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Exploring Excessive Working Hours Among Transportation Gig Workers in Indonesia

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Abstract

The development of information technology has driven the emergence of the gig economy, which has significantly changed the employment landscape. In Indonesia, the gig economy's growth has led to a significantly increasing number of gig workers, particularly in the transportation sector. While digital platforms create flexible job opportunities, this work model also presents challenges, particularly excessive working hours, often necessary to meet daily income targets. This study analyzes the determinants of excessive working hours of gig workers in the transportation sector using logistic regression analysis with the 2022 National Labour Force Survey (Sakernas) data. The results confirm that gig workers in the transportation sector are likelier to experience excessive working hours than non-gig transportation workers. This finding proves that gig transportation workers are more vulnerable than traditional transportation workers. Several factors, such as gender, age, education, region, marital status, and ownership of a Kartu Prakerja, significantly influence the likelihood of gig workers in the transportation sector experiencing excessive working hours. The study's findings offer implications for labor policies and social protection, particularly in ensuring the well-being of gig workers in the transportation sector amid the dynamics of the digital economy.

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INTRODUCTION

Digitalization has become a key driver of transformation in the global economy. Advances in information technology, particularly the internet and digital platforms, have given rise to the gig economy. This structural shift has significantly reshaped the employment landscape, replacing some traditional fixed-term, contract-based work practices with more flexible, temporary, and on-demand work models (Oranburg & Palagashvili, 2018). The flexibility of working hours offered by the gig economy has become the main attraction for individuals seeking supplemental income or jobs that can be adjusted to their personal schedules. Consequently, this dynamic labor market has attracted millions of workers worldwide, presenting opportunities and challenges for individuals, businesses, and policymakers (Sankararaman et al., 2024).

In Indonesia, one of the key manifestations of the gig economy is the rise of gig workers in the transportation sector, including ride-hailing motorcycle taxi drivers and online taxi services. Data from Permana et al. (2022) shows that transportation gig workers comprise 1.23 million people, surpassing the 1.10 million in other service sectors. The transportation sector is desirable due to the ease of entry, high service demand, and minimal qualifications—primarily the possession of a vehicle and access to a digital application.

While digital platforms create new job opportunities, they also give rise to new forms of precarity. A central concern is excessive working hours, which stem from the incentive-driven and algorithm-regulated nature of gig work. Many workers extend their shifts to achieve income targets without stable wages. In this regard, uncertainty in working hours becomes a central indicator of worker vulnerability. Prior studies highlight this problem, such as Putri et al. (2023), who argue that the perceived flexibility of gig work masks a coercive incentive structure, while Maftuchan et al. (2018) note that daily income uncertainty compels extended working hours. Wood et al. (2019) emphasize how algorithmic management fosters unstructured and demanding work patterns, and Zhang & Yan (2024) show that incentive-based systems increase productivity pressure without proportional compensation.

Tieanklin et al. (2024) reinforce this view, observing that ride-hailing drivers often work beyond their desired hours due to the economic pressure of maintaining earnings and avoiding algorithmic penalties. Excessive hours can deteriorate physical and mental health. An ILO (2020) report documents the link between long hours and elevated risks of chronic fatigue, stress, and traffic accidents. Christie & Ward (2019) further identify key risk factors among gig workers: fatigue, speed pressure, and mobile phone use while driving.

The lack of social protection exacerbates these risks. BPJS Kesehatan or BPJS Ketenagakerjaan does not cover many gig workers. BPS-Statistics Indonesia (2023) reports that only 14% of gig workers are enrolled in BPJS programs. Furthermore, gig workers are generally classified as independent contractors, not employees, which limits their legal protections (Mulcahy, 2017). Although the Ministry of Transportation Regulation No. 12/2019 mandates the provision of social protection, in practice, the insurance programs are optional and driver-funded (Putri et al., 2023), resulting in low participation.

Kamim & Khandiq (2019) identify two primary factors contributing to the vulnerability of gig workers in Indonesia, the gamification mechanisms in platforms that make workers highly dependent on user ratings, and information asymmetry between workers and platforms, which restricts workers' bargaining power.

