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Post-Pandemic Employment Recovery: Case Study of Tricycle Drivers in Metro Manila

Takashi Yamano, Yasuyuki Sawada, Shigehiro Shinozaki, Hyuncheol Bryant Kim, Syngjoo Choi, and Siho Park

Abstract

To curve the spread of COVID-19, governments have imposed lockdowns and movement restrictions, which has directly reduced transport workers' earnings dependent on rider fees. To assess the impacts of the pandemic on tricycle drivers in the Philippines, this chapter uses panel data of 1,660 drivers interviewed in 2019 and 2021. Only 19% of them worked under the enhanced community quarantine period in March–May 2020. In the following months, their operation rate increased to 66% during the general quarantine period in June 2020–March 2021 and to 90% by December 2021. The vaccination rate among drivers increased from 10% in May 2021 to 87% in December 2021. Although their work has resumed, their monthly earnings in late 2020 remained about half of 2019. After 2 years of pandemic, it is unclear whether the demand for public transport services will return to pre-pandemic levels. Governments need to provide clear regulations regarding tricycle services and help drivers adapt to post-pandemic conditions.

Key words: Urban transportation, public utility vehicles, tricycle services, COVID-19 pandemic, COVID-19 vaccines

1. Introduction

Since the World Health Organization (WHO) officially declared COVID-19 a pandemic in March 2020 (WHO 2020), countries around the globe have gone through several cycles of varying restrictions on public movement and interaction (Tirachini and Cats 2020). The public transportation sector in many countries experienced severe restrictions (Shortall et al. 2021). In the Philippines, all public transportation services were suspended at the beginning of the pandemic (Government of the Philippines 2020a). Subsequent community quarantine policies gradually relaxed restrictions on public transportations, while imposing safety conditions to reduce the risk of transmission of COVID-19.

Due to the limited availability of mass transit services, road-based public utility vehicles (PUVs) are the primary transportation system in the Philippines (Chuenyindee et al. 2020). Among them, informal paratransit services provide on-demand and flexible transport options to passengers at low costs, but they also contribute to traffic congestion, and air and noise pollution (Cervero and Golub 2007; Phun and Yai 2016). Tricycles (auto-rickshaws) are among the most popular paratransit services in Metro Manila (JICA 2015). Compared with other modes, they provide cheap and convenient service, offering numerous routes and connections. The tricycle service constitutes the border between the formal and informal sectors. Tricycle drivers belong to Tricycle Operators and Drivers' Associations (TODAs), which are registered with and supervised by municipal governments. However, the tricycle drivers' incomes and financial conditions are closer to workers in the informal sector (ADB 2020c). Although there are studies that have measured the impacts of the lockdowns and movement restrictions on mobility, little is known about the magnitude of the financial hardships on the paratransit workers, and how they resumed work under changed circumstances.

This paper uses panel data from tricycle drivers surveyed in both 2019 and 2021. In November–December 2019, 2,487 tricycle drivers were randomly selected from TODAs in Metropolitan Manila to be surveyed. The survey collected their demographic, financial, and employment information. The main findings of the 2019 survey have been summarized in an ADB report (ADB 2020a). Two years later, a follow-up telephone survey was conducted, with 1,660 respondents from the 2019 sample. The 2021 survey asked about drivers' working hours and conditions during different community quarantine periods, their COVID-19 vaccination status, and their financial behavior.

The analysis shows that only 19% of the drivers worked during the enhanced community quarantine period of March–May 2020, and the proportion increased to 66% during the general quarantine period in June 2020–March 2021, and to 90% by December 2021. Meanwhile, the vaccination rate increased from 10% in May 2021 to 87% in December 2021. However, the drivers' working hours and earnings remained much lower than that of 2019. Even though the economy and transport services appear to be returning to normalcy, it may take more time before the demand due to ridership returns to pre-pandemic levels. However, the demand for public transport services may not return to pre-pandemic levels, as customers might have switched to different working conditions or commuting modes.

