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Socioeconomic Factors that affect Usage of Grabcar Services in Kota Kinabalu City, Sabah

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Abstract

The GrabCar service is an increased mode of alternative transportation and support from users is what the company gains in aiding its rise in the transportation business. This mode of transportation is considered a great competitor to the existing public transport services such as transportation services offered by taxis. The advantages of GrabCar prevail themselves as it can be seen that they offer cheaper fares and are more convenient to customers. The question arises on how far can the potential of the mentioned company stretch to facilitate users? This paper aims to identify the features in GrabCar transportation mode by considering its connection with the users' socioeconomic factors. A survey was conducted on 407 civilians around the city of Kota Kinabalu using simple random sampling approach. The data analysis section in this paper uses descriptive (frequency) and inference methods (Chi-Square). Findings show that women dominate the GrabCar service as users compared to men mostly aged 30 and with a monthly income of around RM1, 500 per month. Some aspects need to be taken into account in order to help the authorities to formulate policies for the enhancement of the GrabCar service for a particularly liveable city, especially the city of Kota Kinabalu.

Keywords: *GrabCar, socioeconomic, transportation mode, Kota Kinabalu City*

1 Introduction

The concept of livable city that considers the sustainability of the city itself in the context of sustainable development means that its residents are always cheerful, busy with various economic, social and physical activities that are fresh, green, safe, and attractive (Shahrudin Idrus, Abdul Samad Hadi and Abdul Hadi Harman Shah, 2010). The features of a livable city were resolved through the actions of the residents in the municipalities that use daily transportation services. In order to create a livelihood city, sustainable development issues are often debated since the concept of sustainable development was introduced in 1987 by the Brundtland Report on March 20, 1987.

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Brundtland reports emphasized the convenience of transport services in general and specialized in public transport services in developing countries, (Brundtland G, H. 1987). The concept of livable city is trying to cross the discipline and transdisciplinary levels in the appreciation and measurement of the city of resilience to fulfill the country's great desire to achieve the desired wellness.

In Malaysia, GrabCar was introduced in 2012. By 2015, the GrabCar app had been downloaded by 4.4 million people with an average of seven reservations in every two seconds and today, 13 million people have downloaded the said app from 30 cities covering Malaysia, Singapore, Philippines, Vietnam, Indonesia and Thailand (Lin M. and Dula, C, W. 2016). GrabCar services in Malaysia are available in the Klang Valley, Johor Bahru, Penang, Kota Kinabalu and Melaka. GrabCar operates 24 hours everyday and it facilitates population mobility at notable locations especially the city's residents (GrabCar Malaysia, 2018).

Smith C. (2018) in his article stated that the average use of the GrabCar service was complimented by four million users totalling to seven reserves for every two seconds, and for each month, a total of 5.1 million reservations were recorded. So far, GrabCar drivers have reached 710,000 drivers. His findings include eight countries in Southeast Asia with GrabCar services namely; Malaysia, Singapore, Philippines, Vietnam, Indonesia, Thailand, Cambodia and Myanmar.

The fourth industrial revolution concluded that the Internet of Things (IoT) is not only being able to recover in the business world, but in almost every aspect of everyday life and it is not surprising when the GrabCar company managed to change the human way in using public transportation (Shahrul Nazmi Sannusi, 2017). IoT is used to access a location with ease of ride hailing via e-call using a smart phone. The Malaysian Communications and Multimedia Commission (2017) found that the increase in smart phone usage in Malaysia was sharply increased from 12.0 per cent in 2011 to 75.9 per cent in 2017.

The purpose of this paper which is to identify consumers' socioeconomic factors is important to be implemented in order to plan the potential use of GrabCar in the future. This paper aims to identify the characteristics of GrabCar transportation mode usage by taking into account its relationship with the users' socioeconomic factors. There are three socioeconomic factors that will be discussed in this paper which are; gender, age and monthly income factors affecting the mode of transportation in Kota Kinabalu City.

2 Literature Review

Individuals should use their own transportation or public transportation to move from one place to another place for daily activities such as work, shopping, entertainment, school and other social activities (Rodrigue J, P., Comtois C. and Slack B. 2016). The GrabCar service makes it easy for a person to move from a point of origin to an end point of destination quickly (GrabCar Malaysia, 2018). Revolutionary Industry 4.0 (IR4.0) warns against the use of GrabCar application with the Internet of Things (IoT). The Internet in this decade is a new necessity climbing its way to the top, almost being on par with clothes, food, and shelter specifically in this era. This made conventional taxi services are increasingly irrelevant when GrabCar uses apps on smart phones to operate (Mohd Abdullah, 2018).

