

SERVQUAL Model Dimensions and Customer Satisfaction towards Ride-Sharing Services in Dhaka City

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Abstract

Ride-sharing services have become an integral part of the sharing economy, especially in the transport sector. Previous study findings suggest that there is a lack of literatures on SERVQUAL model dimensions and customer satisfaction of ride-sharing services in Dhaka city. Therefore, this study attempts to explore this issue. The researchers used convenience-sampling method; data were collected from the ride-sharing services users in Dhaka city through an online closed-ended self-administered structured questionnaire survey. 500 questionnaires were distributed to the respondents through online platforms whereas 300 questionnaires were received, and 238 valid responses were considered for data analysis. The survey data were analyzed based on construct validity, convergent validity, and structural modeling using SmartPLS3.0. The researchers found that reliability, assurance, and empathy are significant constructs where tangibility and responsiveness are found to be statistically insignificant. This study has presented one of the first attempts in Bangladesh context where the relationship among the services quality dimensions and customer satisfaction in ride-sharing services was explored from the customer perspectives. In a developing country like Bangladesh, at the execution level, the service providers should resolve the dissatisfactory factors of the users to make the ride-sharing services more acceptable and friendlier.

Keywords: Services Quality, SERVQUAL Dimensions, Customer Satisfaction, Ride-Sharing Services.

Introduction

The technological advancement has emerged as a new concept to access collaborative consumption especially in ride-sharing services which have become increasingly popular in the traveling sector and getting the attention of academicians and policymakers (Akbari, Amiri, Zúñiga, Padash, & Shakiba, 2020; Bakogiannis, Siti, Tsigdinos, Vassi, & Nikitas, 2019; Ko, Ki, & Lee, 2019; Shaheen & Cohen, 2019; Smith, Sochor, & Sarasini, 2018). In addition, transportation facilities play a significant role in the development of modern cities and autonomous development in this sector will change the way of traveling (Levinger, Hazon, & Azaria, 2020).

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In recent years, the acceptance of sharing economy is being popularized at both the individual level and organizational level which benefits are undertaken by the whole society (Schor, 2016; Wang, Wang, Wang, Wei, & Wang, 2020). The ride-sharing services are different from the traditional ride-hailing services in the sense that it saves costs and is convenient to the users because of the popularity of online-based applications (J. Liu, Kockelman, Boesch, & Ciari, 2017; Meelen & Frenken, 2015; Stiglic, Agatz, Savelsbergh, & Gradisar, 2015).

In sharing economy, research works have been conducted in two ways, either organizational-level studies or individual-level studies. The previous literatures addressed that the individual-level studies have focused on empirical studies, explored the motivating factors in participating in ride-sharing services (Hamari, Sjöklint, & Ukkonen, 2016; Möhlmann, 2015). In this study, the researchers have also focused on the individual level study in examining the underexplored research area i.e. services quality dimensions and customer satisfaction in ride-sharing services in Dhaka city of Bangladesh. The success of ride-sharing services depends on the quality of services between the services providers and the customers that connect on on-demand platforms (Z. W. Lee, Chan, Balaji, & Chong, 2018). In a contemporary sharing economy like Uber, Airbnb has boosted the economy overcoming the restrictions, connecting the users, and lowering the transaction costs (Reisch & Thøgersen, 2015; Stokes, Clarence, Anderson, & Rinne, 2014). In ride-sharing services, the organizations follow peer-to-peer ride-sharing services that allow users to rent a ride and act as brokers between the users and services providers and charge a certain amount of commissions per ride (Z. W. Lee et al., 2018). In addition, this study focuses on customer satisfaction, which is an aggregated feeling of a person after using the services. The positive feeling of a customer will be repeated using the services again and sharing with others that facilitate the more usage of ride-sharing services at individual levels (Akbari, Moradi, et al., 2020; Ko et al., 2019; Tussyadiah, 2016). In the intensely competitive market, the service providers engage diverse features that impact customer satisfaction (Sharma & Das, 2017). The customers tend to compare the desired services and the expected services; thus, customer satisfaction has enlarged an ever-growing research area. Previous studies have shown the relative importance of customer satisfaction in ride-sharing services especially in the developed market. Hardly any research has focused on developing country perspectives like Bangladesh where ride-sharing services have gained incredible popularity.

In recent years, the studies conducted on ride-sharing services in Bangladesh have featured different aspects of this service (Bappy, Haque, Bint Halim, & Hossain, 2020; Islam, Huda, & Nasrin, 2019; Jahan, 2019). However, these studies have barely focused on services quality dimensions and customer satisfaction in ride-sharing services. As a result, a limited number of literatures has been found on this ground. To fulfill this research gap, the researchers have attempted to explore the service quality dimensions and customers satisfaction in ride-sharing services considering the popular ride-sharing services in Dhaka city such as Uber, Patho, Obhai, and Shohoz ride. In designing and

conducting this study, the researchers have incorporated the SERVQUAL model developed by Parasuraman, Zeithaml, and Berry (1985). SERVQUAL model has been developed concerning contemporary service quality which is popularly known as e-services quality dimensions popularized by Zeithaml, Parasuraman, and Malhotra (2000). To respond to these research gaps, the researchers addressed the following questions in this study-

RQ1: What are the most important service quality dimensions in ride-sharing services to explain customer satisfaction?