2. Literature review

To curb the spread of COVID-19, governments have imposed lockdowns and movement restrictions (Tirachini and Cats 2020; Shortall et al. 2021). The implications of the imposed movement restrictions can be of three types: avoidance of travel, shift in transport mode, and improvement of quality (Shortall et al. 2021). The first constituted measures that have reduced the use of public and shared transport. These measures included: (i) not allowing non-essential services and large gatherings; (ii) requesting work-from-home where possible; (iii) domestic travel restrictions; and (iv) international travel restrictions. By the end of March 2020, more than 100 countries had implemented some combinations of these measures (Parady, Taniguchi, and Takami 2020). The second type promoted greater use of alternative means of transportation, such as private vehicles, motorcycles, and bicycles. Finally, the third type required or encouraged improved safety measures in public transportation systems., such as (i) additional space and social distancing, (ii) enhanced hygiene and health measures, and (iii) better capacity management for public transport.

The declines in mobility due to lockdowns and movement restrictions, measured by using big data, show significant declines in mobility in developed countries. Based on mobile phone location data from the United States, Lee et al. (2020) found that between January and April 2020 stay-at-home mandates were effective. A similar picture has emerged from studies of European cities and countries. Pullano et al. (2020) assessed the impact of a nationwide lockdown in France, using origin-destination flows captured by mobile phone data, and found that mobility fell by 65%, with the largest decline in regions with large, economically active populations with a high burden of COVID-19 cases.

In the Philippines, Hasselwander et al. (2021) analyzed aggregated cell phone and GPS data from Google and Apple to provide a comprehensive representation of mobility behavior before and during the lockdown. While significant decreases were observed for all transport modes, public transportation experienced the largest drop of 74.5 %. In addition, Yi et al. (2022) analyzed cellphone-based origin-destination flows made available by a major telecommunication company. They found that the effect of lockdowns was strongest in cities where a high share of the workforce was employed in work-from-home friendly sectors or medium-sized and large enterprises.

Despite a growing number of studies on the impacts of COVID-19 and restrictions on mobility, few have examined the impact of such restrictions on workers in semi-formal or informal public transport services. Unlike public workers with fixed salaries, tricycle drivers depend on their earnings from riders. Thus, the lockdowns and movement restrictions directly reduced their income. It is important to empirically assess the impacts on their work and financial situation, which impact their well-being.

3. Tricycle services and COVID-19 pandemic in the Philippines

Many Asian developing countries have limited budgets to support environment friendly and efficient mass transportation systems such as mass rapid transit (MRT), light rail transit (LRT), or bus rapid transit (BRT). Paratransit services provide indispensable services in developing countries where mass transit systems are inadequate (Cervero and Golub 2007). Although paratransit can be defined in many ways, it is best described as an informal public transport mode that has developed to fill the service void left by inadequate private vehicles and/or conventional mass transit systems in cities where official authorization is not required or enforced for providing transport services (Cervero and Golub 2007). Examples of paratransit services in Southeast Asia include motodops and remorks in Cambodia, angkot and Bajaj in Indonesia, and jeepneys and tricycles in the Philippines (Phun and Yai 2016). Although paratransit vehicles are often in poor condition and drivers are largely unregulated, they offer a vital service in the form of personalized transport and feeder services to mass transit systems (Joewono and Kubota 2007). Governments in Asia and the Pacific, including in the Philippines, recognize the importance of paratransit services and have been struggling to integrate them with formal public transport systems.

