# Between Flexibility and Dependency:

## DIGITALISATION, URBAN INFORMALITY AND THE NEW NORMAL FOR JAKARTA'S 'OJEK ONLINE'

Rame-Rame Jakarta

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## DIGITALISATION, URBAN INFORMALITY AND THE NEW NORMAL FOR JAKARTA'S 'OJEK ONLINE'

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**ABSTRACT**

Following the imposition of large-scale COVID-19 social distancing restrictions, ojek online (ojol) have become an essential service for millions of Jakartan households, providing the logistical backbone for a growing digital economy and supporting many small businesses as they continue operating during a period of reduced human mobility.

Although their role in helping to mitigate the worst economic impacts of large-scale social distancing restrictions has been recognised, surveys and interviews conducted by Rame-Rame Jakarta found many individual ojol drivers' livelihoods suffered significantly during lockdown, with reliable commuter pick-up journeys replaced by less frequent and less profitable food or package deliveries. Surveys also indicate that a majority of ojol drivers in the digital 'gig economy' depend on goods and services from Jakarta's informal economy, both as a source of income through deliveries and as consumers. The potential for dramatic fluctuations in the informal economy exposes inherent fragility in the digital-informal network.

Transitioning to the new normal, ojol drivers continue to report challenging circumstances and significantly reduced incomes, even as their service as couriers becomes more important to consumers and small businesses. This is attributed to a sustained reduction in mobility, with many commuters working from home or avoiding public transport, increased waiting times and fewer orders for other services. There is insufficient attention paid to this vital link in Jakarta's post-pandemic economic strategy, with the potential for drivers to abandon their app-based work and seek alternative income sources posing a potentially significant threat to a growing network of online-based home enterprises.

The long term impact of post-pandemic digitalisation on Jakarta's online-informal nexus remains unclear, but warrants further research as an important component of the city's future economic resilience. Harmonizing the decision making of individual drivers within a broader policy agenda will require a multifaceted online transportation and urban design framework for the Indonesian capital region.

## INTRODUCTION

The meteoric rise of Indonesia's 'super-apps' from simple ride-hailing platforms into comprehensive service providers is a milestone in the country's own transformation into an upper-middle income economy. Intermediary service providers working with these apps are most often individual 'partners' using motorcycles to provide a range of intermediary services including transportation, food delivery and package delivery. This model is based on the traditional indonesian 'ojek' service, with the modern incarnation referred to as 'ojek online' or 'ojol.'

With more than a million active drivers in the Jakarta metropolitan region, working across several platforms (Setiawan, 2019), ojol have become the go-to choice for a burgeoning urban middle class increasingly preferring to conduct transactions online. Favoured for their ubiquitousness, speed, flexibility and low prices, legions of green-jacketed motorcycle drivers now play a key role in the transport of goods, people and services across the capital.

The success of these applications has provided a boost to Jakarta's business community by connecting them directly to customers, and particularly small and medium-sized enterprises (SMEs) (Damuri et al, 2019; Walandouw et al, 2019; Bosnia, 2018) who would otherwise be unable to access the logistics networks of larger market competitors and could struggle to attract customers. Being able to deliver goods and services quickly and cheaply has facilitated an explosion of e-commerce and digital payments in the last few years, especially in Jakarta (Wong, 2020). The annual contribution to Indonesia's economy of the 'Go-Jek' platform, one of just two dominant market players, has been estimated to be more than 100 trillion rupiah (Walandouw et al., 2020), much of which is generated by the activities of partners working with the platform, including SMEs and the ojol drivers themselves. Ojol, therefore, play a key role in the government's push for digitalisation as part of their industrial revolution 4.0 development strategy (Indonesian Ministry of Industry, 2018; Hamdan, 2018).

IThe opportunity to generate higher income, particularly compared to traditional ojek or many other informal professions, is a primary motivating factor (Siswanto et al, 2019) for the drivers, and has drawn many hundreds of thousands to urban centres from smaller towns and cities in search of work. The high volume of ojol drivers in the Jakarta metropolitan region helps to ensure low prices, high speed, and near-universal availability of the services they provide.

Despite their significance to the Indonesian economy, and particularly in metropolitan Jakarta, economic insecurity for ojol drivers remains a persistent issue. As ‘partners’ rather than employees, they remain part of the informal ‘gig economy,’ highly vulnerable and lacking many employment rights and benefits including insurance, overtime or union membership (Dina, 2017). They must also provide or finance the necessary equipment themselves, including the motorbike itself, compatible smartphone, helmets, uniform and fuel. In particular, individual drivers have no control over the tariffs charged for their services or the payment amount they will receive, both of which are unilaterally set by the platform companies. Drivers are not provided with the information regarding how these are calculated, limiting their ability to make informed economic choices. In response to some of these changes, ojol drivers have engaged in frequent demonstrations and protests across Indonesia, particularly in Jakarta, where high living costs can significantly affect a driver’s net income (Yuniastuti, Laksmono, Sardjono, 2019).

From March to May 2020, during the early phases of Indonesia’s COVID-19 pandemic response, ojol were prohibited from providing transportation services, as the close proximity of drivers and passengers on a motorcycle was seen as a high infection risk (Governor of DKI Jakarta Regulation no. 33/2020, article 18 paragraph 6, 2020). This policy had a devastating effect on ojol drivers’ incomes, with the vast majority of orders previously having been made through the platforms no longer available. Other services including the delivery of food and packages remained active during this time, but due to the high volume of drivers, the extra costs involved in fulfilling such orders, and the much lower frequency of orders being placed, it was unable to compensate for the dramatic loss of passenger pick-up income. At the same time, many SMEs became increasingly reliant on ojol as an intermediary service because social distancing guidelines prohibited cafes, restaurants, malls, offices and other businesses from staying open and serving the public directly (Governor of DKI Jakarta Regulation no. 33/2020, article 10 paragraph 3, 2020). During this time, many ojol drivers stopped working because they were no longer able to generate an income from the platform, either relying on government assistance, temporarily changing their profession or returning to hometowns outside of the capital.

Having entered the transition phase towards the ‘new normal,’ ojol drivers are once again permitted to transport passengers, with many returning to work, and yet significant disruptions to daily life in Jakarta remain. Ongoing reductions in mobility (Google Mobility Index, April 2020), extended work-from-home policies, reduced capacity on public transport and changes to platform tarifs present serious challenges to the long-term viability of ojol drivers’ livelihoods. At the same time, the government continues to push for a transition towards digitalisation and e-commerce as a strategy for post-pandemic economic resilience during times of uncertainty and with the potential for further restrictions in the future.

The role of ojol drivers in this new phase of Indonesia’s economic development is clear, but the long term impacts of the new normal on their behaviour, choices, availability and willingness to continue working remains speculative. Therefore, developing a better understanding of critical linkages between informality, digitalisation and post-pandemic economic reality should be an important focus of research and policy.

## MATERIALS & METHODS

This research uses a combination of quantitative and qualitative data collected between April 2019 and July 2020 by Rame-Rame Jakarta to offer insight into the daily lives of ojol drivers and the choices they make as important actors in Jakarta's transportation and logistics network. This is supplemented with survey data from users of ojol driver services, both as consumers and operators of home-based SMEs, to establish the significance of their role in Jakarta's industrial revolution 4.0. Unless otherwise stated, all surveys were conducted anonymously, using the Google Forms digital platform, with a multiple-choice question format. All survey results were converted into simple bar charts and analysed for an indication of key trends and patterns within the behaviour and choices of different stakeholder groups.

1. Manggarai Report 1

The first survey conducted in 2019 focused on the daily experiences of ojol drivers operating around Manggarai train station, the Jakarta metropolitan region's main transit terminal. The location was selected for it's important role in Jakarta's transportation network, connecting rail services across the capital itself and from all major satellite cities, as well as for the noticeably large numbers of ojol drivers congregating daily around the station area. 104 survey responses were conducted in person by Rame-Rame Jakarta volunteers over a period of 3 weeks, the results of which were published in an online PDF report and distributed to drivers in paper format. Question topics ranged from daily income to location choice and interaction with the informal economy. Only responses with responses relevant to this report will be included.

2. Manggarai Pandemic Survey

Following the easing of large-scale social distancing restrictions across Jakarta, in July 2020 Rame-Rame Jakarta returned to the Manggarai station area to investigate the impact of COVID-19 on the ojol drivers gathered in the area. The location was chosen to provide a comparison with existing pre-pandemic survey data, despite the presence of relatively few ojol drivers. 32 survey responses were collected in person by Rame-Rame Jakarta over a period of three days, focused on the impact of COVID-19 for individual drivers, both during the period from March-May when passenger journeys were banned, and moving into the transition towards 'the new normal.'

3. Manggarai Interviews

Throughout the process of survey design and data collection, Rame-Rame Jakarta conducted interviews with ojol drivers around the station area to identify key themes and focus areas, improve survey design and supplement the quantitative data collected. More than 20 interviews were conducted with individuals and groups of drivers, some of which were later published online with the driver's permission. The interviews were conducted in a casual style, with responses referenced herein only where they represent a recurrent theme or opinion espoused by a significant majority of drivers.

4. Ojol Customer Survey

In order to better understand the impact of COVID-19 and associated social distancing restrictions on people's mobility choices, a survey of ojol driver users was distributed online via Rame-Rame Jakarta's social media network. 68 survey responses were collected over a one week period, with questions limited to the use of super-app platforms' motorcycle rider services before, during and after the imposition of large-scale social distancing restrictions in greater Jakarta and their role in respondents' daily lives.

5. Home Business Survey

Establishing the significance of ojol driver services to SMEs, and particularly home-based industries, as part of the wider digitalisation agenda, is a key theme of this research. An online survey was distributed via Rame-Rame Jakarta's social media network, with 20 responses collected over a one week period. Questions focused on the ways in which individual enterprises depend to one degree or another on the services specific to ojol, and how these preferences have changed during the COVID-19 pandemic.