RQ2: What is the overall impact of service quality dimensions in ride-sharing services to explain the customer satisfaction in Bangladesh perspective?

The first objective of this study is to explore the service quality dimensions of ride-sharing services to extract customer satisfaction. The five dimensions of service quality have been considered i.e. tangibility, responsiveness, reliability, assurance, and empathy. These constructs have given a comprehensive insight into ride-sharing services in terms of customer perspectives. Secondly, the researchers empirically studied in which context the consumers consider the services quality dimensions and the extent to which customer satisfaction influences the ride-sharing services. Previous studies focused on the new technology acceptance among the users, but few studies considered customer satisfaction and service quality dimension in ride-sharing services.

The remaining paper has been arranged as follows: relevant literature review, proposed relevant hypotheses, and the theoretical model developed have been provided. The later section explained the research methodology; then results are presented, and a discussion has been made. After that, a discussion on the theoretical and practical implications of the paper has been provided. Eventually, based on the results, the researchers have presented the conclusion of the study.

Literature Review

Ride-Sharing Economy

The concept of ride-sharing services such as cars, motorbikes, bicycles, or even rides has become popular in recent circumstances which have gained the attention of academicians and policymakers in the research area (Akbari, Amiri, et al., 2020; Amirikiae & Evangelopoulos, 2018; Ko et al., 2019). Ride-sharing services are a feature of sharing economy in the transportation sector where individual travelers can share a trip, depending on their destinations choose their transportation modes, and money can be automatically charged in an online system (Akbari, Moradi, et al., 2020). A study conducted by Laurell and Sandström (2017) mentioned that in general the sharing economy is considered as collaborative consumption.

Ride-sharing services are being popularized all over the world especially in South Asian countries like India, Pakistan, Bangladesh, and so on (S. Ali, Wang, & Riaz, 2020). As a result, the competition among the ride-sharing services makes the

companies more cautious about the quality of ride-sharing services (S. Ali et al., 2020). The previous studies focused on sharing the economic concept of ride-sharing services both in developed and developing countries aspects (Lam & Liu, 2017; C. Lee, 2017; J. Liu et al., 2017; Y. Liu & Yang, 2018). In Asian countries such as China, Iran, Pakistan, India, Malaysia, Indonesia, and others, the users are adopting ride-sharing services as the easy mode of transportation rather than conventional traveling systems (Akbari, Amiri, et al., 2020; Akbari, Moradi, et al., 2020; S. Ali et al., 2020; Sharma & Das, 2017; Guowei Zhu, Li, & Zhou, 2018; Ge Zhu, So, & Hudson, 2017).

Customer Satisfaction

In marketing activities, the consideration of customer satisfaction is defined as the crucial activity, besides, in the literature organizational perspectives, customer satisfaction represented as the salient factor (Al-Omari, Alomari, & Aljawarneh, 2020; Sezgen, Mason, & Mayer, 2019). Technological advancement has changed the business orientation from product-oriented to customer-oriented by integrating customers' feedback and satisfaction (S. Ali et al., 2020). The researchers Ali et al. (2020) also addressed that in ride-sharing platforms maintaining customer satisfaction is highly challenging by meeting all the required needs of customers. Besides, in business literature especially in the fields of marketing, finance the word customer satisfaction has been used immensely (Yi & Natarajan, 2018). In previous literature, the researchers identified customer satisfaction as the application to elevate the gap between the needs and expectations of customers' products and services (Linqvist Leonardsen et al., 2016; Sadeh, 2017; Xesfingi & Vozikis, 2016). The researchers Parasuraman et al. (1985) addressed customer satisfaction as the result of the application of services quality. According to Stock, Jong, and Zacharias (2017), customer satisfaction is the assessment between the needs and the expectations of products and services from the respective service providers.

A study conducted by Aseres and Sira (2020) mentioned that there was a significant positive relationship between service quality and customer satisfaction in the travel industry. Customer satisfaction has a positive impact on actual behaviour on the usage of technological services (Park & Kim, 2013; Weng, Hsieh, Adnan, & Yi, 2020). Another study finding also indicated that the traditional services quality and e-services quality both have a positive influence on customer satisfaction of ride-sharing services (Khairani & Hati, 2017). A study conducted by Dachyar and Rusydina (2015) in Indonesia where the findings indicated that service quality has a positive influence on customer satisfaction in taxi services. In the Pakistan context, Jhandir (2012) found that perceived service quality has a positive influence on customer satisfaction. The researchers addressed that the service quality dimensions and customer satisfaction have always been attractive fields in the area of research (Tam, 2004). Besides, the continuous development in service quality dimensions is one of the significant strategies to improve customer satisfaction (J.-H. Lee, Kim, Ko, & Sagas, 2011). The researchers have given a thought in understanding service quality and customer

satisfaction which ultimately reflect in customers' behavioural intention in services (Olorunniwo, Hsu, & Udo, 2006).

