

Female Passengers' Opinion about App-based Motorcycle Ridesharing Services in Dhaka City

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Abstract

App-based ridesharing service is a very recent development in the major cities of Bangladesh. This paper depicts existing situation of app-based motorcycle ridesharing services in Dhaka city and the female users' opinion about the services. An empirical study was conducted in Dhaka city, Bangladesh. A total of 100 female users were identified by convenience sampling method and an online questionnaire survey was conducted. This study reveals that mostly the young women consider the app-based motorcycle ridesharing services in Dhaka is very useful for their travel and they usually prefer this service instead of the conventional public transport which often remains overcrowded with poor conditions. Motorcycle ridesharing service is a preferable choice among the users' mainly because of its quick and easy movements in congested roads of the city as well as lower fare rate compared to the ridesharing in car or car-pooling services. Results of this paper could be helpful for the ridesharing service providers in their strategic business planning.

Keywords: App-based services, motorcycle, transport, ridesharing.

Introduction

Dhaka is one of the most highly dense megacities of the world where more than 10 million people live in an area of around 1500 sq. km (Bangladesh National Portal, 2016; Rahman et al, 2012). Statistics show that Dhaka is one of the least motorized cities in the region with approximately 30 motorized vehicles per 1,000 residents (The Louis Berger Group Inc. & Bangladesh Consultants Ltd., 2005; Rahman, 2007). Traffic and transportation of the city is characterized by heavy congestion and delay, wide gap between transport demand and supply, poor traffic management, and poor public transport services (Rahman, 2009). Inadequate transport system is one of the important causes for lack of suitable transport environment, particularly for women (Rahman and Nahrin, 2012). Often women are harassed physically and mentally whilst traveling on a crowded bus or other public transport mode in Dhaka; this incident mostly happens

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either inside the bus or while boarding/alighting (Rahman, 2010a). Therefore, Shefali (2000) claimed that the transport services currently provided in Dhaka city are unreliable, congested, insecure and unsafe for women. This claim is justified as the studies reveal that 84 percent of all female commuters are subject to verbal and physical harassment (Action Aid Bangladesh, 2016), around 94 percent of female commuting in public transport in Bangladesh had experienced sexual harassment in verbal, physical and other forms (BRAC, 2018). Action Aid Bangladesh (2016) further stated that 62 percent of the women have limited their mobility and they have strict timing when travel alone. Therefore, to avoid the harassments, women are now switching to alternatives of public transport such as app-based ridesharing services.

In Bangladesh, women have notable contribution in the social, educational, economic, political and cultural sectors (BRAC, 2018). For example, the total number of students enrolled in professional education is 70,998 where 36.5 percent (around 25,856) are women (Bangladesh National Portal, 2016); the readymade garment sector employed 2.4 million where significant proportion is women (Ali et.al, 2008). The activities outside the residence of women are significant from the cultural, economic and social perspectives. Therefore, they need to travel and commute for socio-economic reasons. However, public transport of the city (mainly served by bus services) are often remain grossly overcrowded, particularly in morning and evening peak hours, that women hardly have any access to buses (Rahman, 2011). Long waiting time and very long queue to board in a bus and no empty seat is available on bus due to overcrowding are common in Dhaka (Rahman and Nahrin, 2012). This situation is very tough and uncomfortable for women to compete with men for boarding into a bus and then manage a seat (Rahman, 2010a). While travelling in a gross overcrowded bus, women passengers are often sexually harassed by male passengers (touching sensitive parts of body and unpleasant situation) that generates mental anxiety and directs them to avoid public transport (Rahman, 2010b; Rahman, 2013). Due to sexual harassment during travel, women may experience intense fear, disturbed sleep, and nightmares (Battered Women's Support Services, 2014). For example, Horii & Burgess (2012) found increased mental health problems such as post-traumatic stress disorder (PTSD), changes in self-esteem, heightened perceptions of vulnerability and the feeling of living in a dangerous world are common effects due to sexual harassments in public transport.

App-based rideshare operations have emerged and been operating mostly in Dhaka city, although they are expanding (Financial Express, 2018). Among the wide range of products in sharing-economy, rideshare services have taken off in the past two years and it is transforming Dhaka's transport sector. Now-a-days, women also prefer using app-based ridesharing services. App-based rideshare services, such as Uber and Pathao, are not overcrowded and therefore pleasant for women passengers. Among a variety of modes (e.g. motorcycle, car and CNG) available for app-based ridesharing service, motorcycle is preferred mostly because of easy moving in congested roads, time-saving and less travel cost (Financial Express, 2018).

In this context, the main purpose of this paper is to assess the existing services of app-based motorcycle ridesharing scheme in Dhaka city having particular focus to explore the female users' opinions about these services. The results of this paper could be helpful for the ride-sharing service providers to improve their services and thus achieving better customer satisfaction.

Registered Motorcycles and Ridesharing Services in Bangladesh

Figure 1 shows the motor vehicle registration data of Bangladesh Road Transport Authority (BRTA) up to April 2019 for the country and Dhaka city. Compared with other modes, the number of motorcycles in Bangladesh is very high; for instance, 8-fold of the number of cars, 13-fold of the number of buses, and 8-fold of the number of autorickshaws and human haulers. There are 25,87,651 motorcycles in Bangladesh of which around 20% (about 6,49,003) are in Dhaka city.

