

Platform Fairness and Sustainable Employment in the Gig Economy: A Mixed Methods Study on Work Engagement Mediation

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Abstract

The gig economy in Indonesia has grown rapidly, particularly in the online transportation sector, yet its workers continue to face persistent challenges related to platform fairness, work engagement, and sustainable employment. This study aims to examine the influence of platform fairness on sustainable employment through the mediating role of work engagement among ride-hailing drivers in Makassar City. An explanatory sequential mixed methods design was employed, involving a quantitative survey of 100 respondents analyzed using PLS-SEM, followed by in-depth interviews with 12 participants to enrich the interpretation. Quantitative findings reveal that platform fairness positively affects work engagement, while work engagement significantly contributes to sustainable employment. However, platform fairness does not directly influence sustainable employment, instead operating indirectly through work engagement. Qualitative results reinforce these findings, showing that although platform fairness is perceived as relatively adequate, issues remain regarding order distribution, income instability, and limited social protection. Drivers maintain high engagement levels due to family motivation, time flexibility, and adaptive coping strategies. The study's novelty lies in identifying work engagement as a crucial psychological pathway linking platform fairness to sustainable employment. Theoretically, it extends the Job Demands–Resources Model to the gig economy context, while practically offering insights for platform management and policymakers in promoting fair and sustainable digital labor systems.

Keywords: Gig economy, platform fairness, work engagement, sustainable employment, mixed methods.

1. Introduction

The rapid growth of the gig economy has transformed labor structures across developing nations, including Indonesia. Within this system, digital platforms-especially in the ride-hailing sector-have provided flexible employment opportunities for millions (Novemyanto & Nur, 2025; Pradana, 2024). According to the 2024 National Labor Force Survey (SAKERNAS), around 1.8 million Indonesians work as online transportation drivers out of approximately 84.2 million informal workers nationwide (Badan Pusat Statistik, 2024). Gojek alone hosts about 2.6 million partner drivers, contributing

substantially to Indonesia's economic productivity (Gunawan, 2024). Despite this remarkable expansion, online drivers continue to face serious challenges regarding platform fairness, income instability, ambiguous employment status, and limited social protection (Putri et al., 2023; Sulistyarini, 2025).

The concept of platform fairness—often aligned with organizational justice theory—has become central to understanding worker satisfaction and engagement in digital labor ecosystems. Perceived fairness includes procedural justice (transparency in algorithms and order allocation), distributive justice (income and reward balance), and interactional justice (communication and respect in decision-making) (Colquitt et al., 2013). Inadequate fairness has been linked to lower trust, increased stress, and disengagement among platform workers (Putri et al., 2023). Conversely, fair treatment enhances work engagement—a positive psychological state marked by vigor, dedication, and absorption—that serves as a vital mechanism supporting sustainable employment (Bakker et al., 2023; Schaufeli, 2017).

Drawing from the Job Demands–Resources (JD-R) Model, fairness functions as a key job resource that promotes engagement and long-term employment outcomes (Bakker & Demerouti, 2017). However, empirical studies directly examining the relationship between platform fairness, work engagement, and sustainable employment among Indonesian ride-hailing drivers remain scarce. Moreover, fairness perceptions in gig work are often influenced by subjective experiences with algorithmic control, incentive systems, and adaptive coping strategies. These multidimensional dynamics suggest that a purely quantitative approach may overlook important contextual nuances.

Therefore, this study adopts an explanatory sequential mixed methods design to analyze the influence of platform fairness on sustainable employment through the mediating role of work engagement among ride-hailing drivers in Makassar City. The combination of quantitative (PLS-SEM) and qualitative (in-depth interviews) analyses provides a more comprehensive understanding of how fairness perceptions shape engagement and sustainability within Indonesia's growing gig economy. This research aims to extend the application of the JD-R framework to digital labor contexts, contribute empirically to organizational justice and engagement literature, and inform fair and sustainable labor policy design for platform-based work.

Based on the identified research gap, this study addresses the following research questions:

1. What is the relationship between platform fairness and work engagement among online ride-hailing drivers?
2. To what extent does work engagement support sustainable employment?
3. Does platform fairness directly influence sustainable employment?
4. Does work engagement mediate the relationship between platform fairness and sustainable employment?
5. How do online ride-hailing drivers perceive and experience platform fairness, particularly regarding order distribution, algorithmic transparency, and incentive systems?
6. How do online ride-hailing drivers interpret and express work engagement in their daily activities?

7. What factors are perceived by drivers as supporting or hindering their sustainable employment?
8. How can the quantitative findings on platform fairness, work engagement, and sustainable employment be explained or deepened through the drivers' qualitative narratives?
9. To what extent do the qualitative insights support, complement, or differ from the quantitative results?

To address these questions, the study adopts an explanatory sequential mixed methods approach and proposes the conceptual framework illustrated in Figure 1.

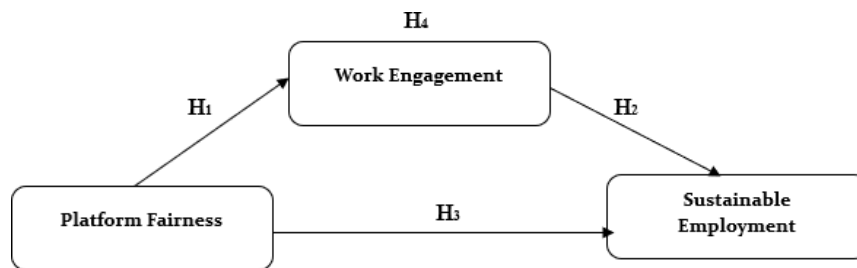


Figure 1. Conceptual framework of the research

Source: Author's personal conception (2025)

Grounded in the Job Demands–Resources (JD–R) Model and previous empirical research, this study proposes the following hypotheses:

- H1:** Platform fairness has a positive and significant effect on work engagement among online ride-hailing drivers.
- H2:** Work engagement has a positive and significant effect on sustainable employment among online ride-hailing drivers.
- H3:** Platform fairness has no direct significant effect on sustainable employment among online ride-hailing drivers.
- H4:** Work engagement mediates the relationship between platform fairness and sustainable employment among online ride-hailing drivers.