According to the Philippines' Land Transportation Office, the number of registered motorcycles in the country was 8.0 million in 2019, which declined to 7.3 million in 2020. It is unclear whether the decline was mostly due to the COVID-19 pandemic, but the number increased again to 8.1 million in 2021. Of the 8.1 million registered motorcycles in 2021, about 1.5 million were tricycles. These vehicles, more commonly found in urban areas, are motorcycles with an attached sidecar (passenger cabin) connected to a third wheel. They can accommodate four to eight passengers, depending on the cabin size and are often used on narrower roads. Most of the tricycles are registered in Region III (269,906), Region IV (286,741), Region I (188,694), and the National Capital Region (142,577), all of which are parts of the main island of Luzon. Although it is unclear how many of the 1.5 million registered tricycles are used for commercial transport services, these numbers provide an upper limit of the number of commercial tricycle services. Commercial tricycle drivers are required to be in TODAs licensed by municipal offices.

As discussed above, the pandemic has prompted countries to undertake various policy responses to limit its spread. In the Philippines, the government quickly imposed an enhanced community quarantine (ECQ) in the National Capital Region (NCR) and other high-risk regions from 15 March 2020 to stop or slow the spread of COVID-19 and ease its impact (Government of the Philippines 2020a). The ECQ policy entailed stay-at-home orders and the suspension of public transport services, including tricycles, except for some essential utility services for medical and other essential frontliners. It also restricted entry to and exit from the NCR with less stringent lockdown measures. These measures limited the physical mobility of people belonging to communities within the NCR. The government also imposed temporary closures of schools and businesses. The first ECQ period ended on 15 May 2020 and was immediately followed by a less stringent lockdown policy (modified ECQ), which also served as a transition period toward a general community quarantine (GCC) that allowed greater mobility from 1 June 2020 (Government of the Philippines 2020b).

From 1 June 2020 to 3 August 2020, the movement of persons was allowed within the NCR, along with the resumption of public and private transport services (Table 1). Tricycles were allowed to operate, but the number of passengers per tricycle was restricted to one in most local government units in NCR, and no back riders were allowed. Buses and other large vehicles were allowed to ply at half capacity, and taxis were allowed just two passengers per row. Curfew hours that prevailed during ECQ (8 p.m.–5 a.m.) were shortened during the modified ECQ (10 p.m.–5 a.m.). To assess the service quality of PUVs, including tricycle services,

in the Philippines during the COVID-19 pandemic, Chuenyindee et al. (2022) conducted an online survey of 564 individuals about PUV services. They found that COVID-19 protocols, tangibility, and assurance variables have significantly affected customer satisfaction.

Table 1: Passenger Limits in Public Utility Vehicles

Mode	Maximum Allowable Capacity (A)	Additional Restrictions (B)
Tricycles	Maximum of one passenger in sidecar	No passengers shall be seated beside or behind driver
Public utility buses, jeepneys, and shuttle services	50% of vehicle capacity (excluding driver and conductor)	Passengers seated on seat apart; no standing passengers For jeepneys and shuttles: only one passenger in driver's row (if no conductor)
UV Express, taxis, and TNVS	Maximum two passengers per row	Only one passenger allowed in the driver's row

TNVS = Transport Network Vehicle Service (e.g., Grab taxi).

Source: Department of Transportation. Land Transportation Office Memorandum Circular No. 2020-2185.

The national government has since made quarantine restriction adjustments based on the number of COVID-19 cases and capacity utilization of health care facilities (Government of the Philippines 2020c). Beginning in October 2021, the government adopted a new community quarantine classification system with only two community quarantine classifications—ECQ and GCQ. It assigns alert levels 1 (lowest) to 5 (highest) in GCQ areas according to the COVID-19 risk levels assessed. Local governments then determine movement restrictions based on age and comorbidities.

4. Methodology and data

For the analysis in this chapter, three quarantine periods are defined: (i) Enhanced Community Quarantine (ECQ), from 17 March 2020 to 31 May 2020, when the government imposed its first lockdown restriction; (ii) General Community Quarantine or GCQ I from 1 June 2020 to 28 March 2021; and (iii) GCQ II for the period of the last 4 weeks before the survey was conducted in November and December 2021. Data used

in this report come from panel surveys conducted in 2019 and 2021 with tricycle drivers in Metropolitan Manila. The 2019 survey results have been summarized in an ADB report (ADB 2020a). In November and December 2019, a survey was conducted with two groups of tricycle drivers. One was a group of randomly sampled drivers from Manila and Quezon City. All tricycle drivers belong to TODAs; among the TODAs that gave consent to let the drivers participate in the survey, approximately 8 to 10 drivers per TODA were randomly sampled.

