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Online Motorbike Ride-Hailing Services as Paratransit Mode in Greater Jakarta: Understanding user's motivations and journey experience

Agita Ratna Jelita Ambar Putri

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Being a dissertation submitted to the Faculty of The Built Environment as part of the requirements for the award of the MSc Transport and City Planning at University College London:

I declare that this dissertation is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

Agita Ratna Jelita Ambar Putri

2 September 2019

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List of Acronyms and Abbreviations

APJII	Indonesian Internet Service Providers Association
BRT	Bus Rapid Transit
GBP	Great British Pounds (Sterling)
GO-JEK	Name of company that offer online motorbike ride-hailing services
GRAB	Name of company that offer online motorbike ride-hailing services
IDR	Indonesian Rupiah
KRL	*Kereta Rel Listrik*
LRT	Light Rail Transit
MRT	Mass Rapid Transit
TPB	Theory of Planned Behaviour
SPSS	Statistical Package for the Social Sciences

Abstract

Online motorbike ride-hailing services are considered as a new form of transportation mode that recently growing in many big cities in Indonesia. This study seeks to understand users' motivation and journey experience in using online motorbike ride-hailing services in Greater Jakarta. A random sample of 232 participants using online motorbike ride-hailing services were collected from Greater Jakarta.

The study investigated critical aspects that influence users' choice in using online motorbike ride-hailing service, both for direct or first and last-mile travel mode. It also examined the significance of the selected instrumental and affective variables on the journey experience. Instrumental variables are the practical aspects of the service, for example, fare, waiting time, and service frequency while affective variables represent feelings perceived by travelling, such as feeling safe, anxious, and happy. Users' dissatisfaction toward some aspects of service were also investigated in order to suggest the aspects needing urgent improvement.

This study found that travel time was the main influence behind users' decision to choose online motorbike ride-hailing services as both primary and secondary transportation modes, while vehicle comfort had the least importance.

Both instrumental and affective variables are considered relevant to users' journey experience with online motorbike ride-hailing services. However, the affective variables were less important than the instrumental in both primary and secondary transportation mode cases.

In this study, users were more dissatisfied with the affective factors in using online motorbike ride-hailing services. The priority of order identified that improvement of instrumental aspects: waiting time and fares, and affective aspects: feeling safe and the lack of disturbance during the ride and the ambience and condition of the vehicle are required to provide a more pleasant journey experience for users. However, the improvements necessitate the participation and cooperation of online motorbike ride-hailing services companies and the government as a transportation regulator.

1. Introduction

1.1 Background

Transportation systems are an essential aspect of urban development that had a significant impact on social life. Rapid motorisation, insufficient, and inadequate mass public transportation system alongside the lack of financial support and authority capacity are discouraging the use of public transportation (Joewono and Santoso, 2015), spurring informal transportation. These small-scale operators, legally or illegally enter the market to fill the gaps by completing regular transit services, passing through neighbourhoods poorly served by formal operators and responding immediately to shifting market demands (Cervero and Golub, 2007).

Nowadays, online shared-mobility services are growing across the globe as many types of informal transportation, including car-sharing and bike-sharing. Some researchers argue that these evolving services disrupt the current transportation system by influencing new travel behaviour and competing with existing modes, but it may help develop a more sustainable transportation system (Ciari and Becker, 2017, p.53; Henao and Marshall, 2017, p.199). To predict the impact of shared-mobility services on the urban transportation system, it is crucial to understand to what extent they act as complements or competitors to existing transportation modes. Several factors including affordability, travel time, cost, convenience, flexibility, technology, and level of service are the reasons behind user's decision to shift to a new transportation mode (Ronald et al., 2017, p.278).

In Indonesia, particularly in highly populated cities, the reliable transportation system is urgently needed to provide efficient mobility services to boost social and economic activities (Currie and Wallis, 2008; Suatmadi et al., 2019). Currently, there are some paratransit modes, including online transportation ride-hailing services operating in Greater Jakarta alongside a limited coverage mass public transportation (Yuana et al., 2019). These ride-hailing services operate with the concept of sharing economy, trying to provide alternative urban transportation modes to cope with insufficient mass public transportation (Suatmadi et al., 2019; Wahyuningtyas, 2016).

Previous studies have discussed paratransit mode globally (Cervero and Golub, 2007) and identified that travel decision and journey experience are influenced by both the practical aspect of service and the feelings evoked by travel (Anable and

Gatersleben, 2005; Dhingra, 2011; Steg, 2005; Steg et al., 2001; Stradling et al., 2007). However, the studies about user motivation and journey experience, especially about online motorbike ride-hailing services in Indonesia, are still insufficient despite its importance as these services are growing fast in several major cities in Indonesia, including Greater Jakarta. Through a better understanding about journey motivation and experience from users' perspective, this study hopes to reveal essential aspects to develop better service for online ride-hailing services, specifically motorbike services and give a positive contribution to the formulation of future mobility in Greater Jakarta.

1.2 Aim and Objectives

The aims of this study are to understand users' motivation and journey experience in using online motorbike ride-hailing services in Greater Jakarta, in order to identify aspects of the service that require immediate improvement.

To fulfil the above aims, the research objectives are as follows:

a. Which factors influence users' choice to use online motorbike ride-hailing services as their travel mode?
b. What key factors affect the journey experience in using online motorbike ride-hailing services?
c. What is the current degree of service dissatisfaction in journeys using online motorbike ride-hailing services?
d. Which aspect of the service needs immediate improvement to reduce the dissatisfaction level and enhance journey experience in using online motorbike ride-hailing services?

This dissertation is arranged into six chapters. Chapter 2 reviews the urban public transportation system, summarises the various motivations that affect users' travel mode choice, investigates the aspects affecting journey experience, and discusses travel satisfaction on journey experience. Chapter 3 discusses the descriptive of the case specifically about Greater Jakarta and public transportation operating in that area, including the online transportation ride-hailing services. Chapter 4 explains the methodology and framework of analysis used for this study, following limitations and ethics. Chapter 5 discusses and analyses the key findings of the empirical research with comparison to relevant literature. Chapter 6 summarises the findings and the conclusions drawn from this study.

2. Literature Review

This chapter will discuss findings from previous literature about the urban public transportation system, followed by paratransit transportation mode and online ride-hailing services. After that, it will examine various aspects that influenced users in choosing a mode of transportation. It also investigates the different factors that affect users' journey experience to understand the influence of these factors on users' travel satisfaction. The chapter concludes with research gaps to form a basis for the theoretical framework used in the study.

2.1 Urban Public Transportation System

The facilities and services of transportation systems are the main factors that allow mobility to happen in the urban context. Urban travel modes can be grouped into three types: public transportation, non-motorised transportation, and private motorised transportation (Pourbaix, 2011). All those travel modes open possibilities for cities to exploit density as an asset for more efficient goods and services provision within their trade to other places.

Glover (2011) defines that public transportation is the transport service made available to the general public. In most developing Asian cities, the public transportation system mostly comes in the form of road-based transportation modes like buses and other paratransit modes including pedicabs or three-wheeler taxis (Hayashi et al., 2004; Wicaksono et al., 2015).

Stradling (2002) argues that, apart from time and money, the attractiveness of public transportation mode depends on the users' interest to save physical, cognitive, and affective efforts. The service quality of public transportation system also depends on the policy and public investment (Joewono et al., 2010) beside the users' daily decision in travel.

2.1.1 Paratransit Transportation

Currently, in many developing countries, the urban transportation system is a combination of official public transportation modes and paratransit modes. Paratransit transportation appeared in the Global South because of the low investment in the high capacity public transportation leading to inadequate mobility service provision (Cervero and Golub, 2007). Paratransit modes are considered as public transportation owned and operated by individuals or

private companies to provide mobility services (Joewono and Kubota, 2007) sometimes operating without official permission (Cervero and Golub, 2007).

The formation of paratransit transportation varies based on each cities' context. However, in general, it is mostly made up by older and smaller-capacity vehicles, owned and operated by a single individual with low-performance services (Cervero, 2000). Cervero (2000) also classified paratransit transportation into five categories: conventional bus, minibus, microbus, three-wheelers and motorbikes, and pedicab or horse-cab.

Paratransit transportation provides a wide range of services, including feeder services linking inaccessible neighbourhoods to the main transportation route, local mobility services in inaccessible areas, direct longer-distance services on routes underserved by official mass public transportation, duplication of franchised services, and providing more efficient services for people with disabilities (Joewono and Kubota, 2008). However, aside from its positive impacts as a gap filler, paratransit transportation contributes negatively to air and noise pollution, traffic congestion, and accidents (Cervero and Golub, 2007).

Paratransit transportation can be assumed as the typical characteristics of the Asian transportation system that represents the broad spectrum of both motorised and non-motorised transport, which can be privately-owned vehicles or official public transportation. Despite its negative impacts, paratransit transportation comes as an affordable and reliable alternative transportation mode that many people still rely on.

2.1.2 Online Ride-Hailing Services

Digitalisation and organised sharing economy are two major revolutions that influenced the rise of online ride-hailing services across the globe (Yuana et al., 2019). Previous research in San Francisco about carpooling identified the success factors of this scheme, specifically about cost, time, flexibility and connectivity with other public transportation (Shaheen et al., 2016). Recently, online ride-hailing service companies such as Uber offer mobility services similar to previous carpooling but use smartphone applications for a small fee (Iacobucci et al., 2017, p.65; Schechtner and Hanson, 2017, p.80).

Online ride-hailing services might be considered as paratransit transportation because they act as a gap filler in the urban mobility network.

The integration between official mass public transportation and paratransit transportation, including online ride-hailing services, can provide a more effective connection in the urban transportation network. It is also essential to ensure that these online ride-hailing services support the long-term vision of the city.

2.2 Factors Affecting Travel Mode Choice

Travel is not just a derived demand (Mokhtarian and Salomon, 2001) for people to access chosen activities in other places; occasionally, people might travel 'just for fun'. The identification of travel destination and purpose mostly becomes the first step to identify people's needs for transportation. The needs, opportunities and abilities are basic factors that influence travel behaviour (Dijst et al., 2013, p.25), alongside with the availability of money, skills, and capacity to choose travel options.

The theory of planned behaviour (TPB) is one of the most influential frameworks in the psychological perspective (Dijst et al., 2013, p.28) that tried to predict and explain human behaviour by linking attitude, subjective norms, and perceived behavioural control (Ajzen, 1991). The TPB also assumes that other supporting factors, including gender, age, personality, income, and general values, may affect the travel behaviour indirectly (Abenoza et al., 2017). Besides the psychological aspects, economic aspects also play an important role on travel behaviour, not only on the price per kilometre, but also the value of travel time and speed (Small and Verhoef, 2007). Different users will values time differently, based on their travel purpose, activities, situational condition, and economic condition.

The combination of users' needs and opportunities create travel motivation. Their travel choice may depend on the various decision-making processes that give them the most significant benefit, which may arise from both the practical aspect of the journey and the feeling evoked through the journey (Anable and Gatersleben, 2005; Steg, 2005). In summary, users' travel mode choice can be influenced by a wide range of factors from transport-specific factors to individual socio-demographic, psychological, and economic factors.

2.3 Factors Affecting Journey Experience

For a long time, transport theory discussed travel decisions and journey experience using functional characteristics, including travel cost, travel time, and speed (Dhingra, 2011; Steg, 2005; Stradling et al., 2007). However, recent studies investigated that other non-instrumental factors, including power, pleasure, and uncertainty, also play a significant role in journey experience (Anable and Gatersleben, 2005; Steg et al., 2001). Many pieces of recent researches have categorised the factors into three groups: instrumental, affective, and symbolic factors. Instrumental factors are the practical aspect of the journey that maximises the service of current transportation modes, including cost, travel time, and reliability (Anable and Gatersleben, 2005; Steg et al., 2001). Affective factors focus on the feeling experienced through the journey such as uncertainty, excitement, pleasure, and boredom (Anable and Gatersleben, 2005). Symbolic factors represent personal identity and individual social status, such as power and freedom (Steg, 2005).

Both instrumental and non-instrumental factors also influence users' journey experience in using public transportation modes (Steg, 2005). Minimum waiting time, cleanliness, and comfort (dell'Olio et al., 2011) alongside an enjoyable, relaxed, and safe journey are the most expected aspects of service for public transportation modes (Hickman et al., 2013; Stradling et al., 2007).

Most of the studies have mentioned the relation between instrumental and affective aspects in using several transportation modes. However, the influence of symbolic factors especially in using public transportation modes are still unclear.

2.4 Travel Satisfaction on Journey Experience

The service quality can be assessed by the performance of the service operator in providing services for the public from both the users and the operator's perspective (Dhingra, 2011; Joewono and Santoso, 2015). Transportation users may have different expectation and satisfaction level through the same quality of service from travel mode. Satisfaction and dissatisfaction are subjective phenomena as an actual evaluation from the users' perspective, based on their expectation against their actual perceived experience after using specific products or services (Mohammad and Alhamadani, 2011).