2. Research Method

2.1. Research Type and Design

This study employs a mixed methods approach with an explanatory sequential design. This design was chosen because the research begins with the collection and analysis of quantitative data to test the causal relationships among variables, followed by the collection and analysis of qualitative data to further interpret and explain the quantitative findings (Tashakkori & Teddlie, 2010). Through this approach, the study provides a more comprehensive understanding of how platform fairness influences work engagement and sustainable employment among online ride-hailing drivers.

2.2. Population and Sample

The population of this study consists of all online motorcycle taxi (ojek online) drivers operating in Makassar City. Since the exact population size is unknown, the quantitative sample size was determined following the recommendation of Hair et al., (2019), which suggests using a minimum of five to ten times the number of indicators in the model. With nine indicators, the minimum required sample size is 90; therefore, this study involved 100 respondents.

For the qualitative phase, participants were selected using purposive sampling from survey respondents who agreed to participate in further interviews. The number of qualitative informants was set at 10 to 15 individuals, consistent with the principle of information-rich cases in qualitative research (Patton, 2015).

2.3. Data Collection Techniques

Data collection in this study was carried out in two complementary stages consistent with the explanatory sequential mixed methods design. The first stage focused on quantitative data, gathered through a survey administered to 100 online motorcycle taxi (ojek online) drivers in Makassar City. The research instruments were adapted from validated prior studies, including the Platform Fairness Perception Scale (Putri et al., 2023), the Utrecht Work Engagement Scale (UWES-9) to assess work engagement (Schaufeli, 2017), and the Sustainable Employment Instrument developed by Van Der Klink et al. (2016). All questionnaire items employed a five-point Likert scale, ranging from “*strongly disagree*” to “*strongly agree*.” The survey was distributed both online and offline to reach a broader pool of participants, with inclusion criteria specifying active drivers who had worked for at least one year and were domiciled in Makassar City.

The second stage involved qualitative data collection, conducted after the preliminary quantitative analysis was completed. Data were gathered through in-depth interviews with a purposively selected subset of survey respondents, particularly those willing to share more detailed insights. The interviews followed a semi-structured guide, allowing the researcher to explore drivers’ experiences related to platform fairness, work engagement, and the challenges of sustaining their profession. This approach provided sufficient flexibility for participants to express personal experiences while maintaining alignment with the study’s objectives.

To enhance data validity, the interviews were supplemented by field observations of drivers’ working conditions and a review of relevant documents such as news articles, research reports, and labor regulations concerning Indonesia’s gig economy. Consequently, the data sources included survey responses, interviews, field notes, and supporting documents, allowing for triangulation throughout the analysis process.

2.4. Data Analysis Techniques

Data analysis in this study was conducted in several stages, consistent with the explanatory sequential mixed methods design. In the first stage, quantitative data collected through the survey were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with the assistance of Smart-PLS software. This analysis involved evaluating the measurement model to assess the

validity and reliability of the instruments and testing the structural model to examine the strength of relationships among latent variables, path coefficients, R^2 values, and the mediating role of work engagement. The PLS-SEM approach was selected because it is suitable for analyzing complex and predictive research models and is appropriate for studies with relatively small sample sizes (Hair et al., 2021).

The second stage consisted of qualitative analysis based on in-depth interview data from the online motorcycle taxi (ojek online) drivers. This process employed triangulation methods, including source triangulation and methodological triangulation, to ensure the validity and credibility of the findings (Patton, 2015). Source triangulation was performed by comparing information obtained from participants with diverse backgrounds, while methodological triangulation was carried out by contrasting interview data with the quantitative survey results and supporting documents such as reports, news articles, and regulations related to the gig economy. The qualitative analysis was conducted manually through a process of open coding, categorizing information, and identifying key themes that reflect drivers' perceptions of platform fairness, work engagement experiences, and strategies for sustaining their employment.

In the final stage, the quantitative and qualitative results were integrated to obtain a more comprehensive understanding of the phenomena studied. Quantitative findings were used to identify patterns of relationships among variables, while qualitative results provided deeper explanations of why these patterns occurred in the lived experiences of ride-hailing drivers. The integration followed the principles of explanatory sequential mixed methods (Tashakkori & Teddlie, 2010), positioning qualitative insights as explanatory extensions of quantitative outcomes. This analytical approach allowed the study to generate not only empirical evidence but also contextual narratives that capture the real experiences of workers within Indonesia's gig economy.

2.5. Operational Definition of Variables

To ensure conceptual clarity and measurement consistency, each construct in this study is defined operationally based on relevant theoretical and empirical foundations. The operational definitions are derived from established frameworks in organizational justice, work engagement, and sustainable employment literature. These definitions serve as the basis for developing measurement instruments and indicators used in the quantitative phase of this research. The following table presents the operational definitions of the study variables, their corresponding dimensions or indicators, measurement scales, and reference sources.