## RESULTS

### 1. Ojol Drivers and the Impact of the COVID-19 Pandemic

**a)** Income Level

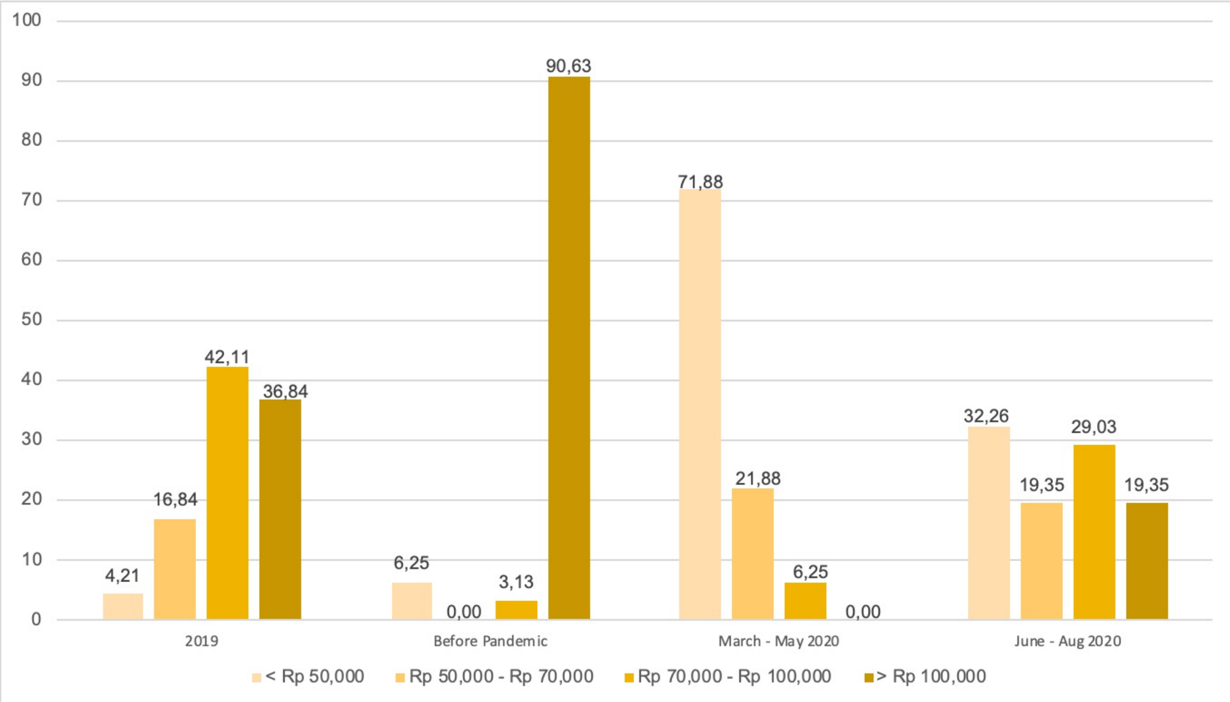


Figure 1. Ojol Income Comparison, 2019 - 2020 (%)

As clearly shown in figure 1, more than 90% of drivers reported a significant loss of daily income following the imposition of large-scale social distancing restrictions when compared to pre-lockdown conditions. A majority reported more than 50% losses, with many drivers stating a pre-pandemic daily income significantly higher than IDR100,000, indicating that the total daily losses may indeed be as high as 70-80%.

Average pre-pandemic incomes reported in 2019 were noticeably lower than those reported in the post-covid study, possibly due to the significantly larger sample size or fluctuations in tariff rates over the months prior to the pandemic. It could also be that those drivers first to return to the Manggarai station area are among the more dedicated or enthusiastic in their work, and therefore generate higher average daily incomes.

Following the repeal of the passenger pick-up ban for ojol drivers and the transition towards Jakarta's 'new normal,' the daily income rates have become highly variable. Only a minority of drivers reported a return to daily earnings of more than IDR100,000 as were reported before the pandemic, and none of the drivers interviewed reported a return to their individual pre-pandemic daily income levels. The clear overall trend is a sustained loss in overall income for ojol drivers, only partially redressed by the lifting of large-scale pandemic social distancing restrictions and the resumption of passenger pick-up journeys.

### b) Source of Income

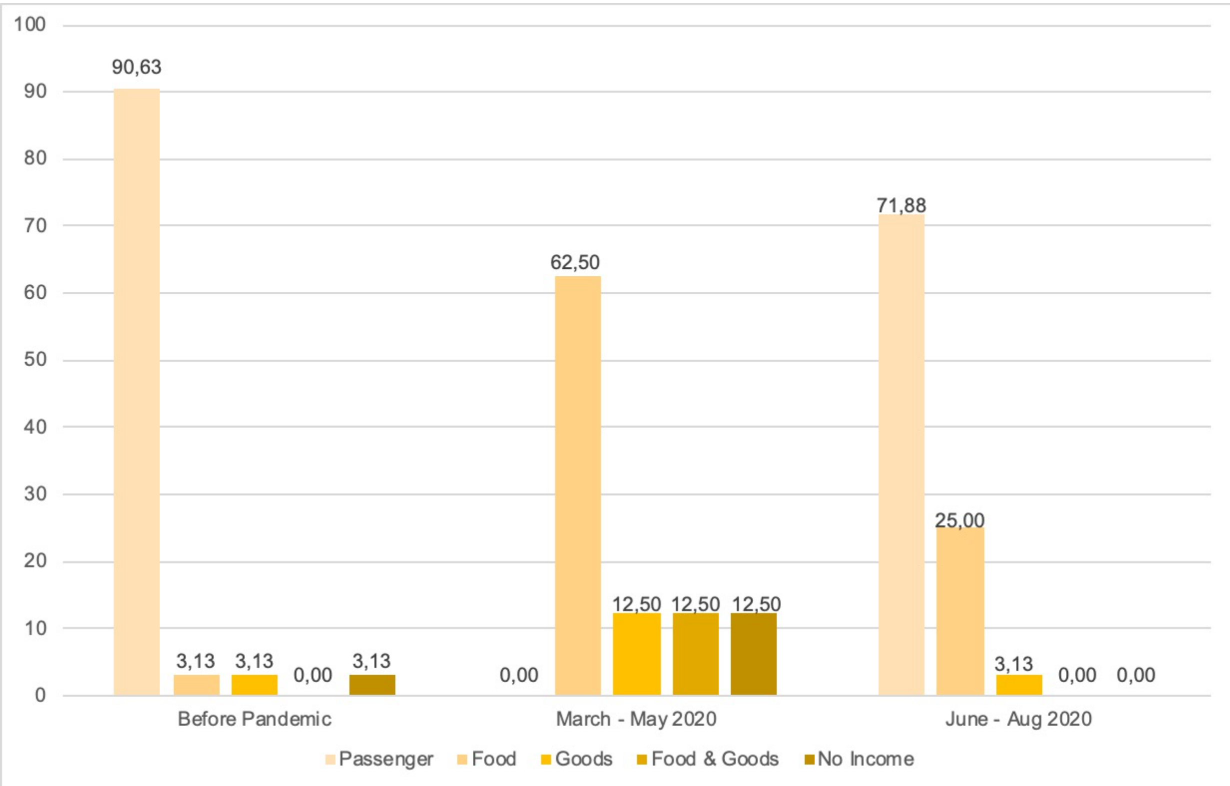


Figure 2. Source of Income, 2020 (%)

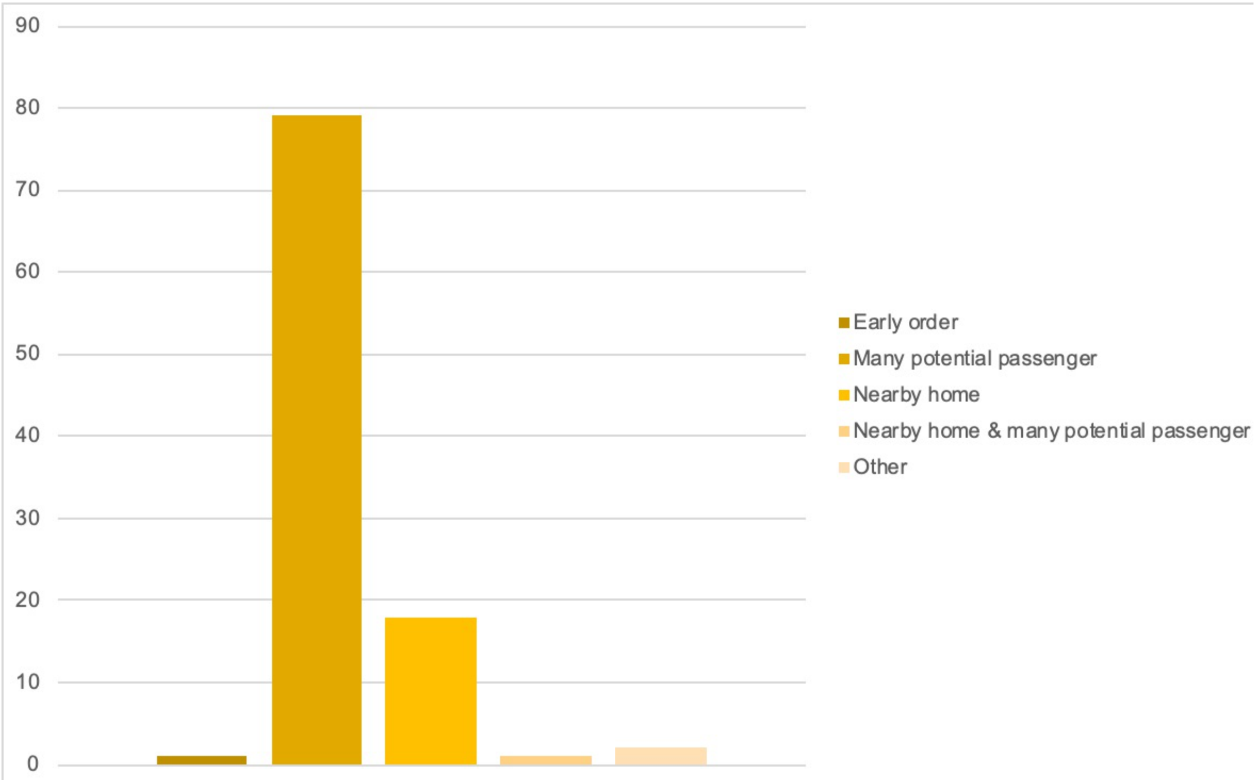

Figure 3. Reason for Gathering at Manggarai (2019)

Figure 2 shows the breakdown of ojol drivers' income from each of the services they provide, and how these percentages have been affected by the pandemic. Prior to large-scale social distancing restrictions introduced in March, it is clear that the vast majority of income for drivers gathering around Manggarai station was for passenger journeys, supported by the 2019 findings (Figure 3) in which drivers identified the main reason for gathering at Manggarai station was the large number of passenger orders they would be able to get.

The fact that the survey respondents had gathered near a main transit spot is one possible reason for this, but a majority of drivers reported in interviews stated that passenger journeys are significantly more profitable and less troublesome than package couriering or food delivery, being faster and simpler to complete. A preference for passenger journeys was also expressed because of the potential for complaints associated with food deliveries in particular, where customer satisfaction depends at least in part on third parties and traffic conditions beyond the drivers' control.

