Work Support and Resilience: Mediating Roles of Stress and Health Among Indonesian Gig Workers

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ABSTRACT

The gig economy in Indonesia has grown rapidly, but gig workers face significant challenges, including job stress and health issues that impact their resilience. This study examines how work support influences work resilience among gig workers in North Sumatra, focusing on the mediating roles of job stress, mental health, and physical health. The objective was to investigate the direct and indirect effects of work support on resilience in a culturally relevant context. A cross-sectional survey was conducted with 387 gig workers, including ride-hailing drivers, food delivery workers, and freelancers, using validated scales to measure work support, job stress, mental health, physical health, and resilience. Data were analyzed using structural equation modeling to test direct and mediating relationships. The findings show that work support directly enhances resilience and indirectly improves it by reducing job stress and improving mental and physical health. The model explains a significant portion of resilience variance, highlighting the critical role of support in mitigating gig work challenges. In conclusion, comprehensive support systems are essential for fostering resilience among gig workers, particularly in Indonesia, where cultural and platform-related factors shape worker well-being.

Keywords*: Gig Economy, Health Conditions, Job Demands-Resources Model, Job Stress, Mental Health, Physical Health, Work Support.*

ABSTRAK

Ekonomi gig di Indonesia telah berkembang pesat, tetapi pekerja gig menghadapi tantangan yang signifikan, termasuk stres kerja dan masalah kesehatan yang memengaruhi ketahanan mereka. Studi ini mengkaji bagaimana dukungan kerja memengaruhi ketahanan kerja di antara pekerja gig di Sumatera Utara, dengan fokus pada peran mediasi stres kerja, kesehatan mental, dan kesehatan fisik. Tujuannya adalah untuk menyelidiki efek langsung dan tidak langsung dari dukungan kerja terhadap ketahanan dalam konteks budaya yang relevan. Survei cross-sectional dilakukan dengan 387 pekerja gig, termasuk pengemudi taksi daring, pekerja pengiriman makanan, dan pekerja lepas, menggunakan skala yang divalidasi untuk mengukur dukungan kerja, stres kerja, kesehatan mental, kesehatan fisik, dan ketahanan. Data dianalisis menggunakan pemodelan persamaan struktural untuk menguji hubungan langsung dan mediasi. Temuan menunjukkan bahwa dukungan kerja secara langsung meningkatkan ketahanan dan secara tidak langsung memperbaikinya dengan mengurangi stres kerja dan meningkatkan kesehatan mental dan fisik. Model tersebut menjelaskan sebagian besar varians ketahanan, menyoroti peran penting dukungan dalam mengurangi tantangan kerja gig. Kesimpulannya, sistem dukungan yang komprehensif sangat penting untuk menumbuhkan ketahanan di kalangan pekerja lepas, khususnya di Indonesia, di mana faktor budaya dan platform membentuk kesejahteraan pekerja.

Kata kunci*: Ekonomi Gig, Kondisi Kesehatan, Model Tuntutan Pekerjaan-Sumber Daya, Stres Kerja, Kesehatan Mental, Kesehatan Fisik, Dukungan Kerja.*

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INTRODUCTION

The digital economy has fundamentally transformed the global employment landscape, with the gig economy emerging as one of the most significant shifts in recent decades. Gig workers, who engage in flexible, platform-based jobs, have become a vital part of the modern workforce, sparking widespread interest among researchers (Wu & Huang, 2024). This transformation is driven by digital platforms that offer flexibility but also introduce unique challenges to worker well-being. In Indonesia, the gig economy has grown rapidly, particularly in North Sumatra, due to the widespread adoption of digital applications and the region's economic needs, which rely heavily on informal work structures (Alauddin et al., 2025; Parman et al., 2025). This region's diverse urban and rural settings, coupled with a young, tech-savvy population, make it a critical context for studying gig work dynamics (Puspitasari et al., 2025).

Despite growing research on gig work, significant gaps remain. According to Wendra et al. (2024), most studies focus on job demands and coping mechanisms but overlook the role of multidimensional work support in building resilience among gig workers. Similarly, Habibi (2025) notes that while mental health challenges are well-documented, the interplay between work support, stress, and health conditions in shaping resilience remains underexplored, particularly in Indonesia. Existing studies often apply Western frameworks, such as the Job Demands-Resources model, without considering cultural factors like communal support in developing contexts (Demerouti & Bakker, 2023; Parman et al., 2025).

Global data highlights the scale of this shift. According to the Board of Governors of the Federal Reserve System (2023), approximately 16% of U.S. adults participated in gig work in 2022, reflecting a growing trend (Klein, 2024). In China, nearly a quarter of the workforce consists of freelance or non-salaried workers, with over 70 million identified as gig workers. In Indonesia, the gig economy has expanded alongside the rise of digital platforms like ride-hailing and food delivery services, employing millions, particularly in urban centers like Medan (Abdullah et al., 2024; Wendra et al., 2024). However, the lack of formal employment protections in Indonesia's gig economy, combined with cultural reliance on communal support systems like *gotong royong*, creates a unique environment for examining worker resilience (Juddi et al., 2025; Parman et al., 2025).

Despite the flexibility offered, gig workers face significant health and well-being challenges. Research shows that gig work is associated with higher stress levels compared to traditional employment, driven by income uncertainty, irregular workloads, and limited social protections (Hafeez et al., 2023). Studies in Indonesia have highlighted additional stressors, such as intense competition among gig workers and dependence on platform algorithms, which exacerbate mental health challenges (Kadiyono et al., 2022; Habibi, 2025). A recent study by Singh et al. (2024) has found significant negative correlations between anxiety, job insecurity, workplace challenges, and well-being, indicating that higher stressors lead to lower well-being. These challenges are particularly pronounced in developing countries like Indonesia, where gig workers often lack access to formal safety nets, unlike their counterparts in developed nations (Newlin et al., 2024).