Table 1. Operational Definition of Variables

Variable	Dimensions / Indicators	Operational Definition	Measurement Scale	References
Platform Fairness (PF)	1. Procedural fairness 2. Distributive fairness 3. Interactional fairness	The extent to which online motorcycle taxi drivers perceive that the digital platform provides fair procedures, equitable income distribution, and respectful	Likert scale (1–5)	(Colquitt et al., 2013; Putri et al., 2023)

Variable	Dimensions / Indicators	Operational Definition	Measurement Scale	References
Work Engagement (WE)	1. Vigor	interactions in decision-making processes.	Likert scale (1–5)	(Bakker et al., 2023; Schaufeli, 2017)
	2. Dedication	The level of energy, enthusiasm, and full psychological involvement of drivers in performing their daily work activities within the platform ecosystem.		
Sustainable Employment (SE)	3. Absorption		Likert scale (1–5)	(Van Der Klink et al., 2016)
	1. Job security	The condition of drivers' work continuity encompassing employment stability, opportunities for long-term career sustainability, and overall well-being in their professional engagement.		
	2. Career sustainability			
	3. Well-being at work			

Source: Adapted from previous research (2025)

3. Results and Discussion

3.1. Overview of the Research Context

This study was conducted among online motorcycle taxi (ojek online) drivers operating in Makassar City, South Sulawesi, Indonesia. Makassar was selected as the research site because it is one of the largest metropolitan areas in Eastern Indonesia and a regional hub for digital economic growth. According to data from the Indonesian Internet Service Providers Association (APJII, 2023), internet penetration in South Sulawesi exceeds 78%, significantly contributing to the expansion of digital platform-based services, including online transportation. The emergence of application-based ride-hailing services such as Gojek and Grab has played a vital role in improving urban mobility while simultaneously creating new employment opportunities for thousands of individuals engaged in the gig economy ecosystem.

The growth of the gig economy within the online transportation sector presents both opportunities and challenges for drivers. On one hand, digital platforms offer work flexibility, opportunities for additional income, and access to a wider digital service ecosystem. On the other hand, issues such as income instability, dependence on algorithmic systems, and fairness concerns in order distribution remain recurring challenges (Putri et al., 2023). These dynamics highlight the importance of examining platform fairness, work engagement, and sustainable employment among ride-hailing drivers—particularly within the context of rapidly developing metropolitan cities like Makassar.

3.2. Respondent Demographics

The respondents in this study consisted of 100 online motorcycle taxi (ojek online) drivers operating in Makassar City. The participants were selected using a purposive sampling technique based on specific inclusion criteria: they had to be active drivers who had been working for at least one year, resided in Makassar City, and had direct experience with the incentive systems and performance evaluation mechanisms implemented by the ride-hailing platforms.

Table 2. Respondent Demographic Characteristics (N = 100)

Demographic Characteristics	Category	Frequency (n)	Percentage (%)
Gender	Male	92	92.0
	Female	8	8.0
Age	< 25 years	15	15.0
	25–35 years	47	47.0
	36–45 years	28	28.0
	> 45 years	10	10.0
Educational Attainment	Senior High School / Vocational School	63	63.0
	Diploma	12	12.0
	Bachelor's Degree	25	25.0
Length of Employment as Ride- Hailing Driver	1–2 years	22	22.0
	3–5 years	51	51.0
	> 5 years	27	27.0
Average Daily Working Hours	< 6 hours	18	18.0
	6–8 hours	44	44.0
	> 8 hours	38	38.0

Source: Primary data processed (2025)

Based on the table above, the majority of respondents were male (92%), with the dominant age group ranging from 25 to 35 years old (47%). Most respondents held a senior high school or vocational school education (63%) and had been working as ride-hailing drivers for three to five years (51%). In addition, more than one-third of the respondents reported working over eight hours per day (38%), indicating a high level of engagement and work intensity within the gig economy sector.

3.3 Descriptive Statistical Analysis

Table 3. Descriptive Statistical Analysis of Research Variables

Variable	Indicator	Mean	Median	Min	Max	Std. Dev.
Platform Fairness (X)	PF1	3.98	4.00	2.00	5.00	1.000
	PF2	3.93	4.00	1.00	5.00	1.134
	PF3	3.78	4.00	2.00	5.00	1.045
Work Engagement (M)	WE1	3.66	4.00	2.00	5.00	0.897
	WE2	3.79	4.00	2.00	5.00	0.993
	WE3	3.92	4.00	2.00	5.00	1.129
Sustainable Employment (Y)	SE1	3.59	4.00	1.00	5.00	1.123
	SE2	3.23	3.00	2.00	5.00	1.018
	SE3	3.26	3.00	1.00	5.00	0.923

Source: Processed primary data using Smart-PLS (2025)

The descriptive statistical analysis reveals that the overall perception of **platform fairness** among online ride-hailing drivers in Makassar City tends to be positive. The mean scores for this variable range from **3.78 to 3.98**, which are relatively high and close to four on a five-point Likert scale. This suggests that most respondents believe the platforms operate fairly in terms of rules, procedures, and interactions. Nevertheless, the indicator **PF2 (distribution fairness)** records the highest standard deviation (**1.134**), indicating a wider variation in drivers' perceptions of how orders are allocated through algorithmic systems. This variation highlights that fairness in order distribution remains a sensitive and potentially contentious issue among drivers.

In terms of **work engagement**, the results show moderately high averages, ranging between **3.66 and 3.92**. The highest mean is observed in **WE3 (absorption in work)**, suggesting that drivers generally feel immersed and focused during their work activities. Such engagement reflects a sense of enthusiasm and dedication among drivers despite the fluctuating nature of gig work. However, the relatively large standard deviations (above 0.9) demonstrate that engagement levels are not entirely uniform—some drivers may experience lower motivation or commitment due to external pressures such as income uncertainty or work fatigue.