Previous studies have identified that safety was the key determinant for women, while service frequency and reliability were more important for younger users, lower-income groups and men in general (Susilo and Cats, 2014). The satisfaction level is influenced by socio-demographic factors, including age, gender, and income.

Susilo and Cats (2014) argue that the satisfaction level declines when users conduct repeated journeys with the same transportation mode due to their awareness to more unsatisfying experiences in their commute. Hence, understanding the satisfaction of existing users is important to maintaining ridership, as well as attracting new users to use that transportation mode. However, it is hard to measure the absolute satisfaction level because perception is a subjective phenomenon (Stradling et al., 2007).

2.5 Framework

The first objective of this study was to identify which transport-specific factors influence different type users in choosing online motorbike ride-hailing services as their travel mode. For this study, three individual-related aspects alongside one trip-specific factors will be used to examine its influence in a different type of users, that draws on the figure (1).

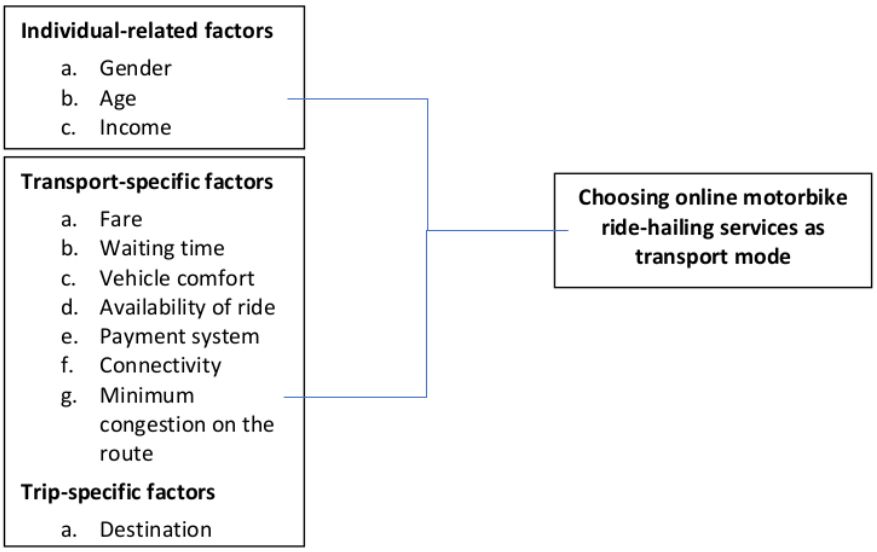


Figure 1 Factors behind users' motivation in choosing travel mode

Another objective was to investigate critical aspects of transport services affecting users' journey experience. The literature mentioned the significance of instrumental

and affective variables for all travel modes, including public transportation, while symbolic factors are majorly significant for car use. To evaluate the journey experience, previous studies have identified various instrumental and affective aspects, but only six instrumental factors and seven affective factors were identified (table (1)) from past studies and context of this study due to the imposed constraints in this case.

Table 1 Instrumental and affective variables identified for this study

Instrumental variables	**Affective variables**
Service frequency	Feeling happy, relaxed and comfortable
Travel time	Feeling safe and lack of disturbance
Waiting time	Security from criminal acts
Cost of travel (fare)	The ambience and condition of the vehicle
Payment system	Driver/staff's behaviour
Lack of traffic congestion on the route	Driver/staff's knowledge and professionalism
	Possibility of doing other activities

With these general findings, understanding the impact of these variables in the Indonesian context will require further empirical evidence.

2.6 Summary

Numerous studies have mentioned paratransit transportation as one of the reliable public transportation modes in developing countries that are not adequately served by mass public transportation, especially in many Asian cities. Many studies also identified the factors behind users' decisions in choosing their travel mode, ranging from transport-specific to individual-related motives. Also, numerous studies investigate the importance of instrumental, affective, and symbolic factors through users' journey experience.

Most past studies focused on car usage or mass public transportation or investigated the different purposes of travel, such as work or leisure. However, this study will look at the usage of paratransit transportation, specifically online motorbike-ride hailing

services, on which currently very limited studies exist. In addition, most previous studies have majorly been done in European cities, which have a different context than Asia's developing cities, where this study was conducted. Testing the same key findings in the context of Greater Jakarta, specifically to online motorbike ride-hailing services users, will help conclude common important factors and highlight the differences in user preference and perception in a different context.

3. Descriptive of the case

3.1 Overview of Greater Jakarta

Greater Jakarta is the most populated metropolitan area in Indonesia consisting of DKI Jakarta, the country's capital and its eight satellite cities and regions (figure (2)): Tangerang, Tangerang Regency, South Tangerang, Depok, Bekasi, Bekasi Regency, Bogor Regency and Bogor (Winarso et al., 2015). DKI Jakarta is currently a centre of economic, political, research, educational, cultural, and social activity. However, due to the high living cost in DKI Jakarta, people tend to live in the satellite cities, causing high commute to DKI Jakarta (Ernst & Young LLP, 2014) with a total of 47.5 million daily trips (Greater Jakarta Transport Authority, c.2018).

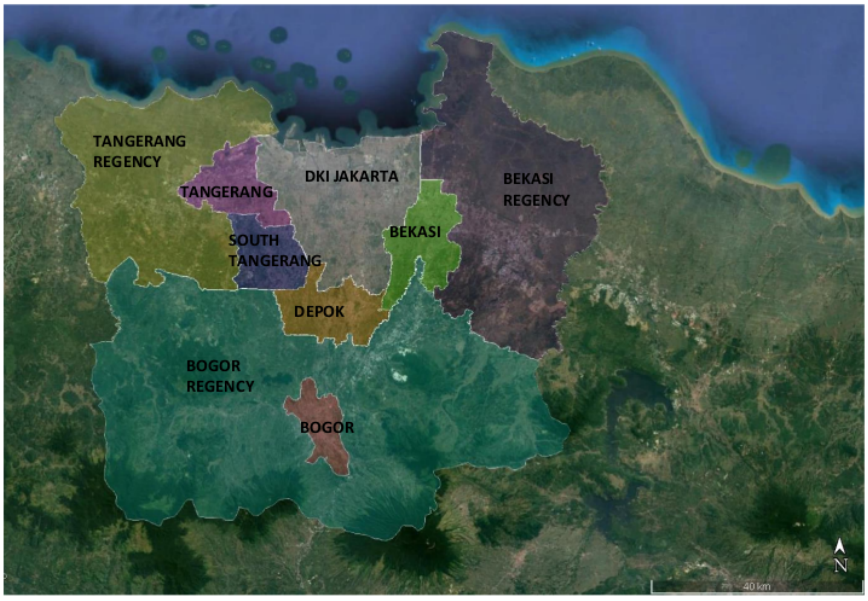


Figure 2 Greater Jakarta Area (Google edited by the author, 2019)

Greater Jakarta is approximately 6,399km^2 large, with 31.7 million people and a density of 4,954 people/km^2 (Greater Jakarta Transport Authority, c.2018). This dense metropolitan area has an issue with high motorisation rates due to the increased usage and ownership of motorised private vehicles that cause terrible traffic congestion with 53% congestion level in 2018, the world's seventh-worst (Tomtom, 2019). Encouraging public transportation use is one of the solutions to solve this problem. However, the transportation policy in Indonesia, specifically in Greater Jakarta, has not successfully nor firmly encouraged people to use public

transportation (Joewono et al., 2010) evidenced by the lack of regulation and/or government programmes. This situation makes people in Greater Jakarta still highly dependent on private car or motorbike.

3.2 Overview of Public Transportation in Greater Jakarta

The provision and condition of public transportation in Greater Jakarta is better than other cities in Indonesia. The area is served by four mass public transportation modes: bus rapid transit (BRT) named *TransJakarta*, commuter train, newly opened mass rapid transit (MRT), and soon-operating light rail transit (LRT). However, all those mass public transportation modes still operate with limited coverage and integration, thus requiring feeder networks. Only 13% of all trips in Greater Jakarta are done by public transportation modes (Yuana et al., 2019) because those modes have not become the first choice for local commuters. To counter urban mobility issues, several paratransit services operate in Greater Jakarta (Wicaksono et al., 2015), including licenced taxis, minibuses (*angkot*), conventional motorbike taxis (*ojek*), and three-wheeler taxis (*bajaj*). These modes share the lane with other users, mostly without fixed routes, schedules and termini (Joewono and Kubota, 2007), except for the *angkot* which has exact routes (Wicaksono et al., 2015). The flexibility of fares, routes, destinations, and schedules make paratransit modes convenient in Greater Jakarta to fill the gap in the public transportation network.

3.3 The Rise of Online Transportation Ride-Hailing Services in Greater Jakarta

Currently, online motorbike ride-hailing services operate in major Indonesian cities, including Greater Jakarta. The two private companies that provide online motorbike ride-hailing services are GO-JEK and Grab. The services from both companies are similar, which is offering an online booking transportation system using a smartphone (GO-JEK, 2019; Grab, 2019). These companies benefit from commuters' frustration with traffic congestion, inadequate public transportation modes, and the growing use of internet and smartphones (Yuana et al., 2019) especially in highly populated cities like Jakarta (Wahyuningtyas, 2016).

The main concept of these online transportation ride-hailing services is to provide private-owned vehicles, mostly motorbikes in Greater Jakarta, to serve the public's mobility needs (Yuana et al., 2019). This service has rapidly grown in Indonesia because of the rise of the digital market and the long-standing popularity of the *ojek* as a mode of transportation (Yuana et al., 2019). Motorbikes are popular in

Indonesia, like in other Asian cities, due to its small size, affordability, speed, and convenience, which is unattainable for cars or mass public transportation (Das and Maurya, 2018; Suatmadi et al., 2019).

Online motorbike ride-hailing services are easy to use because with only an internet-connected smartphone, users can request a vehicle to transport them to their destination anytime and anywhere (GO-JEK, 2019; Grab, 2019). The payment methods are also convenient: cash or cashless using electronic money, designed to fit the Indonesian context's unfamiliarity with credit card payment (Freischlad, 2017). Also, another benefit compared with the conventional *ojek* is upfront and fixed distance-based fare (Suatmadi et al., 2019). The customer also feels safer using these services because the vehicles are required to meet the company standards of operation and feel more secure because they can verify their driver and vehicle number with the application (Amajida, 2016).

All these advantages alongside the mass public transportation network's limited coverage have made online ride-hailing services into one of the reliable alternative transportation modes in Greater Jakarta, gaining more popularity among commuters through the years.

4. Research Methods

4.1 Introduction

This study considers that online ride-hailing services, specifically online motorbike ride-hailing services, are a new form of paratransit mode. This study aims to understand the motivation and journey experience of users in using online motorbike ride-hailing services in order to identify aspects of the service that require urgent improvement.

4.2 Research Strategy

This study adopted a quantitative method to evaluate some factors that affected travel choice and journey experience. Survey is an adequate strategy to conduct large-scale research with the significant number of indicators that are mostly driven by theory-test, with the purpose to obtain external validity or generalisation (Gable, 1994).

The first objective of the study was obtained by examining the frequency of transport-related factors and trip-related factors within different users' characteristic in choosing online motorbike ride-hailing services as their travel mode.

The second objective of the study was accomplished by investigating the instrumental and affective factors mentioned in the literature review, in order to comprehend the relevance in the context of Greater Jakarta.

The third objective of the study was attained by analysing the gap between users' expectation and perceived experience for each identified aspect in the user satisfaction survey for using online motorbike ride-hailing services.

The fourth objective of the study was achieved by weighing the calculated gap between expectation and perceived experience against the importance rating for each aspect to identify the aspects that require improvement based on the urgency level.

4.3 Questionnaire Design

The questionnaire is in Bahasa Indonesia, the national language in Indonesia to ensure the respondents' comprehension towards questions. The questionnaire is divided into six sections, with 47 questions in total. An example questionnaire that has been translated into the English language can be found in the appendix (1).

The first section introduces the purpose of the research and a brief description of the questionnaire, highlights the appropriate time to complete the survey, and presents the consent agreement. The second section contains questions about socio-demographic characteristics including gender, age, and monthly income, deeming if the participant is appropriate or not for this study. If the participant is under 18 years old and/or has never used online motorbike ride-hailing services, they will automatically be opted-out from the survey. The third section investigates user motivations in using online motorbike ride-hailing services. The fourth section identifies their selected trip that will be assessed for this study. The fifth and sixth sections assess the aspects of service in one completed journey for the chosen primary and secondary transportation modes. In that part, the importance level, expectation level, and real experience level are assessed against indicators suggested by the literature. A five-point Likert scale was used to evaluate the aspects of service, where 1 is the lowest point and 5 is the highest point.

The average on the Cronbach's Alpha for 78 items of service that affect journey experience assessment was 0.968, which indicated excellent level on internal consistency (appendix (4)).