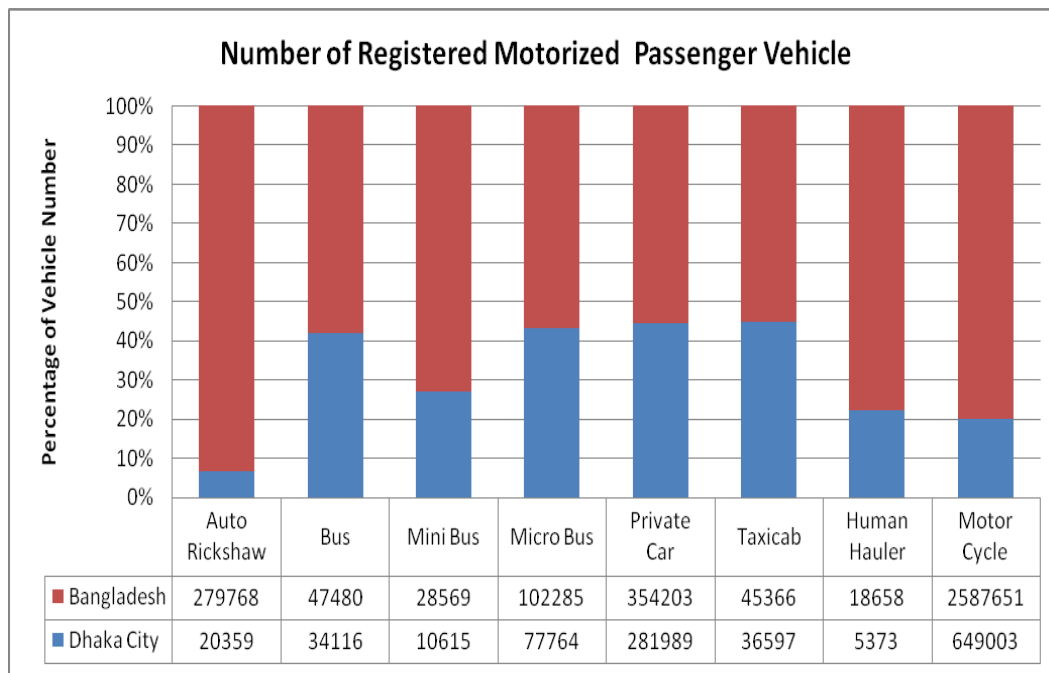


Figure 1: Number of Registered Motorized Passenger Vehicle

Source: www.brta.gov.bd (May, 2019)

Figure 2 shows the composition of registered motorized vehicles in Dhaka city; 58% are motorcycles and 25% are private cars. This information is similar to the data of 2005 (Rahman, 2007), where almost 60% are motorcycles. However, several newspaper reports mentioned that after introducing the app-based ride sharing services, the number of motorcycles and cars in Dhaka have increased. This is probably because, the app-based ride sharing company has no restriction about operating with registration from outside of the Dhaka. Furthermore, the sale of motorcycle has increased; as IDLC Monthly

Business Review (2019) mentioned 0.14 million motorcycles were sold in 2015 but after introducing app-based ride sharing service 0.36 million motorcycles were sold.

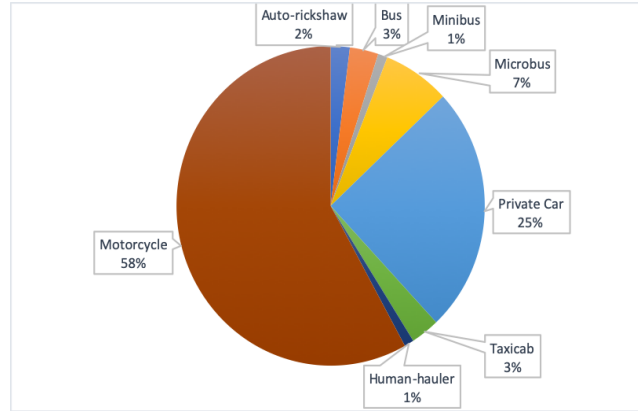


Figure 2: Percentage of Registered Motorized Vehicles(excluding freight) in Dhaka City

Source: www.brta.gov.bd (May, 2019).

The app-based ridesharing services is available in Bangladesh from 2014. There are eight different ridesharing services now operating in country's market, mainly in metropolitan cities (Financial Express, 2018). One of the most successful app-based ridesharing services in Bangladesh is Pathao whilst UBER has the most rapid growth in Dhaka. UBER is one of the fastest-growing companies in the world, based in San Francisco and functioning in over 600 cities (UBER, 2019). Pathao, carved out its niche by focusing on motorcycle services, launching itself with a catchy musical tag line to Dhaka commuters 'Beat the traffic', has been instrumental in spearheading the market along with Uber (The Financial Express, 2018). Table 1 shows the summary of key features of the different app-based motorcycle ridesharing service providers in Dhaka city.

Table 1. Prominent app-based motorcycle ridesharing service providers in Dhaka city

Indicators	UBER	Pathao	Shohoz
Year started	22 November 2016	2015	Mid of 2014
Service area	Dhaka and Chittagong	Dhaka, Chittagong, and Sylhet	Dhaka
Partner drivers	100,000	50,000+	1,000+
Types of service	Uber X, Uber Moto, Uber Premium, Uber Hire	Ridesharing, Parcel, Food delivery, Merchant delivery	Bike Ride Only
Pricing for motorcycle service	Base fare Tk 30, Per km. fare Tk 12, Waiting charge Tk1/minute	Base fare Tk 25, Per km. fare Tk 12, Waiting charge Tk0.5/minute	Base fare Tk 25, Per km. fare Tk 12, Waiting charge Tk0.5/minute
Rider recruitment process	<ul style="list-style-type: none"> • Driving license • National identity card • Vehicle registration • Vehicle tax token • Vehicle insurance • Vehicle certificate of fitness 	<ul style="list-style-type: none"> • Driving license • National identity card • Vehicle registration 	<ul style="list-style-type: none"> • Driving license • National identity card • Vehicle registration

Source: Uber Technologies Inc., 2019; Pathao, 2019; Shohoz, 2019.