The second group is composed of tricycle drivers from Metropolitan Manila who had received financial technology loans from Global Mobility Service Inc. (GMS), a Japanese fintech (finance and technology) company focused on urban mobility providers for enabling sustainable development and social change.[1] They used the loans to buy tricycles and are now repaying GMS. This study calls the first group of drivers as the "conventional" (non-fintech) drivers, and refers to the second group as "fintech" drivers. Table 2 shows the distribution across different cities of the 2,487 drivers surveyed.

The survey included questions about various characteristics of the tricycle drivers. Basic demographic information was collected through a set of standard questions on drivers and their household members. Their socioeconomic status was also measured through questions about income, household assets, and work behavior.

Two years after the first survey, a phone survey was conducted seeking to reach all 2,487 tricycle drivers by using the contact information provided in the 2019 survey. The phone survey was able to reach 1,660 drivers, a response rate of 67%. After two years, some attrition was expected. Reasons for attrition included incorrect or changed phone numbers, non-response, and refusal to be interviewed (Table 2). An important consideration is whether the attrition caused a selection bias in the samples.

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[1] See Global Mobility Service, Inc. https://www.global-mobility-service.com/en/index.html.

Table 2: Geographic Distribution of Drivers Surveyed

	In 2019 [count]	Both in 2019 and 2021 [count (% of A)]
District	(A)	(B)
Capital Manila	1,559	985 (63.2)
Quezon City	848	635 (75.4)
Others	80	40 (46.5)
Total	2,487	1,660 (66.7)

Notes: Others include Caloocan, Malabon, Makati, Mandaluyong, Muntinlupa, Navotas, Pasay, Pasig, and Pateros.

To examine attrition among the respondents, driver characteristics were compared to the demographic characteristics of the 2019 survey. Their ages ranged from 18 to 79 years, with a mean age of 43. Many drivers were married and lived on average with three to four family members.[2] Their mean level of education was 9.6 years.[3] Table 2 compares the characteristics between drivers who were surveyed in both 2019 and 2021, and those who were not included in 2021.

The results indicate that, compared to those not included in the 2021 sample, drivers who responded to both the surveys are more likely to be married and have a smartphone. This finding makes sense, because married drivers are more likely to be settled in one place and maintain the same phone number. As smartphones are becoming popular, those who have old mobile phones are likely to switch to smartphones and may also change their phone numbers in the process. The results in Table 3 raise concerns about attrition bias in the analysis of the 2021 survey, since the 2021 driver samples are somewhat different from the 2019 drivers who were randomly selected. The attrition maybe controlled in the analysis by using exogenous factors that could have caused it. However, such exogenous factors are not available for this analysis. Thus, this study was unable to control for attrition in the analysis, but concerns about potential attrition biases are noted when interpreting the results.

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[2] A household is defined as a social unit consisting of a person living alone or a group of people living together in the same housing unit for more than 3 months, within the past 12 months, and sharing in the preparation and consumption of food. See Philippine Statistics Authority. Census of Population and Housing. Technical Notes. https://psa.gov.ph/population-and-housing/technical-notes.