4.4 Data Collection

This research is based on the data gathered through the online survey platform, Opinio, provided by UCL.

This research specifically targeted the users of online motorbike ride-hailing services in Greater Jakarta. This survey was not intended to be a representative sample of the population in Greater Jakarta because it was beyond the scope of this study considering the time limit and available resource.

The questionnaire was tested before it was distributed to prevent ambiguity and to ensure that the questions are understandable by the wide range of respondents. On average, it took participants 10-20 minutes to complete the questionnaire. The link to the survey was distributed through several social media platforms, including, Instagram, Twitter and LinkedIn and also with help from colleagues who share the link around their communities. In total, 232 samples were collected between June 24th– July 31st, 2019.

4.5 Framework for Data Analysis

The data were processed using the Statistical Package for Social Science (SPSS) through coding, editing, and analysis. They were then interpreted as tables and charts using Excel. Cross tabulation was used in this research to investigate which factors influenced different users' motivation in choosing online motorbike ride-hailing services as their travel mode.

The ordinal data from the survey was assembled using Excel to identify the key factors influencing journey experience. Descriptive statistical analysis was used to evaluate the recorded data from importance, expectation, and perceived experience. They were conveyed in a Likert scale of 1 to 5, representing negative values to positive values, respectively.

However, as mentioned in the literature, the absolute degree of satisfaction is difficult to measure. To address this difficulty, this study adopted the method proposed by Stradling et al. (2007) that developed a 'user disgruntlement index' based on the difference between the quality of execution of an aspect of service and how important its performance is (table (2)). After that, the percentage of disgruntled users was plotted against the percentage of users that gave 'important' or 'highly important' rating for each aspect (figure (3)) to identify which aspects require urgent improvements in order to deliver better satisfactory mobility service.

Table 2 Example of a cross tabulation to compute the percentage of disgruntled users for each aspect

		Perceived experience				
		Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Importance	Unimportant					
	Fairly unimportant					
	Neutral					
	Important					
	Highly important					

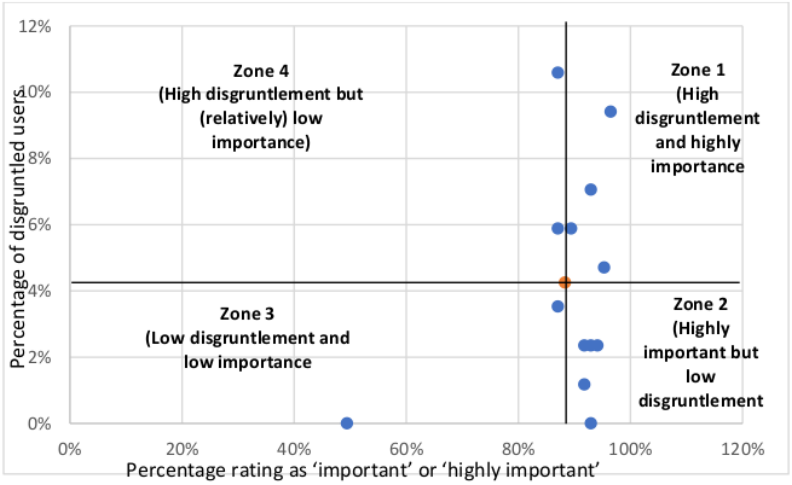


Figure 3 Example of a scatter plot (Stradling et al., 2007)

The plot was divided into quadrants to classify the priority of improvement (Stradling et al., 2007). Zone 1 for factors that require urgent remedial action, zone 2 for factors needing active performance monitoring to keep the low disgruntlement level, zone 3 for factors not requiring immediate actions as they are under the disgruntlement threshold and have low degree of importance, while zone 4 for factors needing improvement only after improvements for aspects falling in zone 1 have been realised (Stradling et al., 2007).

4.6 Limitations

This study adopted a survey method to gain the perspective of various people on a set of aspects affecting their journey motivation and experience in using online motorbike ride-hailing services. However, the participants were not completely random and diverse. The researcher found that not all social groups were familiar with the online survey. Moreover, the link to access the survey may not have been distributed around diverse groups. Participants from the non-productive working-age group were very limited. If the respondent's socio-demographic is more diverse, the data obtained can produce results more relevant to the real situation.

In addition, due to the limited time and available resource, only 13 factors were examined to understand the journey experience, even though there are more than 13 aspects mentioned in the literature (Anable and Gatersleben, 2005; Steg, 2005).

4.7 Ethical Concerns

This study has a low-risk level of ethical implications. The respondents voluntarily took part in the survey and were fully informed about the purpose of the study and were assured that all the disclosed data would only be used for this study. The respondents could fill out the survey in complete anonymity, did them at their convenience and could end the survey at any point should they wish not to continue.

The questions also did not discriminate against any minorities. Thus, this research has complied with reasonable ethical consideration.

5. Research Findings and Analysis

5.1 Descriptive Analysis of User Profile

In total, 232 samples were gathered under the probability approach of random sampling.

Table 3 Socio-demographic background of participants based on gender, age, monthly income, and occupation

		Total of respondents	Percentage of respondents
Gender	Male	75	32.4%
	Female	157	67.6%
Age range	18-25	136	58.6%
	26-35	86	37.1%
	36-45	9	3.9%
	46-55	0	0%
	>55	1	0.4%
Monthly income	<IDR4,000,000	43	18.5%
	IDR4,000,000-7,999,999	113	48.7%
	IDR8,000,000-14,999,999	54	23.3%
	IDR 15,000,000 and above	22	9.5%
Occupation	Employee	186	80.2%
	Self-employed	7	3%
	Student	29	12.5%
	Unemployed/ searching for a job	3	1.3%
	Other	7	3%

Table (3) shows that from a total of 232 samples, the percentage of participants between men and women was 32.3% and 67.7% respectively. Most of the participants were young adults in the 18-25 year and 26-35 year age groups at 62.3% and 34.9% respectively. It corroborates with findings from APJII's survey in 2018 that mentions the 18-35 year age group being the most common internet users in Indonesia (Indonesian Internet Service Providers Association, 2018). Most of the respondents are middle-income people with an IDR4,000,000–7,999,999 (equal to GBP231-462) monthly income at 48.7%. A majority of respondents are employees at 80.2%. However, the sample size of this study is not representative of the Greater Jakarta population.

Table 4 Participants' access to private vehicle

		Number of respondents	Percentage of respondents
Access to private vehicle	Yes	127	54.7%
	No	105	45.3%

Online motorbike ride-hailing services are used by people who have and do not have access to a private vehicle, at 54.7% and 45.3% respectively. It can be assumed that online motorbike ride-hailing services are not only used as an alternative to public transportation but also for private vehicles.

5.2 Trip Characteristics in using Online Motorbike Ride-hailing Service

Online motorbike ride-hailing services are a type of paratransit mode that can be used as a primary or secondary transportation mode. As a primary transportation mode, online motorbike ride-hailing services are used as the main transport mode for door-to-door travel. As a secondary transportation mode, they are used as a feeder to other mass public transportation modes, which in this study is specified only for BRT, commuter train, and MRT.

Table 5 Online motorbike ride-hailing services usage

	percentage of primary transportation mode users	percentage of secondary transportation mode users
Online motorbike ride-hailing services usage	37%	63%

Table (5) describes that 63% of participants use online motorbike ride-hailing services as a secondary transportation mode, while 37% of participants use it as a primary transportation mode. This finding is contrary to previous studies in Great Britain where passengers dislike changing modes (Paulley et al., 2006). Using the online motorbike ride-hailing services as a secondary transportation mode require passenger to do so at one point in the journey.

However, it indicates that online motorbike ride-hailing services might be a good example of paratransit transportation because it might encourage users to connect with other mass-public transportation modes. This finding is in accord with the global characteristic of paratransit transportation as a gap filler in the city mobility network (Cervero and Golub, 2007; Joewono and Kubota, 2008).

5.2.1 Trip Characteristics in using Online Motorbike Ride-hailing Service as a Primary Transportation mode

Table 6 Trip destination based on users' occupation for online motorbike ride-hailing service as a primary transportation mode

		Home	Workplace or business	School or campus	Social or leisure activity
Occupation	Employee	16.3%	53.5%	1.2%	11.6%
	Self-employed	0%	1.2%	0%	2.3%
	Student	2.3%	1.2%	3.4%	1.2%
	Unemployed/ searching for a job	0%	0%	0%	0%
	Other	0%	5.8%	0%	0%
	Total	18.6%	61.7%	4.6%	15.1%

Table (6) shows that the majority of the trips were underwent to get to the workplace or business place. It might be because the majority of respondents were employees.

5.2.2 Trip Characteristics in using Online Motorbike Ride-hailing Service as a Secondary Transportation mode

Using online motorbike ride-hailing service as a secondary transport mode means using it as a feeder to change to other public transportation, which in this study is specified as mass public transportation operating in Greater Jakarta, which are BRT, commuter train and, MRT.

Table 7 Trip destination based on users' primary transportation mode choice

		Home	Workplace or business	School or campus	Social or leisure activity	Getting to a certain point to change transportation mode	Other	Total
Primary mode	BRT	8.2%	18.5%	1.4%	2.1%	2.7%	0.7%	33.6%
	Commuter train	12.3%	24.7%	1.4%	8.2%	6.7%	0.7%	54%
	MRT	5.5%	2.7%	0.7%	1.4%	2.1%	0%	12.4%
	Total	26%	45.9%	3.5%	11.7%	11.5%	1.4%	

Table (7) indicates that the primary transportation mode that is most often combined with an online motorbike ride-hailing service is the commuter train at 54%. Most of the participants' destination in using online motorbike ride-hailing services as a feeder to commuter trains or BRT was to the workplace or business place at 24.7% and 18.5% respectively. Meanwhile, users that combined online motorbike ride-hailing services with MRT for working trip was 2.7%. This indicates that online motorbike ride-hailing services might have acted as good paratransit transportation, increasing the mobility of workers.

5.3 Motivation in Using Online Motorbike Ride-hailing Service

Considering that online motorbike ride-hailing services are a new form of transportation mode, it is essential to analyse users' travel mode before and after the operation of online motorbike ride-hailing services.

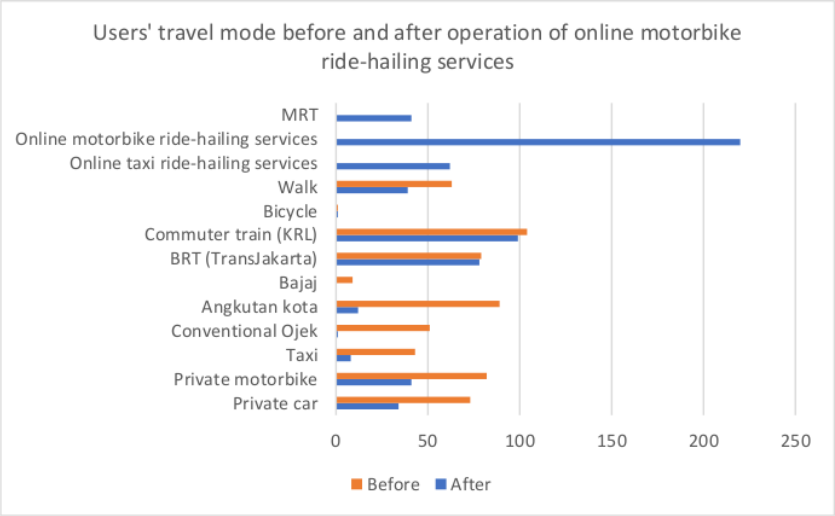


Figure 4 Users' travel mode before and after the operation of online motorbike ride-hailing services

Figure (4) shows that before online motorbike ride-hailing services operated, the commuter train was the main travel mode choice. However, after online motorbike ride-hailing services started operating, the usage of other modes, be it mass public transportation or private vehicles decreased, except the newly operated MRT. Despite the decreased of the commuter train's popularity with users, the commuter train is still the participants' major primary mode of choice to be combined with online motorbike ride-hailing services for their trips (table (7)).

It suggests that online motorbike ride-hailing services might have helped decrease the dependency on private vehicles. It corroborates with Iacobucci et al. (2017) findings about impacts of shared mobility in the US. However, it also decreases the usage of other types of paratransit, including *bajaj* and *angkutan kota* and also starts to compete with mass-public transportation, possibly generating new problems in the future.

The decision behind travel mode choice can be influenced by various factors, including the participants' socio-demographic background, trip-specific factors, transport-specific factors, environment-specific factors, policy factors and quality

factors (Olsson, 2003). However, this study focuses on investigating the correlation between the users' socio-demographic background with transport-specific and trip-specific factors.