This study addresses these gaps by examining how work support enhances resilience among Indonesian gig workers through the mediating roles of job stress and health conditions, integrating Conservation of Resources Theory, Job Demands-Resources Model, and Social Support Theory in a culturally relevant framework. The purpose of this study is to investigate the mechanisms through which work support influences work resilience among gig workers in North Sumatra. Specifically, it aims to test a dual mediation model where job stress, mental health, and physical health mediate the relationship between work support and resilience. By focusing on North Sumatra's diverse gig workforce, this study seeks to provide practical insights for platform operators and policymakers to improve worker well-being, while contributing to a culturally sensitive understanding of resilience in the gig economy.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

Work Support on Work Resilience

The study integrates three key theories to understand resilience among gig workers: Conservation of Resources (COR) Theory, Job Demands-Resources (JD-R) Model, and Social Support Theory. COR Theory suggests that individuals strive to acquire and protect resources, and stress occurs when these resources are threatened or lost (Rai & Mukherjee, 2024). In the gig economy, resources like income stability and emotional support are critical for resilience. The JD-R Model posits that job resources buffer job demands to enhance outcomes like resilience (Demerouti & Bakker, 2023). Social Support Theory emphasizes the role of social networks in mitigating stress and fostering well-being (Caza et al., 2022). These theories are highly relevant to gig work in Indonesia, where workers face resource scarcity and rely on communal support systems like *gotong royong* (Parman et al., 2025). Together, they provide a framework to examine how work support influences resilience through stress and health conditions in North Sumatra's gig economy (Keith et al., 2020).

This integrated theoretical approach is particularly suited to the gig economy's unique challenges. According to Connor and Davidson (2003), resilience involves adapting to adversity, which is critical for gig workers facing unpredictable work conditions. In Indonesia, cultural factors like communal support amplify the role of social resources in building resilience (Juddi et al., 2025). These theories collectively highlight the importance of multidimensional support in mitigating stressors and enhancing health outcomes, providing a robust foundation for studying gig workers in a developing country context (Granger et al., 2022).

H1: Work support has a significant effect on work resilience.

Work Support on Job Stress, Mental Health, and Physical Health

Work support in the gig economy refers to multidimensional resources that sustain worker well-being and performance. According to Caza et al. (2022), work support includes viability support (financial stability), organizational support (fair platform policies), identity and relational support (community connections), emotional support, and career development support. These dimensions are crucial as gig workers often lack formal employment contracts, leading to income uncertainty and low financial stability (Bruckner & Forman, 2021; Abdullah et al., 2024). In Indonesia, platform policies and community networks play a significant role in addressing these challenges, yet studies show that inadequate support exacerbates stress and reduces well-being (Wendra et al., 2024; Juddi et al., 2025). Organizational support, such as transparent algorithms, can reduce feelings of powerlessness (Duggan et al., 2020). Emotional and relational support are particularly vital in Indonesia, where cultural practices emphasize social bonds (Parman et al., 2025). Research suggests that comprehensive support systems enhance mental and physical health, which in turn bolsters resilience (Kadiyono et al., 2022; Hafeez et al., 2023).

The impact of work support extends beyond individual well-being to organizational outcomes. According to Schulte et al. (2016), supportive work environments foster engagement, which is essential for gig workers to sustain performance under pressure. In Indonesia, platforms like ride-hailing services provide limited career development support, which can hinder long-term resilience (Puspitasari et al., 2025). By addressing these gaps, platforms can enhance worker loyalty and productivity, as seen in studies of digital economies (Ardiatama & Irmawati, 2025). Based on this, the following hypotheses are proposed:

H2: Work support has a significant effect on job stress.
H3: Work support has a significant effect on mental health.
H4: Work support has a significant effect on physical health.

The Determinants of Work Resilience

Job stress and health conditions significantly influence gig workers' resilience. According to Quick et al. (2016), job stress arises from psychophysiological reactions to imbalanced work demands, such as work uncertainty and overload, which are prevalent in gig work (Hafeez et al., 2023). In Indonesia, gig workers face additional stressors like algorithmic management and intense competition, which negatively impact their psychological and physical health (Habibi, 2025; Alauddin et al., 2025). Mental health reflects the ability to manage stress and maintain emotional stability, while physical health relates to the capacity to perform tasks without excessive strain (Singh et al., 2024). Research shows that high stress levels reduce resilience by depleting psychological resources, whereas good health enhances adaptive capacity (Kim et al., 2023; Lu et al., 2023). Studies in Indonesia highlight that poor mental health, driven by job insecurity, undermines workers' ability to recover from setbacks (Ardiatama & Irmawati, 2025).

Physical and mental health are critical for gig workers to maintain consistent performance. According to Kossek and Perrigino (2016), poor health conditions limit workers' ability to cope with job demands, particularly in high-pressure environments like the gig economy. In Indonesia, long working hours and lack of rest contribute to physical fatigue, reducing resilience (Faishal et al., 2025). Mental health challenges, such as anxiety from platform dependence, further exacerbate this issue (Khan et al., 2025). Addressing these health factors is essential for sustaining resilience in gig work. Thus, the following hypotheses are proposed:

H5: Job stress has a significant effect on work resilience.
H6: Mental health has a significant effect on work resilience.
H7: Physical health has a significant effect on work resilience.