The 'Ridesharing Service Guideline 2017' in Bangladesh has allowed commercial use of privately used vehicles via app-based services. The ridesharing services using motorcycle are becoming popular among the app-based transport users as they can save time by reducing travel time in cities in the grip of traffic snarls (New Age, 2018). This indicates that in near future there might be more motorcycles in use at a higher frequency on the roads of Dhaka. Despite having the popularity, users of the motorcycle ridesharing services have several concerns and complaints such as – unprofessional attitude of drivers, poor safety gears, excessive fare rate, lack of training for the drivers and untrained bikers employed by the service providers resulting in accidents (New Age, 2018). These bikers usually do not have any professional driving license and their driving skills are not tested by the appropriate authority. Almost none of the bikers have received any training from ridesharing company or any other agency for carrying passengers. As a result, the number of motorcycle accidents has increased significantly, causing death and injuries.

Nevertheless, experience from South-East Asian countries where many cities had rapid growth of motorcycles suggest that two-wheelers may cause chaos for other modes/commuters and pedestrians, and could be unruly. Moreover, the rising fleet of two-wheelers is a cause for safety concern, with an alarming number of young people (and co-riders) vulnerable to road accidents. Therefore, many transport professionals argue that motorcycle ridesharing services in Bangladesh might be beneficial in some

cases but there are concerns as well (Financial Express, 2018). Moreover, the concerned authorities need to enforce strict monitoring and surveillance to ensure that the Ridesharing Service Guideline 2017 is abided by all the stakeholders (The New Age, 2018).

Methodology

Quantitative research approach was followed for this study. The required data and sources were identified (see in Table 2). Relevant secondary data related to the major app-based motorcycle ridesharing services in Dhaka were collected from the newspapers, websites, as well as published and unpublished reports.

Table 2. Required data and sources

Objectives	Variables (Required Data)	Source
Existing Service Pattern	<ul style="list-style-type: none"> Service area Type of vehicles Fare system Rider recruitment process Company policies 	Secondary
User Opinion Analysis	<ul style="list-style-type: none"> Preference of app-based motorcycle ridesharing service Frequency of ride Reason for choosing app-based ridesharing Reason for choosing motorcycle instead of other vehicles Safety Problems in ridesharing service Respondents' expectations and necessity 	Primary (Questionnaire Survey)

Primary data were collected from a particular group of women users' aged over 18 years. A pre-determined structured questionnaire (with some close-ended and some open-ended questions) was prepared and used to collect data. The major sections of the questionnaire are: demographic information, frequency of usage of app-based motorcycle ridesharing services, preferable ridesharing service, reasons behind not using public transport, problems associated with motorcycle ridesharing services particularly the safety issues of female users, and suggestions for improving service quality. An online questionnaire was prepared using Google Forms and sent to the female users of ridesharing scheme. The data were collected during February and March 2019.

The survey considered a sample size of 100 individual women who have recently used an app-based motorcycle ridesharing service. Only about 1% of the motorcycles registered in Dhaka city are owned by women (BRTA, 2019). Most of the female owners of motorcycle in Dhaka are using it for their own travel and not willing to register as a driver in app-based ride sharing service. App-based ride sharing companies claimed that only a very few of their drivers are female and yet app-based ride sharing service is not much popular to female customers, therefore, the proportion of female users in Dhaka is

still very low. For instance, in average only 9 in 100 customers of UBER in daily basis are women (UBER, 2019). In every second Pathao receives 15000 customer requests of which about 82% are for bike service and only 7% to 8% of the requests for Pathao bike are from women users (Pathao, 2019). In app-based ride sharing service in Dhaka, only about 1% drivers are female. Moreover, the social structure of the country is not welcoming if women is seating behind an unknown male (driver) in the motorcycle. Therefore, the number of female users of app-based motorcycle users is yet very low compare to the male passengers. Moreover, UBER and Pathao both mentioned that they receive most of the requests from female users for a motorcycle ride during day time only and most of them are young students or working women (UBER, 2019 and Pathao, 2019).

Results

This section reports on the major findings and results of data analysis derived from the case study conducted in Dhaka city.

Profile of the Respondents

The majority of the female users of app-based motorcycle ridesharing service are youth whilst the older women do not use ridesharing motorcycle. For example, 69% are from age group 23-27 years whilst 25% are from age group 18-22 years and the remaining only 6% are from the groups 28-32 years and 33-37 years (see Figure 3). Occupation of the respondents reveal that almost 69% are students, 25% are employed and the remaining 6% are either engaged in business or in other activities (see Figure 4). Not a single housewife was found who use motorcycle ridesharing service. This information reveals that women who need to travel on regular basis are using motorcycle ridesharing but housewives or others who usually travel very rarely do not use app-based motorcycle ridesharing services.