5.3.1 Motivation in Using these Services as a Primary Transportation Mode

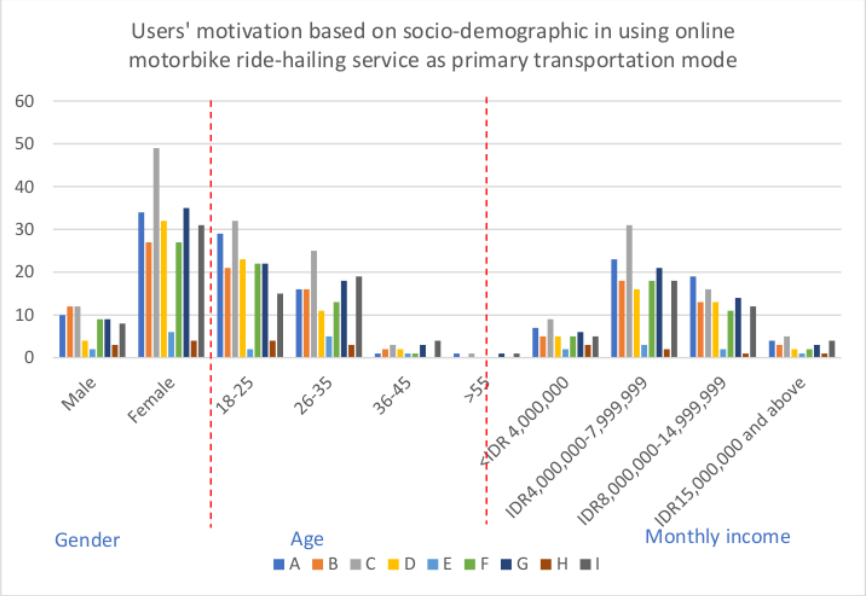


Figure 5 Users' motivation in using online motorbike ride-hailing services as primary transportation mode

A: travel destination	F: ease of getting a ride at the point of departure
B: fares	G: payment system
C: travel time	H: connectivity with other transportation modes
D: waiting time	I: avoiding congestion
E: vehicle comfort	

Figure (5) depicts that most users, regardless of their gender, age, and income, mostly choose online motorbike ride-hailing services as a primary transportation mode because of travel time, except the 36-45 year group. This might be due to the high traffic congestion in Greater Jakarta, which may consume more time if using larger-sized transportation mode for door-to-door transportation. Another reason may be the existence of narrow road in Greater Jakarta which are inaccessible by large-size vehicles, including private car and buses, so online motorbike ride-hailing services may become a reliable direct transportation mode to save travel time.

Meanwhile, vehicle comfort and connectivity with other transportation modes were two of the least popular reasons for most users regardless of their gender, age, and income. It might be because they use online motorbike ride-hailing services for direct journeys to their destination, annulling the need for connectivity within transportation modes.

5.3.2 Motivation in Using these Services as a Secondary Transportation Mode

It is essential to know the reason behind users' choice to combine their travel mode during the trip. The combination of travel modes identified in this study are BRT with online motorbike ride-hailing service, commuter train with online motorbike ride-hailing service, and MRT with online motorbike ride-hailing service. 54% of the respondents combined online motorbike ride-hailing services with the commuter train for their trip, while users combining online motorbike ride-hailing service with BRT and MRT stand in 33.6% and 12.4% respectively (table (7)).

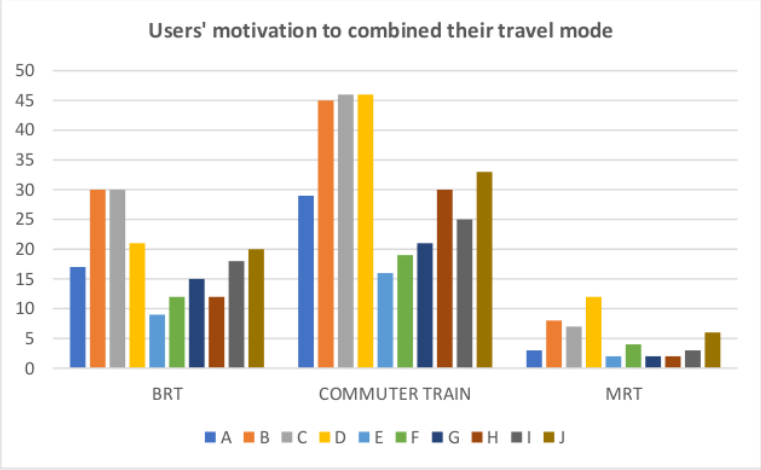


Figure 6 Users' reasons to combine transportation modes for their trip based on their primary transportation mode

A: travel destination	F: vehicle comfort
B: fares	G: ease of getting a ride at the point of departure
C: travel distance	H: payment system
D: travel time	I: connectivity with other transportation modes
E: waiting time	J: avoiding congestion

Figure (6) shows that fares, travel distance, and travel time were the three top

use one transportation mode. It corroborates Turner's finding (2013) about women in Greater Jakarta that are more sensitive to affordable and reliable public transportation than men because women are currently often responsible for household activities while also being active members of labour.

Travel distance was the most chosen reasons by respondents in the age group of 18-25, while affordable fares was chosen by most respondents in the 26-35 age group. For respondents with an IDR15,000,000 or above monthly income, arriving faster at the destination was the main reason to combine their travel mode.

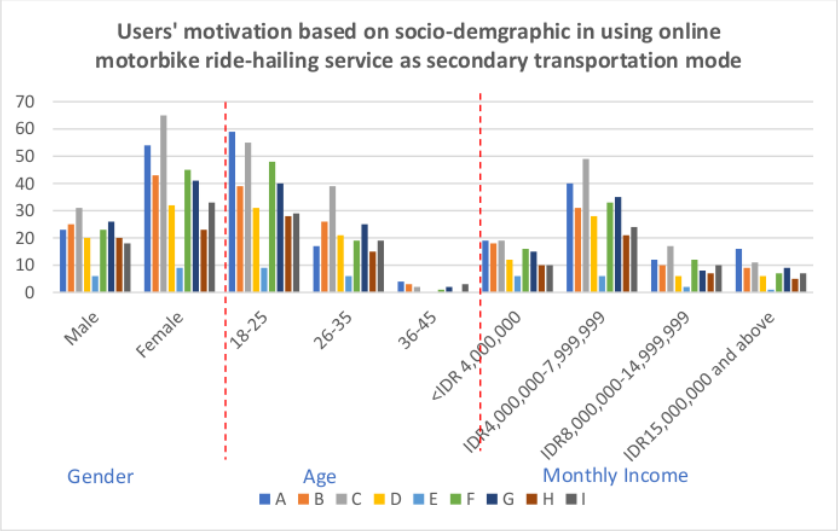


Figure 8 Users' motivation in using online motorbike ride-hailing services as secondary transportation mode

A: travel destination	F: ease of getting a ride at the point of departure
B: fares	G: payment system
C: travel time	H: connectivity with other transportation modes
D: waiting time	I: avoiding congestion
E: vehicle comfort	

Based on figure (8), travel time and travel destination were the most popular reasons for users choosing online motorbike ride-hailing services as their secondary transport mode, possibly due to the size of the vehicle allowing it to cut travel time by using alternative routes that may not be accessible for larger vehicles. The small size of the vehicle of online motorbike ride-hailing service also opens an opportunity to access the exact destination, which cannot be directly reached by most mass-public transportation systems.

Meanwhile, vehicle comfort was the least popular reason to use online motorbike ride-hailing services as feeder regardless of their gender, age, and monthly income. It might be due the brief travel times passed using online motorbike ride-hailing services as a secondary mode that decreases the importance of vehicle comfort in impacting their travel decision.

5.3.3 Summary of Motivation in Using Online Motorbike Ride-hailing Service

Travel time was the most popular reason for users in using online motorbike ride-hailing services for both primary and secondary transportation mode. This transport-specific aspect might be the most popular reason because of the possibility of a motorbike to access many alternative routes to avoid congestion, cutting the travel time compared to using larger vehicles. Meanwhile, vehicle comfort was the least popular reason for users to choose online motorbike ride-hailing service as their primary and secondary transportation mode, possibly because of their awareness of the limited comfort of riding a motorbike. Also, the users using the service as a primary transportation mode did not consider connectivity with other modes because they did not need to change to another transportation mode.

5.4 Key Factors Affecting Users' Journey Experience in Using Online Motorbike Ride-Hailing Services

Seven affective factors and six instrumental factors were selected to investigate which factors are important according to the users of online motorbike ride-hailing services. Those affective factors are the possibility of doing other activities during the trip, the ambience and condition of the vehicle, feeling happy, relaxed and comfortable during the trip, the lack of disturbance during the trip, security from criminal acts, driver/staff's behaviour, and driver/staff's knowledge and professionalism. Meanwhile, the instrumental factors are service frequency, travel time, waiting time, fares, payment systems, and lack of traffic congestion on the road.

5.4.1 Key Factors for Primary Mode Users

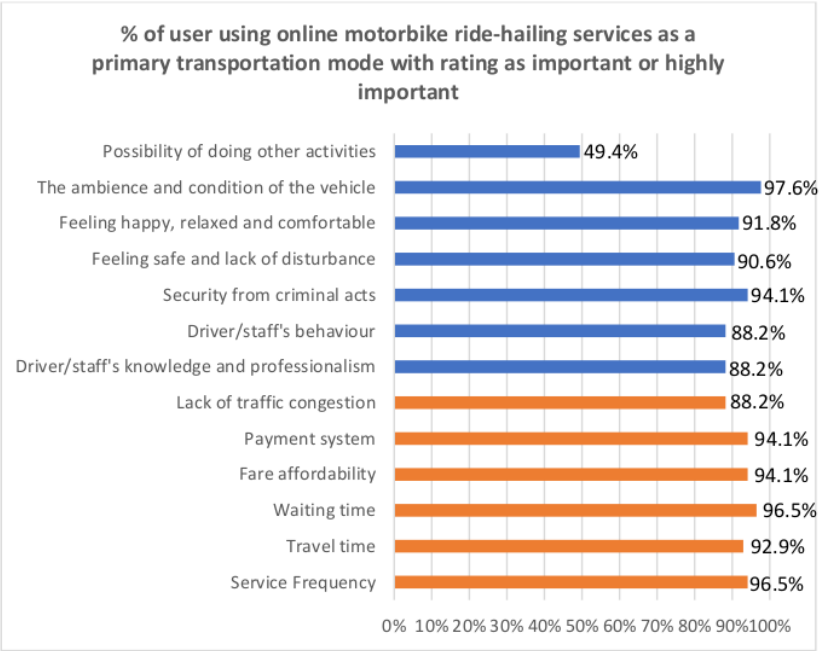


Figure 9 Importance rating of factors influencing door-to-door journey experience using online motorbike ride-hailing service

Figure (9) depicts the percentage of importance for instrumental factors was higher than affective factors, at 95% and 85.7% respectively, for the journey using online motorbike ride-hailing service as a primary transportation mode.

All the affective factors, except the possibility of doing other activities during the trip were considered important for door-to-door journey experience using online motorbike ride-hailing service with more than 80% of the respondents choosing those aspects as important or highly important. The two highest important aspects are vehicle condition and security from criminal acts at 97.6% and 94.1% respectively. Meanwhile, the possibility of doing other activities during the ride was the least important, with less than 50% of the respondents considering it as an important factor that can affect journey experience with online motorbike ride-hailing services.

All instrumental factors were considered important for a direct journey experience using online motorbike ride-hailing services with more than 80% of respondents rating each factor as important or highly important. Waiting time and service

frequency are considered the most important instrumental elements that influence users' door-to-door journey experience. This might be because the users' order needs to be confirmed by the driver first before they can benefit the actual service. Long waiting times can happen in peak hours due to the traffic congestion around Greater Jakarta. The service frequency and waiting time also depends on where user departs. Some areas are significantly covered by the online motorbike vehicles better than others.

5.4.2 Key Factors for Secondary Mode Users

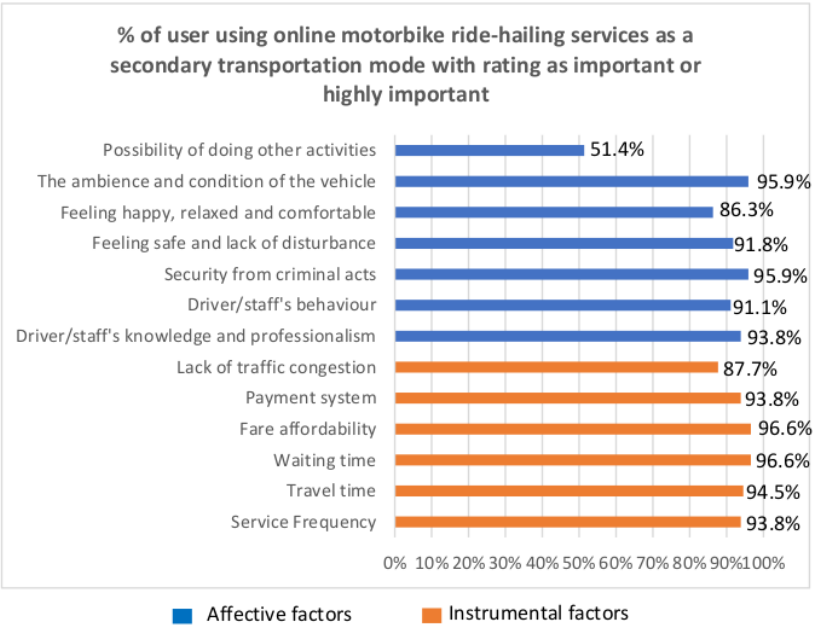


Figure 10 Importance rating of factors influencing first or last-mile journey experience using online motorbike ride-hailing service

Figure (10) identifies that the average percentage of importance for instrumental factors were higher than affective factors, at 93.8% and 80% respectively, for the journey experience in using online motorbike ride-hailing service as a secondary transportation mode.