Building on these findings, this study focuses on the relationship between employment type and uncertainty regarding working hours. Specifically, it investigates whether gig workers in the transportation sector are more likely to experience excessive working hours than non-transportation gig workers. The underlying hypothesis is that algorithmic control and productivity-based incentives in the

transportation gig economy significantly contribute to extended working hours.

In addition, the study examines how sociodemographic factors—including gender, age, education, area of residence, marital status, ownership of a Kartu Prakerja, and participation in training programs—moderate this relationship. Theoretically, younger and less-educated workers may face higher uncertainty due to limited alternatives and higher financial pressure, while training and government support programs may buffer some of these effects.

Despite the growing literature on the gig economy, there is a lack of empirical research that utilizes large-scale, nationally representative datasets such as Sakernas to explore the relationship between employment type and working hours vulnerability. Most existing studies are qualitative. Additionally, the transportation sector, despite comprising most of Indonesia's gig workers (Permana et al., 2022), remains understudied regarding comparative exposure to excessive work hours across sectors.

This study contributes to the growing discourse on labor conditions in the gig economy, particularly in the Indonesian context. It addresses a methodological gap by utilizing Sakernas microdata, a nationally representative labor force survey that remains underutilized in studies of gig workers. Through this approach, the study offers a quantitative foundation to examine the vulnerability of gig workers, especially concerning excessive working hours. The focus on transportation gig workers—who represent the largest share of gig workers in Indonesia (Permana et al., 2022)—enables a comparison with non-transportation gig workers and traditional non-gig workers, providing a clearer understanding of sectoral differences in working conditions shaped by algorithmic management.

In addition, this research examines the role of various sociodemographic factors such as gender, age, education, area of residence, marital status, ownership of a Kartu Prakerja (Indonesia's pre-employment card program), and participation in training programs, influencing the likelihood of experiencing excessive working hours. By doing so, it reveals how different segments of the labor force are exposed to varying levels of risk within the gig economy. The findings of this study are expected to inform policy development aimed at protecting gig workers, including regulating maximum working hours, expanding social protection schemes, and improving transparency and accountability in digital labor platforms.

This study makes a distinct contribution compared to previous research on gig workers. Employing a national, representative, and comprehensive National Labor Force Survey (Sakernas) ensures that the findings reflect the overall conditions of gig workers in Indonesia. The analysis explicitly highlights transportation gig workers, the largest segment of the gig economy, while comparing them with non-transportation gig workers and traditional non-gig workers. Furthermore, the study adopts a quantitative approach based on formal surveys, providing robust and replicable empirical evidence.

Beyond its empirical contributions, the study also enriches academic literature by deepening the understanding of how digital transformation affects employment patterns in emerging economies. It shows how the intersection of platform-based work, informal employment status, and performance-driven algorithms can create new forms of labor precarity. In doing so, the research provides a foundation for future studies and more responsive policy interventions in the digital labor market.

Following the introduction, the next section describes the research methods used, followed by an analysis of the empirical results from the data. The paper concludes with a summary and discusses the policy implications derived from the research findings.

RESEARCH METHODS

This study uses data from the 2022 BPS National Labor Force Survey (Sakernas). Following Permana et al. (2022), the study defines gig workers as self-employed individuals

in the services sector who utilize the internet for their work, particularly in selling goods or services through marketplace websites or applications. While various aspects of gig work can be explored, this study examines explicitly gig workers in the transportation sector who dominate the gig activities in Indonesia.

Based on data from the National Labor Force Survey (Sakernas) 2022, this study identifies transportation gig workers using a combination of key variables. First, workers are classified by primary employment status (question 13a), limited to those who are either self-employed (code 1) or non-agricultural casual workers (code 6), as both categories reflect independent work without a permanent employment relationship. Second, the selection is restricted to the transportation sector (question 14a, code 8) to ensure respondents are employed in transportation. Third, respondents must report online (question 18b, code 1), confirming their activities are connected to digital platforms. Finally, transportation gig workers are further identified by the absence of an employment agreement or contract (question 25, code 4).

By combining these four criteria, the study defines transportation gig workers as individuals who work independently in the transportation sector, rely on digital platforms, and are not bound by formal contracts, capturing the defining characteristics of the gig economy. These criteria resulted in a total of 17,419 observations.