Conceptual Framework and Hypotheses Development

SERVQUAL Model

To measure the service quality dimensions and customer satisfaction, different models and indexes were developed by service organizations such as airlines, hotels, restaurants and food establishments, hospitals, catering outlets, travel, and tourism businesses and applied by the academics and practitioners (Aseres & Sira, 2020; Roemer & Vaske, 2014). According to Aseres and Sira (2020), in the last fifty-years, the service quality and customer satisfaction have achieved scholars' attention that has led to numerous publication. One of the widely used theoretical models in services marketing is the SERVQUAL model and it was developed by Parasuraman et al. (1985) as quality measurement and initially addressed ten elements of the quality of service. The researchers have defined service quality as the inconsistency between the customer expectations and perceptions of the service (Parasuraman, Zeithaml, & Berry, 1988). The researchers also mentioned that in consumer perspectives the service quality is a complex process (Ravichandran, Mani, Kumar, & Prabhakaran, 2010).

The previous literatures also suggested the importance of service quality in the travel industry that has gained immense popularity in the academic research area (Ahrholdt, Gudergan, & Ringle, 2017). A study conducted by Ladhari (2009) addressed that the SERVQUAL model dimension is not universally applicable, rather dependent on the variation in the different services sectors. The researchers also noted that multiple dimensions of service quality have been suggested in previous literatures (Brady & Cronin Jr, 2001). Another similar study conducted by Salameh and Hassan (2015) also mentioned the SERVQUAL model as one of the influential models in service quality. In later years, the researchers modified the model and addressed five constructs such as reliability, assurance, tangibility, empathy, and responsiveness (Ravichandran et al., 2010). These five constructs are also named as RATER Model. The researchers Awasthi, Chauhan, Omrani, and Panahi (2011) also studied the five dimensions of reliability, assurance, tangibility, empathy, and responsiveness of the SERVQUAL scale model. In ride-sharing services, the researchers have shown the concern to address the users' behavioural determinates to use the services which have a positive influence on service quality (Arteaga-Sánchez, Belda-Ruiz, Ros-Galvez, & Rosa-Garcia, 2020; Möhlmann, 2015). The previous study findings also suggested that the service providers should create consistency between the expected services and perceived services to increase customer satisfaction (Ahrholdt et al., 2017; Ban & Ramsaran, 2017).

The previous study finding also indicated that the SERVQUAL model has the flexibility to adapt the model according to the researchers' nature of the research (M. Ali & Raza, 2017). The researchers also considered the five dimensions of service

quality such as tangibility, reliability, responsiveness, assurance, and empathy without changing the five-dimensional structure (M. Ali & Raza, 2017). The previous literature also mentioned the five dimensions of the SERVQUAL model to address customer satisfaction (Awang, Afthanorhan, Mohamad, & Asri, 2015). M. Ali and Raza (2017) concluded that to determine service quality and customer satisfaction SERVQUAL model is one of the relevant ways to determine the relationships among the constructs; others models might have encountered rejections and criticisms.

The present study focused on tangibility, reliability, responsiveness, assurance, and empathy to explore the significant and influential factors on customer satisfaction in ride-sharing services. Compared with previous relevant literatures on ride-sharing services, the study is meant to understand the relationship between five dimensions of service quality and customer satisfaction. The researchers explored the in depth-consideration of the influential factors of ride-sharing services focusing on the context of users in Dhaka city. The services quality model developed by Parasuraman et al. (1985) whereas in the present circumstances the authors adopted the model in the context of ride-sharing services in Dhaka city users to explore the relationship among five services quality dimensions and customer satisfaction. The proposed theoretical model may contribute to the study of ride-sharing services and customer satisfaction from the customers’ usage perspectives of this newly accepted mode of transportation. Based on the hypotheses, the researchers proposed the theoretical model in the context of ride-sharing services in Dhaka city. The research model presented in Figure 1 consists of the following constructs-

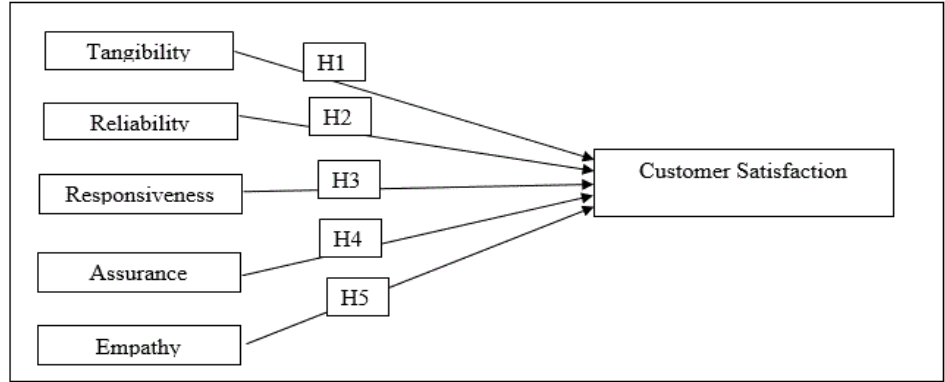


Figure 1: The research model

Tangibility

The researchers mentioned that tangibility is defined as physical facilities, decorations, person's appearance (Parasuraman et al., 1985). Similar study findings addressed that tangibility also indicated the safety and convenience of the customers that represent the