All the affective factors except, for the possibility of doing other activities during the trip were considered important elements that influence users' journey experience in using online motorbike ride-hailing services as a secondary transportation mode. The majority of respondents chose the ambience and condition of the vehicle and security from criminal acts as the most important affective factors, at 95.9% each.

All instrumental factors were considered important elements that can affect users' journey experience. 96.6% of respondents argue that fare affordability and waiting time were important instrumental elements for users' journey experience in using online motorbike ride-hailing services as feeders to other modes of transportation. As there are more than one transportation mode, there will be more than one waiting period for the whole journey, and the fares will also be the accumulation of all modes used for the full journey. This finding confirms with the previous discussion about the reasons behind users' decision to combine transportation modes: more affordable fares, travel destination,and travel time (refer to subchapter (5.3.2)).

5.4.3 Summary of Factors Influencing Users' Journey Experience in Using Online Motorbike Ride-hailing Service

It can be summarised that some affective and instrumental elements were identified as important factors that can influence users' journey experience in using online motorbike ride-hailing service, both for direct travel and for first and last-mile journeys.

Table 8 Importance rating of factors affecting journey experience

Factors	% of user with rating as important or highly important in using online motorbike ride-hailing service as a primary transportation mode	% of user with rating as important or highly important in using online motorbike ride-hailing service as a secondary transportation mode
Possibility of doing other activities	49.4%	51.4%
The ambience and condition of the vehicle	97.6%	95.9%
Feeling happy, relaxed and comfortable	91.8%	86.3%
Feeling safe and lack of disturbance	90.6%	91.8%

Security from criminal acts	94.1%	95.9%
Driver/staff's behaviour	88.2%	91.1%
Driver/staff's knowledge and professionalism	88.2%	93.8%
Lack of traffic congestion on the route	88.2%	87.7%
Payment system	94.1%	93.8%
Fare affordability	94.1%	96.6%
Waiting time	96.5%	96.6%
Travel time	92.9%	94.5%
Service frequency	96.5%	93.8%

Based on individual ratings for each aspect in the table (8), for both types of online motorbike ride-hailing usage, the possibility of doing other activities was considered the least important factor in the journey experience, contrary to previous research in Europe (Hickman et al., 2013). It might be due to the different type of vehicles evaluated for this study, as there are limited activities that can be performed on a motorbike, even as a passenger. On the other hand, security from criminal acts was a highly important affective element for both types of journeys in using online motorbike ride-hailing service. This is corroborated by Olsson's finding (2003) that mentioned security as an important factor in urban areas.

Waiting time and fare affordability was the most instrumental elements that influenced journey experience both for direct or first and last-mile travel using online motorbike ride-hailing services. Since this type of transportation mode does not have an exact schedule, waiting time will vary for each user, depending on where the departure point is and when they order it.

Instrumental factors have a higher importance percentage than affective factors in influencing journey experience. This finding is similar to Anable and Gatersleben (2005) study for a working trip in the UK. This might happen because the majority of respondents for this study use online ride-hailing services to go to their workplace. This is also related to the previous discussion in subchapter (5.3.3), which identified

travel time as one of the major concerns behind users' decision in using online motorbike ride-hailing services in Greater Jakarta.

5.5 Understanding Travel Satisfaction in Using Online Motorbike Ride-hailing Services

Travel satisfaction can be investigated by counting the disparity between the mean customer expectation and the mean perceived experience during the trip for the instrumental and affective factor. If the gap is positive, it indicates that the mean expectation was higher than the mean perceived experience and the gap can be identified as the average level of dissatisfaction.

5.5.1 Primary Mode Users

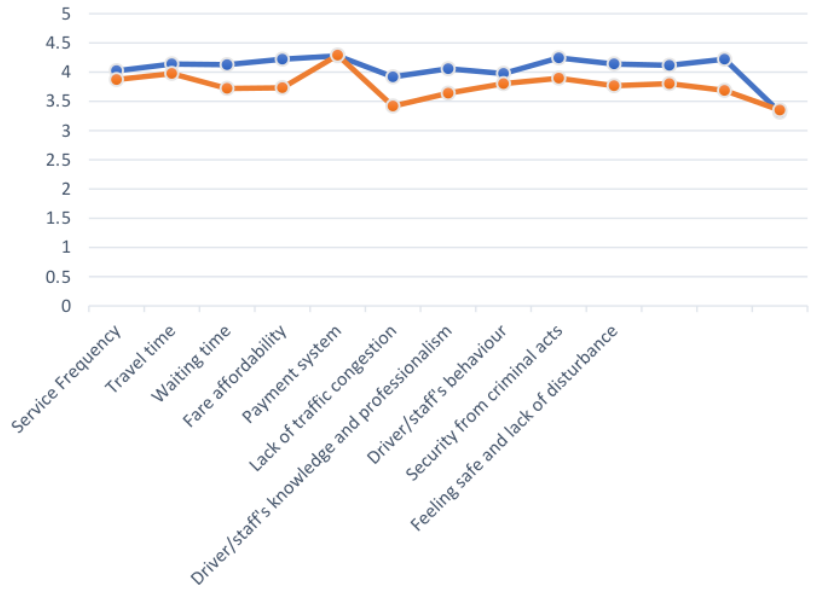


Figure 11 Users' satisfaction level in using online motorbike ride-hailing service as a primary transportation mode

Figure (11) shows the average level of dissatisfaction in using online motorbike ride-hailing services as a primary travel mode. Overall respondents were more dissatisfied with the affective factors, with an average of 0.31, than with the instrumental

factors, with an average of 0.28 (table (9)). There is a positive correlation (Pearson coefficient, between 0.254-0.752 for each element) (appendix (6)) between the importance and expectation. The result indicates that most users expect more for service elements whose good performance should be a priority.

For instrumental factors, the highest dissatisfaction level was for lack of traffic congestion on the route with the mean expectation and the perceived experience at 3.91 and 3.41 respectively. It might happen because online motorbike ride-hailing services are a road-based transportation mode that still needs to face highly congested traffic in Greater Jakarta's roads.

Meanwhile, for the affective factors, the ambience and condition of the vehicle was the element of services that dissatisfied the respondents the most. The mean expectation and the perceived experience were at 4.22 and 3.7 respectively. It might be due to the 'partnership' scheme between the online motorbike ride-hailing services and the drivers. Since the ownership of the vehicle belongs to drivers, the company only can make regulations about the vehicle condition to become their partner. However, sometimes drivers use a different motorbike when providing the transport service.

Interestingly, there are two elements of service that only have slight negative gaps between the mean expectation and the perceived experience. Those were payment systems and the possibility of doing other activities during the trip. It means that those two elements performed well enough to the users' expectation.

5.5.2 Secondary Mode Users

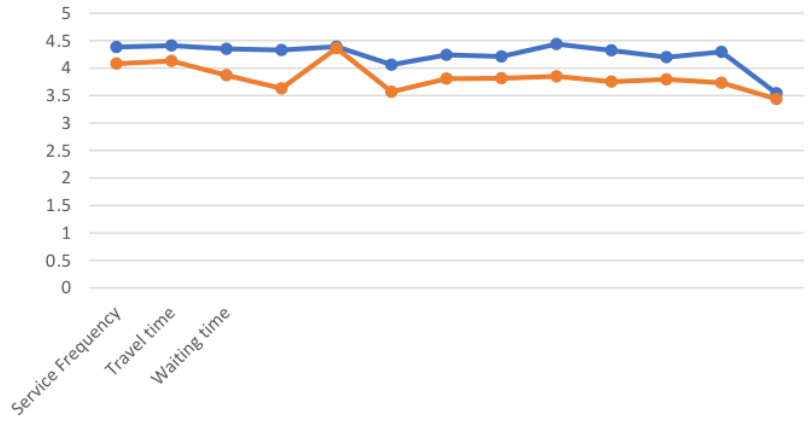


Figure 12 Users' satisfaction level in using online motorbike ride-hailing service as a secondary transportation mode

Figure (12) shows the average level of dissatisfaction in using online motorbike ride-hailing services as a secondary travel mode. Overall respondents were more dissatisfied with the affective factors with an average of 0.44 than the instrumental factors with an average of 0.38 (table (9)). There is a positive correlation (Pearson coefficient, between 0.397-0.770 for each element) (appendix (6)) between the importance and expectation. The result indicates that most users expect more for service elements whose good performance should be a priority.

For the instrumental factors, the most significant dissatisfaction level was for fare affordability with the mean of expectation and the perceived experience at 4.44 and 3.85 respectively. It might be because while using online motorbike ride-hailing services as a feeder to another mass-transportation mode, users have to pay the minimum payment fares, which might cost higher than expected, despite the relatively short travel distance.

For the affective factors, respondents were most dissatisfied with the security from criminal acts. The mean expectation and the perceived experience were at 4.22 and 3.7 respectively. Security is one of the important factors behind user decision in choosing their travel mode (Olsson, 2003) and will affect their journey experience.

Summary of Users' Satisfaction Level in Using Online Motorbike Ride-Hailing Services

Table 9 Average dissatisfaction level in using online motorbike ride-hailing services

Aspect of service	Average gap for primary transportation mode	Average gap for secondary transportation mode
Service frequency	0.15	0.30
Travel time	0.16	0.28
Waiting time	0.40	0.48
Fare affordability	0.50	0.70
Payment system	-0.01	0.03
Lack of traffic congestion	0.5	0.50
Average of instrumental	*0.28*	*0.38*
Driver/staff's knowledge and professionalism	0.42	0.43
Driver/staff's behaviour	0.17	0.40
Security from criminal acts	0.35	0.59
Feeling safe and lack of disturbance	0.37	0.57
Feeling happy, relaxed and comfortable	0.31	0.40
The ambience and condition of vehicle	0.54	0.56

Possibility of doing other activity	-0.04	0.1
Average of affective	*0.3*	*0.43*

In general, based on table (9), users of online motorbike ride-hailing services as both the primary and secondary mode were more dissatisfied with the affective elements of transportation service than the instrumental elements. For the instrumental factors, users of primary and secondary transportation modes were most dissatisfied with fare affordability and most satisfied with the payment system, possibly because current online motorbike ride-hailing fares need to follow regulation from the Ministry of Transportation on minimum fares (Ministry of Transportation of Republic Indonesia, 2019). However, for the payment system, these online motorbike ride-hailing service companies offer two systems of payment: cash or cashless using e-money, ruling out the need to connect with a credit card which is unpopular in Indonesia (Freischlad, 2017).

However, the most dissatisfying affective factors were different for direct journeys and first and last-mile journeys despite using the same mode of transportation, possibly due to different trip characteristics and different socio-demographic background.