This study employs a binary logistic regression model, which analyzes a dependent variable with outcomes ranging between 0 and 1 (Winarno, 2009). The dependent variable in this study is excessive working hours, defined based on the ILO standard as working more than 48 hours per week. In this context, the dependent variable has two categories: excessive working hours (1 if working more than 48 hours per week) and regular working hours (coded as 0 if working less than or equal to 48 hours per week). The logistic regression parameters are further analyzed using the odds ratio, which measures the likelihood of an event occurring (Y=1) for observations with a specific characteristic (X=1) compared to those without it (X=0). The odds ratio value indicates how much more likely a successful event is in the group with X=1 relative to the reference group (X=0). Parameter estimation in the binary logistic regression model uses the Maximum Likelihood Estimation (MLE) method.

The logit model of the effect of gig worker status in the transportation sector on the probability of overwork is as follows:

$$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \beta5X5 + \beta6X6 + \beta7X7 + \beta8X8 + \mu \quad (1)$$

Where Y is a binary variable indicating whether workers are working with excessive working hours (workers who work more than 48 hours a week (1) and workers who work less than 48 hours a week (0)., α is a constant, $\beta1 \ldots \beta9$ is the regression coefficient of each independent variable, X1 is gig workers in the transportation sector, X2 is gender of workers, X3 is age of workers, X4 is worker's age squared, X5 is workers' education level, X6 marital status of workers, X7 is ownership of a Kartu Prakerja or Indonesia's pre-employment card program for workers, X8 is worker's training, and μ is an error (other variables not observed in the model). The details of the operational definition of each variable are presented in Table 1.

Moreover, using data of gig workers in the transportation sector only, the study examines the factors affecting excessive working hours among gig workers in the transportation sector, as modeled as follows:

$$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \beta5X5 + \beta6X6 + \beta7X7 + \beta8X8 + \mu \quad (2)$$

Where Y is a binary variable indicating whether gig workers in the transportation sector have excessive working hours (gig workers in the transportation sector who work more than 48 hours a week (1) and gig workers in the transportation sector who work less than 48 hours a week (0), the independent variables tend to follow the first equation.

Based on the summary statistics of 17,419 observations in Table 2, it was found that 52.9% of workers in the sample experienced excessive working hours, while 47.1% had

regular working hours. Of the respondents, 25.6% were gig workers in the transportation sector, while 74.4% worked in the non-gig sector. The workers' composition was dominated by males, reaching 96%, with female participation of only 4%. The average age of workers was 39 years. The age-squared variable showed significant age diversity, which was used to identify non-linear effects in further analysis. Regarding marital status, 74.1% of workers were married, while 25.9% were single or other.

Regarding education, 52.7% of workers had a higher level of education, namely high school or equivalent, while 47.3% had a lower level of education. Access to government programs is still limited, as only 5.8% of workers have a Kartu Prakerja (Indonesia's pre-employment card program). Similarly, only 18.8% of workers have ever attended training, meaning most workers (81.2%) have not taken advantage of skills development opportunities. Overall, these data indicate several challenges in employment, including a high percentage of workers with excessive working hours, significant gender inequality, and limited access to training and Kartu Prakerja programs.

Table 1. Operational Definition of Variables

Variable	Operational Definition	Unit	Data Source
Excessive working hours	Gig Workers who work more than 48 hours a week (dummy).	Gig workers work more than 48 hours a week (1), and gig workers work less than 48 hours a week (0).	Statistics Indonesia (BPS)
Transportation sector gig worker status	Workers classified as self-employed in the transportation services sector use the internet in their work, especially in carrying out the process of delivering goods/services via websites/applications in Indonesia (dummy).	Workers who are not included in the transportation sector, gig workers (1), and workers who are included in the gig workers (0) category.	Statistics Indonesia (BPS)
Gender	Gender of workers (dummy).	Male (1) and female (0)	Statistics Indonesia (BPS)
Age	The age used is the age of workers based on their date of birth.	Ratio	Statistics Indonesia (BPS)
Age Square	Worker's age squared	Ratio	Statistics Indonesia (BPS)
Education level	The level of education used is the last level completed by workers (have a diploma) (dummy).	High (last graduated from high school or equivalent) (1) and low (last graduated from junior high school or equivalent) (0)	Statistics Indonesia (BPS)
Residence area	The residence area used is the village/sub-district where the worker lives (dummy).	Urban (1) and rural (0)	Statistics Indonesia (BPS)
Marital Status	Marital status of workers (dummy).	Marital status (1) and others (0)	Statistics Indonesia (BPS)
Ownership of a Kartu Prakerja	Ownership of a Kartu Prakerja for workers (dummy).	Having a Kartu Prakerja (1) and not having a Kartu Prakerja (0)	Statistics Indonesia (BPS)
Training	Did the worker take training (dummy)	Taking training (1) and not taking training (0)	Statistics Indonesia (BPS)