Despite the obvious preference for passenger pick-ups, during the period of strictest social distancing restrictions from May-March 2020 when such orders were disabled, ojol drivers turned to other services to generate income. Unsurprisingly, the majority of drivers (62.5%) reported food delivery as the main source of income during this period, with orders increasing as restaurants and cafes were limited to take-away services and large numbers of people remained in their homes. Despite these extra orders and additional income from package courier services, as outlined in figure 1, the average income of ojol drivers decreased considerably, with 12.5% choosing not to work during this period in order to reduce operational expenses.

Since the easing of strict social distancing restrictions in June, passenger journeys have resumed and once again comprise the main component of survey respondents' daily income. It is important to note, however, the decrease in overall percentage share, with food delivery generating a higher percentage of ojol drivers' daily income compared to pre-pandemic levels. This indicates either a greater frequency or distance of food delivery orders, and corresponds to a sustained reduction in overall mobility in Jakarta during the 'new normal' transition period (Circular Letter (SE) of the Minister of Transportation Number 11, 2020), with people instead opting to use home delivery and e-commerce services (Prasidya, 2020). This decrease in mobility and corresponding decrease in passenger journey orders is identified as the primary reason for the income losses outlined in Figure 1.

**c) Expenses**

Figure 4 compares the daily expenses of ojol drivers before, during and after the period of large-scale social distancing from March-May 2020. Across all time periods the rate of expenditure remains relatively constant, with a slight increase reported during the period of strictest lockdown, returning to pre-pandemic levels following the transition to 'the new normal.' When interviewed, many drivers attributed this increase to the fact that they spent more time waiting between less frequent food or package delivery orders, and therefore spent more money in local informal cafes (warung) during the lockdown period.

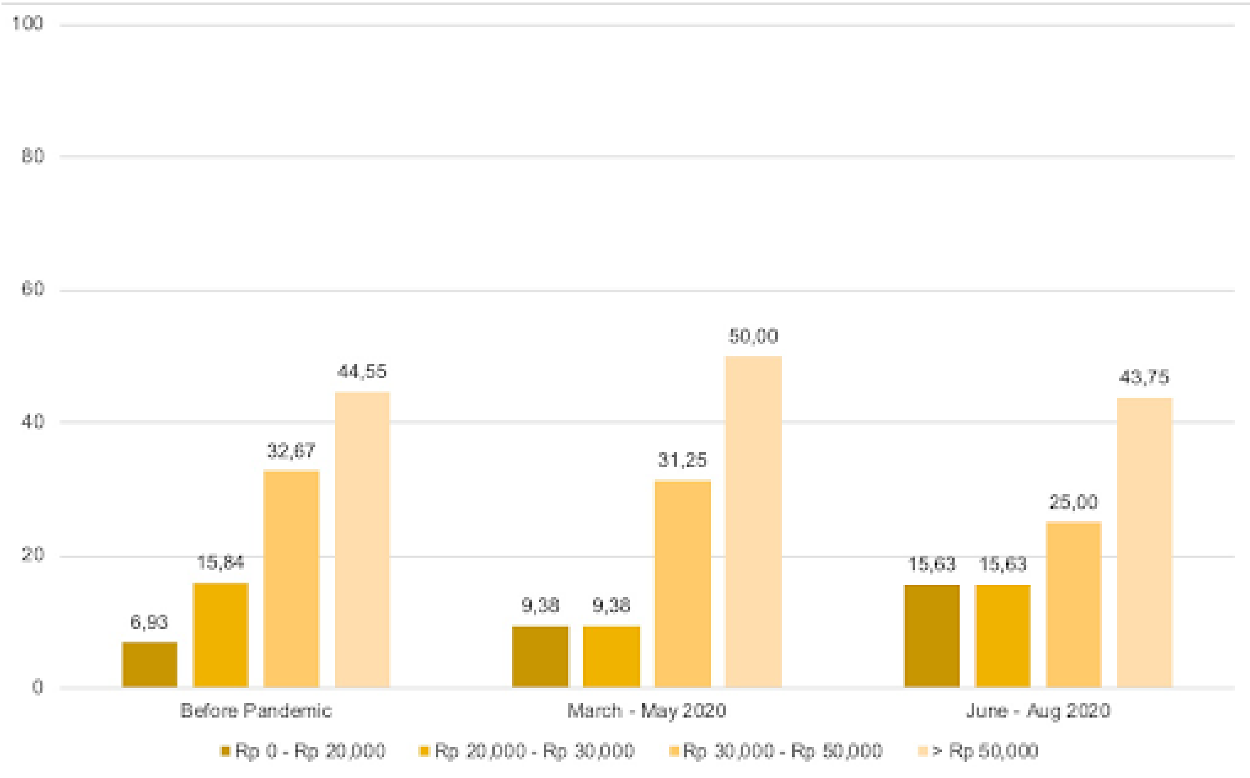

Figure 4. Daily Expenditure Before and After Pandemic, 2019 – 2020 (%)

It is important to note that the relative stability of expenditure by ojol drivers contrasts with the dramatic fluctuations in income outlined in figures 1 and 2. This indicates that expenditure is mostly used for daily needs rather than luxury purchases. Because of the sustained decrease in income from their work, many drivers reported struggling to make a meaningful income, some days struggling just to break even, and this is supported by a comparison of reported incomes and expenditures during the COVID-19 pandemic period.

### d) Coping Strategies

In order to deal with the challenging economic circumstances arising as a result of the pandemic, survey respondents were asked to report their coping strategies. Figure 5 outlines the responses of ojol drivers to the challenges of continuing work during the March-May lockdown period, and their potential future response to a potential long-term new normal transition.

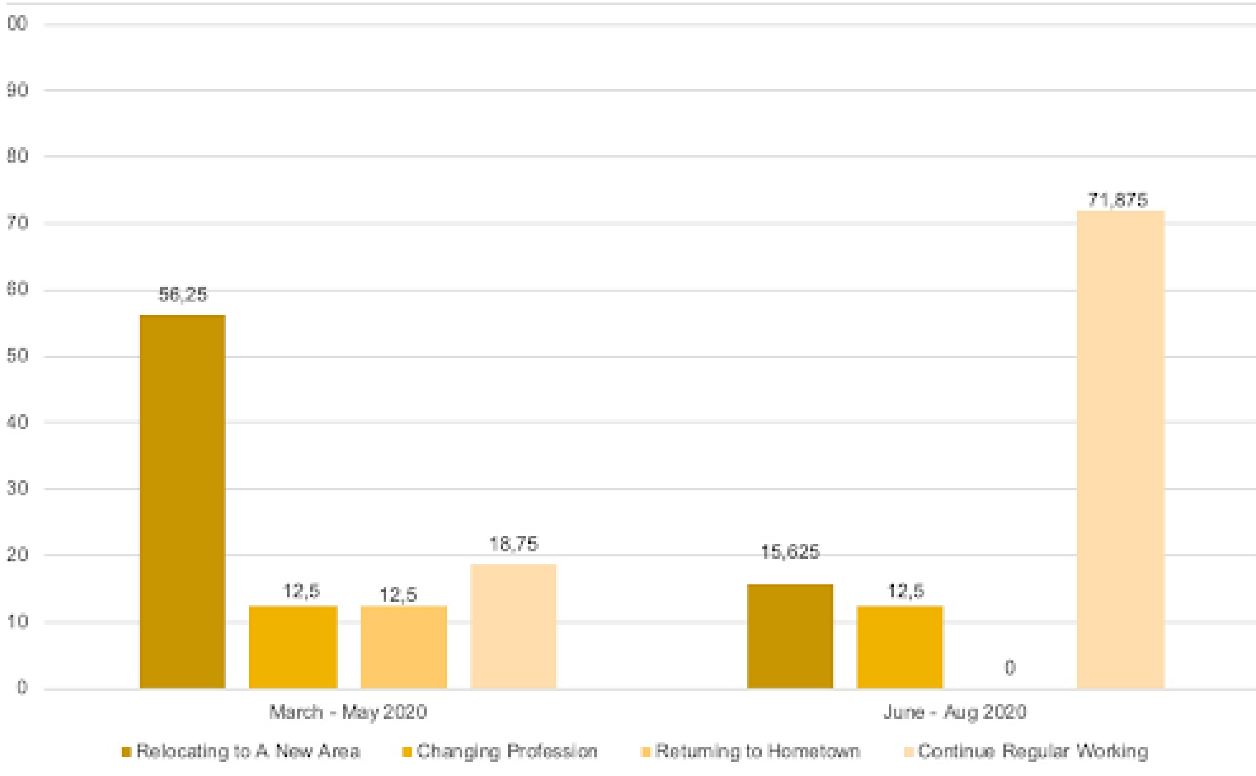


Figure 5. Driver's response to the pandemic, 2020 (%)

During the period of strict social distancing restrictions, a majority of drivers reported relocating to a new area as their primary coping strategy. This allowed them to take advantage of a higher frequency of food and package delivery orders in residential/commercial areas for as long as passenger orders were prohibited and gathering around a major transit terminal was no longer a strategic choice. A driver's location is an important factor in determining the type and frequency of orders received, and comprises an individual driver's primary source of agency in their relationship with the platform and customers.

The second-largest group of drivers reported ceasing work as an ojol during this challenging period, either temporarily changing profession (12.50%) or returning to hometowns outside of the capital (12.50%). When interviewed, a majority of these drivers reported that working as an ojol had become financially untenable because of the drop in orders, with very few identifying concerns regarding personal safety during the COVID-19 pandemic as a significant reason for their choice to stop working. Only a minority of drivers reported being able to continue their regular working habits during this period.

Since the transition to Jakarta's 'new normal' and the relaxing of passenger transport restrictions for ojol, a majority of survey respondents have resumed their previous working routines, with only a single respondent having recently decided to become an ojol driver. Despite the ongoing loss of daily income and drop in number of daily orders, a majority of drivers (71.88%) reported an intention to continue their typical working strategies into the foreseeable future. The expectation for most of these drivers was that conditions would soon improve, with the number of orders and daily income eventually returning to pre-pandemic levels. Others identified challenges in finding alternative income sources during a time of economic instability as leaving them no choice but to continue their operations as ojol drivers, regardless of the challenging circumstances.

One in eight ojol drivers surveyed, however, reported that, without a significant improvement in their short-term daily income level, they intended to abandon their work as ojol drivers and search for an alternative livelihood. Although very much a minority, this phenomenon remains potentially significant to the overall supply of ojol drivers in the Jakarta metropolitan region, particularly given the influence of driver availability on the availability and convenience of ojol services.