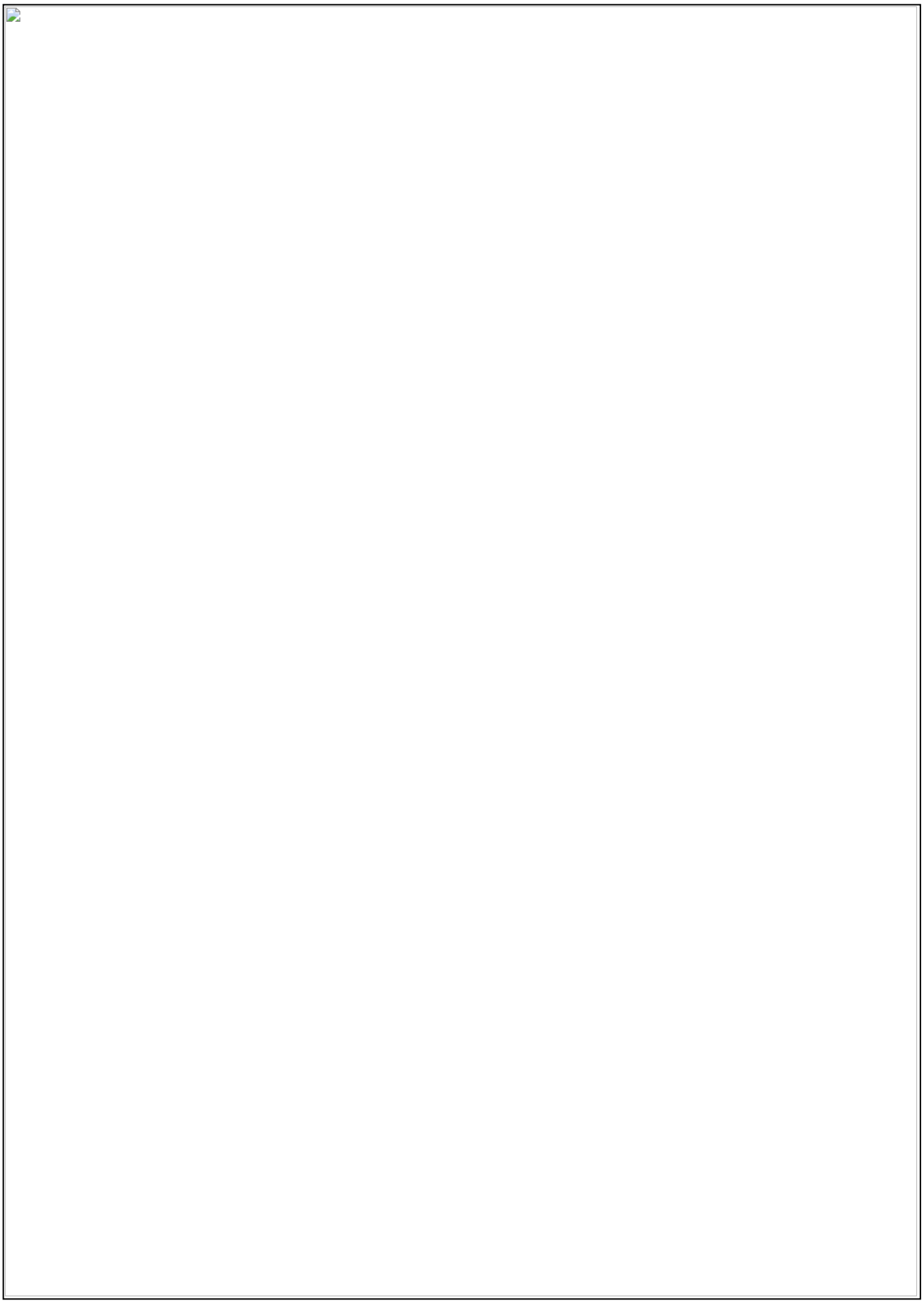
5.6 Identifying Aspects of Services that Require Improvement

The previous subchapters investigated each element prioritised by existing users and observed their degree of dissatisfaction. This part will analyse the priority chart for improving those elements based on the 'disgruntlement measure' coined by Stradling et al. (2007).

5.6.1 Primary Transportation Mode

Table 10 Percentage of disgruntled users and percentage of importance for online motorbike ride-hailing service as a primary transportation mode

Symbol	Factors affecting journey experience	Percentage of disgruntled users (appendix (7))	Percentage of users with rating as important or highly important
A	Service frequency	2.4%	96.5%
B	Travel time	1.2%	92.9%
C	Waiting time	4.7%	96.5%
D	Fare affordability	7.1%	94.1%
E	Payment system	0%	94.1%
F	Lack of traffic congestion on the route	15.3%	88.2%
G	Driver/staff's knowledge and professionalism	5.9%	88.2%
H	Driver/staff's behaviour	3.5%	88.2%
I	Security from criminal acts	2.4%	94.1%
J	Feeling safe and lack of disturbance	5.9%	90.6%
K	Feeling happy, relaxed and comfortable	2.4%	91.8%
L	The ambience and condition of vehicle	9.4%	97.6%
M	Possibility doing other activities	0%	49.4%



K	Feeling happy, relaxed and comfortable	3%	86.3%
L	The ambience and condition of vehicle	8%	95.9%
M	Possibility doing other activities	3%	51.4%

Figure 14 Scatter graph of disgruntlement vs importance for online motorbike ride-hailing services as a secondary transportation mode

Figure (14) investigates the four zones that represent the priority of service improvement for online motorbike ride-hailing services as a secondary transportation mode. The centroid of the data is the relative point of threshold for an acceptable level of user dissatisfaction, dividing the data into these quadrants. The graph conveys a combination of both instrumental and affective variables.

Waiting time, fare affordability, the lack of disturbance during the ride and the ambience, and condition of the vehicle are require urgent improvement since all those elements are in zone 1. Similar to the discussion on subchapter (5.6.1), fare affordability cannot be improved directly because it needs to follow the ministry regulation, while the ambience and condition of vehicle might be better if the companies provide stringent regulation

Traffic congestion on the route has the highest disgruntlement level in zone 4 that is considered for improvement only after the improvement in zone 1 are done. Service frequency, travel time, payment system, driver/staff's knowledge and professionalism, driver/staff's behaviour, and security from criminal acts were significantly important but with relatively few dissatisfied users, means all those factors are in zone 2 needs to be monitored frequently to maintain the low degree of disgruntlement. Meanwhile, feeling happy, relaxed and comfortable during the ride, and the possibility of doing other activities during the ride fall in in zone 3, and do not need urgent improvement because they are still satisfactory.

6. Conclusion

6.1 Summary of Findings

The aims of this study are to understand users' motivation and journey experience in using online motorbike ride-hailing services to identify aspects requiring urgent improvement. The online motorbike ride-hailing service is considered as a new form of paratransit mode that can act as the primary transportation mode for direct travel or as secondary transportation mode as a feeder or last-mile travel to other modes of mass public transportation. This study took place in Greater Jakarta, Indonesia, using an online survey.

Previous studies about motivation, journey experience and user satisfaction were mostly conducted in Global North, specifically European countries, and similar studies in developing Asian cities are still insufficient. This study was valuable to identify users' motivation, journey experience and satisfaction in the Indonesian context.

Research objectives:

1. To identify which factors influence users' decisions in choosing online ride-hailing services as their travel mode based on different users' socio-demographic background.
   This study identified that travel time was the most chosen reason to use online motorbike ride-hailing service as their primary transportation mode, regardless of their gender, age, and income. Meanwhile,

with Anable and Gatersleben (2005) for working trips in the UK. For direct transportation, the most important factors were waiting time, service frequency (instrumental), and ambience and condition of the vehicle (affective). On the other hand, for first and last-mile journeys, fare affordability, and waiting time were the most important instrumental factors, while the ambience and condition of vehicle and security from criminal acts were the most important affective factors.

3. To understand the current degree of journey experience dissatisfaction in using online motorbike ride-hailing services.
   This study revealed that the most significant dissatisfaction level for online motorbike ride-hailing services as the primary transportation mode were the traffic congestion on the route (instrumental) and the ambience and condition of the vehicle (affective). However, the same users were satisfied with the payment system and the possibility of doing other activities during the trip on online motorbike ride-hailing service as a primary transportation mode, since those factors have a negative gap between expectation and actual perceived experience. However, the most significant dissatisfaction level for online motorbike ride-hailing services as secondary transportation mode were fare affordability (instrumental) and security from criminal acts (affective). The overall finding from the discussion was that users were more dissatisfied with affective factors than instrumental factors for both uses of online motorbike ride-hailing service.

4. To investigate the aspect of the service requiring urgent improvement.
   This study use matrix developed by Stradling et al. (2007) to measure 'disgruntled users'. The aspects categorised in zone 1 must be prioritised for improvement because it is highly important with a high percentage of disgruntled users.
   For online motorbike ride-hailing services as a primary transportation mode, aspects categorised in zone 1 were the ambience and condition of the vehicle, fare affordability, feeling of safety and lack of disturbance during the ride, and waiting time. As a secondary transportation mode, the same aspects of service fall in zone one and need urgent improvement. Also, both affective and

instrumental factors need to be evaluated and improved to provide a better journey experience for online motorbike ride-hailing service users. However, the improvement seems to require not only the involvement of the online motorbike ride-hailing services companies but also from the government as a transportation regulator.

6.2 Suggestion for Future Research

This study was valuable and significant in the field of transportation, especially in Indonesia's context. The study was able to identify the reasons behind users' decision in using online motorbike ride-hailing services. It was also able to investigate the level of importance for selected aspects of service alongside users' satisfaction towards online motorbike ride-hailing services. The importance and satisfaction levels were used to formulate the matrix used to identify the priority of improvements to provide a better journey experience.

However, this study only gives insight from existing users' perspective due to time and resource limitations. Future studies with larger datasets, more diverse socio-demographic backgrounds, and with inclusion of non-transportation users' perception to develop similar a matrix can be conducted. User and non-user matrices can be analysed together to develop a better journey experience for existing users and to attract new users to use online motorbike ride-hailing services.

This study also revealed that users' judgement towards their travel motivation and experience were influenced by different social and cultural factors between European and Indonesian contexts. Further empirical studies to identify context-specific factors in Indonesia are needed in order to develop better mobility services in Greater Jakarta.

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Appendix 1 Questionnaire

This research is about users' motivation, journey experience and satisfaction in using online motorbike ride-hailing services as one of transportation mode in Greater Jakarta.

The criteria of respondents are:

- Minimum 18 years old, living in Greater Jakarta Area
- A regular user (at least once a week) of online motorbike ride-hailing services (GO-JEK and/or GRAB)
- Have routine activities in DKI Jakarta

Please be assure that all your responses are voluntary and will be treated confidentially.

Consent	
1. I agree to participate in this survey and will provide the most appropriate answer	a. Agree b. Disagree

Personal Detail	
2. Gender	a. Male b. Female
3. Age	a. Under 18 b. 18-25 c. 26-35 d. 36-45 e. 46-55 f. 55 and above
4. Occupation	a. Employee b. Self-employed c. Retired d. Student e. Unemployed/searching for a job f. Other…..
5. Present income	a. Less than IDR4,000,000 b. IDR4,000,000–IDR7,999,999 c. IDR8,000,000–IDR14,999,999 d. IDR15,000,000 and above
6. Area of living	a. DKI Jakarta b. Bogor c. Bogor Regency d. Tangerang e. South Tangerang f. Tangerang Regency g. Depok h. Bekasi

	i. Bekasi Regency
7. Access to private vehicle	a. Yes b. No (continue number 9)
8. If yes, please indicate the type of vehicle (can choose more than one answer)	a. Car b. Motorbike c. Bike
9. Weekly usage of online motorbike ride-hailing service	a. Never b. 1-5 times c. 6-10 times d. More than ten times

Online motorbike ride-hailing services usage	
10. Usual destinations when using online motorbike ride-hailing services (can choose more than one answer)	a. Home b. Workplace or business c. School or campus d. Social or leisure activities e. Getting to a certain point to change transportation mode f. Other…..
11. Reason in using online motorbike ride-hailing services (can choose more than one answer)	a. Travel destination b. Fares c. Travel distance d. Travel time e. Waiting time f. Vehicle comfort g. Easiness of getting a ride at the point of departure h. Payment system i. Connectivity with other modes of transportation j. Avoiding congestion k. Other….
12. Most frequently used transportation mode before online motorbike ride-hailing services started operating (can choose up to three answer)	a. Private car b. Private motorbike c. Taxi d. Conventional *ojek* e. *Angkutan kota* f. *Bajaj* g. BRT (TransJakarta) h. Commuter line i. Cycling j. Walking

13. Transportation mode that most frequently used currently (can choose up to three answer)	a. Online taxi ride-hailing services b. Online motorbike ride-hailing services c. Private car d. Private motorbike e. Taxi f. Conventional *ojek* g. *Angkutan kota* h. *Bajaj* i. BRT (TransJakarta) j. Commuter line k. MRT l. Cycling m. Walking
14. Reasons for using the transportation mode in question number 13 (can choose more than one answer)	a. Travel destination b. Fares c. Travel distance d. Travel time e. Waiting time f. Vehicle comfort g. Easiness of getting a ride at the point of departure h. Payment system i. Connectivity with other modes of transportation j. Avoiding congestion k. Other, ….