Socioeconomic Factors Affect the Use of Grabcar as a Mode of Transportation

Sinar Harian (2016, October 24) documented that there are several reasons one uses GrabCar, among others, the first one is; reasonable price. Fare charges cannot be made a fraud because it uses an application that must be accessed by drivers and customers. In contrast, taxi drivers do not even want to charge customers according to the taxi rules (charge by meter) and instead, many would even charge depending on the state of road traffics. Second reason is the clean and comfortable rides offered. GrabCar vehicles are more comfortable and clean as the company set the vehicle's annual limit to join in the company. A vehicle to be registered under GrabCar should not be more than the age of five years old. Next, easy access. nowadays, everything is accessible from our fingertips, reservations can be made anytime by just making a reservation in the GrabCar app. Fourth, promotions. GrabCar sometimes offers promotions to attract customers. Fifth, restriction is given to drivers to refuse a ride reservation. GrabCar drivers cannot choose a customer and need to send the user to the specified destination. Sixth, no extra charges. GrabCar does not charge extra for their services. Seventh, GrabCar drivers can choose another initiative in looking for directions such as using Waze app or Google Map to send their customers even if the drivers do not know the destination route.

GrabCar's mission is to develop well as a source of income, enhance safety, access transportation for passengers to travel in ease and solve imbalance problems between the demand and supply of existing public transportation ineffectiveness (Lin, M and Dula C, W. 2016). GrabCar is also a part of "sharing economy" that enables payment and service delivery to be implemented quickly, where passengers and drivers can verify identity and reputation to increase confidence even when both parties are not familiar with each other.

Indra & Hamzah, (2017) conducted a satisfaction study that influenced the use of GrabCar and Uber in Malaysia by taking 156 samples through easy sampling method and it was found that the main factor influencing the use of GrabCar or Uber was the comfortable factor followed by reliability, price, and promotion. She also found that women who used GrabCar and Uber services are those aged from 21 to 30 years old, while in terms of income, those earning around RM1500 were usually the customers.

Thoo Ai Chin, Nur Ain, Lee, and Huam, (2018) conducted a study in Malaysia and found that women dominated the industry as customers. Most GrabCar users are 40 years old and they usually have a monthly income of RM1000 and below. Her findings are slightly different from the findings of Indra and Ibrahim (2017). A study by Glenn A., Regin J, and Sheilah (2017) in Manila found that most Uber and GrabCar users were also women and the average age of Uber and GrabCar users in Manila was ranging from 31-48 years old. The researchers found that the poor public transportation system caused most women to use Uber and GrabCar and the safety and comfort factors were also evaluated by women leading them to using the service. He also discovered that the main purpose of using Uber and GrabCar in Manila was the goal of the workplace.

Armanda, (2017) debated a study at the Faculty of Economics and Business, located at the North Sumatera University, Medan, Indonesia and she found that there was a significant relationship between the promotion variables, the price and the brand image in influencing the users' decision whether to use GrabCar service or not. Fhitryan G. (2017) in his research at North Sumatera University found that reliability, responding to consumers' demands, and insurance facilities affect the quality of GrabCar services at the University and these parameters are significant in influencing consumers' satisfaction in terms of GrabCar service quality while tangible aspects are not significant in affecting the quality of GrabCar services among students in the University of North Sumatra.

Dutzik, Madsen, and Baxandall (2013) states that technological advances in the United States (US) have caused most urban dwellers in the country to use services such as ride sharing to reduce their own vehicles to participate in traffics. This is because in mid-June 2013, more than half of the adults in America used Smart phones and this affected the use of ride hailing services like Uber in the country. Furthermore, in 2012, 82 percent of the US adults are Internet users and it caused them to easily access rides by quickly and easily clicking on some applications.

Nurhidayah F. and Alkarim F. (2017), stated that the dominance of Transportation Network Companies (TNC) in Indonesia such as Uber, GrabCar and Go-Jek is the preferred choice of taxi, bus and other public transportation as daily modes of

transportation especially in Jakarta. However, she found that there were some issues arising from the creation of TNCs in many parts of Indonesia, among them is the dissatisfaction among taxi drivers that led to street demonstrations on the 22nd of March 2016. Therefore, she suggested that TNC drivers should register their vehicles to the Indonesian Transport Ministry since TNC could not take the drivers directly and control the prices without the knowledge of the Indonesian Transport Ministry.