**2. Ojol Customer Preferences and Mobility During the Covid-19 Pandemic**

**a) Mobility patterns**

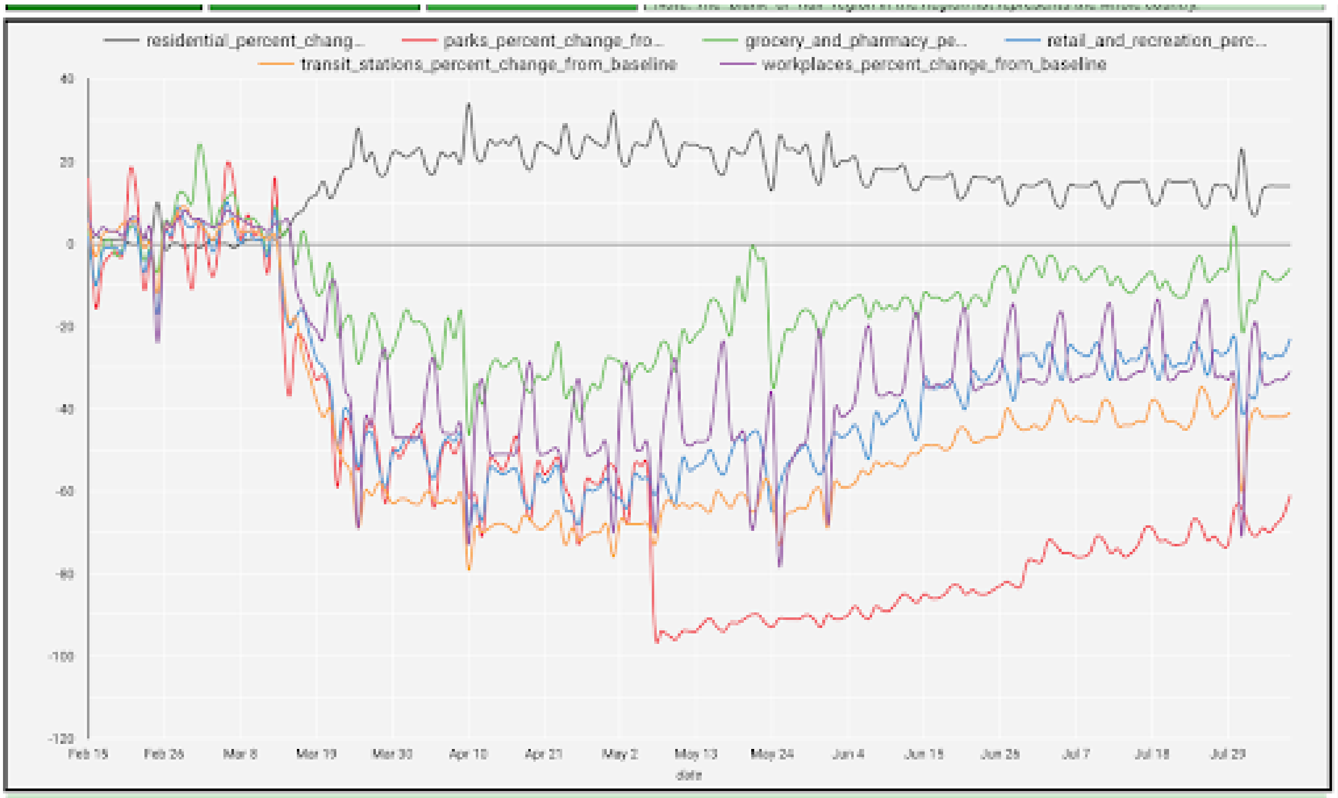


Figure 6. Google Mobility Index During and After Large Scale Social Distancing Restrictions (Google Global Mobility Report, 2020)

As independent contractors or 'partners', a Jakarta ojol driver's income depends on the movement of people and goods across the capital region. Figure 6 highlights key trends in people's mobility since the COVID-19 pandemic, with a comparison between the period of strictest restrictions from March-May 2020 and more recent data from the 'new normal' transition period since June 2020. The introduction of large-scale social distancing measures in March had an immediate and significant impact on human mobility across Jakarta, with an average 70% drop in mobility recorded around transit stations, and a similar 50% reduction in average mobility around central business districts and other workplaces. Retail/recreation  activities were also recorded at less than half average pre-pandemic levels. This sharp decline in mobility likely accounts for the dramatic fall in daily incomes reported by ojol drivers during the same period.

Throughout June and July 2020, despite the transition to Jakarta's 'new normal,' a sustained reduction in mobility has been recorded. Average mobility around transit stations and retail/recreation areas has increased slightly, but remains far below average recorded pre-pandemic levels, with workplaces recording no significant increase in average mobility since the easing of restrictions. This data appears to indicate a fundamental shift in long-term human mobility trends across the Jakarta metropolitan region, sure to impact the daily lives of ojol drivers.

Given the decrease in mobility around transit stations, retail/recreation areas and workplaces, it is perhaps unsurprising that throughout this period residential areas have recorded a corresponding increase in mobility. From March-May when the government advised people to remain in their homes as much as possible, an average 26% increase in mobility around residential areas was recorded, with only a slight decrease recorded since the easing of restrictions. A quantitative shift towards working, shopping and socialising from home, whether as a result of COVID-19 concerns or the increasing digitalisation of Jakartan society, seems unlikely to reverse in the near future.

**b) Use of Ojol: Transport**

The intended primary function of ojol is as a convenient and reasonably priced transportation option, and it is this service which provides the largest portion of drivers' income. Figure 7 and Figure 8 outline survey how respondents' behaviour and attitude towards ojol as a mode of transport have been affected by the COVID-19 pandemic.

Figure 7 highlights a significant decrease in the frequency of ojol passenger orders since the start of the pandemic. Almost 90% of survey respondents report using ojol for transportation less than once every two days, compared to pre-pandemic levels where a majority reported at least daily use of the transportation service.

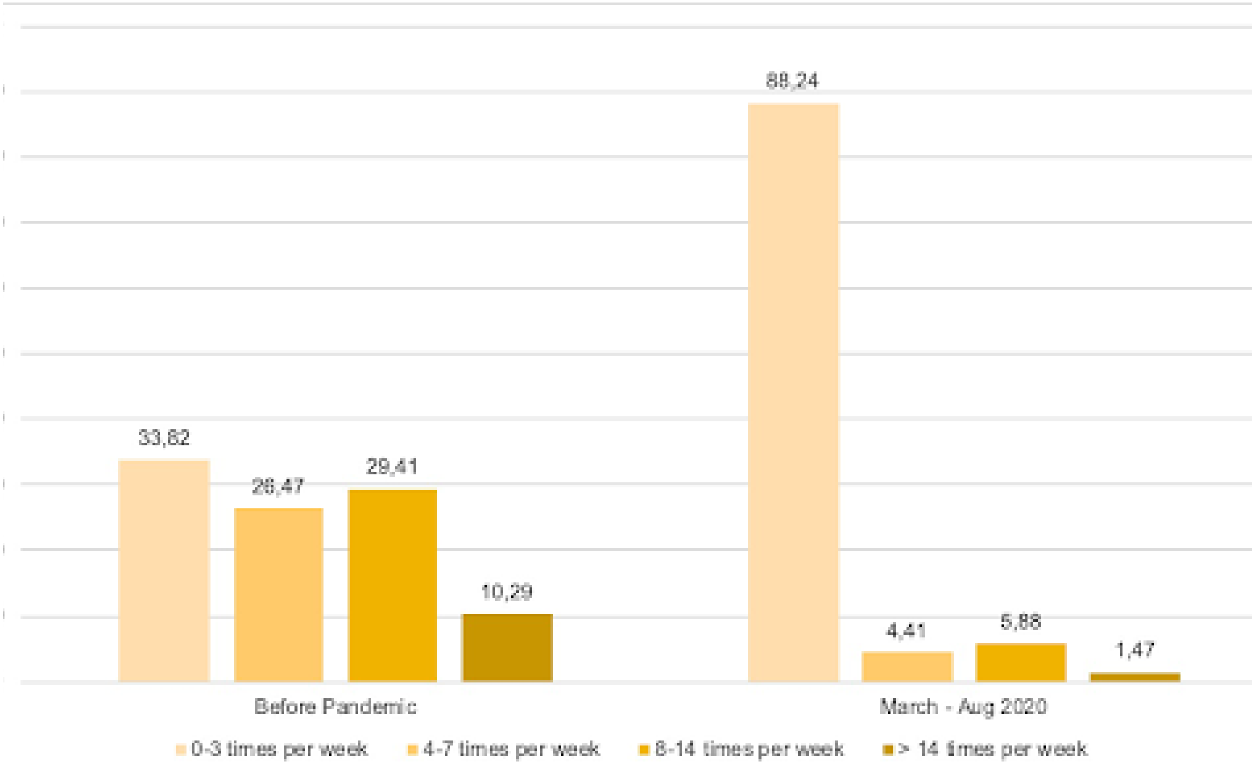


Figure 7. Usage Frequency of Passenger Pick-Up Service (%)