Mediating Roles of Job Stress and Health Conditions

The relationship between work support and resilience is not solely direct but involves mediating pathways. According to Kadolkar (2024), job stress mediates the effect of work support on resilience by reducing the negative impact of stressors like income uncertainty and algorithmic pressures. In Indonesia, where gig workers often face high stress due to platform dependence, support systems can mitigate these effects, enhancing resilience (Faishal et al., 2025; Khan et al., 2025). Mental health also mediates this relationship, as support resources improve psychological well-being, which strengthens adaptive capacity (Lu et al., 2023; Wan et al., 2024). Physical health serves a similar role, as better support reduces physical strain, enabling workers to maintain performance under pressure (Kim et al., 2023). Research in Indonesia suggests that culturally relevant support, such as community-based resources, significantly enhances mental health outcomes (Dara et al., 2025).

The simultaneous mediation of stress and health reflects the complexity of gig work dynamics. According to Hayes (2022), multiple mediators can amplify the effect of resources on outcomes like resilience. In Indonesia, communal support systems like *gotong royong* enhance the mediating role of health by fostering a sense of belonging (Parman et al., 2025). This integrated mediation model is particularly relevant for gig workers who face unique stressors in developing economies (Duanguppama et al., 2025). These findings lead to the following hypotheses:

H8: Job stress mediates the relationship between work support and work resilience.
H9: Mental health mediates the relationship between work support and work resilience.
H10: Physical health mediates the relationship between work support and work resilience.
H11: Health conditions (job stress, mental health, physical health) simultaneously mediate the relationship between work support and work resilience.

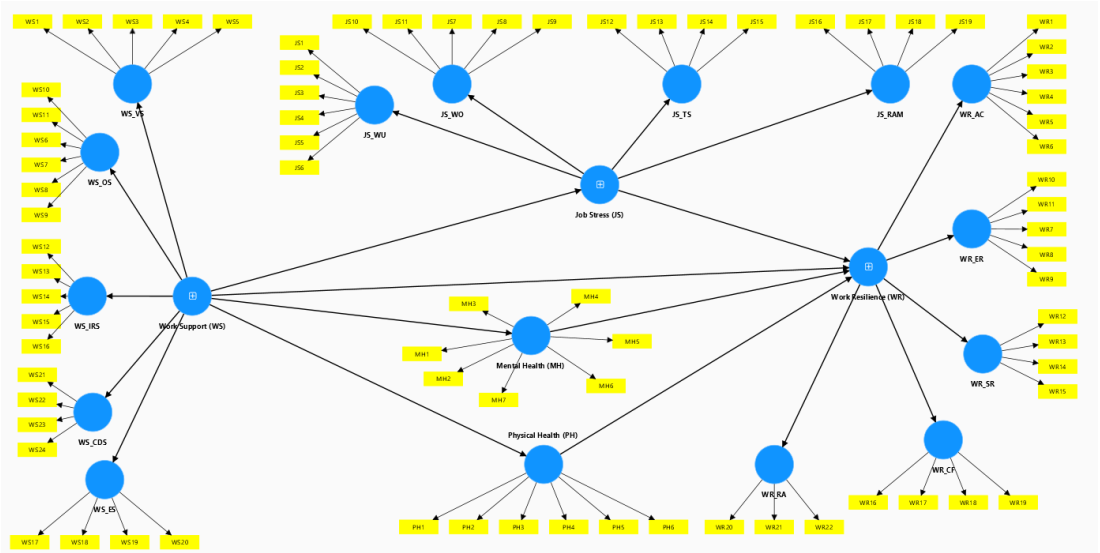

Figure 1. Conceptual Framework

This study proposes a dual mediation model to explain resilience among gig workers in North Sumatra, integrating COR Theory, JD-R Model, and Social Support Theory. According to Keith et al. (2020), combining these frameworks provides a comprehensive lens to understand how work support mitigates stress and enhances health to foster resilience. In the Indonesian context, this model is particularly relevant due to the reliance on informal support systems and the unique stressors of gig work (Supomo, 2024; Izza et al., 2024). The model posits that work support directly influences resilience while indirectly affecting it through job stress, mental health, and physical health. Figure 1 illustrates these relationships, showing direct paths from work support to resilience, stress, and health, and indirect paths through the mediators to resilience (Caza & Milton, 2012; Kašpárková et al., 2018). This framework addresses the research gap by examining the simultaneous mediation of multiple factors in a culturally sensitive context, offering insights into sustainable support systems for gig workers.

RESEARCH METHODS

This study employed a cross-sectional quantitative design with 387 gig workers in North Sumatra, selected via stratified random sampling to ensure job-type and demographic representation. The sample met SEM requirements with 38 indicators (Hair et al., 2021). Primary data were collected between January and April 2025 through an online survey distributed via mobile-friendly platforms, including WhatsApp groups and platform-specific forums commonly used by gig workers. To ensure accessibility, the online survey was distributed via mobile-friendly platforms, and participants were provided with brief training on how to complete it, addressing potential technological or literacy barriers (Creswell & Creswell, 2023).

The survey instruments included the Gig Work Support Scale to measure work support, the Depression, Anxiety, and Stress Scale (DASS-21) for job stress, and the Short Form Health Survey (SF-12) for mental and physical health, all adapted for the gig economy context. Work resilience was assessed using the Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003). All instruments were translated into Bahasa Indonesia using a back-translation procedure to ensure accuracy and cultural relevance. To mitigate response bias, participants received reminders and small incentives, such as mobile data credits, to encourage completion without coercion (Juddi et al., 2025). Ethical approval was obtained from the Institutional Review Board (IRB) of the University of North Sumatra, and informed consent was secured.