Depusoy, Rosario, and Mercado, (2018), in his studies in the city of Manila, Philippines, found that a total of 28,000 GrabCar drivers each day provided their services to Metropolis residents. The researchers also found that women aged 26-30 were GrabCar hardcore users especially those who worked in the private sector and did not have their own vehicles. Not only that, they also found some problems faced by GrabCar users in Manila. The issues were; GrabCar drivers would usually cancel users' orders without reasonable excuses, high fares during peak hours and smelly vehicles. Gunawan S, 2017, in his review of consumer perceptions of the GrabCar service in Surabaya found that consumers were comfortable with their services. Secondly, customers felt at ease in using the GrabCar app. Finally, users were happy to deal with GrabCar drivers in Surabaya.

3 The Method and Location of the Study Area

Method of Analysis

This study uses quantitative method. A total of 407 civilians in Kota Kinabalu City were surveyed. Simple random sampling is easy to use as suggested by Kejcie and Morgan (Krejcie R, V. and Morgan D, W. 1970) hence, the utilization of the method in this study. The population of Kota Kinabalu in 2010 was 452,058. Krejcie R, V. and Morgan D, W. (1970) suggested that if the population exceeded 250000 respondents, the survey would need 384 confidence level 95% (.05 significant value). Therefore, the respondents of this study were 407 people. Questionnaires were distributed to 407 people and unstructured in-depth interviews were conducted on five informants. Data processing and analysis utilize the Statistical Package for Social Sciences (SPSS version 20) and the analysis uses descriptive statistic that branches out to frequency analysis as well as inferential statistic that also branches out to the chi square analysis.

Study Area

Kota Kinabalu City has a total area of 352.10 square kilometers. It is the capital of Sabah. It is located at longitudinal geographical location 116° 2' 0" - 116° 15' 30" E and latitude 5° 52' 30" - 6° 4' 30" N (please refer to Figure 1). Kota Kinabalu is

also the gateway to the state of Sabah and is bordered by the Penampang, Putatan and Tuaran districts. Three government hospitals and four private hospitals are present in the city. The residents of Kota Kinabalu are from various ethnic groups such as Chinese, Kadazan, Dusun, Bajau, Malay, Murut, Bumiputera, non-Bumiputera and non-citizens. There is also Kota Kinabalu Railway terminal and Kota Kinabalu International Airport (KKIA) in Kota Kinabalu City.

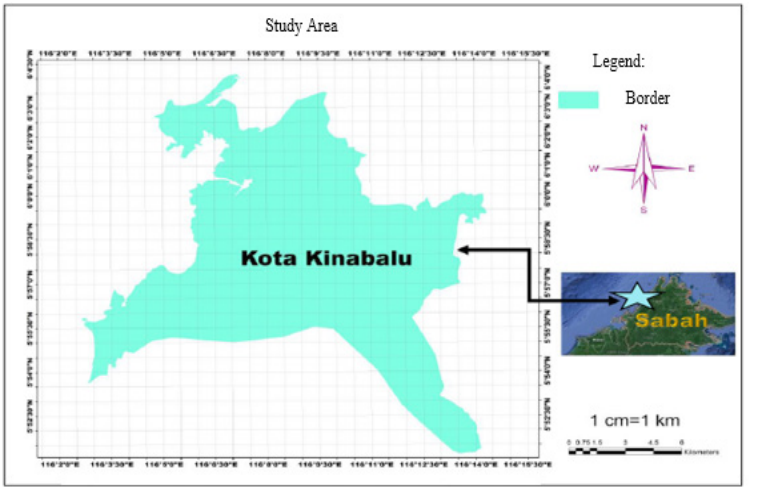

Figure 1 Kota Kinabalu District (Map reference: Timbalai 1948 RSO Borneo, Meters)

4 Findings and Discussion

Respondent Demographic Profile

Table 1 shows the demographic profile of the respondents. Women were the most respondents at 55.8 per cent while men were at 44.2 per cent. The age categories of respondents are those aged 21 - 30 years old. Highest age category recorded 52.1 percent while the lowest age category is 0.7 percent. The lowest monthly income of the respondents was RM 801 - RM 1000 which recorded 44.7 per cent while the highest monthly income was RM 4001 (0.5 per cent).