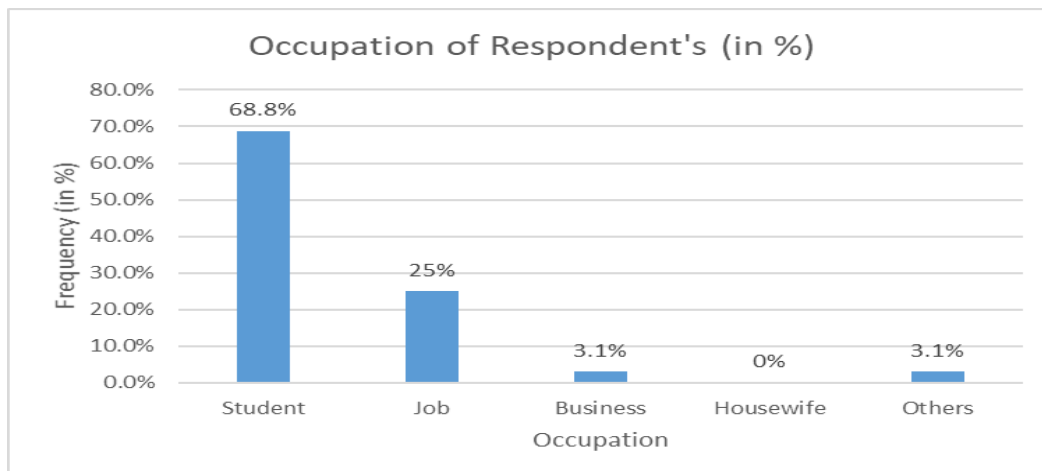


Figure 3. Age of the respondents

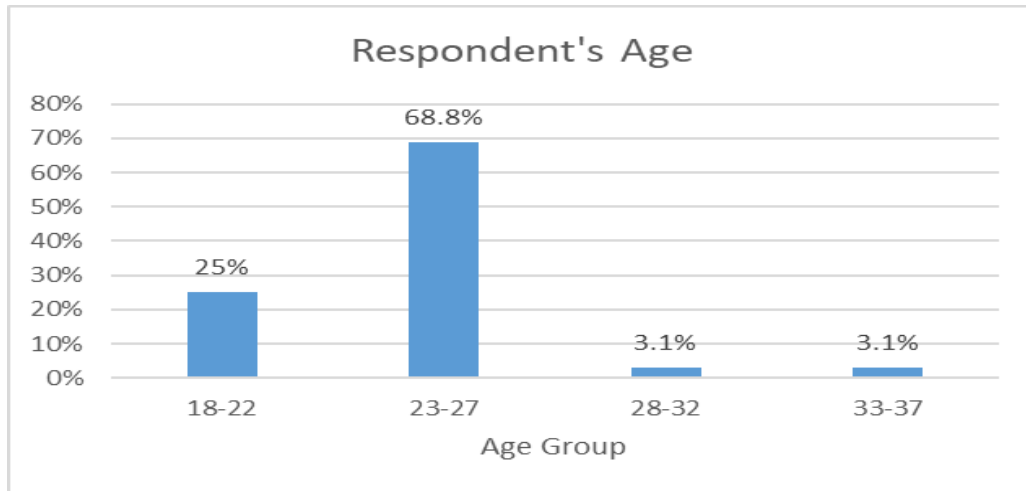


Figure 4. Occupations of the respondents

The respondents were asked why do they use app-based motorcycle ridesharing services instead of using the existing public transport of the city. The majority (about 36%) of them mentioned 'to save travel time' whilst 31% mentioned 'feel insecure or unsafe' in public transport, about 15% mentioned 'poor quality of public transport vehicles', 13% mentioned 'to avoid traffic congestion', and 5% mentioned 'poor or no access to public transport' (Figure 5). However considering the occurrence of accidents or safety issues, people usually consider motorcycle as an unsafe mode and public transport such as buses are comparatively safer.

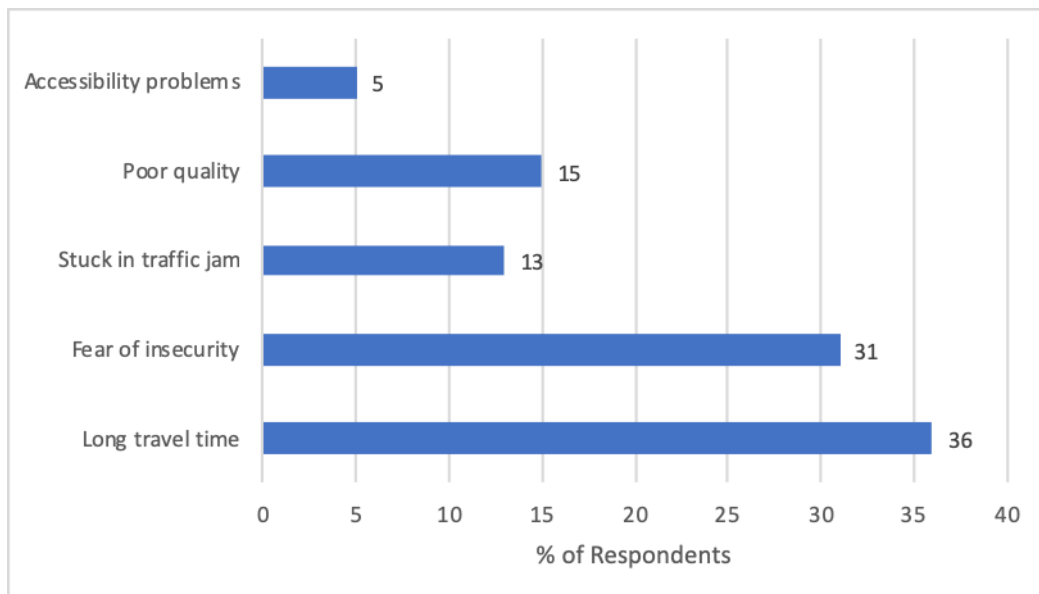


Figure 5. Reasons for avoiding public transport

Preferable App-based Ridesharing Services

Pathao is the pioneer for the case of app-based motorcycle ridesharing service in Bangladesh. Motorcycle ridesharing services in Bangladesh introduced by Pathao in 2015 and UBER introduced their ridesharing services in 2016 (Uber Technologies Inc., 2019 & Pathao, 2019).