company's image and quality (Zeithaml, Bitner, & Gremler, 2018). The evidence from ride-sharing services where the researchers Arteaga-Sánchez et al. (2020) identified that tangibility has a significant influence on customer satisfaction. The recent study finding suggested that the tangibility of the service quality dimension has the most significant influence on customer satisfaction (Aseres & Sira, 2020). H. Ali (2019) found out that the tangible elements of services positively influence customer satisfaction. The previous finding also addressed the direct and significant positive influence of tangibility in customer satisfaction (Al-Mhasnah, Salleh, Afthanorhan, & Ghazali, 2018). In the South Asian context, especially the researches focused on Indian ride-sharing services, the researchers also addressed the service quality and customer satisfaction (Sharma & Das, 2017). The researchers identified that the tangibility of ride-sharing services has a significant and positive influence on customer satisfaction (Sharma & Das, 2017). A study was conducted in Nairobi whereas the researcher focused on service quality and customer satisfaction of taxi services (Hussein, 2016). According to Hussein (2016), tangibility has a positive influence on customer satisfaction. Here, the following hypothesis is proposed,

H₁: Tangibility has a positive and significant relationship with customers' satisfaction.

Reliability

The recent study finding addressed that the reliability dimension was the most significant factor in customer satisfaction (Aseres & Sira, 2020). The previous finding also indicated that the reliability construct in the service quality dimension has a direct and significant influence on customer satisfaction (Aseres & Sira, 2020). Another similar study conducted by the researchers Arteaga-Sánchez et al. (2020) mentioned that reliability has a significant influence on customer satisfaction in ride-sharing services. The previous literatures also addressed that the reliability dimension of service quality has a direct and significant positive influence on customer satisfaction (Al-Mhasnah et al., 2018). In another study conducted by Ban and Ramsaran (2017) addressed a similar finding that indicated the reliability construct has a positive and significant influence on customer satisfaction. According to Al Balushi and Ali (2016), reliability indicates the commitment, on-time services of the customer and is significant in customer satisfaction. A study was conducted focusing on minicab taxi services in Ghana where Horsu and Yeboah (2015) found that the reliability construct of service quality influences customer satisfaction. On the other hand, the researchers found that the reliability construct is insignificant on customers' satisfaction from an Indian perspective (Sharma & Das, 2017). The previous study finding addressed that the reliability dimension of the service quality model has a direct and positive influence on customer satisfaction (F. X. Zhu, Wymer, & Chen, 2002). Another study conducted by Wolfinbarger and Gilly (2003) mentioned reliability is one of the strongest predictors in customer satisfaction. Hence, the following hypothesis is proposed,

H₂: Reliability has a positive and significant relationship with customers' satisfaction.

Responsiveness

The study focused on ride-sharing services where the researchers Arteaga-Sánchez et al. (2020) found out the significant influence of responsiveness in customer satisfaction. The recent study evidence indicated that the responsiveness dimension of service quality has a direct and significant influence on customer satisfaction (H. Ali, 2019). According to Al-Mhasnah et al. (2018), the responsiveness construct of the service quality dimension has a significant and positive influence on customer satisfaction. A study conducted by a group of researchers in the Indian context identified that responsiveness has a significant impact on customer satisfaction in ride-sharing services (Sharma & Das, 2017). The previous findings also concluded that responsiveness positively and significantly influences customer satisfaction (Al-Shamayleh et al., 2015). Another study was conducted by Techarattanased (2015) in Bangkok, Thailand, and the finding suggested that the responsiveness of taxi services affects customer satisfaction. Stiakakis and Georgiadis (2009) also found that responsiveness is one of the significant dimensions of e-services quality that influences customer satisfaction. According to Zeithaml et al. (2000), customers always expect quick recovery and responses from the company. In addition, responsiveness has a positive influence on customer satisfaction whereas if customers feel they are not getting the attention, it may affect the quality perceptions negatively. The previous study finding also suggested that the responsiveness has a significant influence on customer satisfaction (F. X. Zhu et al., 2002). The proposed hypothesis as follows,

H₃: Responsibility has a positive and significant influence on customers' satisfaction.

Assurance

According to Arteaga-Sánchez et al. (2020) in ride-sharing services, assurance has a significant influence on customer satisfaction. The study conducted by H. Ali (2019) found out that assurance has a negative influence on customer satisfaction. Besides, the previous literature also suggested that the assurance construct of service quality dimension has a significant and positive influence on customer satisfaction (Al-Mhasnah et al., 2018). The study was conducted based on the Indian perspective and identified that assurance had an insignificant influence on customer satisfaction rather than other services quality dimensions (Sharma & Das, 2017). The researchers have found assurance as one of the important factors in ride-sharing services especially when they are riding with strangers (Chan & Shaheen, 2012; Furuhashi et al., 2013). The study findings of Rust and Kannan (2002) mentioned that privacy and security concerns are serious issues in customer satisfaction. Hence, the hypothesis followed as -

H₄: Assurance has a positive and significant influence on customers' satisfaction.