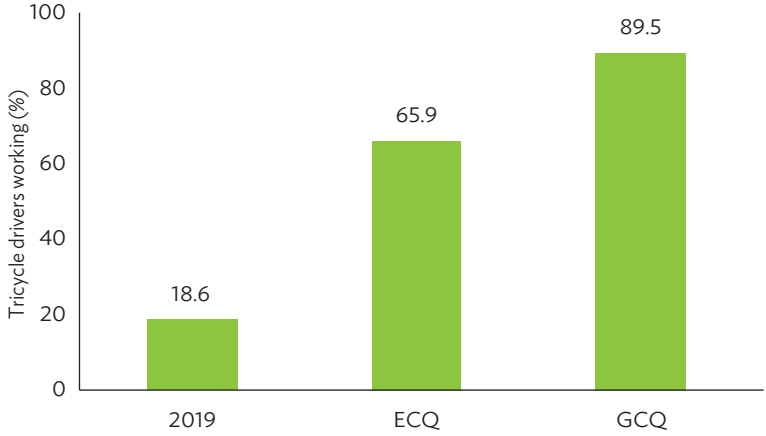
[3] This pertains to the education system before it was changed to a K-12 program, which requires 12 years of education before entering college.

5. Results

5.1 Employment during quarantine periods, 2020–2021

In the 2021 survey, the respondents were asked about their employment status throughout the pandemic and community quarantines. This study has identified three periods, as discussed in Section 4. Under the three periods, some of the respondents worked as tricycle drivers or took different occupations. During the ECQ, only about 18.6% of the respondents worked (Figure 1). The proportion of those who worked increased to almost 66% during GCQ I and nearly 90 % in GCQ II.

Figure 1: Tricycle Drivers Working during Community Quarantine Periods



ECQ = enhanced community quarantine, initial imposition period (17 March 2020–31 May 2020); GCQ = general community quarantine, initial imposition period (1 June 2020–28 March 2021); GCQ II = a 4-week period (October–November 2021) before the survey was conducted during November–December 2021.

Source: Authors.

During these episodes of community quarantine, tricycle drivers faced various restrictions. The first ECQ imposed strict restrictions that prohibited them from operating; thus, some of the respondents chose

alternative occupations (Table 3). At the time of ECQ, 308 respondents worked, about 71% of them as drivers. However, the other 29% chose alternative occupations, including becoming delivery workers (6.5%), construction workers (1.3%), vendors and shop owners (1.6%), daily-wage workers (1.6%), and doing other jobs (17%).

During GCQ I, about 90% of those who went back to work worked as drivers of any vehicle (most likely, tricycles), and the rest took up different occupations. By the time of the survey in December 2021, which was the phase of GCQ II, about 90% of the respondents had resumed work as drivers. Among the alternative occupations, delivery work remained the most popular alternative. The absolute number of respondents who took up delivery work increased from 20 during ECQ to 52 during GCQ II, although the proportion of those working in delivery fell from 6.5% during ECQ to 3.5% during both GCQ I and GCQ II. The results in Table 3 suggest that respondents struggled to find jobs throughout the pandemic, during the periods of community quarantine.

Table 3: Occupations During the Pandemic and Community Quarantine Periods, 2020–2021

	ECQ (Mar – May 2020)		GCQ I (Jun 2020–Mar 2021)		GCQ II (Nov – Dec 2021)	
	(A)	(B)	(C)	(D)	(E)	(F)
Main Occupation	Count	%	Count	%	Count	%
Driver of any vehicle	219	71.1	986	90.1	1,314	88.5
Delivery workera	20	6.5	38	3.5	52	3.5
Construction worker	4	1.3	13	1.2	24	1.6
Street vendor/shop	5	1.6	10	0.9	18	1.2
Daily laborer	5	1.6	5	0.5	11	0.7
Technician	2	0.7	4	0.4	8	0.5
Others	53	17.2	38	3.3	58	3.5
Total who worked	308	100	1,094	100	1,485	100

ECQ = enhanced community quarantine, initial imposition period (17 March 2020–31 May 2020); GCQ I = general community quarantine, initial imposition period (1 June 2020–28 March 2021); GCQ II = a period of the past 4 weeks before the interviews with the respondents (October–November 2021).

[a] For example, Grab Food and Food Panda.