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software to test the hypothesized relationships (H1-H11). The analysis included assessing reliability, validity, and model fit, followed by path

analysis to examine direct and mediating effects. Common method variance was evaluated using Harman's single-factor test to ensure data integrity (Hair et al., 2021). The study controlled for demographic variables like age, gender, and job type to account for potential variations in resilience across different gig worker groups (Puspitasari et al., 2025). This comprehensive approach ensured a robust examination of the dual mediation model in the context of Indonesia's gig economy.

RESULTS

A total of 387 usable responses were obtained from gig workers across North Sumatra, representing a response rate of 78.4% from the targeted 494 contacted participants. To provide a comprehensive understanding of the sample composition and ensure representativeness across different gig work categories, detailed demographic characteristics were analyzed and are presented in Table 1.

Table 1. Sample Demographics

Characteristic	Category	Frequency	Percentage
Age Group	18-25 years	142	36.7%
	26-35 years	158	40.8%
	36-45 years	63	16.3%
	>45 years	24	6.2%
Gender	Male	267	69.0%
	Female	120	31.0%
Education	High School	189	48.8%
	Diploma	94	24.3%
	Bachelor's	89	23.0%
	Master's+	15	3.9%
Type of Gig Work	Transportation (ride-hailing)	156	40.3%
	Food delivery	98	25.3%
	Freelance services	78	20.2%
	E-commerce/marketplace	55	14.2%
Work Intensity	Full-time (>30 hrs/week)	245	63.3%
	Part-time (<30 hrs/week)	142	36.7%
Experience	<1 year	89	23.0%
	1-3 years	187	48.3%
	>3 years	111	28.7%
Location	Medan Metro	234	60.5%
	Secondary cities	98	25.3%
	Suburban/rural	55	14.2%

The sample predominantly consisted of young to middle-aged workers (77.5% under 36 years), with a male majority (69.0%) reflecting the demographic patterns typical of gig work in Indonesia. Transportation services represented the largest category (40.3%), followed by food delivery (25.3%). Most participants (63.3%) engaged in gig work as their primary income source.

Prior to testing the structural relationships, descriptive statistics were computed for all study variables to examine their distributions and assess the strength and direction of bivariate relationships. The means, standard deviations, and intercorrelations among the key constructs provide essential preliminary insights into the data characteristics and support the subsequent structural equation modeling analysis. Table 2 presents the comprehensive descriptive statistics and correlation matrix for all study variables.

The results indicate moderate to high levels of job stress (M = 5.237, SD = 1.039) among gig workers, while work support levels were above moderate (M = 5.722, SD = 0.874). Work resilience showed above-average levels (M = 5.461, SD = 0.970). Mental health (M = 5.176, SD = 1.173) and physical health (M = 5.186, SD = 1.171) both showed moderate levels. All correlations were in the expected directions, with work support positively correlated with health conditions and work resilience, while negatively correlated with job stress.

Table 2. Descriptive Statistics and Correlation Matrix

Variable	M	SD	1	2	3	4	5	6
1. WS	5.722	0.874	(0.956)					
2. JS	5.237	1.039	-0.578**	(0.959)				
3. MH	5.176	1.173	0.409**	-0.209**	(0.917)			
4. PH	5.186	1.171	0.423**	-0.210**	0.476**	(0.903)		
5. WR	5.461	0.970	0.640**	-0.523**	0.706**	0.707**	(0.953)	
6. Age	29.37	8.194	0.182**	-0.124*	0.153**	0.087	0.219**	-

*Note: N = 387. M = Mean, SD = Standard Deviation. Values in parentheses on the diagonal represent Cronbach's alpha coefficients. WS = Work Support, JS = Job Stress, MH = Mental Health, PH = Physical Health, WR = Work Resilience. *p < 0.05, **p < 0.01*

Following established procedures for PLS-SEM analysis, the measurement model was assessed for reliability and validity before proceeding to structural model evaluation. This assessment involved examining factor loadings, internal consistency reliability, convergent validity, and discriminant validity for all constructs. The comprehensive evaluation ensures that the measurement instruments accurately capture the intended theoretical constructs. Table 3 presents the detailed reliability and validity assessment results for all first-order constructs.

Table 3. Reliability and Validity Assessment

Construct	Items	Cronbach's α	CR	AVE	Factor Loadings Range
Work Support (WS)					
Viability Support (VS)	5	0.886	0.918	0.692	0.726-0.897
Organizational Support (OS)	6	0.899	0.924	0.671	0.703-0.911
Identity & Relational Support (IRS)	5	0.891	0.921	0.700	0.727-0.889
Emotional Support (ES)	4	0.784	0.861	0.607	0.770-0.803
Career Development Support (CDS)	4	0.904	0.933	0.776	0.832-0.904
Overall WS	24	0.873	0.911	0.689	0.752-0.881
Job Stress (JS)					
Work Uncertainty (WU)	6	0.949	0.959	0.797	0.916-0.927
Work Overload (WO)	5	0.905	0.930	0.725	0.840-0.865
Technology Stress (TS)	4	0.904	0.933	0.776	0.861-0.930
Role Ambiguity (RAm)	4	0.917	0.941	0.801	0.848-0.932
Overall JS	19	0.919	0.941	0.775	0.866-0.914
Mental Health (MH)	7	0.917	0.934	0.668	0.780-0.842
Physical Health (PH)	6	0.903	0.925	0.674	0.781-0.851
Work Resilience (WR)					
Adaptive Capacity (AC)	6	0.929	0.944	0.739	0.838-0.893
Emotional Regulation (ER)	5	0.918	0.939	0.754	0.822-0.920
Social Resourcefulness (SR)	4	0.873	0.913	0.724	0.832-0.865
Cognitive Flexibility (CF)	4	0.901	0.931	0.771	0.857-0.907
Recovery Ability (RA)	3	0.864	0.917	0.786	0.875-0.897
Overall WR	22	0.897	0.929	0.755	0.845-0.896

Note: CR = Composite Reliability, AVE = Average Variance Extracted.