Empathy

The recent study finding revealed that empathy has a positive and significant influence on customer satisfaction in ride-sharing services (Arteaga-Sánchez et al., 2020). The

previous study finding also indicated that the empathy construct of service quality has a significant influence on customer satisfaction (H. Ali, 2019). According to Al-Mhasnah et al. (2018), the evidence from previous literatures suggested that the empathy construct of service quality dimension has a significant and positive influence on customer satisfaction. A study was conducted on service quality and customer satisfaction in the online cab industry in the Indian context where the researchers concluded that empathy has a significant impact on customer satisfaction (Sharma & Das, 2017). The hypothesis followed as-

H₅: Empathy has a positive and significant influence on customers' satisfaction.

Methods

Sampling and research design

To examine the SERVQUAL model dimensions of ride-sharing services in Dhaka city, this study was designed through a field survey. The study population included the Dhaka city people who have the accessibility of the ride-sharing services and the users of ride-sharing services such as Uber, Pathao, Shohoz ride, Obhai, Taxiwala, Goti, Chalo, Amarbike, Asojai, Jatri, Pearlcab, Pickme, etc. Specifically, the study sample consists of Bangladeshi users who are staying in Dhaka city, the mega-city of Bangladesh. The reason behind choosing Dhaka city as a population of this study was that the very first ride-sharing services were introduced in the capital; people are more familiar and experienced with the services, and most importantly, the majority of the market share of ride-sharing services belongs to the Dhaka city dwellers. The researchers considered the non-probability convenience sampling technique to get the required sample size of the study (Aseres & Sira, 2020). Due to the unavailability of the exact numbers of ride-sharing services users in Dhaka city, the researchers could not apply the probability sampling technique (Arabatzis & Grigoroudis, 2010). Besides, the data were collected using a closed-ended structured questionnaire (Emerson, 2015) through an online survey such as an e-mail survey, social networking sites like Facebook. The researchers collected the surveyed data during the COVID 19 outbreak lockdown period in Bangladesh March-April in 2021. The reasons behind the considered online-based survey were the automation, the speed of collecting responses, and the cost advantages (Mort & Drennan, 2005). The researchers also assured the confidentiality and anonymity of the respondents. At the beginning of the survey, the researchers gave an introduction and clarified the reasons behind conducting this survey. About 500 questionnaires were distributed to the respondents and 300 questionnaires were returned. The researchers found 238 questionnaires were complete and usable to conduct the statistical analysis, and the response rate was 79.33% which satisfied the rule of thumb of the SmartPLS proceedings (Urbach & Ahlemann, 2010). The level of the confidence interval is considered 95% of this research framework. For secondary resources, data were collected from previous literatures such as articles, books, online sources, and others. Despite this, the researchers used a deductive

approach instead of inductive approach because the current study was based on existing theory in the context of Bangladesh (Rehman, Bhatti, & Chaudhry, 2019).

Measures

The questionnaire consists of the service quality dimensions to explore customer satisfaction using the SERVQUAL model. The parameters of the SERVQUAL model are determined as reliability, assurance, tangibility, empathy, and responsiveness which is also known as RATER (Ziyad, Rehman, Batool, & Khan, 2020). The constructs and other additional variables were also focused on in the research framework. The scales covered multiple items to measure each of the constructs. The respondents were asked to indicate to which extent they agree or disagree with the items on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5), where three identifies the neutral response. The items were adopted from the previous literatures along with some modifications in the context of the research framework. The measurement items were adopted from Parasuraman et al. (1985) and modified according to the present study context. The researchers used a four-item scale measure for tangibility, responsiveness, assurance, empathy; and three-item scale measures were used for reliability assessment (Parasuraman et al., 1985). Besides, a four item-scale was used to measure customer satisfaction (D. Y. Lee & Lehto, 2013; Park & Kim, 2014). The structured questionnaire was divided into two parts. The first part of the questionnaire was about the socio-demographic profile of the respondents and the second part consisted of all items of the constructs. The structured questionnaire comprised twenty-three items of the constructs and six questions were based on the demographic variables of the respondents.

Statistical Tools

To conduct the data analysis, the researcher applied the SmartPLS software 3.0 to adopt the Partial Least Square- Structural Equation Modeling (PLS-SEM). The researchers conducted the construct reliability and validity, the discriminant validity, path coefficients, and the structural model of the constructs via SmartPLS. In the field of business research especially in the marketing arena, the researchers have applied SmartPLS in exploratory research (Hair, Sarstedt, Ringle, & Mena, 2011). Another reason considered applying SmartPLS for data analysis purposes was that the normality of the data is not considered in SmartPLS (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014). Apart from SmartPLS, the researchers also used SPSS 25 version to analyze the demographic characteristics of the respondents.

Common Method Bias

To check the common method bias, the researchers conducted the full-collinearity test. The study conducted by Kock (2015) mentioned that if all VIFs results are equal to or lower than 3.3, the model can be considered free of common method bias. The study results showed that all the VIFs results are lower than 3.3 (see appendix table 1) and it is assumed that the study findings are not affected by the common method bias.