Meanwhile, the findings for **sustainable employment** show comparatively lower average scores, between **3.23 and 3.59**, indicating that drivers perceive their long-term job sustainability as only moderate. The lowest mean values appear in **SE2 (career sustainability)** and **SE3 (work well-being)**, implying that career continuity and occupational well-being are persistent challenges in the gig economy. These results underline the vulnerability of ride-hailing work, where long-term stability and security remain uncertain despite short-term income opportunities.

Overall, the descriptive findings suggest that while drivers generally perceive a reasonable level of fairness and maintain good engagement with their work, their sense of sustainable employment remains modest. This pattern reinforces the theoretical premise that **platform fairness alone may not be sufficient to ensure long-term job sustainability**, and that **work engagement plays a critical mediating role** in linking fair platform management to workers' sustained participation and well-being in the gig economy.

3.4 Results of the Outer Model Test (Construct Validity and Reliability)

The evaluation of the measurement model was conducted to ensure that all indicators used in this study are both valid and reliable in representing their corresponding latent constructs. The outer model assessment included three primary stages:

- (1) testing convergent validity through outer loading, composite reliability (CR), and average variance extracted (AVE);
- (2) assessing construct reliability using Cronbach's Alpha and composite reliability; and
- (3) testing discriminant validity using the Heterotrait–Monotrait Ratio (HTMT) criterion.

Table 4. Measurement Model Evaluation

Construct	Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability (ρ_A)	Composite Reliability (ρ_C)	AVE	HTMT
Platform Fairness (X)	PF1 = 0.910 PF2 = 0.907 PF3 = 0.937	> 0.90	0.907	0.914	0.941	0.843	with SE = 0.420 with WE = 0.404
Sustainable Employment (Y)	SE1 = 0.932 SE2 = 0.899 SE3 = 0.867	> 0.86	0.882	0.892	0.927	0.809	with PF = 0.420 with WE = 0.785
Work Engagement (M)	WE1 = 0.871 WE2 = 0.875 WE3 = 0.920	> 0.87	0.867	0.870	0.919	0.790	with PF = 0.404 with SE = 0.785

Source: Processed primary data using Smart-PLS (2025)

The results of the outer model analysis indicate that all indicators for Platform Fairness, Sustainable Employment, and Work Engagement exhibit outer loading values above 0.70, ranging from 0.867 to 0.937. This confirms that each indicator has met the convergent validity requirement, demonstrating a strong ability to represent its respective latent construct (Hair et al., 2019). The results are further supported by the average variance extracted (AVE) values for all constructs, which exceed the threshold of 0.50—specifically, 0.843 for Platform Fairness, 0.809 for Sustainable Employment, and 0.790 for Work Engagement—indicating that the indicators explain a substantial proportion of the variance in their constructs.

The reliability test results show that the Cronbach's Alpha values for all constructs are above 0.70 (PF = 0.907; SE = 0.882; WE = 0.867), confirming a high level of internal consistency. Similarly, both forms of composite reliability (ρ_A and ρ_C) exceed 0.70, further affirming the reliability of the measurement model. These findings suggest that the research instrument is highly dependable for assessing the constructs specified in this study.

The discriminant validity test, based on the HTMT (Heterotrait–Monotrait Ratio) criterion, also meets the acceptable limit of 0.85. The HTMT values between constructs are 0.420 for Platform Fairness and Sustainable Employment, 0.404 for Platform Fairness and Work Engagement, and 0.785 for Sustainable Employment and Work Engagement. These results confirm that each construct in the model is empirically distinct from the others, thereby satisfying the discriminant validity criterion.

In summary, the results of the outer model evaluation demonstrate that all indicators in this study fulfill the requirements of convergent validity, construct reliability, and discriminant validity. Hence, the measurement model is considered adequate and reliable, allowing the analysis to proceed to the structural model evaluation (inner model) to test the hypothesized relationships among the latent variables.

3.5 Structural Model Evaluation (Inner Model)

3.5.1 Multicollinearity Test (VIF)

Before testing the structural relationships among the latent constructs, an essential preliminary step is to assess collinearity using the Variance Inflation Factor (VIF) values. The purpose of this test is to ensure that no multicollinearity exists among indicators or constructs, which could potentially affect the validity of the model estimation results. According to Hair et al. (2021), multicollinearity becomes problematic when the VIF value exceeds 5.0, although a more conservative threshold of 3.3 is frequently applied in structural equation modelling. Therefore, if all VIF values fall below these critical limits, it can be concluded that the model is free from significant multicollinearity issues.

The results of the collinearity test in this study are presented in **Table 5** below.

Table 5. Results of Collinearity Test (VIF)

<u>Indicator</u>	<u>VIF</u>
PF1	2.837
PF2	2.835
PF3	3.381
SE1	3.123
SE2	2.599
SE3	2.171
WE1	2.071
WE2	2.268
WE3	2.791

Source: Processed primary data using Smart-PLS (2025)

The results presented in Table 6 indicate that all indicators in the model have VIF values ranging from 2.071 to 3.381. These values are well below the critical threshold of 5.0, and most also fall below the more conservative limit of 3.3 as suggested by Hair et al. (2021). This finding confirms that no multicollinearity issues are present among the indicators, meaning that each variable contributes uniquely to its respective construct without excessive redundancy of information.

