

SENIOR RESEARCH

Sharing Economy and Income Inequality of Platform Participants in Thailand: A Case Study of Grab, Bangkok.

> Name : Sarocha Sirivivatnanon ID : 5845928029

Advisor : Voraprapa Nakavachara, Ph.D. Date : May 13,2019

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Approve

(Assoc.Prof.Sothitorn Mallikamas, Ph.D.)

Chairman

Date of Approval _____

Abstract

The sharing economy entails peer-to-peer exchanges for individuals to earn additional income from goods and services by utilizing the technological innovation. This has generated controversy for its effect of income distribution on labor market. This paper investigates the evidence that for-profit sharing economy has an impact on the decrease in income inequality among the platform participants. An online survey was distributed to a random sample of 100 Thai providers on Grab platform in Bangkok, Thailand, which is one of the top transport service applications. The results verify that there is a decline in Gini indexes by considering at the earning from the platform per month among the samples. Participants who are non-dependent workers has an opportunity to make their revenue using the platform. Additionally, respondents who has relative low full-time job income are also disproportionately benefits from Grab car or Grab motorcycle services. Furthermore, the paper also reveals the additional research of the factors that affect an average platform earning per month by using OLS.

Keywords: sharing economy, income inequality, platform economy, Grab

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Introduction

The introduction technological innovation or digital platforms, currently, have been playing a significant role and disrupting in the market exchange, some of which have unique features. This new business model connects individuals or providers directly to consumers willing to pay for their time, skills, and assets. Uber, comprised a connection of driver and passenger, is an example of a new type of transportation in the context of the sharing economy and network hospitality. The platform have attracted a public attention because these function reduces the person to person exchange cost of individuals and allow them to adjusting, entering and leaving the market as they prefer. Those individuals are concerned as a gig workers which have flexible working hours and precarious earning. This economy has become an appealing way to many individuals for contributing an additional income. Have this recent innovation exposed disparities in income distribution among platform participants?

Mentioning about the supply side of the online platform economy, there are participants who are dependent workers and non-dependent workers. Dependent workers, have received income from the full-time job, are working with platform for a part-time job in order to increase their supplemental income, while non-dependent workers are freelance. The arrival of online economy has put the pressure on the income inequality among those participants(Schor, 2017). There are arguments that income inequality has increased in platform providers because the concentration of income is contributed to high educated individual who has well-compensated full-time job. In other words, dependent worker could raise their income by technological way. The debate, however, still exists as the sharing economy could be a potential tool to upgrade the income distribution by spreading opportunity and supporting income to individuals at the bottom of the distribution(Fraiberger and Sundararajan, 2015). In fact, there is limited consensus among academic papers because the platforms and participants have been unwilling to reveal their insight data.

The purpose of this research is to explore the impact of sharing economy on the income distribution among platform participants in Thailand, which has not yet been raised the academic literature. Grab, which is a Southeast Asia's leading platform in transportation sector like Uber, was used as a research context by focusing in Bangkok. Grab also claims that there is over 9

million providers across their network, including Thailand. Therefore, Grab has been selected as a reference point of this research for the reason that it is one of the popular platforms.

This research paper will include the literature review to extend the knowledge of sharing economy. To begin with, the paper examines the definition of sharing economy and the characteristic of its worker. To anticipate the results, moreover, the academic papers have overlooked the relationship of digital platform and income distribution. This study is mainly focusing on Grab driver, in doing so, a sample of 100 providers will be randomed from this platform which collected the data by direct informal survey. The survey aims to find the individual characteristics, platform activities, platform earning income, and full-time job income. Gini coefficients will be used to measure the impact of sharing economy on provider's income distribution. Furthermore, supplemental analysis will also proved the significant factors, contributing to average earning from the platform by using the econometric method of Ordinary Least Squares Regression. From a empirical research, this study will shed light on income inequality among Grab participants in Thailand and, lastly, will discuss the limitation and recommendation.

Literature Review

2.1 The Sharing Economy

The introduction of new business models spawned by technological innovation or digital platforms, such as Uber and Airbnb, have been playing a significant role and considerable attention as disruptors in market exchange. The concept of sharing economy, collaborative consumption and gig economy, have been used to provide or share access to goods and services that are facilitated by a community based on online marketplaces(Botsman, 2010). According to Sundararajan(2014), there are three distinctive players: platforms, entrepreneurs, and consumers. The platforms are the middleman in marketplaces which facilitate the exchange of goods and services among those peers. The entrepreneurs or workers are the individuals that supply goods and services in these marketplace, whereas, the consumers demand by buying or renting. In for-profit platform, the payment from consumer to entrepreneur will be mediated by the platform. In addition, a key characteristics of what it called "digital matching firms" are defined by the Commercial Department(Telles, 2016). The business model consists mainly of the following: (1) the use of information technology to facilitate peer to peer transaction, (2) the use of rating system to ensure quality, (3) the flexibility of working hours, and (4) the necessity of worker-provided tools and assets. Consequently, the online platform or sophisticated software, contributed to a potential handful of the exchange marketplaces, has become a routine part of daily life.