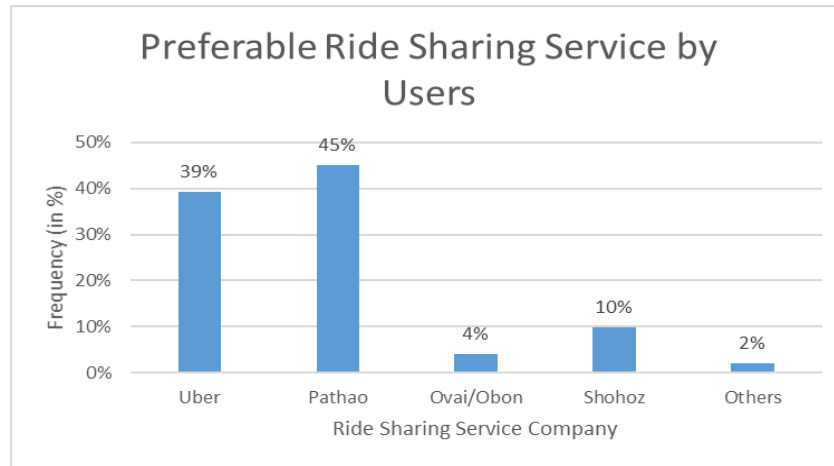


Figure 6. Preferable app-based ride sharing service by users'

The respondents were asked which services of motorcycle ridesharing they prefer most. Almost 45% of the respondents mentioned that they prefer Pathao as ridesharing service whilst 39% respondents prefer using UBER. Shohoz ride is preferred by 10% of the users whilst OBHAI/OBON is preferred by 4% of users and only 2% prefer other services. This information reveals that UBER and Pathao as the pioneer in the market is dominating the market share of motorcycle rideshare service than the other service providers. Moreover, Pathao and Uber have attracted the attention of the majority of the users in Bangladesh.

Frequency of Usage and the Reasons for Using App-based Motorcycle Services

Only about 19.5% of the respondents use app-based motorcycle ridesharing services on a regular basis or daily whilst the remaining use the service very rarely (e.g. once in a month or only when emergency). As Figure 7 shows, 39% of the respondent use the service in every week and 6.5% use only once in a month. The major causes behind the use of motorcycle ridesharing services are shown in Figure 8. Users prefer to use motorcycle ridesharing service mostly because it 'saves time' and 'avoid traffic jam', that have been reported by 83% and 76% respondents respectively.

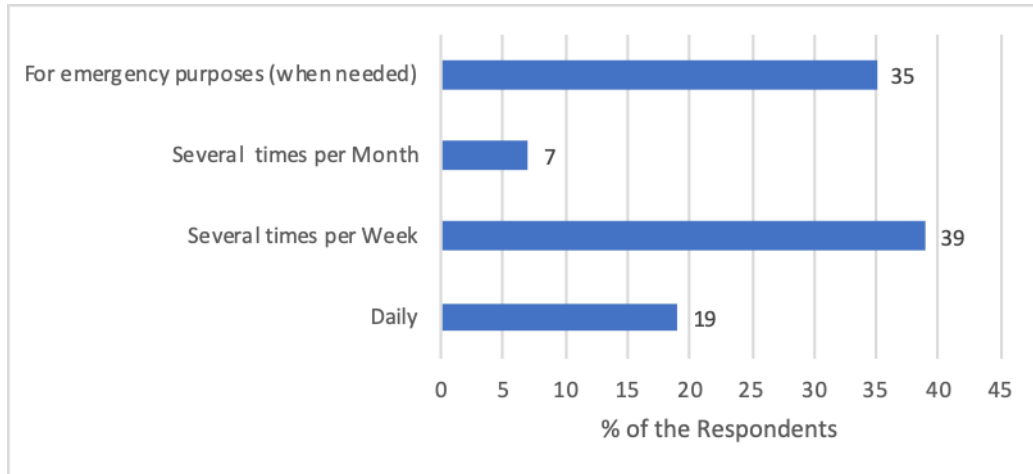


Figure 7. Frequency of usage

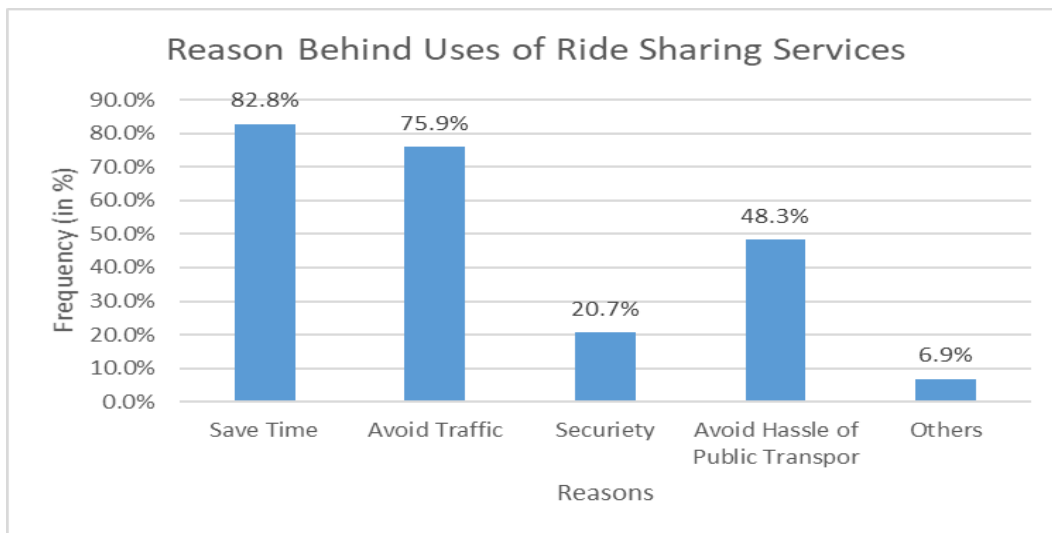


Figure 8. Reasons behind using motorcycle ride sharing service

Even though widespread congestion and delay are common in the streets of Dhaka, data reveals that several respondents consider that using motorcycle ridesharing help them to reach in desired destinations easily without much delay and avoiding the traffic. It is also worth mentioning that 48% of the respondents use motorcycle ridesharing to avoid the hassle in using public transport and 21% mentioned security reasons for their ridesharing trips.