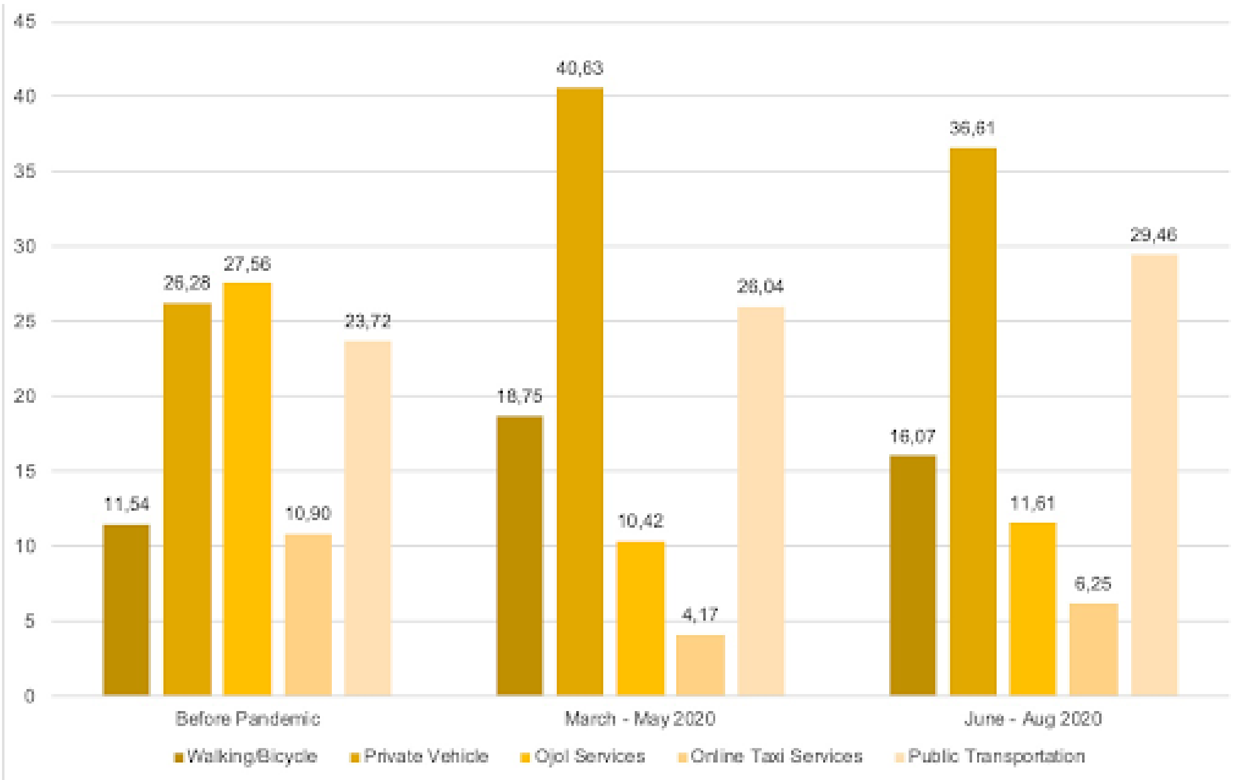


Figure 8. Transportation Mode Preferences March - Aug 2020

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Figure 8 identifies key trends in transportation preferences, and how they have been affected by the pandemic and associated social distancing restrictions. Of all modes of transport, ojol was the most popular option for survey respondents prior to the pandemic, followed by private vehicles and public transport. The prohibition of ojol transportation during the pandemic, alongside recommendations to avoid crowded public transport, resulted in an immediate shift to private vehicles as the primary transport option. Since beginning the transition period, private vehicles have remained the dominant transportation option, with ojol losing more than 50% of its pre-pandemic popularity among survey respondents.

**c) Use of Ojol: Food**

Take-away food is a popular secondary service provided by ojol drivers, and the second largest contributor to their daily income. Figure 9 outlines how respondents' purchasing habits using ojol as an intermediary delivery service have been affected by the COVID-19 pandemic.

While not as dramatic as the fluctuations in passenger behaviour, respondents' use of ojol for food deliveries shows clear differences between pre-pandemic and post-pandemic conditions. The most significant change is the increase in respondent's intermediate use of ojol food delivery services, with more than a 15% increase reported in order frequencies of between 4-7 times per week.

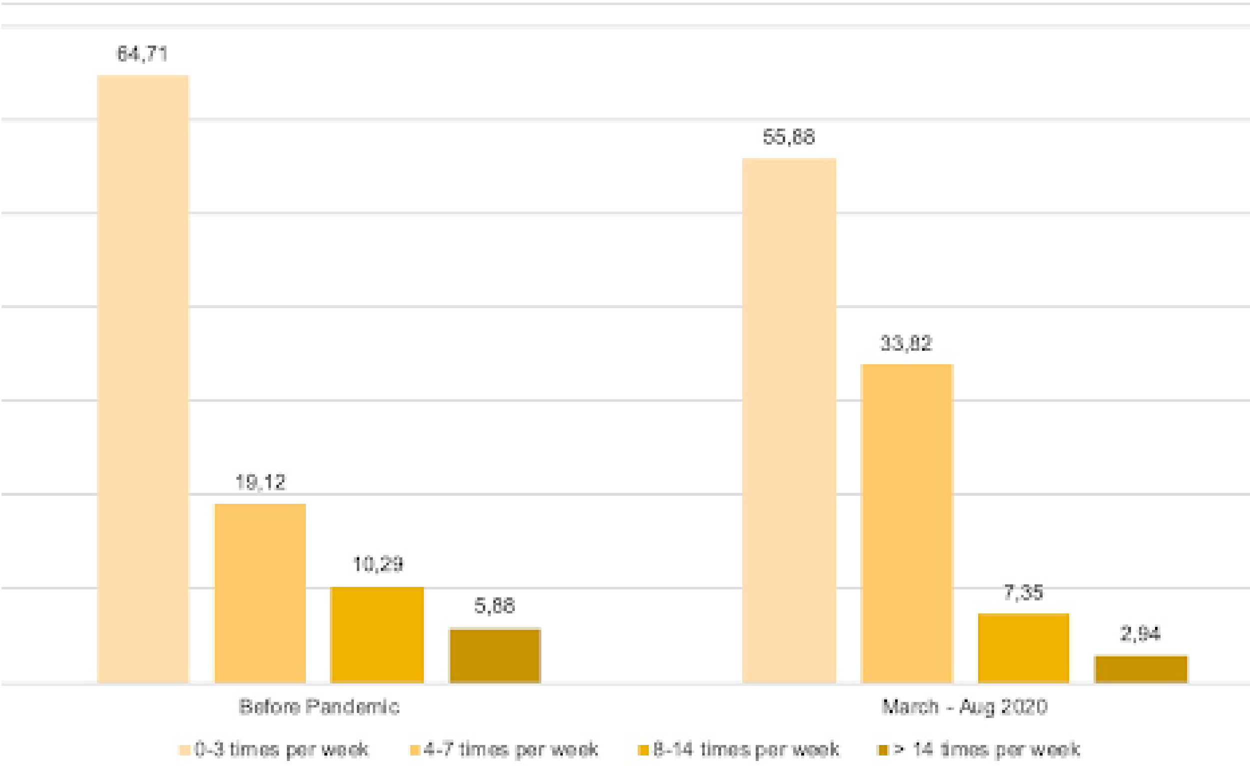


**Figure 9. Usage Frequency of Food Delivery Services (%)**

The overall trend is shown towards more frequent use, with almost half of respondents reporting frequent or daily use during the large-scale social distancing and new normal transition periods, an overall increase of around 10%.

**d) Use of Ojol: Packages**

The third most popular service provided by ojol drivers in greater jakarta is to act as couriers for packages, often connecting businesses directly with their customers. Figure 10 outlines how respondents' purchasing habits using ojol as an intermediary courier service have been affected by the COVID-19 pandemic.

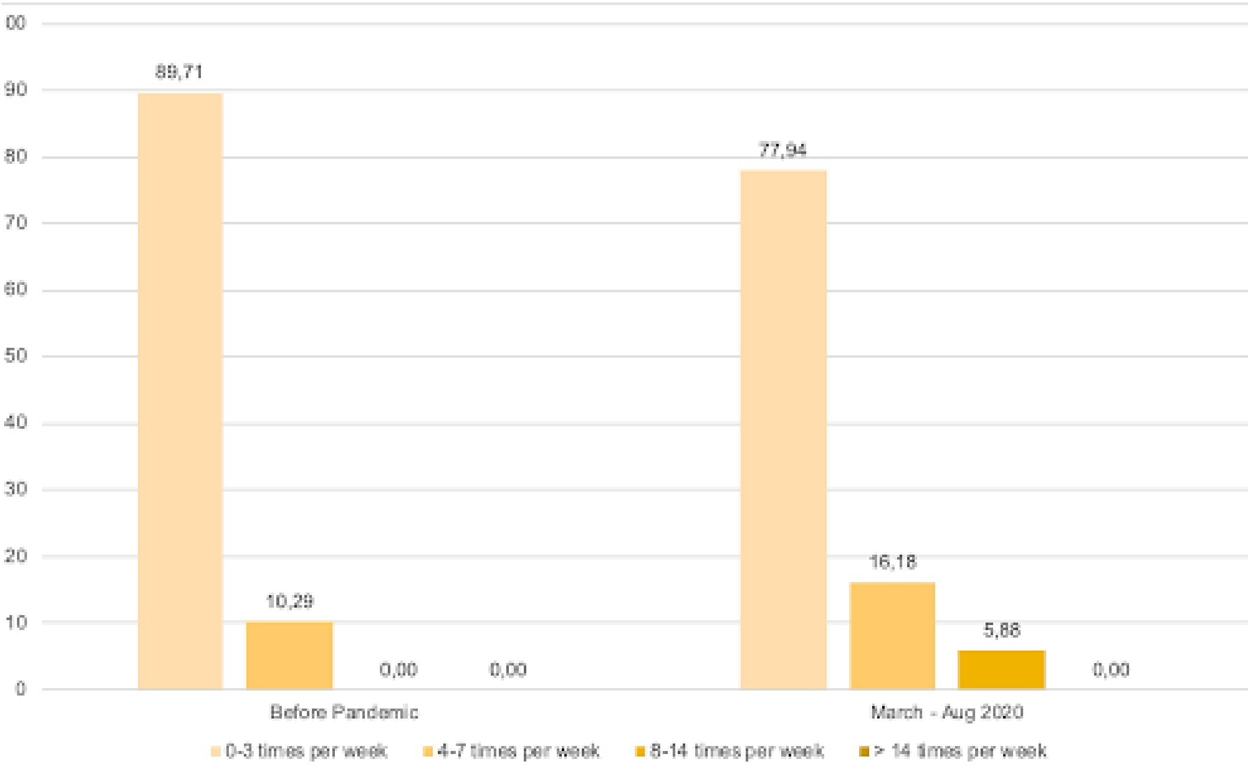


**Figure 10. Usage Frequency of Goods Delivery Services (%)**

The data clearly shows respondents' increased use of ojol drivers' courier services in the months following the pandemic outbreak. This corresponds with large social distancing restrictions, and a decrease in citywide mobility, all of which suggests a shift towards e-commerce. Daily use of courier services for packages indicates a wholescale adoption of online shopping as an alternative retail and recreation activity.

### e) Use of Ojol: Importance

Figure 11 illustrates the perception of survey respondents regarding the importance of ojol driver services in their daily lives, during the period before and after the COVID-19 pandemic in Jakarta.