Sundararajan(2014) also claims that sharing economy or peer-to-peer platform distinguishes into four broad types. Firstly, two parties are repurposing owned asset as a rental goods. Individuals are granting each other in order to temporary access the underutilized asset, perhaps for money(Frenken., 2017). These platform provide an opportunity for people who are not professional providers to lend out or rent out their sharable goods to others such as houses, cars, tools. Airbnb has seen as the epitome of the sharing economy, in which entrepreneurs can offer part of their living space to other peers for only a specific duration. Another example is the platform RelayRides and Getaround which allow individuals who have vehicles to rent out as short-term car rentals. The second type of platform facilitate professional services provision. This could expand their business opportunity, instead of working with traditional institution

(Benkler, 2015). For example, Uber is an on-demand platform connecting driver with consumers to provide ride-sharing. Another type is a marketplace for various kind of freelance worker. Due to Schor(2014), some of these platforms, like TaskRabbit which pair users who need people to do task done, provide a chance for unemployed. Lastly, peer to peer asset sales are the platform for recirculation of goods such as eBay and Etsy. These sites have been operating for selling goods through customers for decades since technological software decreased the transaction cost from person to person.

The mechanism of peer to peer platform lead to the reduction in ecological impact, and the increase in social connections(Schor, J. B. and Fitzmaurice, 2015). In the case of Airbnb, cultural exchange and local community has generated, while participants are connected by the platforms. Furthermore, this has made an opportunity for asset owners to redistribute value across the supply chain, creating new income-earning for participants, and to reduce the producers' costs for middleman. Economic impacts are generated from lower transaction cost, so that, the same level of assets and labors are contributed to a higher level of output(Sundararajan,2014). Ravenelle(2017) asserts that this for-profit platforms has fascinated many attraction after the wreckage of the 2008-2009 economic collapse, sharing economy became a desirable option for those who had no longer jobs and income dilemma. As a consequence, the innovative disruption enhance economic relations and autonomy for applicants(Rifkin, 2014).

2.2 The Case Study: Grab Application

According to the company estimates(2015), Grab is Southeast Asia's leading application that connected users to offer the widest range of on-demand transport services including private cars, motorbikes, taxis, and carpooling services, in order to deliver food and package. This platform, is one of an example of sharing economy, is a middleman connecting customers and providers or gig worker to perform services.

Grab has born since 2012 based in Singapore, currently, the company is in 195 cities in eight Southeast Asian countries. Its transaction volume in emerging Asia has grown up significantly every year. The company also claims that there are over 9 million micro-entrepreneurs connected with their platform and over 5 million people use the combined platform daily in Southeast Asia. Grab has entered Thailand in October 2013 and has already exceed a hundred percent of the smartphone penetration. Its services were expanded to 16 mega-cities across Thailand and have been growing continuously.

2.3. Labor Markets

Labor relations in the sharing economy are being a provider in what also came to be known as the gig, or on-demand economy. The platforms began calling the providers who were offering rooms, rides, delivery services and other tasks as a "micro-entrepreneurs" and showed the idea that are their own bosses, work flexible hours, and control nearly everything about the platform experience(Schor & Attwood-Charles, 2017). Although there is a positive trend of gig labors, they still be controlled over by the platforms due to the absence of the standard employment protections and labor union.

The main characteristic of the online platform economy or gig economy is that providers were paid for each products or services, while conventional job usually commit to pay for full time working. For instance, Uber, the app be a facility for individual to earn money with the tap of a button, and get paid automatically once a driver is approved, they are ready to start earning money(Ravenelle, 2017). This is the market with arguably the lowest barriers to entry and the highest vulnerability to automation, implying precarious profit prospects.

The study of Schor and Attwood-Charles(2017) illustrate that online intermediaries were drawn an attention from a half of all workers, even a high quality workers, while the employment benefits have been decreased from the wage stagnant. There still be an argument on wide range of earnings on the platforms, however, they claim that some platforms are well-rewarded. UberX drivers earned higher rates than conventional cabs due to the fact that technology directly match with passengers(Hall and Krueger, 2015). Unlike, cab drivers spend most of working hours for seeking customers. This lucrative earning also rely on the location, skill, and asset of providers. On the other hand, the report indicates the relationship of dependent on their platform earning and the gratification with platform work. From the sample of 102 providers, they found that 26% are dependent on the platform for their fundamental part of income, 43% are moderately dependent, and 32% treat the income as supplemental. This can be explained that, relying on digital platforms to access goods and services market has become appealing way for individual

with portable benefits and other technological features, as a part-time and more casualized workforce.