Table 1 Respondent Demographic Profile

Parameter	Category	Number of people's	Percentage (%)
Gender	Men	180	44.2
	Women	227	55.8
Age (Years old)	11 – 20	147	36.1
	21 – 30	212	52.1
	31 – 40	40	9.8
	41 – 50	5	1.2
	51>	3	0.7
Monthly income	< RM 800	75	18.4
	RM 801 – RM 1500	182	44.7
	RM 1501 – RM 2000	30	7.4
	RM 2001 – RM 3000	8	2
	RM 3001 – RM 4000	6	1.5
	RM 4001 >	2	0.5
	Other (students)	104	25.6
Total		407	100

GrabCar Usage Relationship with Socioeconomic Factors

GrabCar transportation mode and its relationship to gender factors

Table 2 (please refer to Table 2) shows the mode of transportation used for daily activities and its relationship with gender factors. There was a significant difference of 0.030 on GrabCar usage with gender factors. Around 64 percent of women use GrabCar and that number is higher than what men has recorded for the issue with only 36 percent of men using GrabCar as a daily mode of transportation to carry out daily activities, especially to go to work. The findings are parallel to Glenn A *et al.,* (2017) where it was stated that most people use GrabCar for workplace purposes. As an addition, unstructured interviews with a female informant revealed some more findings that can be observed as follows:

> *"sia rasa manyak wanita guna GrabCar karana tak ada kereta sendiri, sia naik GrabCar sia rasa sebagai "bos ba" bila naik GrabCar karana dalam GrabCar terdapat seorang pemandu dan seorang penumpang sahaja bukan macam bas ada seorang pemandu dan manyak orang di bas. Sia dapat merasai keadaan kenderaan yang mahal seperti Hilux karana sia tidak dapat beli kereta tu karana mahal tapi sia syiok naik kerata tu"*
> (Informant 1)

From the interview, the researcher found that one informer felt happy with GrabCar especially when luxury vehicles such as Hilux are available. She felt like a

"boss" because there was a driver and a passenger only in a ride. This caused her to feel as if she were a boss. The present finding is the same with Indra & Ibrahim (2017), Depusoy *et al.,* (2018), Thoo Ai Chin *et al.,* (2018), and Glenn A *et al.,* (2017) where they stated that many women use GrabCar services as compared to men.

Table 2 GrabCar transportation mode and its relationship to gender factors

Transportation Mode	Gender		
	Men (%)	**Women (%)**	**Total (%)**
Bus	51.9	48.1	100
Car	60.0	40.0	100
GrabCar	**36.0**	**64.0**	**100**
Motorcycle	65.8	34.2	100
Walking	42.0	58.0	100
Others	40.0	60.0	100

Chi Square = 12.401, Significant value = 0.030

GrabCar transportation mode and its relationship to age factors

There is no significant difference (0.073) between GrabCar transportation mode and age factor. However, the frequency distribution in Table 3 (please refer to Table 3) shows that there is a slight difference between the use of GrabCar transportation modes between ages. The age categories of 21-30 are the frequent GrabCar users with the record of 61.3 percent. The findings show that people around the age of 30 also use GrabCar services in Kota Kinabalu City. The findings are in line with Indra and Ibrahim (2017), where it was found that most GrabCar users are from the age of 30 years old and below. However, the findings are not in line with Glenn A. *et al.,* (2017), where his study in Manila found that Uber and GrabCar users' age is ranging from 31 to 48 years old. Possibly, different geographical and cultural factors caused the differences in GrabCar usage regarding to the factor of age.

Table 3 GrabCar transportation mode and its relationship to age factors

Transportation Mode	Age (Years old)					
	11 – 20 (%)	**21 – 30 (%)**	**31- 40 (%)**	**41 – 50 (%)**	**51 > (%)**	**Total (%))**
Bus	48.1	43.0	6.3	1.3	1.3	100
Car	10.6	51.2	34.4	2.5	1.3	100
GrabCar	**26.7**	**61.3**	**12.0**	**-**	**-**	**100**
Motorcycle	23.7	55.3	21.0	-	-	100
Walking	42.0	56.0	2.0	-	-	100
Others	80.0	20.0	-	-	-	100

Chi Square = 29.812, Significant value = 0.073

GrabCar transportation mode and its relationship to monthly income factors

There is a significant difference of 0,000 between GrabCar usage with monthly income factor. Table 4 (please refer to Table 4) shows that there are differences in monthly income influences with the use of GrabCar in Kota Kinabalu City. The highest monthly income recorded was RM801 - 1500 at 57.3 per cent followed by RM800 and below by 30.7 per cent affecting the use of GrabCar. In overall, GrabCar users have a monthly income of around RM1500. The findings are similar to Indra and Ibrahim (2017) where it is discovered that most GrabCar users are earning around RM1500 per month.