All constructs demonstrated adequate reliability (α > 0.78) and Composite Reliability (CR > 0.85). Average Variance Extracted (AVE) values exceeded the minimum threshold of 0.60 for all constructs, supporting convergent validity. Factor loadings ranged from 0.75 to 0.89, all exceeding the recommended minimum of 0.60. Figure 2 illustrates the factor loadings, all exceeding 0.70, confirming that the measurement model was robust and suitable for testing the structural model.

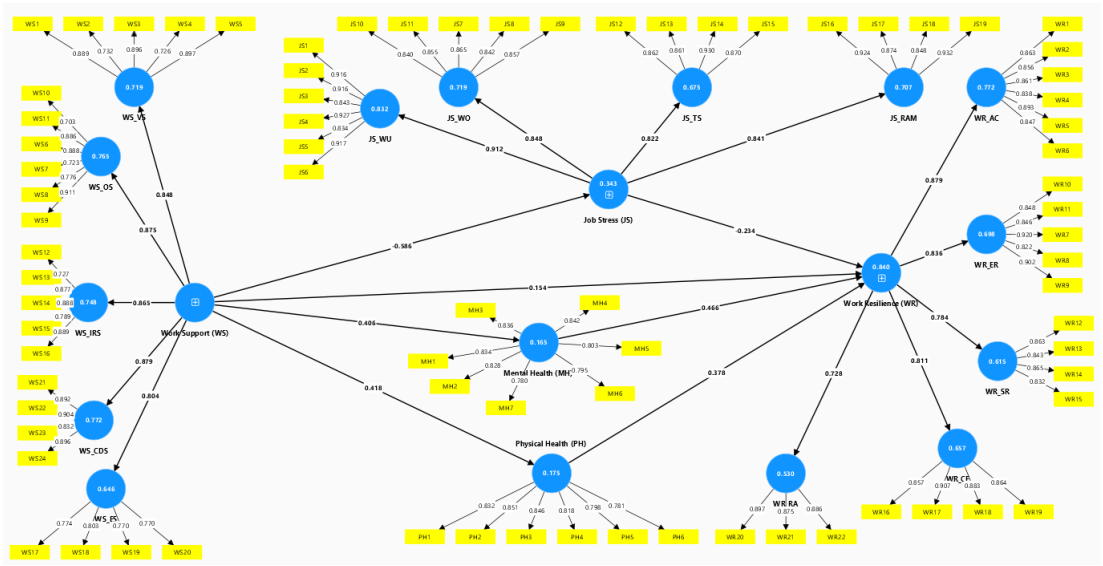

Figure 2. Outer Model

Before examining the structural relationships, the overall model fit was evaluated to ensure that the hypothesized model adequately represents the observed data. Multiple fit indices were examined to provide a comprehensive assessment of model adequacy, following recommendations for PLS-SEM evaluation. The model fit assessment confirms whether the theoretical framework appropriately captures the relationships among the constructs. The model fit indices indicate that the hypothesized model provides an acceptable to excellent fit to the data, supporting the appropriateness of the theoretical framework. Figure 3 illustrates the bootstrapping model for mediation paths, showing significant indirect effects through all mediators.

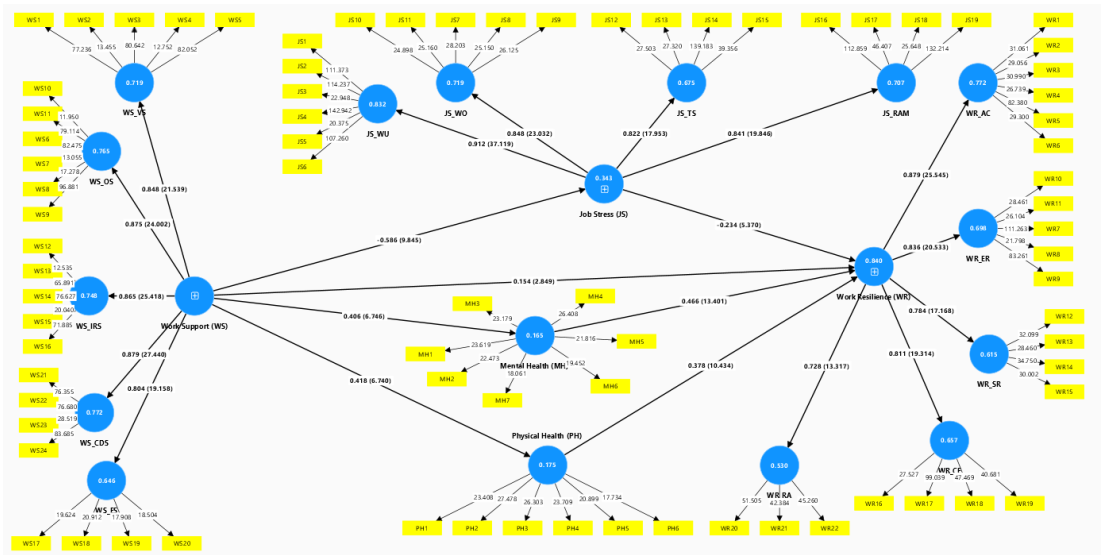

Figure 3. Bootstrapping Model

Following the establishment of adequate model fit, the structural relationships were examined to test the proposed hypotheses. The path analysis provides empirical evidence for the direct effects hypothesized in the theoretical model, including the relationships between work support, job stress, and work resilience. Standardized path coefficients, significance levels, and effect sizes were evaluated to determine hypothesis support. The direct effects testing results are presented in Table 4.