2.4. The impact of Sharing Economy on Income Inequality

While the sharing economy has raised many questions, this study will highlight one impact that has not been identified. There is also small amount of research done to prove the relationship between sharing economy and its effects on the income inequality. In a study done by JP Morgan Chase Institute which aims to track supply-side participation and earnings. The researchers analyze the online platform economy into labor platforms, connecting customers with driver and freelance workers who perform tasks, like Uber and TaskRabbit – and capital platforms, which connect customers with individuals who rent assets or sell goods, like Airbnb and eBay. The dramatic growth of the number of participants and transaction volumes in sharing economy lead to an increase in overall average platform earnings. Nevertheless, the finding indicate that a tendency for US labor platforms has been growing more rapidly than capital platforms which earning in transport sector has widened over leasing platform(JP Morgan Chase Institute's research, 2018). In this regarding, monthly earnings among drivers are declined steadily so that some participants are less likely to replace a full-time job, while the leasing sector average earning has been increasing overtime. Thus, the growth in income inequality has came alongside a disparity in earnings across the platforms.

Similarly, Schor (2017) argue that gig workers or participants who have full time job could augment their additional income provided in an technological way. They are taking job that have traditionally been done by workers of low education, such as cleaning, driving, and other manual labors. The study found that there are 44% of gig workers have full-time jobs, reflecting the high rate of nondependent workers whom are typically relying on their full-time jobs or other sources of earnings to provide financial stability and benefits(Schor and Attwood-Charles, 2017). One reason is that people are not substitute for temporarily revenue since this economic opportunity is relatively new in the market. A research illustrates that the online platforms are disadvantaging people in the bottom 80% of the income distribution(Schor, 2017). Besides, providers are highly educated and many have well-compensated full-time job.

Inequality, then, has increased as income has been concentrated among founders and venture capitalists(Schneider, 2014).

Looking further on another study, Fraiberger and Sundararajan (2015) who asserts that low-income households will disproportionately benefit from renting out the asset such as peer-to-peer car rental. However, this analysis is precarious because they assumes that low-income have valuable asset to rent. This work is contrast with the above studies, in which inequality could reduced by spreading an opportunity and providing income to people at the bottom of the distribution.

Recently, this paper can only conclude that the ambiguity effect still remains whether the sharing economy is contributing to disparity in income distribution.

Conceptual Framework



Figure 1 Conceptual Framework

This research intends to examine whether technology innovation or online platform has generating a disparity in income distribution among dependent workers and non-dependent workers. The conceptual framework above shows the relationship between two groups of gig workers and the change in income distribution. Regarding to their source of income, platform providers are distributed to dependent(employed) worker and nondependent(unemployed) worker. Both groups are participating in online platform called 'Grab', which in turn, its additional earning have certain impacts on the change of income distribution. Positively, they can increase their overall incomes from the platform, however, these average platform earnings also are affected by working hours or driving hours, number of rides, and asset-used in providing services. According to Fraiberger and Sundararajan, the disparity in income distribution could be ameliorated as the non-dependent workers and dependent workers, who have relative low income, are allowed to freely access the platform and generate their earning. In contrast, the case that average platform earnings are concentrated in the dependent workers, which also earn income from a full-time employment, could lead to an increase in income inequality among Grab participants as it mentioned by Schor.

Research Methodology

4.1. Data Collection

The finding data was collected from online surveys with random 100 Grab Participants in Bangkok. This service was chosen because the platform illustrate the type of business that is found in sharing or gig economy. Grab has an incredibly success in Thailand as the platform attracts various groups of individuals, mentioning both of providers and consumers. To date, this platform have not made data available to researchers, which has impeded the ability to study them. Thus, direct online survey to Grab drivers, by service tracking and facebook group messaging, is the key technique to approach targeted samples. Moreover, respondents have to perform a services with Grab more than a month so that they could estimate their average platform earning per month, which is one of the main study. It is important to note that these earning represent revenues to participating individuals, and not profits. Participation on the digital platforms would also involve in financial risks and opportunity costs.

The online survey included three parts(see Appendix A). In the first part, participants were asked about their individual information, such as gender, age, education, household income. Secondly, platform activities, which are working hours, number of services, and vehicle type, and platform earnings were included in the survey question. Respondents also needed to report whether they have a full-time job. If so, their full-time job incomes were also collected in ranges.

4.2. Measures

The measuring instrument aims to demonstrate the change in income distribution due to the arrival of sharing economy or Grab platform in Bangkok. The Gini indicator is one of a measurement of inequality in a distribution. This is widely used to measure distributions of income and wealth of populations or families in a country, ranged from 0 to 1. The lower the value of Gini, the lower the in equality in the distribution. Gini indicators play an important role in the redistributive policies of country's welfare, for example, a number indicates whether all layers of the population share in collective wealth increases (Timothy and Smeeding, 2005). In the case of income distributions, the latest Gini of Thailand in 2017 is about 0.453 which has been gradually decreasing in the past decade, while the Gini coefficient of Bangkok is 0.405(NESDB, 2018).