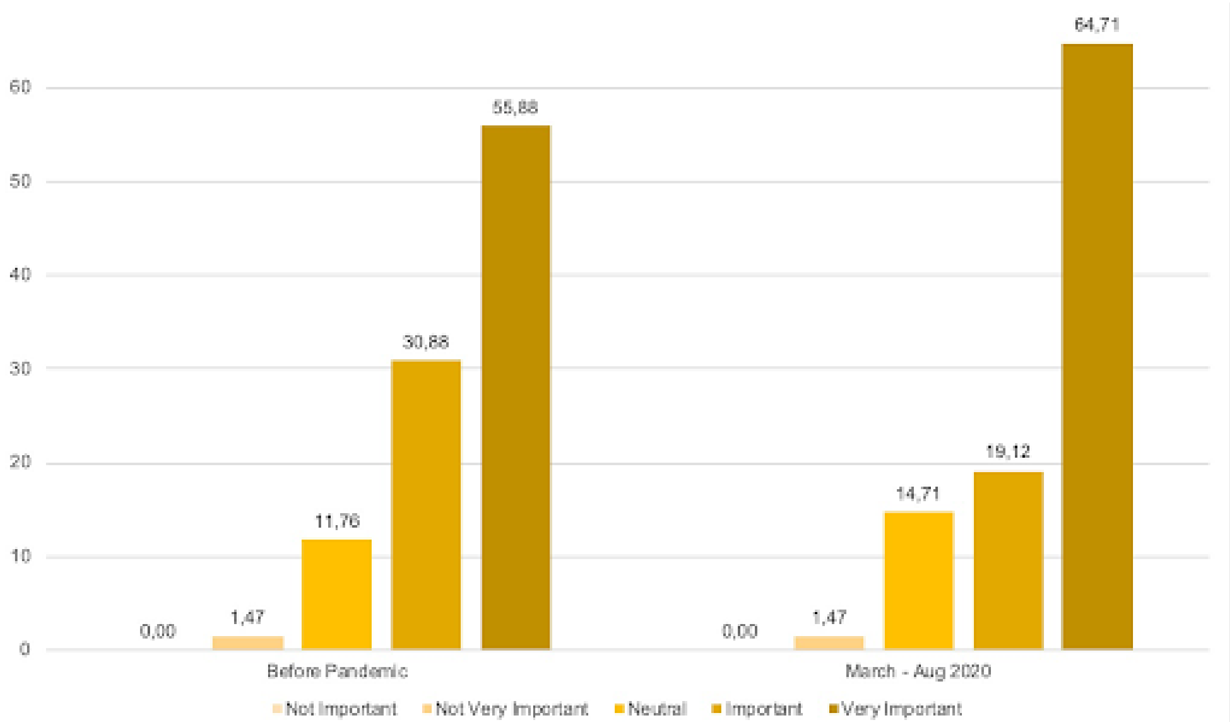


Figure 11. The Importance of Ojol Services to Users (%)

The data indicates an overall increase in respondents' perception of how important ojol driver services are to their daily lives, with almost two-thirds ascribing the highest rating of importance during the pandemic period. Given the decreased preference for using ojol as a mode of transportation during the same period, it can be assumed that much of this importance is attributed to their role in the delivery of food and as package couriers.

## 2. Home Enterprises, Ojol and The Impact of The Covid-19 Pandemic

### a) Business Profile

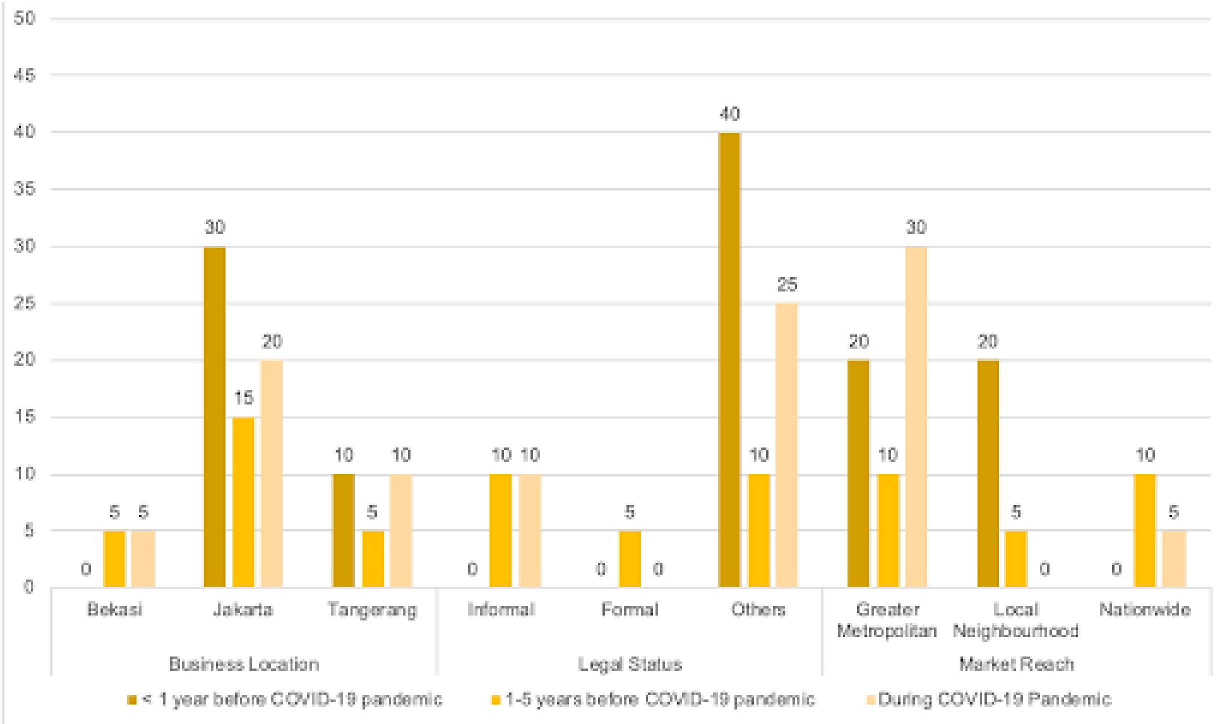


Figure 11. The Importance of Ojol Services to Users (%)

Small and Medium-sized Enterprises (SMEs) are relatively common in Jakarta, ranging from informal street vending activities to a growing community of online-based home enterprises. Figure 12 illustrates the business profile of survey respondents, with majority operating enterprises yet to be formally registered with government officials, and therefore part of the informal economic sector.

The majority of respondents' home enterprises are located in Jakarta itself, with a significant minority located in the largest satellite cities of Bekasi and Tangerang. However, an even larger majority of respondents' businesses service customer demand across the greater metropolitan region, with only a quarter limiting their sales activities to the immediate local area.

As outlined in the following subsections, many of these enterprises are part of the increasing movement towards digitalisation in Indonesia, and specifically in the Jakarta metropolitan region, with ¾ of respondents' enterprises having been established in the last 18 months.

Interestingly, the data indicates significant growth in the SME sector since the outbreak of the COVID-19 pandemic itself, with 35% of survey respondents reporting only having launched their businesses following the imposition of large-scale social distancing restrictions in March 2020.

### b) Use of Ojol: Delivery Options

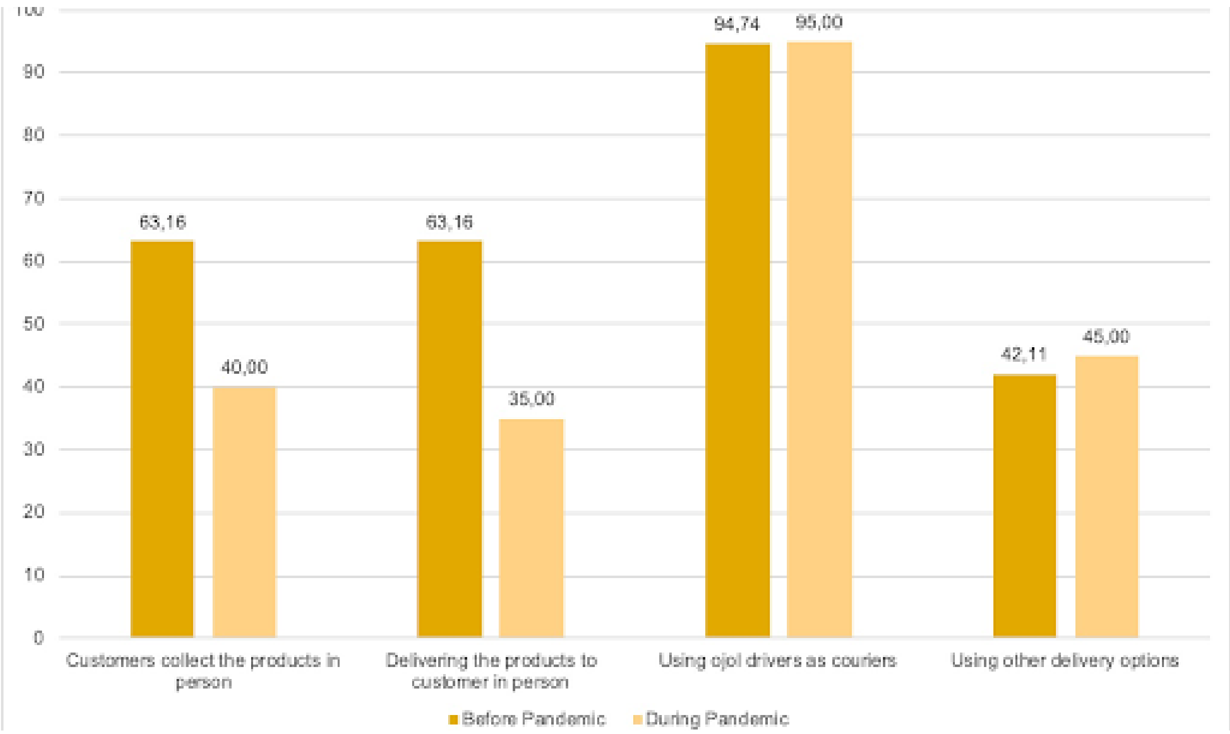


Figure 13. Delivery Preferences of SMEs (%)

In order to service their customers across the sprawling metropolitan region, operators of home-based digital SMEs rely on a range of intermediary delivery and courier services, as well as sometimes fulfilling the role themselves. Figure 13 illustrates the changes in the preferences and behaviour of home-based SME operators before and after the outbreak of COVID-19.

While many respondents reported frequently interacting directly with their customers prior to the pandemic, either by delivering their products and services in person or customers collecting them in person, almost all respondents also reported using ojol drivers as couriers. Ojol drivers were already the most popular option, with significantly more enterprises using their services than any other delivery option.

Following the pandemic outbreak, unsurprisingly direct interaction between the SME operators and their customers has decreased significantly, with a corresponding rise in the use of intermediary delivery services. Ojol driver services have retained their pre-pandemic dominance, however, and remain the most popular option.