Trip Distance and Travel Time

The distance for the majority of female users of app-based motorcyclersharing trips are short. For example, trip distance for about 63% of the respondents are within 8 km (Figure 9). However, it is worth mentioning that a considerable portion of trips are for longer distance such as 25% is 8-12 km and 12% is 12-16 km. Figure 10 shows the average travel time of the app-based motorcycle trips.

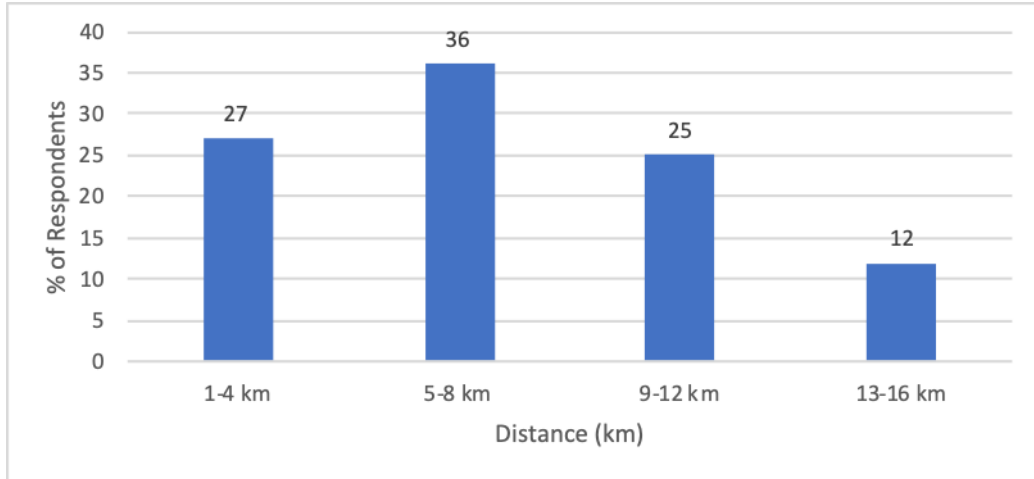


Figure 9: Average Travel Distance

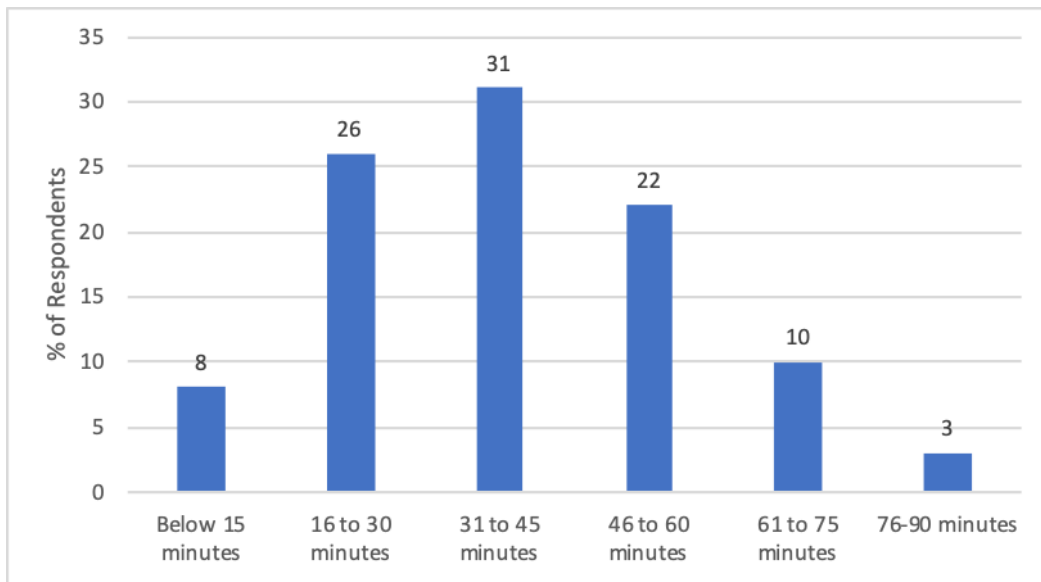


Figure 10: Average Time of Trip on app-based motorcycle to Reach Destinations

Due to traffic congestions, it is often very difficult in Dhaka city to reach the destinations on time. Traffic management and regulatory measures are very poor and sometimes even absent. The average speed of traffic in Dhaka is now only 7 km per hour (Dhaka Tribune, 2017). About 31% of the respondents mentioned that they required 31 to 45 minutes to reach their destinations. However, a very few (only 3%) mentioned more than 1 hour to reach their destinations. Probably because the motorcycle is not safe mode in Dhaka and cost is relatively higher for longer distance, the proportion of trips on app-based motorcycles is less for longer distance.

Safety of Motorcycle Ridesharing Services

About the perception of safety, 75% of the respondents mentioned that they consider app-based motorcycle ridesharing services are safe for women whilst the remaining 25% of the respondents mentioned the service as 'unsafe' for women.