In order to calculate the Gini indicator, these are based on the frequency distribution of the units of analysis, in this study is full-time job income and average platform earning, and cumulative of participants. The first point in the curve conforms to income of the smallest unit in these markets, the next is the smallest plus the smaller one, and so on. This leads to the Lorenz curve. In a perfect equality, all participants would generate the same share to the overall income. Regarding to this, the Lorenz curve would be a straight line. On the other hand, in the most extremely unequal system, a single participant would generate all incomes in the labor market, and the Lorenz curve would follow the x-axis until this last point is reached.



Figure 2 Gini Coefficient and Lorenz Curve

Accordingly, this index measures the relative area between the Lorenz curve and the straight line (figure 2). The Gini coefficient can be formulated as follows (Buchan, 2002);

$$G = \frac{\sum_{i=1}^{n} (2i - n - 1) x_i}{n \sum_{i=1}^{n} x_i}$$

While n represents the number of participants in the Grab platform, x_i being the amount of income of the participants with position *i* in the distribution. Thus, due to Buchan(2002), the Gini ranges between zero and (n - 1)/n for an entire distribution, approaching a large populations. For analysing among smaller populations of size, this requires a normalisation that shows Gini coefficients for all populations. The formula for the normalised Gini coefficient will be;

$$G = \frac{n}{(n-1)} \frac{\sum_{i=1}^{n} (2i-n-1)x_i}{n \sum_{i=1}^{n} x_i} = \frac{\sum_{i=1}^{n} (2i-n-1)x_i}{(n-1) \sum_{i=1}^{n} x_i}$$

Although Gini index is relatively transparent and efficient tool for analysing income or wealth distribution, there are some obstacles in this study. Firstly, index facilitates a comparison from year to year, but the measure does not allow to locate where changes in the distribution occur. To this end, Gini analysis can be complemented with comparisons of subset shares in overall income. Moreover, the Gini coefficient is also sensitive to tails at the top or bottom of the distribution. In our data, however, participants are comparing in a fixed range of full-time job income, and hence such an omission is unlikely in this study.

In order to examining income distribution between two groups of participant, dependent workers and non-dependent workers, this research paper investigates income from two different sources as mentioned earlier—full-time job income and average platform earning. Other sources of income are regardless in this study. In the survey data, platform earnings are expressed in an average number, while full-time job incomes are classified into ranges; 0 for non-dependent workers, and the mid range from each income levels for dependent workers.

The study measures the impact of sharing economy on income inequality by comparing between Gini coefficients. First, income distribution of all sample participants is measured as they generate income from their full-time job. In this stage, there is an absent of sharing economy or platform earning. Nondependent workers, then, have an overall income equal to zero because they do not have a full time employment and platform earning. In contrast, dependent workers can make a revenue from being employed in different amount. Second stage, due to the arrival of sharing economy or online platform 'Grab', all participants could raise additional income from the platform. Thus, overall incomes of nondependent workers are being positive, similarly to dependent workers. This lead to the change Gini Index in this stage. The difference of those Gini coefficients indicate that sharing platform disproportionately affects income inequality among dependent workers and non-dependent workers.

Moreover, this methodology will be repeated to study only dependent workers, in which they generate various levels of full-time job income. So, the research could also find out that sharing economy would also contribute to a shift in income distribution by comparing participants who have low-income job and high-income job

4.3. Supplemental Methodology

The research paper, additionally, investigates the significant factors that affect the average earning from Grab platform in Bangkok. Theoretically, hour of working is considered as a main factor that determines the change in platform earning. The objective of this study is to illustrate the other important factors that impact participant's additional earning. Especially, this method is used to prove how dependent and non-dependent workers can generate Grab earning, contributing to the change in income distribution or Gini index.

Econometric method of Ordinary Least Squares Regression will be adopted to indicate the factors having a significant impact on the average amount of earning from Grab platform in Bangkok. In order to form the model, the dependent variable (Y) is the average platform earning per month, in baht, by performing Grab services in Bangkok, whereas, independent variables (X), which will be focusing on, are hours of working and full-time job income of participants. Moreover, the other independent variables are gender, age, education, household income, number of rides, and vehicle type. Table 1 will illustrate name, description and hypothesis of each variables. The model of Ordinary Least Squares Regression is applied for finding the significant factors of average Grab earning, will be as follows;

Average Platform Earning = $\beta_0 + \beta_1 W$ orking Hours + $\beta_2 F$ ull time job Income

 $+\beta_{3}Gender + \beta_{4}Age + \beta_{5}Education + \beta_{6}Household\ Income + \beta_{7}Ride + \beta_{8}Vehicle + \epsilon$