Furthermore, the absence of multicollinearity implies that the independent constructs are statistically distinct and that the model maintains a stable estimation structure, thereby supporting the reliability of subsequent path analyses. This result aligns with the recommendations of Henseler et al. (2015), who emphasize that acceptable VIF values enhance the interpretability and precision of the structural model.

Overall, the findings demonstrate that the research model meets the preliminary assumption of collinearity, allowing the analysis to proceed confidently to the structural path evaluation phase for testing relationships among the latent variables.

3.5.2 R-Square (R^2) Test

The R-Square (R^2) test was conducted to evaluate the extent to which the independent variables in the model explain the variance of the dependent variables. In the context of PLS-SEM, the R^2 value

represents the predictive power of the structural model. According to Hair et al. (2021), an R^2 value of 0.75 is considered substantial, 0.50 is moderate, and 0.25 is weak. Therefore, the higher the R^2 value, the stronger the independent variables in explaining the dependent variable.

The results of the R^2 test in this study are presented in **Table 6** below.

Table 6. Results of R-Square (R^2) Test

Dependent Variable	R-Square	Adjusted R-Square
Sustainable Employment	0.495	0.485
Work Engagement	0.131	0.122

Source: Processed primary data using Smart-PLS (2025)

As shown in **Table 6**, the Sustainable Employment variable has an R^2 value of 0.495, indicating that the independent variables in the model collectively explain approximately 49.5% of the variance in Sustainable Employment. This level of explanatory power falls within the moderate category (Hair et al., 2021), suggesting that the model provides a reasonably good prediction of sustainable employment among online ride-hailing drivers.

Meanwhile, the Work Engagement variable records an R^2 value of 0.131, implying that platform fairness accounts for about 13.1% of its variance. Although this value is relatively low, it still demonstrates a meaningful yet limited influence of platform fairness on work engagement. Taken together, these results indicate that the structural model possesses an adequate predictive capacity, particularly in explaining the dynamics of employment sustainability within the gig economy context.

3.5.3 Effect Size Test (f^2)

The effect size (f^2) test was conducted to examine the magnitude of each independent variable's contribution to the dependent variable within the structural model. In other words, this test measures the relative influence of a construct when it is included or excluded from the model. According to Hair et al. (2019), an f^2 value of 0.02 is considered small, 0.15 is medium, and 0.35 or higher is large. In the context of PLS-SEM, the f^2 test complements the R^2 analysis by providing insight into the individual contribution of each predictor variable in explaining the dependent construct (Hair et al., 2021).

The results of the f^2 test in this study are presented in **Table 7** below.

Table 7. Results of Effect Size Test (f^2)

Relationship Between Variables	f-Square (f^2)
Platform Fairness → Sustainable Employment	0.036
Platform Fairness → Work Engagement	0.151
Work Engagement → Sustainable Employment	0.701

Source: Processed primary data using Smart-PLS (2025)

As shown in **Table 7**, the relationship between Platform Fairness and Sustainable Employment yields an f^2 value of 0.036, which falls within the small category. This suggests that although the relationship is statistically significant, the direct contribution of platform fairness to employment sustainability is relatively limited. In contrast, the relationship between Platform Fairness and Work

Engagement demonstrates an f^2 value of 0.151, indicating a moderate effect size. This finding implies that perceptions of fairness within digital platforms play a meaningful role in enhancing driver engagement, particularly in the context of ride-hailing services in Makassar.

The most prominent finding is the relationship between Work Engagement and Sustainable Employment, which produces an f^2 value of 0.701, classified as large. This result indicates that work engagement exerts a substantial influence in promoting employment sustainability among gig workers. In other words, the higher the level of work engagement, the greater the likelihood that online drivers will experience continuity and stability in their work.

Overall, these findings reinforce the mediating role of work engagement in the relationship between platform fairness and sustainable employment. While platform fairness exerts a relatively small direct influence on job sustainability, its indirect impact through increased engagement is considerably stronger. This aligns with previous literature emphasizing work engagement as a key psychological mechanism linking organizational factors to long-term employment sustainability (Bakker et al., 2023; Schaufeli, 2017; Van Der Klink et al., 2016).

3.5.4 Model Fit Test

The model fit test was conducted to evaluate the extent to which the proposed structural model aligns with the empirical data obtained. The purpose of this test is to determine whether the relationships among the latent variables and their corresponding indicators are adequately represented by the data. According to Hair et al. (2021), assessing model fit in PLS-SEM provides an overview of the overall suitability of the model, which serves as the foundation for determining its validity and reliability in explaining the observed phenomena.

Table 8. Model Fit Test Results

Index	Saturated Model	Estimated Model	Cut-off Value	Remarks
SRMR	0.054	0.054	≤ 0.08	Good fit
d_ULS	0.133	0.133	Not specified	–
d_G	0.145	0.145	Not specified	–
Chi-square	90.254	90.254	The smaller, the better	Moderate
NFI	0.856	0.856	≥ 0.80	Good fit

Source: Processed primary data using Smart-PLS (2025)

The results of the model fit analysis show that the SRMR value of 0.054 is below the threshold of 0.08, indicating that the model exhibits a good level of fit with the empirical data (Hair et al., 2019). Additionally, the NFI value of 0.856 exceeds the recommended cut-off of 0.80, further confirming that the model demonstrates an acceptable degree of overall fit. The Chi-square value of 90.254 suggests a moderate fit, which is expected given that this test is highly sensitive to sample size (Hair et al., 2021).