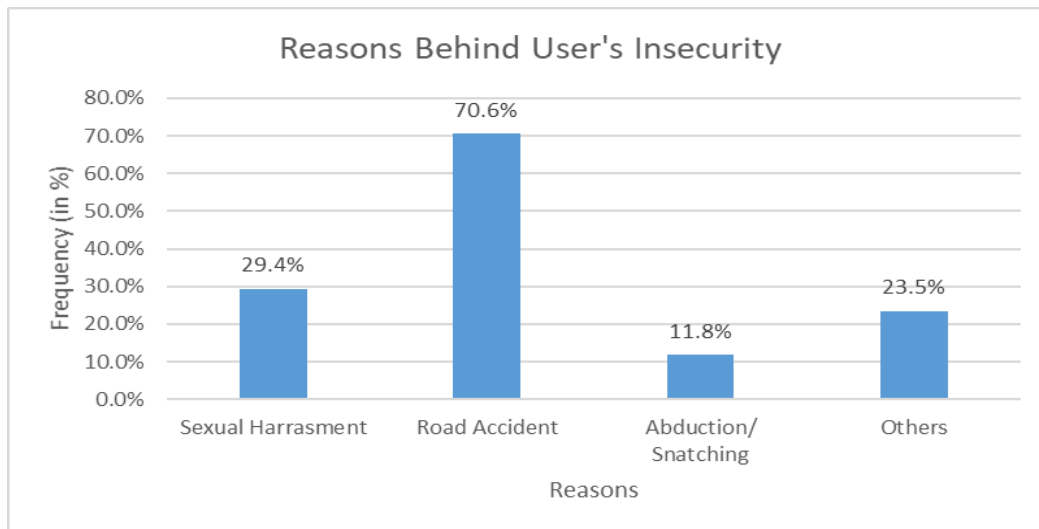


Figure 11. Reasons behind users' insecurity

Figure 11 shows the main reasons for perception of users' who think that app-based motorcycle ridesharing service is not safe. About 70.6% of the respondents feel insecure because of road accidents, almost 29.5% complained that they have faced problems of sexual harassments, 23.5% mentioned other reasons, and about 12% mentioned the problem of snatching they have faced while they were on ride.

Problems Associated with Motorcycle Ridesharing Services

The respondents were asked to report the major problems they usually face while using motorcycle ridesharing service. According to the respondents, motorcycle ride sharing service companies do not provide a good quality helmet for the users' and the lack of

experience of drivers were reported by the majority, which were around 41% for both the issues. About 28% mentioned 'excess fare rates' and 'delay in locating clients location', 22% respondents mentioned the problem in 'application glitch to operate the service apps' and 12.5% respondents complained about the 'bad manners of driver' (as shown in Figure 12).