Table 4. Direct Effects and Hypothesis Testing

Hypothesis	Path	B	S.E.	C.R.	p-value	F-Square	Decision
H1	WS → WR	0.154	0.054	2.849	0.005	0.079	Supported
H2	WS → JS	-0.586	0.060	9.845	<0.001	0.523	Supported
H3	WS → MH	0.406	0.034	6.543	<0.001	0.197	Supported
H4	WS → PH	0.418	0.058	6.799	<0.001	0.212	Supported
H5	JS → WR	-0.234	0.044	5.370	<0.001	0.223	Supported
H6	MH → WR	0.466	0.040	12.955	<0.001	0.976	Supported
H7	PH → WR	0.378	0.060	10.107	<0.001	0.632	Supported

Note: β = Standardized path coefficient, S.E. = Standard Error, C.R. = Critical Ratio.

Direct effects were tested to evaluate H1-H7, as presented in Table 4. Work support had a significant positive effect on work resilience (β = 0.154, p = 0.005), supporting H1. Work support negatively affected job stress (β = -0.586, p < 0.001), supporting H2, and positively affected mental health (β = 0.406, p < 0.001) and physical health (β = 0.418, p < 0.001), supporting H3 and H4. Job stress negatively affected work resilience (β = -0.234, p < 0.001), supporting H5. Mental health (β = 0.466, p < 0.001) and physical health (β = 0.378, p < 0.001) positively affected work resilience, supporting H6 and H7. These findings confirm the direct relationships in the model, with work support playing a pivotal role in reducing stress and enhancing health outcomes among gig workers in North Sumatra (Wendra et al., 2024).

To examine the indirect effects proposed in the theoretical model, mediation analysis was conducted using bootstrapping procedures with bias-corrected confidence intervals. This analysis tests whether job stress and health conditions serve as significant mediating mechanisms in the relationship between work support and work resilience. The mediation analysis provides insights into the pathways through which work support influences worker resilience. The comprehensive mediation analysis results are detailed in Table 5.

Table 5. Mediation Analysis Results

Hypothesis	Indirect Path	Point Estimate	Boot S.E.	95% CI Lower	95% CI Upper	t-stat	VAF (%)	Decision
H8	WS → JS → WR	0.137	0.037	0.065	0.209	3.718	47.13	Supported
H9	WS → MH → WR	0.189	0.031	0.128	0.250	6.130	55.18	Supported
H10	WS → PH → WR	0.158	0.030	0.099	0.217	5.265	50.67	Supported
H11	WS → (JS, MH, PH) → WR	0.484	0.040	0.406	0.562		75.90	Supported

Note: Boot S.E. = Bootstrap Standard Error, CI = Confidence Interval, VAF = Variance Accounted For.

Mediation analyses were conducted to test H8-H11, with results shown in Table 5. All mediation hypotheses were supported, as the 95% confidence intervals did not include zero. Job stress partially mediated the relationship between work support and work resilience (indirect effect = 0.137, CI: 0.065-0.209, VAF = 47.13%). Mental health conditions also significantly mediated this relationship (indirect effect = 0.189, CI: 0.128-0.250, VAF = 55.18%), as did physical health conditions (indirect effect = 0.158, CI: 0.099-0.217, VAF = 50.67%).

To provide a comprehensive understanding of the complex mediation pathways in the theoretical model, multiple mediation analysis was conducted to examine the simultaneous operation of all proposed mediators. This analysis reveals the relative importance of different mediation pathways and quantifies the total indirect effects operating through the combined mediating mechanisms. Job stress and health conditions simultaneously mediate the relationship between work support and work resilience. The total indirect effect was significant (0.484, CI: 0.406-0.562), indicating that 75.90% of the

total effect of work support on work resilience was mediated through the combined effects of job stress and health conditions.

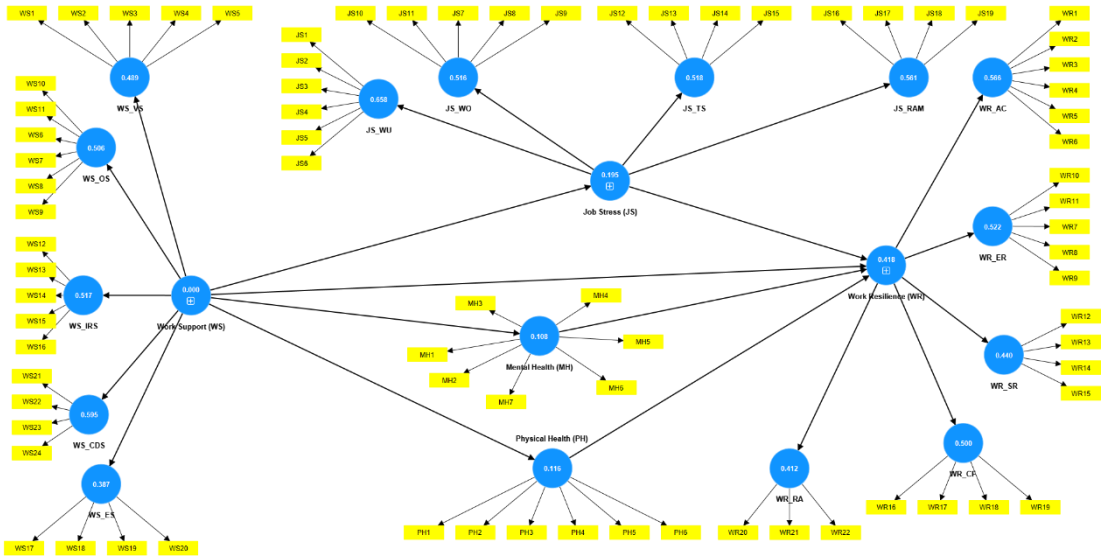

Figure 4. Blindfolding Result

To enhance interpretability, a path diagram was created to visualize the mediation model. Figure 4 illustrates the direct and indirect paths from work support to work resilience via job stress, mental health, and physical health. The diagram shows standardized path coefficients, with significant paths ($p < 0.001$) marked, providing a clear representation of the model's relationships.