Meanwhile, the d_ULS and d_G indices do not have strict cut-off thresholds, but their relatively low values suggest that the model does not suffer from substantial discrepancies between the empirical and estimated data. Taken together, these findings indicate that the proposed structural model meets

the criteria for an acceptable model fit and can be reliably used for further hypothesis testing and evaluation of the relationships among latent constructs.

To assess these relationships, the study employs a Structural Equation Modelling (SEM) approach using Partial Least Squares (PLS-SEM). This method was chosen because it allows for the simultaneous estimation of complex causal relationships among independent, mediating, and dependent variables (Hair et al., 2019). PLS-SEM is also appropriate when the research objective involves prediction and theory development, particularly in models with a relatively large number of indicators.

Figure 2 presents the estimated structural model, illustrating the direction of relationships among constructs, the path coefficients, and the R-square values of the endogenous variables.

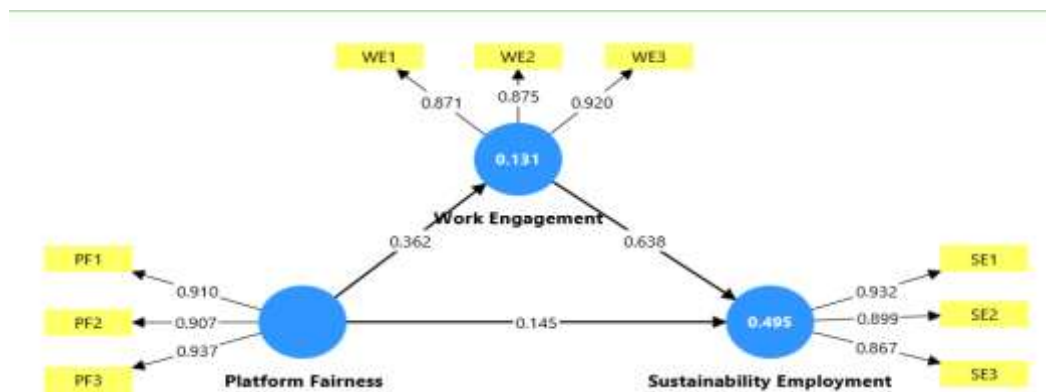


Figure 2. Structural Equation Modelling
Source: Processed primary data using Smart-PLS (2025)

3.6 Hypothesis Testing

Table 9. Results of Hypothesis Testing

Hypothesis	Statement	Path Coefficient	T-Statistics	P-Values	Decision
H1	Platform fairness is positively related to the work engagement of online ride-hailing drivers.	0.362	3.843	0.000	Supported
H2	Work engagement is positively related to the sustainable employment of online ride-hailing drivers.	0.638	8.306	0.000	Supported
H3	Platform fairness is directly and positively related to the sustainable employment of online ride-hailing drivers.	0.145	1.542	0.123	Not supported
H4	Work engagement mediates the relationship between platform fairness and sustainable employment among online ride-hailing drivers.	0.231	3.470	0.001	Supported

Source: Processed primary data using Smart-PLS (2025)

The results of hypothesis testing presented in Table 10 reveal several key findings. First, **H1 is supported**, indicating that platform fairness has a positive and significant relationship with work engagement ($\beta = 0.362$; $t = 3.843$; $p < 0.001$). This means that when drivers perceive fair treatment in terms of order distribution, communication, and incentive systems, they tend to be more psychologically engaged in their work (Colquitt et al., 2013; Putri et al., 2023).

Second, **H2 is also supported**, with a strong and significant relationship between work engagement and sustainable employment ($\beta = 0.638$; $t = 8.306$; $p < 0.001$). This finding suggests that drivers who demonstrate high levels of vigor, dedication, and absorption in their work are more likely to experience job continuity and long-term employability within the gig economy.

However, **H3 is not supported**, as the direct relationship between platform fairness and sustainable employment is found to be statistically insignificant ($\beta = 0.145$; $t = 1.542$; $p = 0.123$). This implies that fairness in platform governance alone is not sufficient to directly ensure sustainable employment outcomes without the mediating influence of psychological factors such as engagement.

Finally, **H4 is supported**, confirming that work engagement serves as a mediating variable between platform fairness and sustainable employment ($\beta = 0.231$; $t = 3.470$; $p = 0.001$). This result highlights that drivers' engagement functions as a crucial psychological pathway through which fairness perceptions translate into sustainable work outcomes.

Overall, these findings underscore the central role of work engagement in bridging organizational fairness and employment sustainability. While fairness creates the foundation for trust and motivation, it is engagement that transforms these perceptions into sustained work behavior and commitment, reinforcing previous evidence in the organizational psychology and gig economy literature (Bakker et al., 2023; Schaufeli, 2017; Van Der Klink et al., 2016).

3.7 Qualitative Research Findings

The qualitative analysis was conducted through in-depth interviews with 12 online ride-hailing (ojol) drivers, purposively selected from the survey respondents. The interviews focused on drivers' subjective experiences related to perceptions of platform fairness, levels of work engagement, and strategies for sustaining their employment within the gig economy. The analysis generated several key themes that capture the drivers' lived experiences and contextual realities in navigating fairness, engagement, and job sustainability.

a. Perceptions of Platform Fairness

Most informants expressed that order distribution is not always perceived as fair, even though the application system generally helps them earn an income. One driver, ER (32 years old), shared his experience: *"Sometimes the order system feels unfair. Some friends keep getting orders, while I often have to wait a long time before receiving one. It doesn't feel fair, even though we all start working early in the morning."* (Interview, Driver 5, Makassar, 2025)

However, several drivers also acknowledged that transparency has improved compared to previous years, especially regarding the incentive scheme:

“Now I think the bonus system is clearer. There are daily targets, so even if it feels tiring, at least I understand how the calculations work.” (Interview, Driver 2, Makassar, 2025)

b. Work Engagement as a Source of Motivation

Online ride-hailing drivers demonstrated a high level of work engagement despite the demanding nature of their jobs. Many linked their motivation and persistence to family responsibilities. One 40-year-old driver, LA, shared his perspective: *“Of course, it’s tiring — we all feel that. But what else can we do? This is for my wife and kids, so I have to stay motivated. When an order comes in, it makes me happy — it feels like new energy.”* (Interview, Driver 7, Makassar, 2025).