Results And Analysis

Demographic characteristics

The demographic information of the respondents is presented in the table-1. The users of ride-sharing services in this study indicated that the majority are male users nearly 70.6% ; 29.4% females are users. More than 39.5% of the users belonged to 18-23 age group, the second significant users' usage rate is 36.1%, and the age group is 24-29 years. The users were well-educated whereas 42.4% is undergrad students and 39.5% of the users had post graduate degrees. Besides, on the issue of income level of the respondents, about 37.4% of the respondents had a monthly income level below Tk. 10,000 (118 USD) and 29.4% of the respondents had a monthly income above Tk. 40,000 (472 USD). In the last six months, 60.10% of the respondents used the ride-sharing services more than five times and the second-highest users are 24.8% used 2-3 times.

Table 1: Demographic characteristics of the respondents

Demographic Profile	Respondents (n=238)	Valid Percentage (%)
Gender		
Male	168	70.6%
Female	70	29.4%
Age group		
18-23	94	39.5%
24-29	86	36.1%
30-35	24	10.1%
36-40	13	5.5%
Above 40	21	8.8%
Education		
HSC	6	2.5%
Undergrad	101	42.4%
Graduate	94	39.5%
Masters	37	15.5%
Income level		
Below 10,000 tk	89	37.4%
10,000-20000 tk	30	12.6%
20,000-30,000 tk	15	6.3%

Demographic Profile	Respondents (n=238)	Valid Percentage (%)
30,000-40,000 tk	34	14.3%
Above 40,000 tk	70	29.4%
Last 6 months used ride-sharing services		
2-3 times	59	24.8%
3-5 times	36	15.1%
More than 5 times	143	60.1%

Source: Researchers' computation

The Measurement Model

The researchers used a partial least square test via SmartPLS software version 3.0 in hypotheses testing (F. Hair Jr et al., 2014). From table 2, the measurement model is illustrated in detail, whereas Cronbach's Alpha (α) measures the internal consistency of the data. The value of outer loadings should be 0.7 or greater than that but in exploratory research, the acceptable values could be 0.5 to 0.6. (Chin, 1998). The present study also indicated that the outer loadings are also greater than 0.6 respectively and the findings are also supported by the previous study conducted by F. Hair Jr et al. (2014). For data analysis purposes, Cronbach's Alpha (α) and composite reliability were analyzed to ensure the reliability of the data. Besides, the data validity was ensured by conducting average variance extracted (AVE). The study conducted by F. Hair Jr et al. (2014) recommended the values of CR and AVE are 0.7 and 0.5 respectively and our study findings also supported the previous research findings to conduct further analysis. The composite reliability values ranged from 0.819 to 0.858 which exceeds the recommended value and indicated the good fit of the data reliability (Wang et al., 2020). The Cronbach's alpha values of the constructs ranged from 0.687 to 0.753 which also supports the previous study findings. The values of AVE ranging from 0.603 to 0.669 which met the acceptable range of analysis. The suggested values of VIFs should be lower than 05 and the presented results showed that the values were quite lower than recommended value (F. Hair Jr et al., 2014).

Table 2: Results of the measurement model

Constructs	Items	Loadings	VIFs	Cronbach's Alpha (β)	Composite Reliability	AVE
Tangibility	TAN2	0.744	1.342	0.687	0.822	0.607
	TAN3	0.843	1.291			
	TAN4	0.747	1.395			

Reliability	REL1	0.726	1.246	0.694	0.830	0.621
	REL2	0.849	1.494			
	REL3	0.784	1.427			
Responsiveness	RES2	0.688	1.414	0.689	0.819	0.603
	RES3	0.827	1.234			
	RES4	0.809	1.495			
Assurance	ASU1	0.857	1.623	0.753	0.858	0.669
	ASU2	0.783	1.472			
	ASU4	0.812	1.478			
Empathy	EMP1	0.765	1.290	0.682	0.824	0.610
	EMP3	0.720	1.308			
	EMP4	0.852	1.437			

To test the validity of this study's constructs, the Fornell-Larcker discriminant validity test was applied (Fornell & Larcker, 1981). The researchers mentioned that discriminant validity was evaluated by comparing the square roots of the AVE values and the correlations between constructs (Chiu & Wang, 2008). In table 3, the results of the discriminant validity showed that the correlations among the constructs supported the convergent validity and discriminant validity of this study.

Table 3: Results of discriminant validity model (Fornell- Larcker validity)

Constructs	1	2	3	4	5	6
Assurance	0.818					
Customer Satisfaction	0.533	0.821				
Empathy	0.581	0.502	0.781			
Reliability	0.579	0.472	0.587	0.788		
Responsiveness	0.481	0.353	0.418	0.467	0.777	
Tangibility	0.229	0.171	0.209	0.288	0.327	0.779

The Structural Model

The path analysis was also conducted to test the proposed hypotheses of this study. Besides, path coefficients also show the cause and effect relationships (Santhanamery & Ramayah, 2015). The path coefficients (β) and the coefficients of the determination (R^2) are also considered as the basic criteria for structural model analysis (Akbari, Moradi, et al., 2020). The results of path coefficients are shown in figure 2 and table 5. In this study findings, R^2 is 0.356 which indicated that 35.6% of ride-sharing services customer satisfaction was carried out by five defined service quality dimensions i.e.

