mobile app-based taxi services. The parameters of Web design, Reliability, and Privacy security also applied to service quality in the context of Mobile app-based taxi services. Beside validating E-tail in context of mobile app-based taxi services, the study aimed to measure the service quality of My car and grebe. It has been observed the Grebe has a better service quality compared to My car. For four service quality criteria, it is concluded that there is no significance in the web design of two companies. Customers of Grabe and My car are equally educated customers. Moreover, the maps of both Grabe and My car are google map-based apps, therefore customers don't find any difference in web design. However, web design is an important factor in the service quality of these two companies. The results prove our hypothesis that web design has a significant relationship with the service quality of the taxi service providers.

Reliability is one of the prominent variables in both traditional and latest service quality models. Reliability measures the ability of a service provider to fill its promises. In our study results, reliability is one significant variable which impacts on service quality. However, independent sample-t-test results, it has been statistically proven insignificant that, there is a difference between these companies in terms of reliability . The reason behind this is the certainty of the customers that on booking they will get a car. As this study was conducted in the metropolitan area, both companies have many cars and drivers in the area to serve the customers. Therefore, customers find both companies reliable.

Privacy concern over the internet in 2018, was widely conducted research. (Dills & Mulholland, 2018; Dong et al., 2018; Fernández et al., 2018; FINK, 2017; GEVERO et al., 2015; He et al., 2018; Lokhandwala & Cai, 2018; Long et al., 2018; Stiglic et al., 2015; Wang et al., 2018). In terms of privacy-security, our study has concluded that there is a difference between Grabe and My car. The customers think that my car cares about more privacy then Grabe. The reason behind more care is that My car is only a taxi service providing company, while compared to my car, Grab is providing services in multiple domains like food and e-commerce. The customers can even do shopping using grab app which also shares the customers required data with the food delivery providers. Moreover, the study also proved that the privacy security has a

positive relationship with the service quality.

In conclusion, the study has proved that Website and app design has a significant relationship with the Service Quality of Grabe and My car. The reliability/ ability to fulfill the customer request has a significant relationship with the Service Quality of Grabe and My car. The privacy security has a significant relationship with the Service Quality of Grabe and My car. As we are moving to the digitization, the mobile app based companies are disrupting every industry, the traditional companies are also changing their business models or pattering with app based companies(Faisal, Khalil-Ur-Rehman ; Muhammad, Farooq ; Tansholpan, Bekmyrza ; Waqar, Younas ; Valliappan, 2018; Muhammad Farooq & Raju, 2019; Muhammad Farooq et al., 2018). However, in parallel, the importance of service quality is also increasing. Customers in every sector are demanding better service from the service providers(Buzdar et al., 2016; Muhammad; Farooq et al., 2019; Muhammad Farooq et al., 2019). Therefore, the study concludes that, mobile app based taxi service provides has a long way to go. These companies can further expand their services, partner with other services providers, the prerequisite of all these developments is better service quality.

4.1. Recommendations

This research has validated the e-tail three variables in the context of mobile app-based taxi service providers. The study recommends the service providers to focus more on web design. Web design is linked with the privacy security of the customers, and it ultimately impacts on the reliability of the service. The managers must consider that design is not about how things look, the design tells, how things work. The current study has covered the perception of digital natives living in Kuala Lumper. The future researchers can target all age group people and conduct things to study in a different culture.

4.2. Limitations

The study has only covered the response of digital natives. The survey was conducted only in one city. The future researcher can increase the research scope and can target all age segments. Moreover, in privacy-security, the gender can also play an important role, due to the limited sample we could not find differentiate between males and females responses. The future researcher can compare the responses of females and males in terms of Privacy and security.

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