Source: Sakernas 2022 (processed)

Table 2. Summary Statistics

Characteristics	Mean	Std. Dev
Excessive Working Hours	0.529	0.499
Transportation Gig Workers	0.256	0.436
Male	0.961	0.194
Age	39.147	12.173
Age_square	1680.667	1010.592
Married	0.741	0.438
Higher education	0.527	0.499
Kartu Prakerja	0.058	0.233
Training	0.188	0.391
Observation	17,419	

Source: Sakernas 2022 (processed)

RESULTS AND DISCUSSION

The effect of gig workers in the transportation sector on the probability of a worker having excessive working hours is presented in Table 3. The odds ratio for the gig workers in the transportation sector of 1.075 indicates that gig workers in the transportation sector are 1.075 times more likely to experience excessive working hours than non-gig workers in the transportation sector, assuming other variables remain constant. This result is statistically significant at the 95% confidence level ($p = 0.041$).

Gig workers in the transportation sector are more likely to work excessive hours than non-gig workers due to several interrelated factors. The performance-based or demand-based approach encourages them to continue taking orders because the income earned correlates with the number of orders or trips in the transportation sector completed. This creates pressure to work longer to earn an adequate income (Jaydarifard et al., 2024). This is consistent with Cook et al. (2019) and Najiha & Herman (2023) arguing that gig workers tend to work longer hours than traditional workers due to performance-based incentives and income uncertainty. Flanagan (2019) also mentioned that so many workers have to work longer hours than conventional jobs to achieve a decent income,
although they often receive very low wages (Riley, 2017).

The lack of employment protections usually available through formal contracts for non-gig workers means that working hour limits and overtime regulations do not apply to gig workers. Current employment regulations do not provide adequate protection, so they often work beyond the working hour limits generally applied in the formal sector (Gill & Gupta, 2024). The flexibility of schedules, the main attraction of gig work, blurs the line between work time and rest time, causing workers to realize often that they have accumulated excessive working hours. In addition, there is an oversupply of labor in the gig economy, so workers must compete globally (Wood et al., 2019). The increasing competition between gig workers makes workers fight for tasks or jobs. This encourages workers to spend long hours to get tasks or jobs (Lehdonvirta, 2018; Jaydarifard et al., 2024). With these various economic and structural pressures, gig workers in the transportation sector are often trapped in situations that require them to work longer hours. While these jobs offer flexibility, the reality is that many gig workers have to sacrifice their time and well-being to achieve a decent income.

These findings are consistent with the framework of labor supply theory (see Mankiw, 2011), particularly concerning the interaction between the substitution effect and the income effect. In the case of gig workers, the substitution effect tends to dominate. When incentive rates increase or service demand rises, leisure prices

increase because every hour not spent working represents a lost opportunity to earn income. This situation encourages gig workers to extend their working hours, often exceeding formal standards. The phenomenon is obvious during peak hours or when daily bonus targets are offered, as workers are willing to continue working late into the night to maximize their earnings.

In contrast, the income effect should reduce working hours once income has reached sufficient level, but is weakened among transportation gig workers. Low hourly wages, high operational costs such as fuel, vehicle installments, and maintenance, combined with the absence of social protection, mean that gig workers rarely achieve a level of income they perceive as adequate. Consequently, the tendency to reduce working hours in favor of leisure is very limited.