tangibility, reliability responsiveness, assurance, and empathy. The R^2 value indicates that a moderate relationship exists and the findings justified the previous literature (Akbari, Moradi, et al., 2020; W.Chin, 1998). The 1000 bootstrapping re-sampling procedure was also applied to test the path coefficients (Chin, 2010). For direct relationship hypotheses, three out of five hypotheses are supported. The tangibility of the ride-sharing services has an insignificant negative influence on customer satisfaction ($\beta = -0.002$, $t = 0.026$, $p > 0.05$). Moreover, the reliability of the ride-sharing services has a significant and positive influence on customer satisfaction ($\beta = 0.148$, $t = 1.755$, $p < 0.05$). Furthermore, the drivers' responsiveness do not have a significant influence on customer satisfaction ($\beta = 0.05$, $t = 0.748$, $p > 0.05$). Meanwhile, the assurance has a positive and significant influence on customer satisfaction ($\beta = 0.293$, $t = 3.934$, $p < 0.05$). Besides, the empathy of the ride-sharing services also has a positive and significant influence on customer satisfaction ($\beta = 0.225$, $t = 2.831$, $p < 0.05$) (see details in figure 2 and table 4).

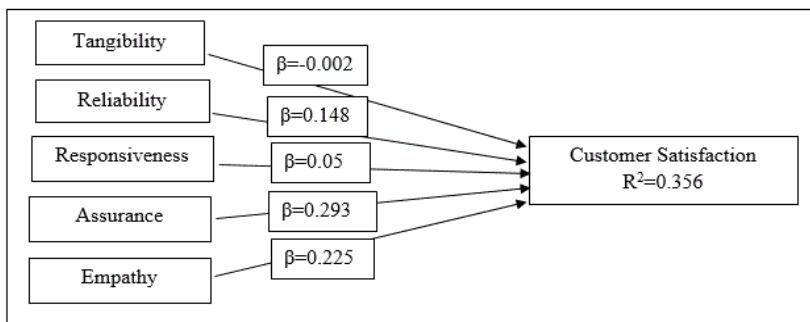


Figure 2: Results of path coefficients

Table 4: Results of hypotheses testing

Direct relationships	Path Coefficients (β)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ($ O/STDEV $)	P Values	Decision
H1: Tangibility -> Customer Satisfaction	-0.002	0.018	0.07	0.026	0.490	Rejected
H2: Reliability -> Customer Satisfaction	0.148	0.137	0.084	1.755	0.040	Supported
H3: Responsiveness -> Customer Satisfaction	0.05	0.053	0.066	0.748	0.227	Rejected
H4: Assurance -> Customer Satisfaction	0.293	0.299	0.075	3.934	0.000	Supported
H5: Empathy -> Customer Satisfaction	0.225	0.222	0.079	2.831	0.002	Supported

Notes: p-value < 0.05

The objective of this current study is to determine the influence of tangibility, reliability, responsiveness, assurance, and empathy on customer satisfaction towards ride-sharing services. The results indicated that tangibility has a negative influence on customer satisfaction. The result is also insignificant and rejected the proposed hypothesis H₁. The reliability of ride-sharing services has a significant and positive influence on customer satisfaction and supported hypothesis H₂ (Horsu & Yeboah, 2015; Sharma & Das, 2017). On the other hand, responsiveness showed a positive influence on customer satisfaction and rejected the proposed hypothesis H₃. The assurance has a significant and positive influence on customer satisfaction with ride-sharing services and supported hypothesis H₄ (Chan & Shaheen, 2012; Sharma & Das, 2017). Despite this, empathy has a significant and positive influence on customer satisfaction with ride-sharing services and supported hypothesis H₅ (Sharma & Das, 2017). The tangibility and responsiveness have been found insignificant towards customer satisfaction in the context of ride-sharing services in Dhaka city.

DISCUSSION

In this study, the researchers tried to explore the influence of service quality dimensions measured by SERVQUAL model on customer satisfaction in using ride-sharing services in Dhaka city. The research questions were examined using data collected from 238 ride-sharing services users in Dhaka. The researchers evaluated the five dimensions of ride-sharing services in the Bangladesh context which was scarcely explored in developing countries contexts (Akbari, Moradi, et al., 2020; Balachandran & Hamzah, 2017; Sharma & Das, 2017). The study considered the impact of tangibility, reliability, responsiveness, assurance, and empathy on the satisfaction of ride-sharing services users. The study also focused on practical investigation for the theoretical model of SERVQUAL model that indicates the better understanding of customer acceptance of ride-sharing services and satisfaction level of using the services. The researchers found several study findings; firstly, reliability (H₂), assurance (H₄), and empathy (H₅) have the strongest effect on customer satisfaction to use ride-sharing services. The finding confirmed the previous studies that also investigated the customer satisfaction could significantly affect the use of ride-sharing services (Akbari, Moradi, et al., 2020; Balachandran & Hamzah, 2017; Hussein, 2016; Sharma & Das, 2017). In the Bangladesh context, the finding is remarkable because, in the Indian context, it is found that tangibility, empathy, and responsiveness have a significant impact on customer satisfaction in ride-sharing services (Sharma & Das, 2017) where, in Bangladesh context, only empathy is found to be significant. The new finding can contribute to the theoretical paradigm to explore the dimensions of service quality dimensions and customer satisfaction. Besides, tangibility (H₁), and responsiveness (H₃) have depicted an insignificant impact on customer satisfaction in ride-sharing services. In the context of other countries, the researchers found tangibility and responsiveness were significant

factors in determining customer satisfaction in ride-sharing services (Balachandran & Hamzah, 2017; Hussein, 2016; Sharma & Das, 2017). The researchers also addressed that the different set of customer base might be the reason to explore the new finding which also a contribution to the literature.