Source: Authors.

5.2 Incidence of COVID-19 and vaccination status

In the 2021 survey, the respondents were asked whether they had tested positive for COVID-19, and about their vaccination status (Table 4). Since the beginning of the pandemic in 2020, 36% of the drivers said they had been tested for COVID-19 at least once. Although only 3% reported having tested positive for COVID-19, 11% said they had experienced symptoms associated with COVID-19, such as fever with a dry cough, shortness of breath, and loss of taste or smell. About 7% had at least one family member who had tested positive for COVID-19, and 13% had at least one co-worker who had tested positive.

Table 4: COVID-19 Experience among Tricycle Drivers

	Mean	Std. Dev.
Tested for COVID-19	0.36	0.48
Confirmed positive for COVID-19	0.03	0.16
Experienced any COVID-19 symptoms	0.11	0.31
Has family members confirmed positive for COVID-19	0.07	0.26
Has a co-worker confirmed positive for COVID-19	0.13	0.34

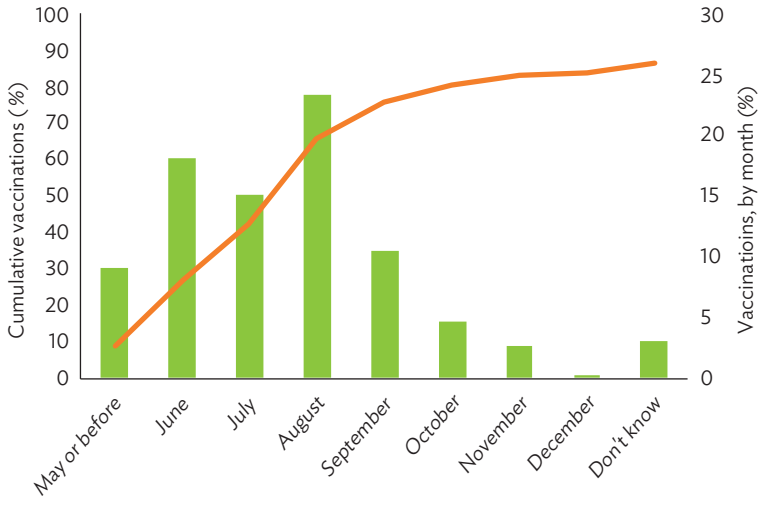
Notes: COVID-19 symptoms include fever with a dry cough, shortness of breath, and loss of taste and/or smell.

Source: Authors.

Next, the drivers were asked about their COVID-19 vaccine status (Figure 2). Before the survey in December 2021, about 87% of the drivers said they had been vaccinated.[4] Vaccination started in the Philippines in February 2021, and about 9% of the respondents had received at least one dose of the vaccine before the end of May 2021. The proportion quickly increased during June–August 2021.

[4] Vaccines available included Sinovac and Sinopharm (57%), Pfizer and Moderna (28%), Astra Zeneca (9%), and others.

Figure 2: Vaccination Rates Among Tricycle Drivers in 2021



Notes: The curve represents cumulative vaccinations until any given point during the year. The bars represent vaccinations for each month.

Source: Authors.

Among 218 unvaccinated respondents, 45% were willing to receive a COVID-19 vaccine, 29% were unwilling, and 26% were unsure (Table 5). Among those who were willing, about 8% cited not having the time as a main reason for not receiving vaccines. Other reasons include "doctors did not recommend" (about 7%) and "others" (almost 30%). Among those who were unwilling to be vaccinated, over 9% cited being afraid of adverse side effects as a main reason. A little over a quarter were unsure about receiving vaccines.

Table 5: Willingness to Receive COVID-19 Vaccine by Unvaccinated Drivers (n=218)

Reason for not receiving vaccine, by willingness type	%
Willing to receive COVID-19 vaccines	**44.5**
I do not have time for vaccination	7.8
My doctor did not recommend it	7.3
Other	29.4
Unwilling to receive	**29.4**
I am afraid of adverse side effects	9.2
Others	20.2
Unsure	**26.1**
Total unvaccinated (n=218)	100

Source: Authors.