Variable Type	Data	Variable	Description	Hypothesis			
Dependent Variable Platform Average Platform Earning		The average amount of participants earning from providing Grab services per month.					
Independent Platform Working Variable Activities Hours		The number of working or riding hours that participants were used to provide services per month.	$\beta_1 > 0$				
	Full-time employment	Full-time Job Income	Participant's income per month	$\beta_2 < 0$			

Table 1 Variable Descriptions and Hypothesis

		from being employed 1, for dependent worker who has no full-time job. Income range of non-dependent workers are divided into; 10,000-20,000 baht = 2 20,000-30,000 baht = 3 30,000-40,000 baht = 4 40,000-50,000 baht = 5	
Individual Characteristic	Gender	0 = Male, 1 = Female	No significant
Individual Characteristic	Age	1 = 18-25 years old 2 = 25-35 years old 3 = 35-60 years old	No significant
Individual Characteristic	Education	1 = High school or lower 2 = Diploma 3 = Bachelor degree 4 = Master degree	$\beta_5 < 0$
Individual Characteristic	Household Income (per month)	1 = Less than 20,000 baht 2 = 20,000 - 40,000 baht 3 = 40,000 - 60,000 baht 4 = 60,000 - 80,000 baht 5 = 80,000 - 100,000 baht 6 = 100,000 - 120,000 baht 7 = 120,000 - 140,000 baht 8 = 140,000 - 160,000 baht 9 = 160,000 - 180,000 baht 10 = More than 180,000 baht	β ₆ > 0
Platform Activities	Rides	The number of services or rides providing Grab services per month.	$\beta_7 > 0$
Platform Activities	Vehicle type	The assets or vehicle which is used to perform services. 0 = Motorcycle, 1 = Car	$\beta_8 > 0$

Results and Interpretation

5.1. Sample Profile

The table below shows the sample profile of 100 random Grab participants, including individual characteristics, full-time employment, and platform activities. Remarkably, the majority of online survey respondents were male with 86 percents. Their ages ranged from 18 to 60, with 50% falling between 35 to 60 years old. Our sample revealed their different educational level, which 47% performed below bachelor degree and 53% had a bachelor degree. There was a concentration in household income with lower than 100,000 baht per month, however, this amount also counted on the family sizes.

In term of full-time job employment, fifty-one percent of sample participants had no full-time job or no other sources of income. Relying on the survey on Grab platform, our study groups consisted of 49 dependent workers and 51 non-dependent workers. Moreover, there was 20 and 17 respondents that had an income job between 10,000 to 20,000 and 20,000 to 30,000, respectively. This indicates that their income job of sample participants were commonly lower than 30,000 baht per month, so they tend to participate the platform in order to generate an additional earning. Besides, more than half of samples reported average working hours below 200 hours per month. While the majority of the respondents(78%) were using car to perform services (GrabCar), 22% of them were using motorcycle to perform ride-sharing services or delivery services, such as GrabBike, GrabExpress, and GrabFood.

	Characteristics	Percentage(%)
Gender	Male Female	86 14
Age	18 - 25 years old 25 - 35 years old 35 - 60 years old	9 41 50
Education	High School or lower Diploma Bachelor Degree	21 26 42

Table 2	Sample	e Profile
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	Master Degree	11
Household Income	Less than 20,000 baht	14
(per month)	20,000 - 40,000 baht	27
	40,000 - 60,000 baht	21
	60,000 - 80,000 baht	14
	80,000 - 100,000 baht	13
	100,000 - 120,000 baht	2
	120,000 - 140,000 baht	3
	140,000 - 160,000 baht	1
	160,000 - 180,000 baht	1
	More than 180,000 baht	4
Full-time	has no full-time job (non-dependent worker)	51
Employment	has full-time job (dependent worker)	49
Income Job	no income job	51
(per month)	10,000 - 20,000 baht	20
	20,000 - 30,000 baht	17
	30,000 - 40,000 baht	6
	40,000 - 50,000 baht	6
Working Hours	Less than 100 hours	25
(per month)	100 - 199 hours	36
	200 - 299 hours	24
	More than 300 hours	15
Number of Rides	Less than 100 hours	29
	100 - 199 hours	38
	200 - 299 hours	18
	More than 300 hours	15
Vehicles Type	Car	78
	Motorcycle	22

Regarding to the survey dataset, some variables are collected in an numerical data. The following table illustrates the descriptive statistics of average platform earning, working hours, and number of rides. Overall, the mean of platform earning is 18,678 baht. The lowest average platform earning per month from Grab among 100 samples is 2,000 baht, whereas the highest is

up to 60,000 baht per month. Looking further to other variables, the average of working hours and number of rides are 168 and 155, respectively.