Implications of the Findings

The present study contributes to the literature paradigm in exploring SERVQUAL model dimensions of customer satisfaction in ride-sharing services in Dhaka city, Bangladesh context. The existing theoretical model explored the influence of service quality dimensions on customer satisfaction in ride-sharing services in Dhaka. The users of ride-sharing services are diverse in socio-demographic factors. The findings of this study have practical implications for the start-up CEOs, and the policymakers who are involved in ride-sharing services in Dhaka city. Moreover, service quality dimensions and customer satisfaction of ride-sharing services have managerial implications that would help to develop the strategies (Ban & Ramsaran, 2017). The ride-sharing services providers can take initiatives to improve the quality of the service by increasing the reliability, assurance, and empathy of the services so that customers are assured to use the services. The companies should also improve the service quality by arranging training sessions for the drivers in handling customers, monitoring of their progress, and checking the customers' rating on ridesharing apps. Besides, the drivers should extend their services when customers give calls on sharing apps. They should show a positive attitude towards customers to make the trip pleasant i.e. in other words, it is very important to assure a comfortable feeling while riding. Satisfied customers would tend to spread note of positivity to their social groups to use ride-sharing services more often. The reverse reaction could happen if the customers are not satisfied with ride-sharing services because they found it unpleasant while traveling. In this case, they will post negative comments on social networking sites and give lower ratings of the drivers in ride-sharing apps. The ride-sharing services operators should provide the customers the access to lodge complain about the inappropriate behaviour of the drivers. The authority should disclose the hidden charges. If any conflict arises between the driver and customer, the company should take prompt action to resolve the conflicts between two parties. Otherwise, the users of ride-sharing services would be unwilling to take the service and as consequence, the service providers would not receive the expected financial benefits.

Conclusion

The sharing economy presents an emerging phenomenon that has received significant attention from both the academicians and policymakers. The objective of this study was to explore the impact of service quality dimensions on customers' satisfaction in the context of ride-sharing services in Dhaka city, Bangladesh. In this research, the researchers applied a quantitative analysis method where data were collected through a web-based survey using a structured questionnaire and the impact of all constructs in

the proposed theoretical model is studied. The study findings contributed to the previous literature by exploring the SERVQUAL model in extending customer satisfaction to identify the users' acceptance level in ride-sharing services. The reliability, assurance, and empathy are found significant in using ride-sharing services in Dhaka city whereas, the tangibility and responsiveness indicated an insignificant influence on customer satisfaction in using ride-sharing services. The researchers applied the existing theory, the SERVQUAL model, to address customer satisfaction in a developing country i.e. Bangladesh perspectives. In this regard, the researchers have found new dimensions to fulfill the research questions and they partially succeeded in analyzing the theoretical spectrum. In using ride-sharing services, the Bangladeshi consumers are not yet accustomed to the developed countries and people need time to adopt the introduced services. Besides, female customers especially face security concerns while traveling in ride-sharing services in Bangladesh when compared to other countries. Therefore, to ensure customer satisfaction, the ride-sharing service providers should focus on increasing the reliability, assurance, and empathy factors of their services.

Limitations and Scope of Further Studies

This study concluded the significant findings in the context of ride-sharing services in Dhaka city. However, there are some limitations of this study that should be minimized in future studies. Firstly, the majority of the respondents were from the university level. The researchers can add the diverse socio-demographic profile of the respondents to overcome this limitation. Secondly, the sampling technique of the study followed by non-probability convenience sampling which also indicated lack of the generalization of the samples. Thirdly, the valid responses used were 238 for data analysis purposes, which also indicated the lack of representation of the ride-sharing services users in Dhaka city. In the future, the researchers can add others construct to get more valid responses and representative sample sizes to get broader and generalized research findings. Finally, the researchers focused on customer satisfaction of ride-sharing services rather than the continuous use of ride-sharing services. To enhance this study's findings, a future study can be conducted focusing on the continued usage intention of ride-sharing services.

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Authors Contribution

Lecturer Sabakun Naher Shetu contributed to conceptualization, data curation, formal analysis, and original draft part.

Assistant Professor Md. Kaysher Hamid contributed to methodology, supervision, visualization, and the review and editing part of the study.

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Appendix

Table1: Common Method Bias

Collinearity Statistics-VIF	
	VIF
Assurance_1	1.623
Assurance_2	1.472
Assurance_4	1.478
CS_1	1.411
CS_3	1.601
CS_4	1.674
Empathy_1	1.29
Empathy_3	1.308
Empathy_4	1.437
Reliability_1	1.246
Reliability_2	1.494
Reliability_3	1.427
Responsiveness_2	1.414
Responsiveness_3	1.234
Responsiveness_4	1.495
Tangibles_2	1.342
Tangibles_3	1.291
Tangibles_4	1.395