Table 6. Variance Explained (R^2)

Dependent Variable	R^2	Adjusted R^2	Q^2	Contributing Predictors
JS	0.343	0.342	0.195	WS
MH	0.165	0.163	0.108	WS
PH	0.175	0.173	0.116	WS
WR	0.840	0.838	0.418	WS, JS, MH, PH

Note: Q^2 values > 0 indicate predictive relevance.

To assess the practical significance of the findings and understand the explanatory power of the theoretical model, variance explained (R^2) and predictive relevance (Q^2) were examined for all endogenous constructs. These measures provide insights into the model's ability to explain and predict the outcome variables, demonstrating the substantive importance of the relationships identified. The variance explained and predictive relevance results are summarized in Table 6.

The model explained substantial variance in work resilience (84.0%), with moderate to large effect sizes according to Cohen's (1988) guidelines. Work support accounted for 34.3% of the variance in job stress, 16.5% of the variance in mental health, and 17.5% of the variance in physical health, while the combined model explained significant variance in all outcome variables. All Q^2 values were positive, indicating good predictive relevance.

Additional analyses were conducted to ensure robustness. Controlling for demographic variables showed no significant changes in the results, indicating that the model was stable across different gig worker groups. Common method variance was tested using Harman's single-factor test, which showed that no single factor accounted for more than 50% of the variance, confirming minimal bias. These checks strengthen the reliability of the findings, particularly in the context of North Sumatra's diverse gig workforce. The results collectively support the dual mediation model, highlighting the critical role of work support in promoting resilience by reducing stress and improving health.

DISCUSSION

This study confirms that work support significantly enhances work resilience among gig workers in North Sumatra, Indonesia, through direct and mediated pathways, as hypothesized in H1-H11. The findings align with the Conservation of Resources (COR) Theory, which posits that resources like work support mitigate stress and bolster resilience (Rai & Mukherjee, 2024). The strong direct effect of work support on resilience (H1) supports prior research indicating that resources like fair platform policies and community support enhance adaptive capacity (Caza et al., 2022). According to Scott et al. (2024), supportive environments are particularly critical in high-pressure settings like the gig economy, where workers face income uncertainty and algorithmic pressures. In Indonesia, cultural practices like *gotong royong* amplify the role of relational support, making these findings contextually significant (Parman et al., 2025). The negative effect of work support on job stress (H2) and its positive effects on mental and physical health (H3, H4) further highlight the multifaceted role of support in improving well-being. Fiers (2024) also highlights that digital skills serve as a critical non-material resource for gig workers, enabling them to manage platform disruptions and reinforce resilience.

The mediation analyses (H8-H11) reveal that job stress, mental health, and physical health mediate the relationship between work support and resilience, explaining 75.90% of the effect. These results are consistent with the Job Demands-Resources (JD-R) Model, which emphasizes that resources reduce stress and enhance health outcomes (Demerouti & Bakker, 2023). According to Arji et al. (2023), job stress mediates the impact of workplace resources on performance, a pattern evident among Indonesian gig workers facing platform-driven stressors. The simultaneous mediation (H11) underscores the interconnectedness of these factors, particularly in North Sumatra's competitive gig economy (Habibi, 2025). The findings extend previous studies by integrating Social Support Theory, showing that community-based support in Indonesia mitigates the negative effects of stress and health challenges (Juddi et al., 2025). Similarly, Ray (2024) demonstrates that socio-spatial informal networks play a crucial role in coping with precarity among platform drivers in India, underscoring the value of communal and relational support in developing economies.

The study's focus on North Sumatra highlights unique regional dynamics, such as the reliance on digital platforms and informal support systems, which differ from Western contexts. According to Khan et al. (2024), gig workers in developing countries face distinct challenges like limited access to formal safety nets, making localized support critical. These findings contrast with studies in developed nations, where formal protections are more common (Newlin et al., 2024). Wood and Lehdonvirta (2023) further emphasize that reputational instability and recognition struggles are central to the experiences of remote gig workers, linking directly to the psychological health dimension highlighted in this study. The cross-sectional design limits causal inferences, and self-reported measures may introduce bias, suggesting the need for longitudinal studies and objective health assessments in future research (Creswell & Creswell, 2023). Future studies could explore variations across gig worker types, such as ride-hailing drivers versus freelancers, to uncover specific support needs (Duanguppama et al., 2025).

These findings offer significant implications for theory and practice. Theoretically, the study advances the integration of COR, JD-R, and Social Support Theory by demonstrating their applicability in a developing country context, particularly through the simultaneous mediation of stress and health. Incorporating insights from Fiers (2024), Ray (2024), and Wood and Lehdonvirta (2023) strengthens this contribution by showing that digital skills, informal networks, and reputational stability are complementary resources shaping resilience in diverse gig work settings. Practically, platform operators in Indonesia should implement transparent algorithms to reduce stress, as suggested by Kadolkar (2024). Policymakers can develop community-based programs leveraging *gotong royong* to enhance mental health support, such as peer networks for gig workers. Additionally, platforms should offer health-focused initiatives, like subsidized medical check-ups, to improve physical health and resilience. These interventions can enhance

worker well-being and productivity, contributing to a sustainable gig economy in North Sumatra and beyond.