Variables	Count	Mean	SD	Minimum	Maximum
Platform Earning	100	18,678	15,352.98	2,000	60,000
Working Hours	100	167.14	94.19	14	360
Number of Rides	100	154.62	94.72	10	400

Table 3 Descriptive Statistics

5.2. Data Analysis using Gini Index

Gini index allow to observe how income inequality in numerous participant observations have deviated by the arrival of sharing economy or Grab platform in Bangkok.

Figure 3 Lorenz curve of all sample participants(dependent and non-dependent workers)



Firstly, the research aims to find the Gini indexes from all sample participants, which are dependent workers and non-dependent workers. In the figure 3 above, the cumulative percentage of total sample income is plotted against the cumulative percentage of corresponding population. Perfectly equality of income distribution has illustrated in the black line from both graphes.

While the blue line shows the lorenz curve of total income, the red line shows the lorenz curve excluding the platform earning of all sample Grab participants. The improvement of income equality can be shown by involving the platform earning because income Lorenz curve shifts inward close to equality line.

In the case of the red line, non-dependent workers received zero total income because they relied on platform earning. From the data collection, 51 respondents had no full-time job, this made its income lorenz curve string along the x-axis until 0.51. Meanwhile, dependent workers increased their full-time job income, leading to a large Gini index which is 0.62. A distribution of income as skewed as that of all respondents implies a huge income disparity from the underutilization of asset or human capital. Accordingly, there is a deadweight loss in the market of underdeveloped and underutilized asset through non-dependent workers.

As regards the impact of Grab platform on income inequality among participants, the existing of earning from the platform is associated with lower income inequality due to the decrease in Gini index to 0.31. These two graphs show remarkable differences in inequality among the sample participants. Labor market is better off from a massive increase in income, especially by boosting income for the non-dependent workers.



Figure 4 The column chart of aggregate income for 100 sample participants

Furthermore, figure 4 indicates the summation of each income sources from all the sample, which were segregated to non-dependent and dependent workers, in order to show the general view on the income differentiation. The difference in income of both groups was

1,205,000 baht per month by not to mention earning from the platform, however, this has been decreased dramatically as non-dependent workers could generate their income with Grab platform. The amount of income difference, then, drop down to 589,200 baht per month.





Secondly, dependent workers are obviously reflecting the disparity in income in the first stage, by using Gini index, that each individuals received diverse range of full-time job income. Respondents who has relative low income job moderately expanded its additional earning over those who have high income job. Lorenz curve with counting of platform earning have shifted much closer against the red line(Figure 5). Gini index have changed from 0.18 to 0.15. Comparing the Gini coefficients with the engagement of sharing platform, dependent workers are becoming more equal in terms of their total income. This illustrates that low income job workers could also generate higher income, leading to a reduction in income inequality among them. Note that the distribution of total income in dependent workers was more equitable than that of income, but the distribution of total income in all samples was much more skewed than that of income.

Our results supports the hypothesis of decreasing inequalities among participants. Examining the impact of earning from Grab platform on the income distribution, the study found that income Gini indexes declined as the average total income level increase, although there seemingly are other potential factors affected an increase in average platform earning(data analysis using OLS). Grab could disproportionately benefits all sample participants, especially non-dependent workers and low-income workers. Thus, the magnitude of the effect of sharing economy on income inequality is considerable.

5.3. Regression

OLS is used to find the significant factors that affecting average platform earning. The regression results, illustrating the expected factors related to an average platform earning per month(in baht) of sample Grab participants, are shown in the table 4 below for eight sets of study variables. The entire result, using STATA, is also included in the research(see Appendix B). According to the hypothesis, the coefficient of working hours, household income, rides and vehicle type would be positive number, on the other hand, the coefficient of full-time job income and education would show negative outcome. In addition, there would be two variables, gender and age, that have no significant impact on the average platform earning per month.

(Dependent Variable: Average Platform Earning)					
Variables	Coef.	SE	P > t		
Working Hours	46.14052	17.72902	0.011		
Full-time Job Income					
2	-1,581.784	2,477.388	0.525		
3	-6,973.631	3,030.474	0.024		
4	-10,886.04	5,530.723	0.053		
5	-10,703.32	6,176.972	0.087		
Gender	-3,046.881	2,907.017	0.298		
Age					
2	-2 031 268	3 229 608	0.531		
3	-1.570.873	3.300.139	0.635		
-	y - · · · · · ·	-)			
Education					
2	-6,860.098	2,680.221	0.012		
3	-4,263.632	2,429.507	0.083		

Table 4 The Regression Results of the average platform earning per month(in Baht) of sample participants

4	-906.5103	4,491-829	0.841	
Household Income				
2	7,914.685	2,835.221	0.007	
3	11,445.87	3,018.322	0.000	
4	16,916.17	3,310.127	0.000	
5	15,070.23	3,693.301	0.000	
6	35,021.41	6,341.942	0.000	
7	22,754.3	5,365.468	0.000	
8	12,919.75	9,278.763	0.168	
9	2,497.558	8,437.595	0.768	
10	16,956.12	5,713.855	0.004	
No. of Rides	56.84883	14.83581	0.000	
Vehicle Type	11,455.14	2,336.845	0.000	
Constant	-9,326.245	4,627.361	0.047	

t-value in parentheses

The direct-impact model shows a significant positive association between average platform earning per month from all sample participants and the working hours, in which p-value less than 0.05(see Table 4). The the coefficient 0.011 reveals that if an Grab participant's working hours increases by 1, his average earning per month will increase by approximately 46.14 baht. This positive coefficient is match with the initially hypothesis of the research, that is $\beta_1 > 0$.