**c) Use of Ojol: Frequency**

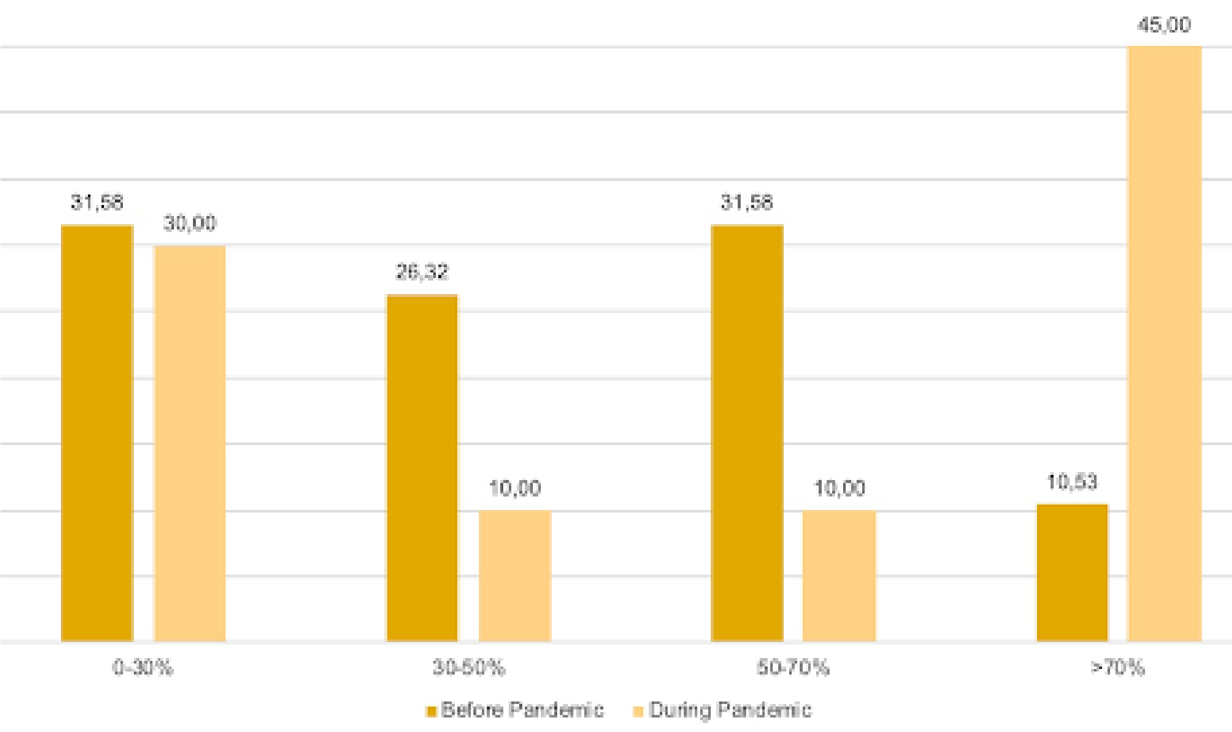


Figure 14. Significance of Ojol Services to Business Income (%)

To further examine the significance of ojol driver services to home-based SMEs, respondents were asked to report what percentage of their business was conducted using ojol as intermediaries. Figure 14 illustrates the change in preferences before and after the outbreak of COVID-19.

The data clearly indicates the importance of ojol drivers to home-based SMEs as couriers before the pandemic, delivering a significant portion of their total business to customers across Jabodetabek. Following the imposition of large-scale social distancing restrictions and the transition to the 'new normal,' the importance of ojol drivers has only increased, with a majority of SME operators now relying on their services for at least half of their total business.

Interestingly, the roughly ⅓ of respondents who least rely on ojol drivers has remained relatively stable, corresponding roughly to the 25% of respondents who sell primarily to their neighbours and local area. This could indicate increasing adoption of ojol services mainly by home-based online SMEs who sell across a wider area, as a response to the decreased mobility and restrictions associated with the COVID-19 pandemic.

**c) Use of Ojol: Importance**

Figure 15 illustrates the perception of survey respondents regarding the importance of ojol driver services in their daily lives, during the period before and after the COVID-19 pandemic in Jakarta.

Unsurprisingly, given their preference for and near-universal use of ojol services, a majority of respondents identified ojol driver services as important or very important to the operation of their SMEs prior to the COVID-19 pandemic.  Corresponding to the use patterns outlined in previous sections, during the months since the pandemic outbreak ojol driver services have become even more important to the operation of SMEs in the Jakarta metropolitan region, with a majority of respondents now attributing the highest level of importance.

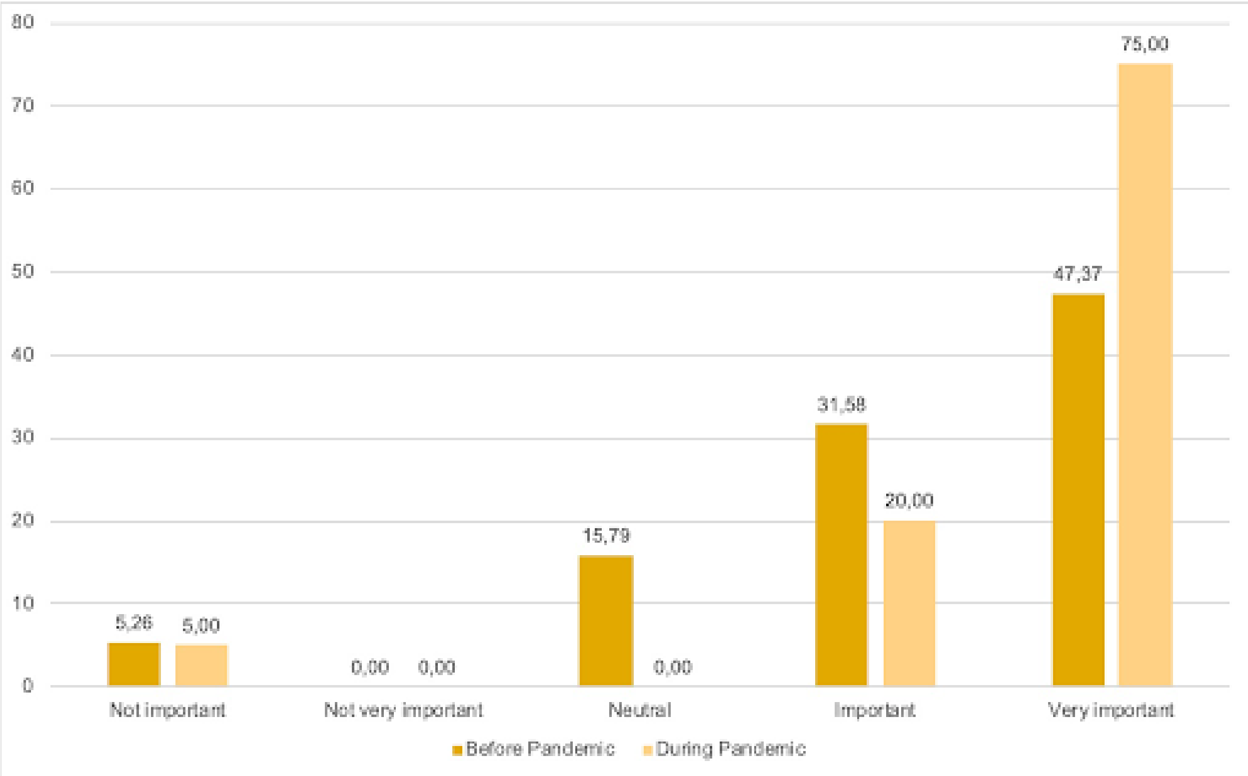


**Figure 15. Perception of Business Owners to Ojol Services (%)**

Once again, the number of respondents attributing a low level of importance has remained stable, indicating an increasing reliance of home-based digital SMEs on an existing strategy of using ojol driver services for deliveries across a wide area.

## DISCUSSION

The survey results outlined above represent only a small fraction of the drivers, customers and businesses involved in Jakarta's growing digital-informal network, however the results provide new insight into the dynamics which are shaping the nature of interaction between these key stakeholders, and indicate a need for further research into these themes in the future. Key areas of interest and intersection alluded to by the data are discussed in detail below.

### 1. Mobility, E-commerce and The Role of Ojol Drivers in Post-pandemic Jakarta

As with most major urban centres following the global spread of the COVID-19 pandemic, Greater Jakarta has witnessed a significant drop in human mobility during the first half of 2020. Previously a metropolitan region defined by massive commuter flows from satellite cities to the central business districts of the capital itself, crowded retail malls and a vibrant cultural calendar, the imposition of large-scale social distancing restrictions in March saw empty streets, shuttered retail spaces and a prohibition on social gatherings.

Having announced the transition towards the 'new normal' in late May, amid fears of a resurgent viral outbreak and a significant shift towards remote working for millions of commuters, a prolonged reduction in human mobility remains noticeable when compared to pre-pandemic levels. For Jakarta, this version of the 'new normal,' if sustained into the long term, represents a significant disruption to the city's established economic and social fabric.

Millions of Jakartans depend on regular mobility patterns for their livelihoods, taking advantage of strategic locations to service one of the planet's largest daily human migrations, from informal street traders to centrally-located restaurants, property developers and, of course, green-jacketed ojol drivers congregating around stations and malls, offices and apartment blocks. How they will deal with the sudden emergence of an entirely new reality remains to be seen, and is discussed further in subsequent sections.

This reduction in mobility across the capital region has stimulated an explosion of e-commerce activity, compounding an already existing trend among increasingly tech-savvy Jakartans. Online payment systems, retail applications and massive online marketplaces have become icons of Indonesia's economic transformation, with the government hoping to capitalise on the tech sector and digitalisation as part of the nation's industrial revolution 4.0 (Indonesian Ministry of Industry, 2019). The major platforms are supported by millions of small-scale entrepreneurs, many of whom operate informal home enterprises digitally through the network, trading everything from food and fashion to art and services.

With reduced mobility and ongoing restrictions on social gatherings and activities as a result of the pandemic, many new entrants into this digital-informal marketplace have taken advantage of spare time to join the e-commerce boom. Millions of customers spending more time at home provides a unique opportunity to digital SMEs by reducing the competitive advantage of strategically-located market rivals. However, while the technology to establish and register an enterprise is universally accessible, SMEs lack access to the logistics networks of larger competitors, and therefore rely on intermediary delivery services to reach their customers (Purnamaningsih et al., 2019). Ojol drivers provide an essential service for such businesses, many of which conveniently sell directly through the 'super app' platforms on which the drivers themselves are also registered.