Additionally, some drivers emphasized flexible working hours as an important factor that keeps them engaged: *“I enjoy this kind of work because I can manage my own time. Even though the income isn’t always stable, I feel more in control.”* (Interview, Driver 9, Makassar, 2025)

c. Challenges to Work Sustainability

Issues of employment sustainability primarily stem from income uncertainty and health risks. Several drivers mentioned that long working hours have significant physical impacts: *“When I drive for up to 12 hours a day, I often get back pain, not to mention dealing with the heat and rain. Sometimes I wonder how long I can keep doing this.”* (Interview, Driver 4, Makassar, 2025)

In addition to health concerns, many drivers also emphasized the lack of adequate social protection: *“If I get sick or my motorbike breaks down, I have to cover the costs myself. So when we talk about the future, there’s really no guarantee in this kind of work.”* (Interview, Driver 11, Makassar, 2025)

d. Survival Strategies and Future Expectations

To maintain **employment sustainability**, drivers often rely on **personal coping strategies**, such as diversifying income sources or remaining loyal to a specific platform. One driver shared his approach: *“Besides driving, I also run a small online business. So when orders are slow, I still have another source of income.”* (Interview, Driver 3, Makassar, 2025)

Many also expressed hopes for greater attention to labor protection from both the government and platform companies:

“I hope there will be health insurance or at least accident coverage. We’re human too, and working on the road comes with real risks.” (Interview, Driver 10, Makassar, 2025)

The qualitative findings indicate that, although platform fairness is generally perceived as adequate, concerns remain regarding order distribution and the lack of social protection. Drivers maintain high levels of work engagement primarily due to family motivation and flexible working arrangements, yet their employment sustainability continues to be challenged by income instability and health risks. These insights reinforce the quantitative results, confirming that work engagement serves as a mediating factor—platform fairness alone is insufficient to ensure job sustainability without the presence of personal motivation and psychological involvement.

3.8 Discussion

The findings of this study reveal a complex relationship between platform fairness, work engagement, and sustainable employment among online ride-hailing (ojol) drivers in Makassar City.

Quantitatively, platform fairness was found to have a positive effect on work engagement (H1 supported), while work engagement strongly influenced sustainable employment (H2 supported). However, platform fairness did not show a direct significant effect on sustainable employment (H3 not supported), but rather operated indirectly through the mediation of work engagement (H4 supported).

These findings are consistent with the Job Demands–Resources (JD-R) Theory, which emphasizes that job resources such as fairness play a vital role in fostering employee engagement, which in turn contributes to long-term outcomes (Bakker et al., 2023; Bakker & Demerouti, 2017). The qualitative evidence reinforces this result by showing that, although fairness is generally perceived as adequate, dissatisfaction persists regarding order distribution and the lack of social protection. Consequently, fairness alone is not sufficient to ensure employment sustainability without the presence of emotional involvement and intrinsic motivation.

As one driver expressed: *“Sometimes the order system feels unfair. Some friends keep getting orders, while I have to wait a long time before one comes in.”* (Interview, Driver 5, Makassar, 2025)

This statement reflects that fairness is not always evenly perceived among drivers. Nevertheless, many still display strong engagement, driven by family responsibilities and work flexibility, as illustrated by another respondent: *“Of course, it’s tiring. But since this is for my wife and kids, I have to stay motivated.”* (Interview, Driver 7, Makassar, 2025)

These narratives demonstrate that fairness enhances the likelihood of engagement, but such engagement is primarily fueled by internal motivation and social support rather than by procedural fairness alone.

a. Why does platform fairness not directly affect sustainable employment?

This phenomenon can be explained by the inherent uncertainty of gig work. While fairness provides a sense of procedural and distributive justice, drivers’ employment sustainability is largely determined by external factors, including social protection, income stability, and occupational health. As noted by Putri et al. (2023), fairness in Indonesia’s gig economy does not automatically guarantee long-term job security due to structural challenges such as non-formal employment status and the absence of social protection mechanisms.

Hence, the novelty of this study lies in emphasizing that fairness in the gig economy serves only as a potential job resource, which produces tangible effects on sustainable employment only when mediated by engagement. This extends existing literature that has predominantly highlighted direct fairness–outcome relationships (Colquitt et al., 2013; Putri et al., 2023) and contributes to the broader application of the JD-R model within the context of non-formal, platform-based labor.