The finding that gig workers in the transportation sector are 7.5% more likely to experience excessive working hours, with a 1.8 percentage point increase in probability, highlights their vulnerability to excessive work patterns and underscores the need for regulatory intervention. This evidence suggests that existing labor regulations are no longer adequate to address the realities of gig work. Gig workers, legally classified as casual workers, face the risk of excessive working hours without explicit legal protections. Therefore, a dedicated regulatory framework is needed to establish maximum working hour standards for informal digital workers, involving platforms as technical enforcers through automated monitoring systems. This regulation is crucial for safeguarding worker health, safety, and productivity, while ensuring that workforce flexibility does not lead to vulnerabilities due to excessive workloads. Governments and platforms can implement daily or weekly minimum income guarantees complemented by quality-based incentives, rather than incentives tied solely to work duration or order volume, to prevent potential income losses due to working hour restrictions. Furthermore, occupational health and safety protections such as access to routine medical services, health education, and health insurance through government-platform partnerships are crucial to provide gig workers with basic protections comparable to those of formal workers.

The pseudo R-squared is relatively low because individual-level cross-sectional data in Sakernas are highly heterogeneous, with many unobserved factors influencing outcomes. Since the model can only include a limited number of observed covariates, much variation remains unexplained, leading to lower pseudo R^2 values.

Table 3. Results of Binary Logistic Regression Analysis with Odds Ratio

Characteristics	Coef.	Odds Ratio	P>|z|
Transportation Gig Workers	0.073	1.075	0.041**
Male	0.602	1.825	0.000***
Age	0.055	1.057	0.000***
Age_sq	-0.0007	0.999	0.000***
Marry	0.126	1.135	0.003***
Higher education	0.298	1.347	0.000***
Kartu Prakerja	0.134	1.143	0.048**
Training	-0.031	0.970	0.457
Observation		17,419	
Pseudo R-squared		0.0114	

Source: Sakernas 2022, BPS (processed)
Note: *** significant at 1% level; **significant at 5% level; * significant at 10% level

Table 4 presents the results using the data of gig workers in the transportation sector only. The results show several factors significantly influence the probability of working excessive hours. Male workers in the transportation sector are 4.81 times more likely to experience excessive working hours than females. These results are consistent with Cook et al. (2021), who showed that men tend to drive more hours per week and remain active on platforms for longer periods than women. Similarly, Churchill & Craig (2019) emphasized that men are likelier to work longer hours in incentive-based gig jobs, where income is directly linked to productivity. The male dominance in transportation-based gig jobs, such as motorcycle taxi driving and courier services, reflects economic incentives and broader social and cultural dynamics.

This pattern can be further explained through the theoretical perspective of the gender division of labor, which argues that the labor market is not gender-neutral but instead structured by prevailing social norms and cultural expectations that differentiate the roles of men and women. In many societies, men are socially constructed as the primary breadwinners, forcing them to dedicate more time to income-generating activities to meet financial responsibilities (Galván & García-Peñalosa, 2018). Conversely, women's participation in gig transportation work is often shaped by their dual roles, balancing productive work with household responsibilities. As explained by Khazanah & Firmansyah (2024), women are generally limited in working excessive hours due to greater domestic responsibilities, such as caring for the household and children.

Consequently, the gendered division of labor influences the choice of employment sector and their exposure to the risk of excessive work hours. Men are more vulnerable to excessive work hours driven by income and social expectations, while women are constrained by domestic responsibilities that limit their capacity to work excessively. This dynamic illustrates how gendered employment arrangements shape patterns of work intensity and vulnerability in the gig transportation economy.

The empirical finding that age has a non-linear effect on the likelihood of transport sector gig workers engaging in excessive working hours aligns with the life-cycle labor supply theory (Borjas, 2016). According to this framework, labor supply follows an inverted U-shaped trajectory: younger individuals typically work fewer hours due to limited experience and ongoing education or training; hours worked then rise during prime working age as higher wages and productivity increase the opportunity cost of leisure; and finally, with advancing age, declining health, reduced physical capacity, and stronger preferences for leisure lead to a gradual reduction in labor supply until retirement. The observed increase in working hours during prime age, followed by a decline in later years, reflects this dynamic. Importantly, the result suggests that even within the flexible transportation gig work, absent formal contracts, labor supply decisions remain influenced by the fundamental patterns described in life-cycle theory. This is also in line with research that shows that the older the age, the intention to stay in gig work increases up to a certain point, then decreases again (Le Van et al., 2022)