The greater amount of platform earning is mostly due to an increase in financial status, consequently, the possibility that the relationship between income job and platform earning could be different for individuals across different income job levels. The results emphasize the negative relationship in full-time job income and platform earning. While the coefficient of income ranges of more than 20,000 baht per month has statistical significance at 5% level, a participant who has income job lower than 20,000 baht per month, however, shows no significant with average platform earning. This still be in line with the hypothesis as the higher income job lead to the lower platform earning generated by participants.

According to the table above, gender and age does not have statistically significant association with an average platform income per month from the samples. As expected, there is

limited barrier of gender and age to entry Grab application, meaning that this platform is freely open in the labor market. Both male and female could generate higher amount than the others. Relying on the driving licence requirement in Thailand, the minimum age to drive a motor vehicle is 18, and to drive motorcycle is 15. Then, participants who has driving permit and pass the platform's criteria could also achieve their additional income.

Most of the household income range, from the results, has a significant relationship with the platform earning per month. Some ranges, instead, has no significant effect due to the relative low samples falling in those ranges. Indeed, since the household income was higher in a month with more platform earning for sample participant, this was led to the the positive coefficient as expected.

The number of rides and vehicle type are the factors showed the significant impact on the average platform earning per month of a Grab participants with statistical significance at 1% level. This regression results point out the positive coefficient of the number of rides, that for every 1 ride rises, the earning per month on platform will also increase about 57 baht. Likewise, the coefficient of vehicle type suggests that a participants who use car to perform services could contribute the average platform earning per month almost 11,455 baht higher as it compared to participants who use motorcycle to perform services or delivery. These positive coefficients are also match with the hypothesis of the research, β_7 and β_8 are higher than zero.

Conclusion

While many academic papers are trying to claim that sharing platform or online platform economy lead to an social inequality, this paper highlights one controversy that has not been clarified about sharing economy. That is how for-profit sharing economy influences to the disparity in income distribution among its participants. Within the context of online platform in Thailand, the research has collected 100 random samples of Grab participants in Bangkok via online survey. The data collection shows average platform earning, full-time job income, individual characteristics, platform activities. Regarding to their sources of income, respondents are classified to dependent worker and non-dependent workers in order to find an inequality.

The Gini index, is a measurement of inequality in a distribution, has used to identify the research question by capturing a point of time. Considering in total income of both the dependent workers and non-dependent workers, the Gini coefficients dramatically decrease as the platform earnings are included. This results suggest that Grab platform provides financial stability and opportunity for respondents, particularly non-dependent workers. In addition, Gini indexes of sample participants who have full-time job income also decline when platform earnings are counted. The improvement in income distribution affect not only respondent who has no job, but also respondent who has low income job. The online platform economy has created new and more flexibility opportunities for individuals to generate income, overall, earning from the Grab platform could contribute to a reduction in income inequality among our sample providers.

Furthermore, this paper points out the significant factors that generating average platform earning per month by using a regression model. The results has shown that age and gender have no significant association with platform earning because platform is an open market entry. While coefficient of working hours, number of rides, household income and car are significantly positive, the coefficient of full-time job income and education results in negative sign. Negative relationship could be implied that sample participants who has higher full-time job income tend to generate lower average platform earning. As a consequence, the total income of each participants would be more equitable.

6.1. Limitation of research

Although the study reports meaningful findings and provides some important insights number into the current literature, it is not without limitations.

In order to show the impact of arrival of sharing economy on income distribution, the data should be collected and represented in term of time series. Due to the time limitation, this research, then, only capture the income distribution in a point of time.

The platform have been largely unwilling to share or public their data, particularly to student researcher, and most of this activity is not captured in government survey. As such, this research can only approach and collect data from 100 random samples of platform participants in Bangkok via online. As a result, this small number of the samples could not be able to depict all the platform providers in Bangkok good enough. Moreover, this population could not also contribute to the whole population in Thailand due to the restricted in the study scope. Indeed, there still be ambiguous whether Grab platform would exacerbate or ameliorate income inequality in Thailand.

6.2. Recommendation

From the results, research figures out that Grab or digital platform lead to positive outcome in income inequality, especially among those sample providers. The ways in which accessing the platforms is affecting larger trends in income distribution, the public sector agencies might take an action from this innovation benefit. Despite gig labor still show the paradox of regulating the sharing economy, reactions could be mixed to handle the rapid growth of sharing economy and to boost the income inequality of Thai individuals.