Trip details The questions below concern the last trip you have made that involved using online motorbike ride-hailing service and/or combined it with mass public transportation (BRT, Commuter line and MRT) Example: journey from home to office consist of: Going to BRT terminal using **online motorbike ride-haling services** -> ride **BRT** -> ride **online motorbike ride-hailing service** from BRT terminal to office	
15. Destination for this journey	a. Home b. Workplace or business c. School or campus d. Social or leisure activities e. Getting to a certain point to change transportation mode f. Other….
16. Use more than one transportation mode	a. Yes

	b. No (continue to question number 21)
17. Reason to use more than one transportation modes (Can choose more than one answer)	a. Travel destination b. Fares c. Travel distance d. Travel time e. Waiting time f. Vehicle comfort g. Easiness of getting a ride at the point of departure h. Payment system i. Connectivity with other modes of transportation j. Avoiding congestion
18. Primary transportation mode (Primary mode is main transportation mode that served the longest journey Example: Going to BRT terminal using **online motorbike ride-haling services** -> ride **BRT** -> ride **online motorbike ride-hailing service** from BRT terminal to office Primary mode: BRT) (The answer will be used to evaluate the question number 22-34)	a. Online motorbike ride-hailing services b. BRT (TransJakarta) c. Commuter line d. MRT
19. Reason chose mode in number 18 as primary transportation mode (can choose more than one answer)	a. Travel destination b. Fares c. Travel time d. Waiting time e. Vehicle comfort f. Easiness of getting a ride at the point of departure g. Payment system h. Connectivity with other modes of transportation i. Avoiding congestion
20. Secondary transportation mode (if applicable) (Secondary mode is supporting mode to connect with primary mode Example:	a. Online motorbike ride-hailing services b. N/A

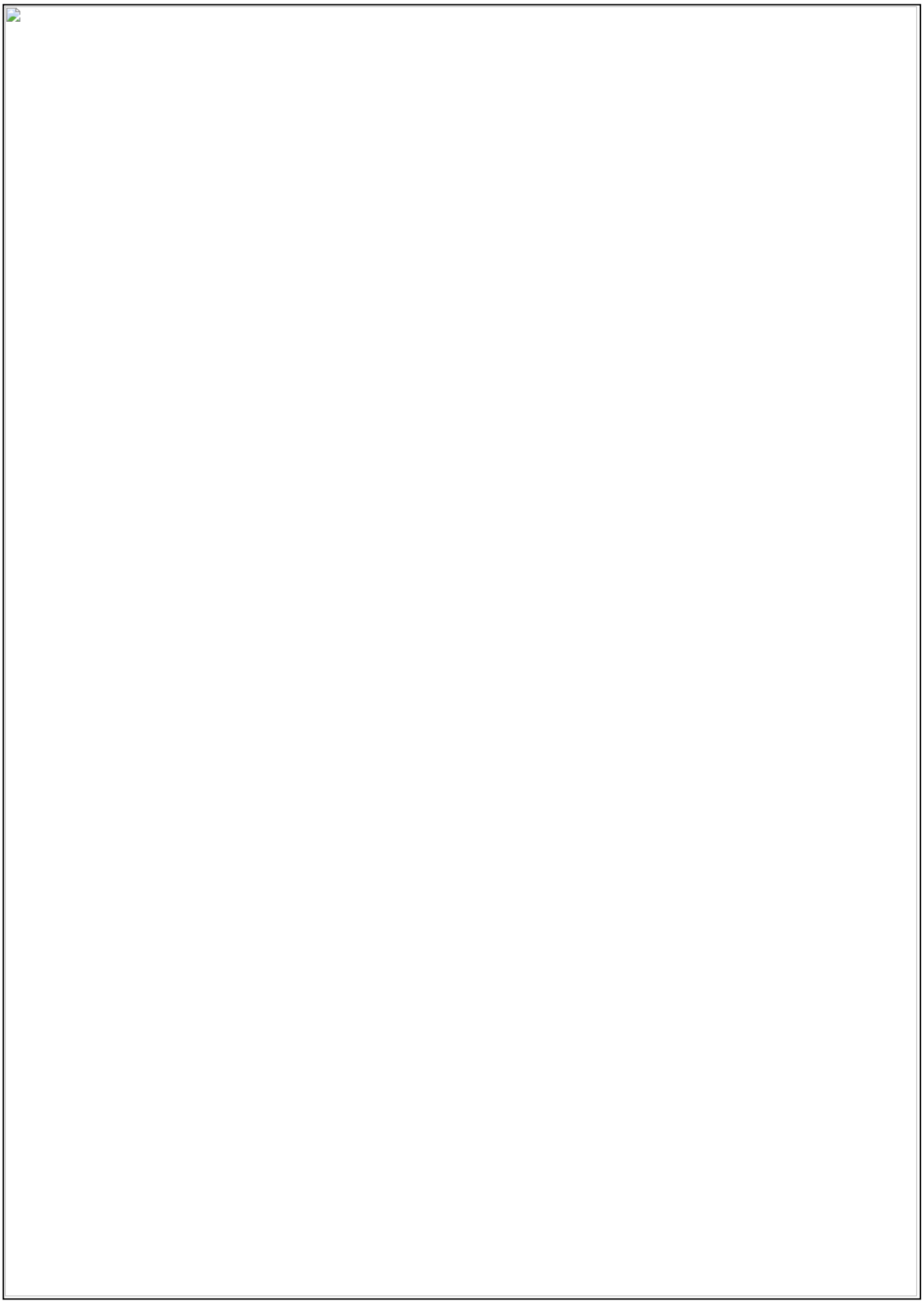
Going to BRT terminal using **online motorbike ride-haling services** -> ride **BRT** -> ride **online motorbike ride-hailing service** from BRT terminal to office Secondary mode: Online motorbike ride-hailing services) (The answer will be used to evaluate the question number 35-47)	
21. Reason chose mode in number 20 as secondary transportation mode (can choose more than one answer)	a. Travel destination b. Fares c. Travel time d. Waiting time e. Vehicle comfort f. Easiness of getting a ride at the point of departure g. Payment system h. Connectivity with other modes of transportation i. Avoiding congestion

Service assessment of the chosen primary transportation mode

This section will assess:

- Importance level, which is how importance is the aspects of the service is delivered well
- Expectation level, which is how high you expect the aspect of the service in the chosen mode
- Perceived experience, which is how well is the aspect of the service being delivered to you

		Very low	Low	Neutral	High	Very high
22. Service Frequency	Importance					
	Expectation					
	Perceived experience					
23. Travel time	Importance					
	Expectation					
	Perceived experience					
24. Waiting time	Importance					
	Expectation					
	Perceived experience					



Service assessment of the chosen secondary transportation mode (if applicable)

This section will assess:

- Importance level, which is how importance is the aspects of the service is delivered well
- Expectation level, which is how high you expect the aspect of the service in the chosen mode
- Perceived experience, which is how well is the aspect of the service being delivered to you

		Very low	Low	Neutral	High	Very high
35. Service Frequency	Importance					
	Expectation					
	Perceived experience					
36. Travel time	Importance					
	Expectation					
	Perceived experience					
37. Waiting time	Importance					
	Expectation					
	Perceived experience					
38. Fare affordability	Importance					
	Expectation					
	Perceived experience					
39. Payment system	Importance					
	Expectation					
	Perceived experience					
40. Lack of traffic congestion on the route	Importance					
	Expectation					
	Perceived experience					
41. Driver/staff knowledge and professionalism	Importance					
	Expectation					
	Perceived experience					
42. Driver/staff behaviour	Importance					
	Expectation					
	Perceived experience					
43. Security from criminal acts	Importance					
	Expectation					

	Perceived experience					
44. Feeling safe and lack of disturbance	Importance					
	Expectation					
	Perceived experience					
45. Feeling happy, relaxed and comfortable	Importance					
	Expectation					
	Perceived experience					
46. The ambience and condition of the vehicle	Importance					
	Expectation					
	Perceived experience					
47. Possibility of doing other activities	Importance					
	Expectation					
	Perceived experience					

Appendix 2 Participants' Socio-Demographic

Number of respondents = 232 people

		Primary mode user	Secondary mode user	Total
Gender	Male	22	53	75
	Female	64	93	157
Age	18-25	45	91	136
	26-35	35	51	86
	36-45	5	4	9
	46-55	0	0	0
	>55	1	0	1
Occupation	Employee	71	115	186
	Self-employed	3	4	7
	Student	7	22	29
	Unemployed/ searching for a job	0	3	3
	Other	5	2	7
Monthly income	<IDR4,000,000	13	30	43
	IDR4,000,000–7,999,999	40	73	113
	IDR8,000,000–14,999,999	25	29	54
	>IDR15,000,000	8	14	22
Access to private vehicle	Yes	22	85	107
	No	64	61	125

Appendix 3 Travel Mode Choice

Users' chosen travel mode before and after the operation of online motorbike ride-hailing services

Travel mode	Before	After
MRT	0 (first operation in 2019)	41
Online motorbike ride-hailing services	0	220
Online taxi ride-hailing services	0	62
Walk	63	39
Bicycle	1	1
Commuter train (KRL)	104	99
BRT (TransJakarta)	79	78
Bajaj	9	0
Angkutan kota	89	12
Conventional *ojek*	51	1
Taxi	43	8
Private motorbike	82	41
Private car	73	34

Appendix 4 Reliability test

Reliability test for user's experience in using online motorbike ride-hailing service (level of importance, level of expectation and perceived experience)

Cronbach's Alpha	N of items
0.969	78

Appendix 5 Motivation

4.1 Users' motivation in using online motorbike ride-hailing service as primary transportation mode

		a	b	c	d	e	f	g	h	i
Gender	Male	10	**12**	**12**	4	2	9	9	3	8
	Female	34	27	**49**	32	6	27	35	4	31
Age	18-25	29	21	**32**	23	2	22	22	4	15
	26-35	16	16	**25**	11	5	13	18	3	19
	36-45	1	2	3	2	1	1	3	0	**4**
	46-55	0	0	0	0	0	0	0	0	0
	>55	**1**	0	**1**	0	0	0	**1**	0	1
Monthly income	<IDR4,000,000	7	5	**9**	5	2	5	6	3	5
	IDR4,000,000 – 7,999,999	23	18	**31**	16	3	18	21	2	18
	IDR8,000,000 – 14,999,999	10	13	**16**	13	2	11	14	1	12
	>IDR15,000,000	4	3	**5**	2	1	2	3	1	4

a: Travel destination
b: Fares
c: Travel time
d: Waiting time
e: Vehicle comfort
f: Easiness of getting a ride at the point of departure
g: Payment system
h: Connectivity with other transportation modes
i: Avoiding congestion

4.2 Users' motivation to combine travel mode

		a	b	c	d	e	f	g	h	i	j
Primary transportation mode	BRT	17	30	**30**	21	9	12	15	12	18	20
	Commuter train	29	45	**46**	**46**	16	19	21	30	25	33
	MRT	3	8	7	**12**	2	4	2	2	3	6
Gender	Male	15	28	**32**	29	10	17	15	22	18	19
	Female	34	**55**	51	50	17	18	23	22	28	40
Age	18-25	28	50	**52**	45	13	17	25	22	31	35
	26-35	28	33	28	31	14	18	13	21	15	21
	36-45	**3**	0	**3**	**3**	0	0	0	1	0	**3**
	46-55	0	0	0	0	0	0	0	0	0	0
	>55	0	0	0	0	0	0	0	0	0	0
Monthly income	<IDR4,000,000	11	**20**	16	14	5	7	9	10	10	10
	IDR4,000,000 – 7,999,999	22	35	**45**	42	12	14	18	22	26	31
	IDR8,000,000 – 14,999,999	10	**21**	15	12	5	10	7	7	7	13
	>IDR15,000,000	6	7	7	**11**	5	4	4	5	3	5

a: Travel destination
b: Fares
c: Travel distance
d: Travel time
e: Waiting time
f: Vehicle comfort
g: Easiness of getting a ride at the point of departure
h: Payment system
i: Connectivity with other transportation mode
j: Avoiding congestion

4.3 Users' motivation in using online motorbike ride-hailing service as secondary transportation mode

		a	b	c	d	e	f	g	h	i
Gender	Male	23	25	**31**	20	6	23	26	20	18
	Female	54	43	**65**	32	9	45	41	23	33
Age	18-25	**56**	39	55	31	9	48	40	28	29
	26-35	17	26	**39**	21	6	19	25	15	19
	36-45	**4**	3	2	0	0	1	2	0	3
	46-55	0	0	0	0	0	0	0	0	0
	>55	0	0	0	0	0	0	0	0	0
Monthly income	<IDR 4,000,000	**19**	18	**19**	12	6	16	15	10	10
	IDR4,000,000 – 7,999,999	40	31	**49**	28	6	33	35	21	24
	IDR8,000,000 – 14,999,999	12	10	**17**	6	2	12	8	7	10
	>IDR 15,000,000	**16**	9	11	6	1	7	9	5	7

a: Travel destination
b: Fares
c: Travel time
d: Waiting time
e: Vehicle comfort
f: Easiness of getting a ride at the point of departure
g: Payment system
h: Connectivity with other transportation mode
i: Avoiding congestion

Appendix 6 Correlation Test

Pearson's coefficient for online motorbike ride-hailing service as primary and secondary transportation mode

	Primary mode			Secondary mode		
Factors	Average importance	Average expectation	Pearson correlation	Average importance	Average expectation	Pearson correlation
Service frequency	4.27	4.02	.254*	4.58	4.38	.568**
Travel time	4.43	4.14	.628**	4.60	4.41	.671**
Waiting time	4.45	4.13	.460**	4.60	4.35	.591**
Fare	4.49	4.22	.587**	4.64	4.33	.397**
Payment system	4.39	4.23	.752**	4.57	4.39	.694**
Lack of traffic congestion on the route	4.30	3.92	.507**	4.47	4.06	.571**
Driver/staff's knowledge and professionalism	4.35	4.06	.673**	4.53	4.24	.581**
Driver/staff's behaviour	4.28	3.98	.667**	4.49	4.21	.659**
Security from criminal act	4.55	3.98	.558*	4.71	4.44	.550**
Feeling safe and lack of disturbance	4.41	4.14	.738**	4.55	4.32	.673**
Feeling happy, relaxed and comfortable	4.39	4.12	.750**	4.43	4.20	.729**
The ambience and condition of the vehicle	4.46	4.22	.698**	4.63	4.29	.693**
Possibility of doing other activities	3.39	3.31	.726**	3.64	3.54	.770**