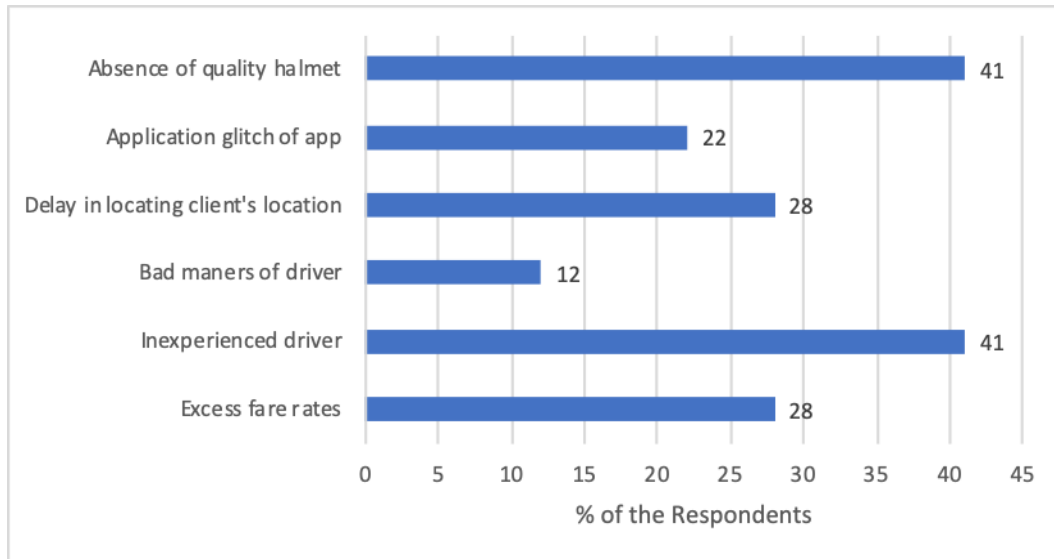


Figure 12. Problems in motorcycle ride sharing service faced by users

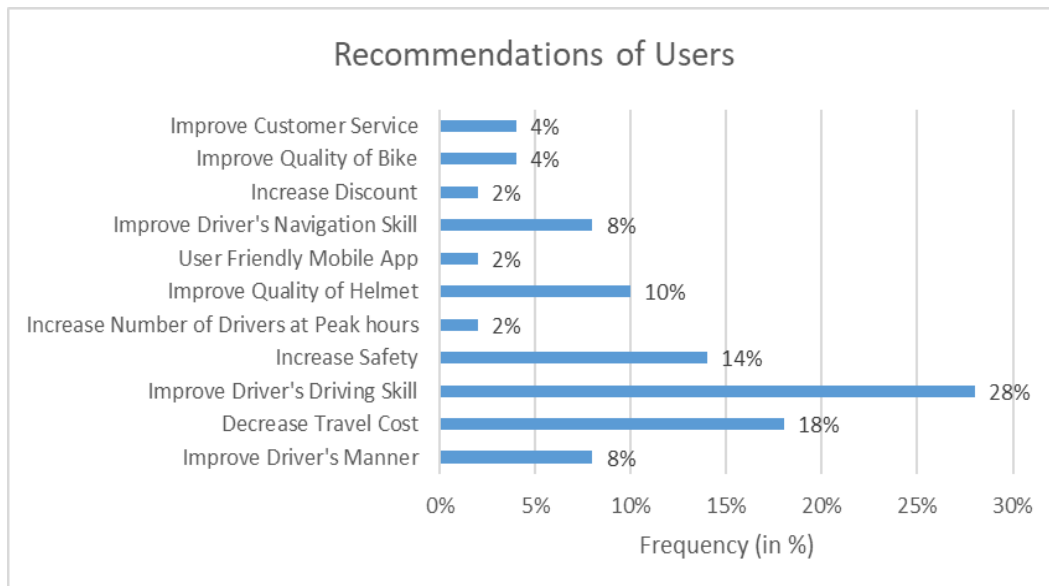


Figure 13. Recommendations provided by the users'

Respondents were asked to provide their suggestions to improve the quality of services of app-based motorcycle ridesharing services. Figure 13 shows that about 28% of the respondents think that ridesharing service need to evaluate the driver recruitment process and improve the drivers' driving skill first and 18% respondents think that companies need to reduce their travel fare to consider the affordability issues of the riders. They also recommended to increase safety (14%), improve the quality of helmet (10%), improve the drivers' manner as well as app navigation skill (8%), improve customer service and quality of bike (4%), increase discount service, quality of bike and increase service in peak hour (2%).

Discussion and Conclusions

Results discussed in previous section reveal that there are some issues and problems of app-based motorcycle ridesharing services. The specific issues are followings:

- **Driving behavior and the experience of driver:** The app-based ridesharing service provider companies just do check the driving license and vehicle license registration but they do not evaluate or consider the experience (e.g. the length or duration of driving) of the drivers. Due to lack of skilled driving, female passengers often feel insecure using motorcycle ridesharing services. Moreover, several accidents of the motorcycle ridesharing services happened recently made this situation scary for the female users. Yet there is no provision to test the manner and behavior of the drivers before they are employed. Sometimes they do not know how to behave well towards female passengers of motorcycle ridesharing service.
- **Helmet use:** Wearing helmet during motorcycle ride is the mandatory by law for both the drivers and the passengers. Not using a helmet during the ride is also violation of the traffic rules. However, until May 2018, there was no such provision of helmet use by the service provider companies. After the students' movement in May 2018 for demanding safer roads, the ridesharing companies have provided helmet to their registered drivers. Nevertheless, the anecdotal evidence show that the quality of the helmets is very poor and they are not suitable to protect the users from the accidents.
- **Excessive fare rate:** Users of the motorcycle ridesharing service are mostly the students of university and young working women. Despite the occasional provision of promo code to avail discount by the users, the fare rate is not affordable for many people.

There are also some other problems of motorcycle ridesharing services such as delay in locating client's location, application glitch, poor customer care service, poor GPS tracker, poor route mapping, poor quality of motorcycle, etc. Based on the findings, some of the suggestions for the app-based motorcycle ridesharing services are:

- The Ridesharing Service Guideline 2017 need to be revised and enforced properly. The guideline could also look on exploring the possibilities to introduce some

specialized apps that have been used in other countries for app-based motorcycle ride sharing service for women such as Pink SAM, OBONE, Lily etc in Bangladesh.

- If a vehicle is registered for ride sharing service, the fitness of the vehicles needs to be checked.
- The driver registration system requires to follow a rigorous process. Along with the driving license, the operating company could also consider the educational qualifications as well as the experience of the driver through an interview process.
- Ridesharing service companies should provide good quality helmets for both the drivers and riders.
- Revised framework for fare structure of app-based motorcycle ride-sharing services should be formulated so that it could be more affordable for many people or it could provide special discounts to the students or frequent users.
- The ride sharing services should have a good GPS tracking system so that the system is able to find the route easily and the driver can reach to the client's location or destination on-time.
- Some other areas for improvement of the services could be modernizing the apps to make it more user friendly, handle the confidential data of the user's with care, maintaining the confidentiality and ensuring improved and better customer services.

People usually need to travel regularly to perform their socio-economic activities or for other different purposes. However, the existing conventional public transport services in Dhaka city is often not safe or secure for women. Therefore, women who travel or commute regularly, usually prefer ridesharing services. However, the app-based motorcycle ridesharing services do have some constraints or limitations. Though the app-based motorcycle ridesharing services is relatively new in Bangladesh, it gained considerable acceptance or popularity among the users within a short span of time. Yet, almost all the service providers of app-based motorcycle ridesharing are operating without following any proper guidelines or regulatory framework. It is expected that the Ridesharing Service Guideline 2017 by BRTA would be able to address the issues and drawbacks related to app-based motorcycle ride sharing services for improving the overall situation of the service.

The findings of this paper could be helpful for the app-based ridesharing service providers for strategic business planning as well as improving their clients' satisfaction. This paper provides the pathway for further research and study related to app-based ride sharing services in Bangladesh. Further research could be on safety aspects, financial analysis and fare rates of the app-based motorcycle ride sharing services.

Note: An earlier version of this paper was presented in 13th International Conference of the Eastern Asia Society for Transportation Studies (EASTS) "Redesigning Transport & Logistics for the Rise of Asia", Colombo, Sri Lanka, 9-11 September 2019.

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