The future policies should support the sharing economy for its innovation, while developing strategies to address the challenges. Country could subsidize sharing platforms to encourage expansion of utilized asset and generate consumer surplus. Facilitating the sharing economy could be tools for social equity and economic redistribution, in which platforms could serve poor individuals such as employing low-income and disadvantaged communities. Finally, this research paper hope this will begin that conversation.

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Appendix A

<u>Survey</u>

The impact of Sharing Economy and Income Distribution of Grab Participants

Individual Characteristics

Gender :

Male Female		
Age :		
□ 18-25 years old	25-35 years old	
□ 35-60 years old	\Box more than 60 years old	
Education :		
High School or lower	🗌 Diploma (ปวช./ปวส.)	
Bachelor's Degree	Master's Degree	Doctor's Degree
Household income (per month) :		
Less than 20,000 baht	20,000 - 40,000 baht	
40,000 - 60,000 baht	🗌 60,000 - 80,000 baht	
🗌 80,000 - 100,000 baht	100,000 - 120,000 baht	
120,000 - 140,000 baht	140,000 - 160,000 baht	
🗌 160,000 - 180,000 baht	180,000 - 200,000 baht	
☐ More than 200,000 baht		
Number of Family Members :	(number) people	

Full-time Employment

Do you have a full-time job, apart of Grab?

 \Box Yes \Box No

Salary/Income from the full-time job (per month) :

□ No full-time job

 \Box 20,000 - 30,000 baht \Box 30,000 - 40,000 baht

40,000 - 50,000 baht

☐ More than 50,000 baht

Platform Activities

Average Income working with Online Platform (per month) :

___(number)___ baht

Average hours spending on Grab platform per month :

___(number)___ hours

Average rides per month : ____(number)___ rides

Asset-used to perform platform services :

Car Dotorcycle

Appendix B

. regress (PlatformEarning WorkingHours i.FulltimejobIncome Gender i.Age i.Education i.HouseholdIncome NoofRides VehicleType)

Source		SS	df		MS	Number of	obs =	100
Markal		612-110	20	0.4.61	CECCA	E(22, 77)	_	13.80
Danidual	1.0	36130+10	22	61201	163664	Prob > r	-	0.0000
Residual	9.	/2226+09	"	6132	623.2	R-squared	-	0.7976
Total		2226-110	0.0	0.25	112055	Raj R-squa	ired =	7021 0
Iotal	2	33366+10	99	235	13855	ROOT MSE	-	7631.2
PlatformEarn	ing	Coef.	Std.	Err.	τ	P> t	[95% Conf	[. Interval]
WorkingHo	urs	46.14052	17.7	2902	2.60	0.011	10.83754	81.44351
FulltimejobInc	ome							
	2	-1581.784	2477	.388	-0.64	0.525	-6514.894	3351.325
	3	-6973.631	3030	.474	-2.30	0.024	-13008.08	-939.1858
	4	-10886.04	5530	.723	-1.97	0.053	-21899.12	127.0355
	5	-10703.32	6176	.972	-1.73	0.087	-23003.25	1596.598
Gen	der	-3046.881	2907	.017	-1.05	0.298	-8835.492	2741.73
	Age							
	2	-2031.268	3229	. 608	-0.63	0.531	-8462.239	4399.702
	3	-1570.873	3300	.139	-0.48	0.635	-8142.29	5000.543
Educat	ion							
	2	-6860.098	2680	.221	-2.56	0.012	-12197.1	-1523.097
	3	-4263.632	2429	.507	-1.75	0.083	-9101.399	574.1354
	4	-906.5103	4491	.829	-0.20	0.841	-9850.885	8037.864
HouseholdInc	ome							
	2	7914.685	2835	.223	2.79	0.007	2269.035	13560.34
	3	11445.87	3018	.322	3.79	0.000	5435.625	17456.12
	4	16916.17	3130	.127	5.40	0.000	10683.29	23149.05
	5	15070.23	3693	.301	4.08	0.000	7715.932	22424.53
	6	35021.41	6341	.942	5.52	0.000	22392.99	47649.83
	7	22754.3	5365	.468	4.24	0.000	12070.29	33438.31
	8	12919.75	9278	.763	1.39	0.168	-5556.627	31396.13
	9	2497.558	8437	. 595	0.30	0.768	-14303.84	19298.96
	10	16956.12	5713	.855	2.97	0.004	5578.379	28333.86
NoofRi	des	56.84883	14.8	3581	3.83	0.000	27.30696	86.39069
VehicleT	ype	11455.14	2336	.845	4.90	0.000	6801.886	16108.39
_	ons	-9326.245	4627	.361	-2.02	0.047	-18540.5	-111.993