5.3 Working hours, income, and loans in late 2021

Even after the drivers resumed work, they did not work as much as they did in 2019 and earned less than before. The study finds that tricycle drivers worked, on average, 9.3 hours a day for 5.7 days a week in 2021, while they worked 11 hours a day for 6.3 days a week in 2019 (Table 6). From 2019 to 2021, the mean hours worked per week declined by over 26 hours, from about 70 to 54. Partly because of the reduced hours of work, the drivers' average monthly income declined by half, from 15,949 Philippine pesos (₱) in 2019 to ₱7,716 in 2021. Their spouses' monthly income also declined from ₱3,746 to ₱1,795 over the same period. The combined household income from both spouses, and other additional income, fell by over half, from ₱26,212 to ₱10,647. Finally, the survey asked about tricycle drivers' financial conditions in 2021. About 31% of them are paying back loans taken to pay for their vehicle. During the pandemic, about 80% of those who had loans missed at least one repayment installment.

Table 6: Average Hours Worked and Average Income Earned by Tricycle Drivers

	2019	GCQ II (Oct – Dec 2021)	Difference
	(A)	(B)	(B) – (A)
Worked (%)	100	89.5	-10.5***
Working hours/day (hours)	11.2 a	9.3 a	-1.9***
Working days/week (days)	6.3 a	5.7 a	-0.5***
Working hours/week (hours)	70.3 a	53.6 a	-16.7***
Monthly income (PHP)			
Driver	15,949	7,716	-8,234***
Spouse	3,746	1,795	-1,952***
Household	26,212	10,647	-15,565***
Financial Status			
Have loans (%)	NA	30.6	
Problems with repayment (%)	NA	78.0	
Number of respondents	1,660	1,660	

NA = not applicable
[a] Represents the 1,485 respondents who worked in GCQ II 2021.
*** Significant at the 1% level ($p<0.01$).
Source: Authors.

A simple regression analysis helped identify the factors that affected the tricycle drivers' monthly earnings in 2019 and 2021 (Table 7). Another model was run with the dependent variable as a simple difference of earnings between 2021 and 2019. To enable comparison, the estimation models used data about the same 1,660 drivers who were included in both surveys. The 2019 regression results are consistent with the research's expectations. Age has a strong negative coefficient, which suggests that, for each extra year that a driver is older by, the monthly income declines by ₱55. However, because the average monthly earning of the drivers was ₱15,949, this amounts to only a 0.3% decline. A married and educated driver earned significantly more than others. The average monthly earnings of drivers in Quezon City were lower than those of their counterparts in Manila, while in other areas drivers earned more.

Table 7: Determinants of Drivers' Monthly Incomes in 2019 and 2021 (OLS)

	2019 Income	2021 Income	Difference in Incomes (2021–2019)
	(A)	(B)	(C)
Driver Characteristics			
Age (years)	-54.5***	-95.2***	-40.7**
	(3.08)	(7.35)	(2.01)
Married (yes)	1990.7***	333.3	-1657.3***
	(3.65)	(0.84)	(2.66)
Education (years)	213.8***	36.6	-177.1**
	(3.26)	(0.76)	(2.36)
Number of household members	106.2	92.0	-14.2
	(1.13)	(1.33)	(0.13)
Quezon City (dummy)	-1287.5***	-1064.9***	222.6
	(3.17)	(3.58)	(0.48)
Other areas	4101.4***	136.5	-3342.2***
	(3.21)	(0.15)	(2.71)
Year 2021 (dummy)	-	-	-3342.2***
			(2.71)
Constant	14,430.5	11,088.3	-
	(13.3)	(13.9)	
Adjusted R-squared	0.032	0.041	0.013
Total	1,658	1,658	1,658

Note: Numbers in parentheses are absolute z-scores based on robust standard errors. ** significant at the 5% level ($p<0.05$). *** significant at the 1% level ($p<0.01$).