Appendix 7 Cross-Tabulation of Percentage Importance and Percentage Disgruntlement

6.1 Online motorbike ride-hailing service as primary transportation mode (n=86)

Instrumental factors			Perceived experience				
			Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Service frequency	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	3	3	0
		Important	**0**	**1**	7	41	2
		Highly important	**0**	**1**	5	17	6
Travel time	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	5	1	1
		Important	**0**	**0**	5	27	3
		Highly important	**0**	**1**	8	21	14
Waiting time	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	2	2	0
		Important	**0**	**1**	12	24	2
		Highly important	**0**	**3**	11	22	7
Fare affordability	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	1	0	1	0
		Neutral	0	0	2	2	0
		Important	**0**	**2**	6	20	2
		Highly important	**0**	**4**	18	13	15
Payment system	Importanc	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	1	0
		Neutral	0	0	4	1	0

		Important	**0**	**0**	4	30	5
		Highly important	**0**	**0**	3	7	31
Lack of traffic congestion on the route	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	1	1	0
		Neutral	0	0	7	2	0
		Important	**0**	**4**	11	20	1
		Highly important	**2**	**7**	13	8	9
Affective factors			Perceived experience				
			Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Driver/staff's knowledge and professionalism	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	9	1	1
		Important	**0**	**2**	10	21	1
		Highly important	**0**	**3**	13	16	9
Driver/staff's behaviour	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	7	2	2
		Important	**0**	**0**	8	30	2
		Highly important	**0**	**3**	9	14	9
Security from criminal acts	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	1
		Neutral	0	0	5	0	0
		Important	**0**	**1**	4	20	1
		Highly important	**0**	**1**	14	23	16
Feeling safe and lack of disturbance	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	1	0	0
		Neutral	0	0	8	0	0
		Important	**0**	**2**	9	20	1

		Highly important	**0**	**3**	5	25	12
Feeling happy, relaxed and comfortable	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	7	1	0
		Important	**0**	**2**	11	23	1
		Highly important	**0**	**0**	7	23	11
The ambience and condition of the vehicle	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	3	0	0
		Important	**0**	**2**	11	27	0
		Highly important	**0**	**6**	9	16	12
Possibility of doing other activities	Importance	Unimportant	0	0	2	1	0
		Fairly unimportant	0	7	8	2	0
		Neutral	0	2	19	3	0
		Important	**0**	**0**	10	14	3
		Highly important	**0**	**0**	5	7	3

6.2 Online motorbike ride-hailing service as secondary transportation mode (n=146)

Instrumental factors	Perceived experience				
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Service					

Lack of traffic congestion on the route	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	3	0	0
		Neutral	0	3	9	3	0
		Important	**0**	**5**	16	18	0
		HIghly important	**1**	**9**	26	25	28
Affective factors			Perceived experience				
			Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Driver/staff's knowledge and professionalism	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	7	1	1
		Important	**0**	**2**	12	35	1
		Highly important	**0**	**5**	23	33	26
Driver/staff's behaviour	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	1
		Neutral	0	1	8	2	1
		Important	**0**	**0**	19	28	1
		Highly important	**0**	**4**	21	32	28
Security from criminal acts	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	5	1	0
		Important	**0**	**4**	8	18	0
		Highly important	**1**	**2**	31	39	37
Feeling safe and lack of disturbance	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	0	9	3	0
		Important	**0**	**6**	14	20	2
		Highly important	**0**	**6**	20	37	29

Feeling happy, relaxed and comfortable	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	2	0	0
		Neutral	0	0	14	4	1
		Important	**0**	**3**	12	26	30
		HIghly important	**0**	**2**	23	29	31
The ambience and condition of the vehicle	Importance	Unimportant	0	0	0	0	0
		Fairly unimportant	0	0	0	0	0
		Neutral	0	1	5	0	0
		Important	**0**	**6**	15	20	2
		Highly important	**2**	**4**	23	38	30
Possibility of doing other activities	Importance	Unimportant	0	0	3	0	0
		Fairly unimportant	0	5	8	6	0
		Neutral	0	5	34	9	1
		Important	**0**	**3**	11	17	0
		Highly important	**0**	**2**	12	15	15

Appendix 8 Risk Assessment

RISK ASSESSMENT FORM

FIELD / LOCATION WORK

The Approved Code of Practice - Management of Fieldwork should be referred to when completing this form

http://www.ucl.ac.uk/estates/safetynet/guidance/fieldwork/acop.pdf

DEPARTMENT/SECTION

LOCATION GREATER JAKARTA, INDONESIA

PERSONS COVERED BY THE RISK ASSESSMENT Agita Putri

BRIEF DESCRIPTION OF FIELDWORK Online questionnaire

Consider, in turn, each hazard (white on black). If **NO** hazard exists select **NO** and move to next hazard section.
If a hazard does exist select **YES** and assess the risks that could arise from that hazard in risk assessment box.
Where risks are identified that are not adequately controlled, they must be brought to the attention of your Departmental Management who should put temporary control measures in place or stop the work. Detail such risks in the final section.

ENVIRONMENT	**The environment always represents a safety hazard. Use space below to identify and assess any risks associated with this hazard**
e.g. location, climate, terrain, neighbourhood, in outside organizations, pollution, animals.	Examples of risk: adverse weather, illness, hypothermia, assault, getting lost. **N/A**
CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**

- ☐ work abroad incorporates Foreign Office advice
- ☐ participants have been trained and given all necessary information
- ☐ only accredited centres are used for rural field work
- ☐ participants will wear appropriate clothing and footwear for the specified environment
- ☐ trained leaders accompany the trip
- ☐ refuge is available
- ☐ work in outside organisations is subject to their having satisfactory H&S procedures in place
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

EMERGENCIES	**Where emergencies may arise use space below to identify and assess any risks**
e.g. fire, accidents	Examples of risk: loss of property, loss of life
N/A	
CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**

- ☐ participants have registered with LOCATE at http://www.fco.gov.uk/en/travel-and-living-abroad/
- ☐ firefighting equipment is carried on the trip and participants know how to use it
- ☐ contact numbers for emergency services are known to all participants

- ☐ participants have means of contacting emergency services
- ☐ participants have been trained and given all necessary information
- ☐ a plan for rescue has been formulated, all parties understand the procedure
- ☐ the plan for rescue /emergency has a reciprocal element
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

EQUIPMENT	**Is equipment used?**	**NO**	**If 'No' move to next hazard** **If 'Yes' use space below to identify and assess any risks**
e.g. clothing, outboard motors.	Examples of risk: inappropriate, failure, insufficient training to use or repair, injury. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangement for equipment is followed
- ☐ participants have been provided with any necessary equipment appropriate for the work
- ☐ all equipment has been inspected, before issue, by a competent person
- ☐ all users have been advised of correct use
- ☐ special equipment is only issued to persons trained in its use by a competent person
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

LONE WORKING	**Is lone working a possibility?**	**NO**	**If 'No' move to next hazard** **If 'Yes' use space below to identify and assess any risks**
e.g. alone or in isolation *lone interviews.*	Examples of risk: difficult to summon help. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangement for lone/out of hours working for field work is followed
- ☐ lone or isolated working is not allowed
- ☐ location, route and expected time of return of lone workers is logged daily before work commences
- ☐ all workers have the means of raising an alarm in the event of an emergency, e.g. phone, flare, whistle
- ☐ all workers are fully familiar with emergency procedures
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

	The possibility of ill health always represents a safety hazard. Use space below to identify and assess any risks associated with this Hazard.
e.g. accident, illness, personal attack, special personal considerations or vulnerabilities.	Examples of risk: injury, asthma, allergies. **N/A**

CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**

- ☐ an appropriate number of trained first-aiders and first aid kits are present on the field trip
- ☐ all participants have had the necessary inoculations/ carry appropriate prophylactics
- ☐ participants have been advised of the physical demands of the trip and are deemed to be physically suited
- ☐ participants have been adequate advice on harmful plants, animals and substances they may encounter
- ☐ participants who require medication have advised the leader of this and carry sufficient medication for their needs
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

TRANSPORT	**Will transport be required**	**NO**	**X**	**Move to next hazard**
		YES		**Use space below to identify and assess any risks**
e.g. hired vehicles	Examples of risk: accidents arising from lack of maintenance, suitability or training Is the risk high / medium / low?			

CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**

- ☐ only public transport will be used
- ☐ the vehicle will be hired from a reputable supplier
- ☐ transport must be properly maintained in compliance with relevant national regulations
- ☐ drivers comply with UCL Policy on Drivers http://www.ucl.ac.uk/hr/docs/college_drivers.php
- ☐ drivers have been trained and hold the appropriate licence
- ☐ there will be more than one driver to prevent driver/operator fatigue, and there will be adequate rest periods
- ☐ sufficient spare parts carried to meet foreseeable emergencies
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

DEALING WITH THE PUBLIC	**Will people be dealing with public**	**YES**	**[illegible]** **[illegible] risks**
e.g. interviews, observing	Examples of risk: personal attack, causing offence, being misinterpreted. **low**		

CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**

- ☐ all participants are trained in interviewing techniques
- ☐ interviews are contracted out to a third party
- ☐ advice and support from local groups has been sought
- ☐ participants do not wear clothes that might cause offence or attract unwanted attention
- ☐ interviews are conducted at neutral locations or where neither party could be at risk
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

WORKING ON OR NEAR WATER	**Will people work on or near water?**	**NO**	**If 'No' move to next hazard** **If 'Yes' use space below to identify and assess any risks**
e.g. rivers, marshland, sea.	Examples of risk: drowning, malaria, hepatitis A, parasites. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ lone working on or near water will not be allowed
- ☐ coastguard information is understood; all work takes place outside those times when tides could prove a threat
- ☐ all participants are competent swimmers
- ☐ participants always wear adequate protective equipment, e.g. buoyancy aids, wellingtons
- ☐ boat is operated by a competent person
- ☐ all boats are equipped with an alternative means of propulsion e.g. oars
- ☐ participants have received any appropriate inoculations
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

MANUAL HANDLING (MH)	**Do MH activities take place?**	**NO**	**If 'No' move to next hazard** **If 'Yes' use space below to identify and assess any risks**
e.g. lifting, carrying, moving large or heavy equipment, physical unsuitability for the task.	Examples of risk: strain, cuts, broken bones. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangement for MH is followed
- ☐ the supervisor has attended a MH risk assessment course
- ☐ all tasks are within reasonable limits, persons physically unsuited to the MH task are prohibited from such activities

- ☐ all persons performing MH tasks are adequately trained
- ☐ equipment components will be assembled on site
- ☐ any MH task outside the competence of staff will be done by contractors
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

SUBSTANCES	**Will participants work with substances**	**NO**	**If 'No' move to next hazard** **If 'Yes' use space below to identify and assess any risks**
e.g. plants, chemical, biohazard, waste	Examples of risk: ill health - poisoning, infection, illness, burns, cuts. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangements for dealing with hazardous substances and waste are followed
- ☐ all participants are given information, training and protective equipment for hazardous substances they may encounter
- ☐ participants who have allergies have advised the leader of this and carry sufficient medication for their needs
- ☐ waste is disposed of in a responsible manner
- ☐ suitable containers are provided for hazardous waste
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

OTHER HAZARDS	**Have you identified any other hazards?**	**NO**	**If 'No' move to next section** **If 'Yes' use space below to identify and assess any risks**
i.e. any other hazards must be noted and assessed here.	Hazard: Risk: is the risk		

CONTROL MEASURES **Give details of control measures in place to control the identified risks**

Have you identified any risks that are not adequately controlled?	**NO**	**X**	**Move to Declaration**
	YES		**Use space below to identify the risk and what action was taken**

Is this project subject to the UCL requirements on the ethics of Non-NHS Human Research?	**No**
If yes, please state your Project ID Number	

For more information, please refer to: http://ethics.grad.ucl.ac.uk/

DECLARATION	The work will be reassessed whenever there is a significant change and at least annually. Those participating in the work have read the assessment.

Select the appropriate statement:

☒ I the undersigned have assessed the activity and associated risks and declare that there is no significant residual risk

☒ I the undersigned have assessed the activity and associated risks and declare that the risk will be controlled by the method(s) listed above

SUPERVISOR **Dr Robin Hickman**

SIGNATURE OF SUPERVIOR DATE

FIELDWORK	**5**	May 2010