3.9 Implications

a. Theoretical Implications

Theoretically, this study reinforces the validity of the Job Demands–Resources (JD-R) Model within the gig economy context, emphasizing that platform fairness functions as a job resource whose effect on sustainable employment only materializes through work engagement. This finding

extends the application of organizational justice theory to digital labor environments, demonstrating that the dimensions of fairness—traditionally examined within formal organizational settings (Colquitt et al., 2013)—are equally relevant for gig workers who interact with algorithmic management systems. By integrating fairness, engagement, and sustainability, this research provides a nuanced understanding of how psychological mechanisms operate under algorithmic governance.

b. Practical Implications

For platform companies, the findings convey a critical insight: enhancing perceptions of fairness alone is insufficient. Firms must actively foster an engaging work ecosystem that supports drivers' motivation and well-being. This can be achieved through several strategic measures, including:

- Ensuring transparency in the order distribution algorithm to reduce perceived bias.
- Implementing consistent and equitable incentive systems that reward performance fairly.
- Developing physical and mental well-being programs to enhance drivers' resilience and satisfaction.
- Providing skill development opportunities that enable drivers to pursue sustainable career growth.

By adopting these initiatives, platform companies can not only improve their fairness reputation but also strengthen driver loyalty, engagement, and retention, ultimately contributing to a more stable and productive digital labor ecosystem.

c. Public Policy Implications

For government institutions, particularly the Ministry of Manpower, the study underscores that digital labor policies must go beyond minimal protection frameworks. Public policy should ensure the implementation of fair algorithms, establish clear appeal mechanisms for drivers, and expand inclusive social protection coverage for gig workers. Furthermore, the government should promote decent work standards across digital platforms by introducing regulations that address:

- Reasonable working hours,
- Access to health and accident insurance, and
- Support for income diversification among drivers.

Such policy measures would not only enhance work engagement but also strengthen the sustainability of the digital workforce in Indonesia, aligning with broader goals of inclusive and equitable labor development in the digital economy era.

4. Conclusion and Recommendations

This study aimed to analyze the influence of platform fairness on sustainable employment, with work engagement as a mediating variable, among gig economy workers—specifically, online ride-hailing drivers in Makassar City—using an explanatory sequential mixed methods approach.

Quantitative results revealed that platform fairness positively affects work engagement, and work engagement positively affects sustainable employment. However, platform fairness does not directly

influence sustainable employment, but rather exerts an indirect effect through work engagement. This finding highlights that perceptions of fairness are essential for fostering engagement, but employment sustainability can only be achieved when workers exhibit a high level of engagement.

The qualitative findings enrich these results by illustrating the real-life experiences of online drivers. While they acknowledged the transparency and utility of the platform, many still perceived unfairness's in order distribution, along with income instability and a lack of social protection. Despite these challenges, drivers maintained strong engagement, primarily driven by family motivation, schedule flexibility, and personal coping strategies. These insights reinforce that sustainable employment in the gig economy depends not only on systemic fairness but also on workers' emotional involvement and intrinsic motivation.

The novelty of this study lies in its demonstration that platform fairness does not directly ensure sustainable employment, but requires work engagement as a mediating mechanism. This contributes to expanding the literature on organizational justice and the Job Demands–Resources (JD-R) Model within Indonesia's gig economy context, which remains relatively underexplored.

In conclusion, building a fair and transparent work ecosystem is necessary but insufficient unless platform companies also promote engagement through well-being initiatives and skill development programs. Simultaneously, public policy must guarantee algorithmic fairness, basic social protection, and decent work standards, ensuring that the sustainability of digital labor in Indonesia evolves equitably and inclusively

Limitations and Suggestions for Future Research

While this study provides valuable insights into the dynamics of platform fairness, work engagement, and sustainable employment within Indonesia's gig economy, several limitations must be acknowledged to guide future research.

First, the study's quantitative sample of 100 online ride-hailing drivers from Makassar City may limit the generalizability of its findings. Indonesia's gig economy is highly diverse, with variations in platform operations, labor conditions, and regional socioeconomic contexts. Therefore, future studies are encouraged to include larger and more geographically diverse samples across multiple cities or provinces to ensure broader representation and to validate the model in different cultural and economic settings.

Second, the qualitative phase, which involved in-depth interviews with 12 drivers, provided rich contextual insights but may not fully capture the heterogeneity of gig workers' experiences. Despite the use of triangulation to enhance validity, the limited number of participants restricts the exploration of broader perspectives. Subsequent studies could expand the number and diversity of informants, including drivers from various platforms, part-time workers, or even former gig workers, to better understand the longitudinal aspects of employment sustainability and adaptation strategies.

Third, the research design employed an explanatory sequential mixed methods approach, in which qualitative data collection followed the quantitative analysis. While this design effectively clarified and elaborated on statistical results, it also meant that not all quantitative findings could be explored

in depth. Future researchers may consider adopting a convergent parallel mixed methods design, allowing quantitative and qualitative data to be gathered simultaneously. Such an approach would enable a more comprehensive and integrated understanding of the interplay between platform fairness, engagement, and sustainability.

Furthermore, this study focused on three key constructs—platform fairness, work engagement, and sustainable employment—which, while theoretically robust, do not encompass all dimensions influencing gig workers' labor conditions. Other relevant factors, such as job insecurity, perceived organizational support, digital literacy, and work-life balance, are worth integrating into future research models to provide a more holistic depiction of digital labor dynamics.

Finally, this research did not empirically address the public policy and regulatory aspects of digital labor governance, even though the findings highlight their critical role in ensuring fair and sustainable employment. Future investigations could incorporate policy-oriented analyses—for example, comparative studies between countries or cross-platform regulatory evaluations—to offer deeper insights into how institutional frameworks shape fairness perceptions and employment outcomes in the gig economy.

In summary, although this study successfully demonstrates the mediating role of work engagement in linking platform fairness to sustainable employment, it opens several pathways for future inquiry. Expanding methodological scope, conceptual frameworks, and policy integration will not only strengthen academic contributions but also enhance the practical relevance of research in promoting equitable, secure, and sustainable digital labor ecosystems.

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