Table 4. Results of Binary Logistic Regression Analysis with Odds Ratio

Characteristics	Coef.	Odds Ratio	P>|z|
Male	1.570	4.810	0.000***
Age	0.108	1.114	0.000***
Age_sq	-0.001	0.999	0.000***
Higher education	0.146	1.157	0.032**
City	0.622	1.862	0.000***
Marry	0.162	1.175	0.055*
Kartu Prakerja	0.396	1.485	0.000***
Training	-1.116	0.891	0.143
Observation		4,454	
Pseudo R-squared		0.0347	

Source: Sakernas 2022, BPS (processed)
Note: *** significant at 1% level; **significant at 5% level; * significant at 10% level

Higher education positively and significantly affects the probability of gig workers in the transportation sector experiencing excessive working hours. This suggests that practical skills, strategies in optimizing platform algorithms, and consistency in working in the digital work ecosystem may require people with higher formal education. However, because higher education does not directly provide benefits in terms of income, gig workers with higher education backgrounds may feel the need to extend their working hours to reach the level of income they consider appropriate. This condition reflects the phenomenon of overeducation or overqualification, where individuals possess higher qualifications than required but remain in the gig transportation sector due to limited opportunities in the formal labor market. As a result, education that is supposed to offer protection and better prospects instead becomes associated with greater vulnerability through excessive working hours. Overall, the results differ from those of Herrmann et al. (2023), which show that higher education has no significant relationship with income levels in the gig economy. Living in urban areas has a significant effect on excessive working hours. Gig workers in the transportation sector in urban areas are 1.86 times more likely to work excessive hours than workers in rural areas. This finding aligns with research by Nakka & Chintha (2023), who found that the average income of gig workers in urban areas is higher, encouraging them to work longer hours to obtain higher rates and incentives. This difference can be understood through the labor-leisure trade-off framework (Mankiw, 2011), where workers tend to reduce leisure time to increase work hours when the opportunity cost of leisure increases due to high economic needs and performance-based incentives. High mobility, population density, and the intensity of economic activity in urban areas create a more dynamic online transportation market, encouraging gig workers to exploit opportunities to acquire more passengers.

Furthermore, the role of platform-based incentives also reinforces the tendency for excessive working hours in urban areas. Order-based bonus schemes are relatively easy to achieve in areas with high demand, encouraging workers to remain active until bonus targets are met. Conversely, in rural areas with low demand, such incentives are relatively difficult to achieve, thus discouraging workers from extending work hours. The higher cost of living in urban areas also increases the economic pressure on gig workers to continue working longer hours. Thus, the excessive working hours found among gig workers in urban areas are not solely an individual choice, but rather the result of the interaction between the digital labor market's structural conditions and the region's socio-economic context.

Marital status also has a significant effect, where married gig workers are 1.175 times more likely to experience excessive working hours than those who are not married. This aligns with research by Ahituv & Lerman (2007), which explains that marriage increases men's work hours, contributing to higher future wages. In other words, marital status can be understood as a structural determinant that shapes work behavior through the mechanism of household economic responsibility. The demand to stabilize family income encourages married gig workers to extend their working hours, particularly in the online transportation sector, which does not provide fixed wages and relies solely on the number of completed orders. Within the framework of new household economics, this decision reflects a household's adaptive strategy to maximize income and mitigate financial risk amidst the uncertainty of the digital labor market.

In addition to economic necessity, incentive systems within gig platforms reinforce the tendency for married workers to work excessive hours. Productivity-based bonus schemes, which require workers to complete a certain number of trips or meet daily targets, provide additional motivation for those with family responsibilities to remain active until the targets are achieved. Unlike single gig workers, who have greater flexibility in determining their working hours and tend to balance work and personal life, married workers prioritize family economic security. They are more willing to sacrifice leisure time. Thus, marital status influences individual preferences regarding working hours and is also related to platform incentive structures and income uncertainty in the gig sector, resulting in higher overwork patterns among married workers.