Table 4 GrabCar transportation mode and its relationship to monthly income factors

Transportation Mode	Monthly Income							
	< RM 800 (%)	**RM 801- RM 1500 (%)**	**RM 1501- RM 2000 (%)**	**RM 2001 – RM 3000 (%)**	**RM 3001 – RM 4000 (%)**	**RM 4001> (%)**	**Others (students) (%)**	**Total (%)**
Bus	16.5	36.7	3.8	1.3	-	-	41.7	100
Car	10.0	41.9	11.9	4.4	3.1	0.6	28.1	100
GrabCar	**30.7**	**57.3**	**4.0**	**-**	**-**	**1.3**	**6.7**	**100**
Motorcycle	26.3	50.0	13.2	-	2.6	-	7.9	100
Walking	20.0	48.0	4.0	-	-	-	28.0	100
Others	-	-	20.0	-	-	-	80.0	100

Chi Square = 72.717, Significant Value = 0.000

GrabCar users' challenges in Kota Kinabalu City

There are some challenges for GrabCar users while complimenting GrabCar services in Kota Kinabalu City. Through unstructured in-depth interviews, these are the challenges that users face while using the GrabCar service:

Cancellation of booking

> *"masa sia book GrabCar kadang-kadang tu pemandu minta sia cancel sia punya tempahan tapi masa tu sia mahu pergi tempat kerja terpaksa request lagi sekali sampai dapat"*
>
> (Informant 2)

Through the interview with informant two, the GrabCar drivers canceled their booking especially at peak hours for no reason. As a result, informant two needed to take longer time to get another driver.

"kita sebagai pemandu GrabCar kadang-kadang minta pengguna cancelkan tempahannya kerana tempat pengguna mahu pergi jauh, kami terpaksa drive sampai jauh dan penat, pinggang sakit lagi-lagi masa jem"

(Informant 3)

An interview with a GrabCar driver (Informant 3) found that the cancellation of the booking was due to fatigue caused by driving long distances and the pressure produced by traffic congestion during peak hours.

High Demand

"sa gunakan GrabCar empat kali dalam satu minggu, mudah dan cepat bila gunakan GrabCar tapi masa high demand tambang mahal banding dengan harga biasa, sa perlu guna GrabCar juga karana tak ada pengangkutan sendiri kalau guna bas di KK lambat, tiada jadual waktu bas yang tetap, tiada aircond, teksi mahal dari GrabCar sa terpaksa guna GrabCar juga"

(Informant 4)

Informants four shared his GrabCar experience with a frequency of using their service as often as four days a week. The GrabCar app provides convenience and saves the time of his journey to reach the destinations. GrabCar price during peak hours is high, compared to normal times especially during high demand periods. He had to settle for not having a private vehicle. Ineffectiveness of public transportation service and expensive taxi rates caused him to consider GrabCar as the best alternative.

Promotion

"sejak uber gabung ngan GrabCar tiada promosi oh, dulu ok ada promosi code jimat sikit, macam saya ini student ba tiada duit yang tetap dan minta kat family, kadang kala fikir juga mahu naik GrabCar ke atau macam mana"

(Informant 5)

Finally, Informant five announced that there was no promotion offered since Uber merged with GrabCar and he was a student at the Institute of Higher Learning (IPT). The informant had no fixed source of income and this sometimes caused him to think twice or thrice to hail a GrabCar driver. In short, there are some challenges faced by GrabCar users such as cancellation of booking, high demand, and no promotions when using GrabCar in Kota Kinabalu City at present.

5 Discussion and Conclusion

Socioeconomic factors affect the use of GrabCar services in Kota Kinabalu City, Sabah in terms of gender, age and monthly income. Women dominate the GrabCar usage in Kota Kinabalu with the age range of 30 and monthly income of RM1500. These findings are in line with the studies conducted by previous researchers in Southeast Asian cities such as Jakarta, Surabaya, Medan and Manila**.**

While there are some challenges when using the GrabCar service such as cancellation of orders, high demand, and no promotions, it does not become an issue to users to the point where they have to detach themselves from the company. GrabCar is still users' choice in the IR 4.0 world with smart phones making people smarter in choosing transportation modes and in this situation, it is whether to choose public transportation such as bus, taxi or alternative transportation such as GrabCar. This causes the City of Kota Kinabalu to be regarded as a livable city because locations can be reached quickly and easily with the help of GrabCar. Although so, one has to always keep in mind that GrabCar is a company that moves cars from points to points and it affects the total numbers of cars on the road. When the demand for GrabCar increases, the number of cars also increases on the road. As a result, traffic congestion will affect the inhabitants' livelihoods especially from the environmental and psychological aspects of the population (Haryati S, and Sharifah M,2010).

Therefore, in the future, all parties should work together to improve the quality of public transportation services in Kota Kinabalu City especially public buses so that city residents have the options to choose from in order to carry out daily activities in Kota Kinabalu City. This is to improve the quality of life of the people in this livable city. Hence, some policies need to be set up to control and improve the quality of GrabCar services by taking samples from several other countries in effort to ensure that the quality of life of Kota Kinabalu residents increases.

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