Source: Authors.

Compared to the 2019 model, fewer variables proved significant in the 2021 model. Age has a larger and more statistically significant coefficient in the 2021 model, suggesting that the monthly income declines by ₱95 with each year added to a driver's age. Average monthly earnings in 2021 dropped to ₱7,716, a 1.2% decline, which was four times larger than that of 2019. In Quezon City, the mean monthly earning is about ₱1,065 lower than in Manila. Besides the age (of the driver) and the city dummy (for Quezon City), other variables are not significant, possibly suggesting more disruptions in the labor market for drivers.

Married and educated drivers did not earn more than others, as they did back in 2019. The drivers in areas other than Manila and Quezon City earned relatively more in 2019, but that difference shrunk in 2021 and ceased to be significant.

The last model, which uses changes in the monthly earnings over time, confirms the inferences drawn from the first two models. Older drivers have seen their average earnings decline more than those of younger drivers. Married, educated, and drivers outside of Manila and Quezon City have experienced larger earning declines than other drivers.

6. Conclusion

In the Philippines, in response to the spread of the COVID-19 pandemic, the government imposed a series of community quarantine programs that suspended or limited business operations. To assess the impacts of the pandemic and community quarantine restrictions on small and medium enterprises, and understand their recovery process, this study examined the welfare and working conditions of tricycle drivers. Among public transportation services, the tricycle services in the Philippines exist at the border between the formal and informal sectors, and tricycle drivers are among the most vulnerable transportation workers because of their limited financial resources. By using panel data from surveys of 1,660 tricycle drivers in 2019 and 2021, this study examined how their employment and incomes were impacted during periods of quarantine.

The surveys found that only 19% of the respondents worked during the first quarantine period (ECQ) during March–May 2020. In the subsequent quarantine periods between June 2020 and May 2021 (GCQ I), about 66% of them worked, and the percentage of those working increased to 90% by the time of the survey in November–December 2021 (GCQ II). Regarding drivers' COVID-19 and vaccination statuses, the survey found that 36% of the respondents had taken at least one COVID-19 test, and 3% of the total respondents tested positive for COVID-19. The vaccination rate rose rapidly from 27% in June 2021 to 87% at the time of the November–December 2021 survey.

Although most drivers have returned to work and 87% of those surveyed reported being vaccinated, their earnings remain lower than what they earned pre-pandemic. The mean weekly working hours declined by almost a quarter, from 70 hours in 2019 to 54 hours in 2021. The drivers' average income fell by more than half, from ₱15,949 to ₱7,716. Because their spouses' incomes also fell, the average household income among tricycle drivers declined by 60%. In late 2021, almost

one in three tricycle drivers was repaying loans borrowed to buy the vehicles, and over three-quarters of them reported having missed at least one repayment installment. Thus, although work has resumed for many, the financial hardship experienced by tricycle drivers due to the pandemic was likely to continue beyond 2021.

Lockdowns and movement restrictions to control COVID-19 sharply reduced the use of public transportation vehicles such as tricycles. Many commuters avoided shared public vehicles because of the fear of contracting COVID-19. Given the disruptions to the informal and semi-formal public transportation sectors, and the impacts on and responses by their operators and drivers, it is yet unclear whether the demand for shared public transportation vehicles, notably the tricycles in the Philippines, will ever return to pre-pandemic levels. Some regular commuters, pre-pandemic, may have arranged to work from home on a continuing basis, and others have switched to commuting by private modes of transportation. It is important for local governments to issue clear guidelines that require appropriate safety measures in shared public vehicles to ease riders' misgivings and keep them safe. Such guidance will help tricycle drivers and other informal and semi-formal public transport providers adapt to post-pandemic requirements more effectively and expeditiously.

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