Participation in the Prakerja program increases the likelihood of gig workers in the transportation sector experiencing excessive working hours by 1.485 times compared to those who do not have a Kartu Prakerja. This phenomenon can be explained by a selection effect, where program recipients generally come from groups with higher economic vulnerability, such as workers or laborers laid off or MSMEs facing difficulties (Septiyadi & Rahayu, 2022). This situation encourages them to extend their working hours to maintain income stability, and reflects that program recipients tend to have greater economic needs than non-recipients.

Furthermore, these results align with Al Ayyubi et al. (2023) findings, who emphasized that the Pre-Employment Card program contributed to employment. However, its impact was relatively limited among young people, predominantly employed in the informal sector. This indicates that the Pre-Employment Card program can indeed increase workforce participation, but is not yet effective enough to encourage transition to the formal sector. On the other hand, the Pre-Employment Card program provides training through digital platforms (Aryanisila, 2022). This can improve job literacy and digital skills, encouraging more intensive participation in gig platforms. Program recipients may be encouraged to utilize the acquired skills by increasing work hours for additional income. At the same time, the limited availability of decent formal employment opportunities encourages gig work to become the primary source of income. Thus, this statistically significant relationship confirms that participation in the Pre-Employment Card program is closely correlated with increased excess working hours in the transportation gig sector.

Training has no significant effect on excessive working hours for gig workers in the transportation sector for several reasons. The nature of gig work in the transportation sector is highly dependent on external factors, such as passenger demand, platform algorithms, and app incentives, which determine the duration of work more than the skills acquired through training. In this demand-based system, workers tend to adjust their working hours to market fluctuations rather than to the additional skills they possess. These results suggest that several sociodemographic factors influence the working patterns of transportation gig workers, thus requiring policies that balance the welfare of gig workers with the flexibility of work in the gig economy. This interpretation aligns with previous empirical

findings, clarifying why training alone may not substantially change gig workers' behavior. The research findings of Cortellazzo and Vaska (2024) suggest that the impact of training on gig workers' performance and behavior, including working hours, is primarily indirect. Their study reveals that platform-provided training is generally limited to basic technical instructions, such as navigating the application interface and adhering to safety protocols. Notably, this training does not encompass more comprehensive topics, such as time management, strategies for improving work efficiency, or personal financial management skills. Consequently, such narrowly focused training cannot induce significant behavioral change among gig workers.

CONCLUSION

The rapid expansion of the gig economy, driven by digital platforms, has significantly altered employment patterns in Indonesia, particularly within the transportation sector. This study sought to investigate the extent to which transportation gig workers are vulnerable to excessive working hours—a key indicator of labor precarity. Utilizing nationally representative data from the 2022 Sakernas and employing binary logistic regression analysis, this research examined the relationship between employment type and the likelihood of working more than 48 hours per week, while also assessing the influence of various sociodemographic factors.

The analysis results confirm that the status of a gig worker in the transportation sector significantly increases the probability of workers experiencing excessive working hours. Gig workers in the transportation sector are more likely to experience excessive working hours than non-gig workers, assuming other variables in the model remain constant. Several factors, such as gender, age, education, region, marital status, and ownership of a Kartu Prakerja, significantly influence the likelihood of gig workers in the transportation sector experiencing excessive working hours.

Based on the findings of this study, several policies can be proposed to address the risk of excessive working hours for gig workers in the transportation sector. The government must establish regulations regarding maximum working hour limits and ensure a decent minimum income level so that workers are not encouraged to work excessively to achieve daily targets. In addition, social protection schemes, such as health insurance, work accident insurance, and pension funds, need to be expanded for gig workers through collaboration between the government, digital platforms, and workers themselves.

On the other hand, the government can also provide incentives for digital platforms that implement worker welfare policies, such as limiting working hours and providing social benefits, in the form of tax breaks or subsidies. In addition, strengthening the role of gig worker unions is an important step in fighting for workers' rights and welfare, including negotiating working conditions with digital platforms. With the implementation of this policy, it is hoped that the welfare of gig workers in the transportation sector can be better protected without reducing the flexibility of work, which is the main characteristic of the gig economy.

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