The main advantages of ojol driver services for home-based digital SMEs are related to their speed, convenience and ubiquitousness, provided at a reasonable price, as well as promotion through the drivers' 'super app' platforms (Tyas et al., 2019). In a city well known for heavy traffic congestion, a motorcycle's ability to move relatively quickly between larger vehicles and traffic jams makes them faster than other forms of transport (Palevsky, 2019), including when acting as a courier, with delivery times identified as an important factor in customer satisfaction by home-based SMEs choosing to use ojol services (Tyas et al, 2019).

Similarly, the convenience of using ojol services is a key element of their attractiveness to both customers making orders and SME operators choosing delivery options (Siswanto et al., 2019), as they will both collect and deliver the package directly, with no need to visit a distribution centre or arrange a specific pickup time. The sheer number of ojol drivers servicing the Jakarta metropolitan region ensures that there are always drivers available within reasonable distance and time for both customers and SME operators, making the network universally available and reliable for conducting business.

Clearly then, as indicated by the data, ojol drivers have only become more important for home-based digital SMEs since the outbreak of the COVID-19, as decreased mobility shifts business-customer interaction into the online format, with ojol drivers serving as vital intermediaries for goods and services. Existing SME operators' reliance on ojol driver services has increased, but many new enterprises have emerged with a business strategy wholly based on this digital-informal nexus.

**2. Challenges Facing Ojol Drivers in Post-pandemic Jakarta**

Even as they have become increasingly vital for Jakarta's economy, and home-based digital SMEs in particular, ojol drivers themselves are facing significant economic challenges across the metropolitan region. The reduced mobility responsible in part for the sudden growth of online business and e-commerce, threatens to undermine the livelihoods of hundreds of thousands of individual drivers, perhaps threatening the very business model itself.

At the core of the drivers' challenges is the sudden and significant loss of income from passenger journeys, most dramatic during the period of large-scale social distancing restrictions from March-May 2020, but continuing well into the current transition towards the 'new normal.' As outlined in the data and reported in interviews, by far the most significant contribution towards a driver's daily income comes from passenger journeys, the volume of which have been affected by an overall decrease in human mobility and an increased preference for private vehicles as a mode of transportation since the outbreak of the COVID-19 pandemic. It is hard to envisage a future where the volume of package and food delivery orders increase enough to compensate for the collective loss of millions of daily ojol-assisted commuter journeys.

Passenger pick-ups are not only more profitable for drivers because of their higher volume. Ojol drivers identified a number of reasons for a general preference towards passenger journeys over package or food deliveries, despite the higher per-kilometre tarif rate, including time, trouble and risk.

Compared to a passenger order, during which the driver and customer interact directly and share the experience of a journey, the indirect nature of other orders was identified as problematic. The most significant factor was time, with each package or food order taking significantly longer to complete than a comparable passenger journey, thereby reducing the number of orders possible per driver on any given day. This could be as simple as a driver having to travel to pick up the order, potentially wait for it to be prepared for transit, and then locate the delivery address, but could also include additional complications (Tyas et al. 2019).

Drivers reported trouble accessing certain areas such as large residential complexes or private streets, particularly if the order recipient was unwilling to go outside and wait in an obvious place. As well as affecting the time taken to complete an order, such circumstances carry additional risk for the drivers in the form of penalties, complaints and low ratings from dissatisfied customers. As previously mentioned, the speed and convenience of ojol driver services is a key component of their appeal to customers, both as recipients or senders, and therefore any delay or perceived inconvenience could result in negative feedback for a driver, even in circumstances beyond their control such as heavy traffic or a slow response from a sender.

Such negative feedback incurs additional penalties from the platform operator, including temporary suspensions or other actions which further reduce a driver’s daily earning potential (Manabung, 2020).

In addition to the loss of orders resulting from reduced mobility, drivers face additional challenges in their relationship with the 'super-app' platforms themselves. The platform providers are also suffering as a result of reduced mobility, and have taken actions to limit the economic damage of fewer daily passenger orders, including removing the bonus program afforded to drivers who complete a high number of orders in a single day (Manabung, 2020). Ostensibly this is in order to divert funds to provide each driver with a daily minimum income of IDR50,000, but this program has yet to reach all drivers, and fails to account for the specific challenges of drivers with a large number of dependents to support, for example.

Several months into Jakarta's transition towards the 'new normal' and the situation for ojol drivers shows no sign of returning to pre-pandemic conditions. A long-term reduction in average daily incomes would appear to be a very real prospect for a majority of drivers, while living costs in the capital remain high by indonesian standards. Some drivers actually reported an increase in daily expenses in the months following the relaxation of large-scale social distancing measures because of using more petrol to complete longer distance orders or searching for new locations to receive orders, as well as spending more to charge their phones or by snacks while waiting in informal street cafes.

Given that the income-generating potential of working as an ojol driver has been identified as the key reason for joining the profession (Siswanto et al., 2019), it is reasonable to assume such conditions may prompt a certain percentage of drivers to abandon their work in search of a new livelihood.

### 3. Digitalisation, informality and economic resilience in post-pandemic Jakarta

The preferences of different stakeholders in Jakarta's digital-informal sector are particularly important at a time when the Indonesian government is making a concerted effort to establish e-commerce and digitalisation as the key component of the country's industrial revolution 4.0. The COVID-19 pandemic has provided additional incentives for new entrants to the online marketplace, the survey data showing a majority operating as unregistered or informal enterprises, as well as for established actors to strengthen their existing e-commerce operations. It has also increased the importance of ojol drivers as intermediaries, supporting the growth of SMEs in particular by providing a logistical network and facilitating direct customer interaction (Wandalouw et al., 2020).

The informal nature of this new economic nexus, both on the part of SME operators and ojol drivers, is an important consideration for a number of reasons. Firstly, by its very nature the informal sector is much less well understood than its formal counterpart, with less data available to the public and to policy-makers regarding current trends in the sector. This makes it a potential source of instability, particularly in the case of Indonesia, where a majority of citizens rely on informal livelihoods. The ability of the informal sector to absorb surplus labour and support household incomes may help the economic system deal with the impact of certain economic shocks, but it also presents potential challenges in the context of the government's digitalization agenda.

The proliferation of informal businesses depends in part on the initiative of individual operators and their perception of economic opportunity (Beyer & Morgan, 2018, Hallam & Zanella, 2017), with the rapid growth in e-commerce having gone some way in mitigating the worst short-term economic impacts of the COVID-19 pandemic as new entrants take advantage of changing market conditions and new incentives for doing business online. Similarly, the negative economic impact of the pandemic is likely to impact the decision making of ojol drivers regarding whether or not to enter and remain in the informal profession.

As independent contractors or 'partners' (mitra), ojol drivers are under no contractual obligation to continue working, or to service a certain number of orders on a given day. Indeed, facing the prospect of a sustained drop in average daily incomes, the survey data indicates that a certain percentage of ojol drivers will determine the profession is no longer economically viable and abandon the work. While the survey sample size is too small to accurately predict what percentage of ojol drivers might decide to search for an alternative livelihood, it nevertheless reveals the reality that, for some, the reality of working in Jakarta's 'new normal' is unsustainable. These individuals are likely to, at the very least, search for supplementary income, with impacts for the currently ubiquitous supply of ojol driver services.

As the very same reduction in mobility which undermines the livelihoods of ojol drivers stimulates additional growth of home-based digital SMEs whose business model is reliant on their services, a potential pitfall of the government's digitalisation strategy becomes apparent. Encouraging more and more activity in different areas of life to be conducted digitally will only further reduce the mobility of people across the greater Jakarta region, Indonesia's economic engine, thereby negatively impacting the incomes of ojol drivers dependent on passenger pick-up order volume. Exactly how this will affect the supply of ojol driver services in Jakarta is unclear, and depends entirely on the individual cost-benefit analysis of each driver.

## 4. Conclusions & Recommendations

In addition to public and private vehicle transport, ojol drivers have become a crucial actor in the movement of goods and people across the greater Jakarta region, and a key consideration for wider issues of mobility in post-pandemic Indonesia. Although their pivotal role in transporting passengers through their apps' pick-up services may have diminished somewhat since the reduction in mobility resulting from large-scale social distancing restrictions and the transition to 'the new normal,' they have become increasingly important to the development of a vigorous e-commerce and online business sector.

Their role as couriers is particularly important for those smaller home-based enterprises which depend on the efficient delivery of individual packages direct to their customers, many of which are unregistered or informal in nature. As informal or 'gig economy' workers themselves, however, ojol drivers are facing increasingly challenging economic conditions, with a reduction in human mobility and a preference for private vehicle travel undermining the foundation of their pre-pandemic livelihoods. In the event of a sustained, long term reduction in human mobility across greater Jakarta, an exodus of ojol drivers should be anticipated in response to this new economic pressure, as individual drivers search for alternative sources of income.

The extent to which a significant number of home-based digital SMEs depend on the ubiquitous presence of ojol drivers to ensure a smooth, fast and convenient customer interaction presents a potential pitfall for the government's digitalisation agenda. The apparent paradox of encouraging more and more business activity to take place online while inadvertently undermining the earning capacity of key intermediaries in the e-commerce network is rooted in the reality that even digital marketplaces ultimately depend on real-world logistics and physical processes. At what point the negative impacts of reduced passenger mobility on ojol drivers might ultimately feed back into the business strategies of home-based digital SMEs, in terms of reduced customer satisfaction, longer wait times or higher prices, remains unclear.

The explosion of digital informality in recent years and its interaction with other sectors of the formal and informal urban economy remains a poorly understood phenomenon. Millions of Jakartans are now engaged in a trading network that is not only largely unregistered, but also mostly invisible, conducted directly between customers and businesses from the comfort of their homes. Ojol drivers represent one of the only visible aspects of this network, the logistical backbone of what the Indonesian government hopes will be the driver of economic growth and post-pandemic economic resilience in years to come.

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Like all informal workers, their participation in the network is a factor of individual decision making on a daily basis, and is therefore easily affected by outside shocks or dramatic changes in circumstance. Further research is required to better understand exactly how ojol drivers make their decisions to participate in the digital-informal sector, and how far these decisions could potentially intersect with the government's plans for Indonesia's industrial revolution 4.0.

The informal sector at large, and the digital-informal nexus in particular, remains poorly understood (Palevsky, 2019), with limited research into the themes presented in this paper. Provisions should be made to ensure the economic security of ojol drivers as vital intermediaries in Jakarta's e-commerce network, with collaboration necessary between public, private and informal stakeholders to ensure a multifaceted, inclusive and sustainable approach to urban digitalisation in the 21st century.

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