CONCLUSION

This study highlights the critical role of work support in enhancing work resilience among gig workers in North Sumatra, Indonesia. The findings confirm that work support directly improves resilience and indirectly influences it through reduced job stress and improved mental and physical health, as shown in the dual mediation model (H1-H11). The strong explanatory power of the model, as seen in Table 9, underscores the importance of comprehensive support systems in addressing the unique challenges of gig work, such as income uncertainty and platform dependence. These results emphasize that fostering resilience in the gig economy requires addressing both workplace stressors and health conditions, particularly in a culturally rich context like Indonesia, where community-based support plays a significant role. Theoretically, this study contributes to resilience and gig economy literature by emphasizing the integration of workplace support with health-related and stress-related mechanisms, while also highlighting the significance of community-based support in developing country contexts such as Indonesia.

Practically, the study offers important implications for platform operators and policymakers. Transparent platform policies and community-based support programs, such as peer networks rooted in *gotong royong*, can reduce stress and enhance health, thereby boosting resilience. Health-focused initiatives, like subsidized medical check-ups, can further support gig workers' well-being. However, the cross-sectional design limits causal conclusions, and self-reported measures may introduce bias. Future research should use longitudinal designs to establish causality and include objective health assessments to strengthen findings. Exploring differences across gig worker types, such as ride-hailing drivers versus freelancers, could also provide deeper insights into tailored support strategies for Indonesia's diverse gig economy.

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REFERENCES

[1] Abdullah, N., Ismail, M. M., Murad, M. S. H., & Salah, M. (2024). Critical insights into gig economy: A Peninsular Malaysia case study. *Jambe Law Journal, 7*(1), 45–62.

[2] Alauddin, F. D. A., Aman, A., Ghazali, M. F., & Daud, S. (2025). The influence of digital platforms on gig workers: A systematic literature review. *Heliyon, 11*(1), 1–15.

[3] Ardiatama, F. R., & Irmawati, I. (2025). Analisis pengaruh gig economy dan mindfulness terhadap loyalitas pekerja melalui mediasi kesejahteraan. *Paradoks: Jurnal Ilmu Ekonomi, 8*(1), 593–620.

[4] Arji, S., Elhaddadi, M., Ahami, A. O. T., & Ziri, R. (2023). Work stress among workers of a Moroccan company. *Acta Neuropsychologica, 21*(3), 315–325.

[5] Board of Governors of the Federal Reserve System. (2023). *Report on the economic well-being of U.S. households in 2022 - May 2023*. Washington, DC: Federal Reserve Board.

[6] Bruckner, C. L., & Forman, J. B. (2021). Shoring up shortfalls: Women, retirement, and the growing gig economy. *Journal of Retirement, 8*(3), 23–35.

[7] Caza, B. B., & Milton, L. P. (2012). Resilience at work: Building capability in the face of adversity. In K. S. Cameron & G. M. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 895–908). New York, NY: Oxford University Press.

[8] Caza, B. B., Reid, E. M., Ashford, S. J., & Granger, S. (2022). Working on my own: Measuring the challenges of gig work. *Human Relations, 75*(2), 262–289.

[9] Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

[10] Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety, 18*(2), 76–82.

[11] Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Thousand Oaks, CA: SAGE Publications.

[12] Dara, D., Febriantina, S., & Suwatno, S. (2025). Enhancing well-being in hybrid work: The crucial role of organizational support for Indonesia's State Civil Apparatus. *Cogent Psychology, 12*(1), 245-264.

[13] Demerouti, E., & Bakker, A. (2023). Job demands-resources theory in times of crises: New propositions. *Organizational Psychology Review, 13*(3), 209–236.

[14] Duanguppama, S., Jadesadalug, V., & Ponchaitiwat, K. (2025). Influence of employee well-being and work flexibility on innovative work behavior and job performance: A comparative study of full-time and gig workers in digital business. *Tourism and Hospitality, 6*(4), 166–180.

[15] Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020). Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal, 30*(1), 114–132.

[16] Faishal, N. M., Aftan, M. W., Anisa, N., Noerrahmat, P. N. P., & Syihabudin, Q. S. (2025). Flexible work and job design for stress management in changing work environments. *OIKOS, 17*(2), 267–284.

[17] Fiers, F. (2024). Resilience in the gig economy: digital skills in online freelancing. *Journal of Computer-Mediated Communication*, *29*(5), 10-14.

[18] Granger, S., Barker Caza, B., Ashford, S. J., & Reid, E. M. (2022). Adapting to a jolt: A mixed methods study identifying challenges and personal resources impacting professional gig workers' well-being during COVID-19. *Journal of Vocational Behavior, 136*(1), 10-37.

[19] Habibi, J. (2025). Faktor psikososial dan kesejahteraan mental pengemudi ojek online di Bengkulu: Studi mixed-methods tentang beban kerja, dukungan sosial, dan dinamika ekonomi. *Journal of Nursing and Public Health, 13*(1), 326–333.

[20] Hafeez, S., Gupta, C., & Sprajcer, M. (2023). Stress and the gig economy: It's not all shifts and giggles. *Industrial Health, 61*(4), 211–220.

[21] Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Thousand Oaks, CA: SAGE Publications.

[22] Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). New York, NY: Guilford Press.

[23] Izza, A., Indarto, I., & Albert, A. (2024). The mediation role of self-efficacy on innovative work behavior. *Jurnal Ilmiah Manajemen Kesatuan, 12*(6), 2349–2360.

[24] Juddi, M. F., Aprianti, A., & Hameed, R. A. (2025). Understanding communication patterns in coping with stress in Indonesia's gig economy. *Jurnal Kajian Komunikasi, 13*(1), 74–96.

[25] Kadiyono, A. L., Moningka, C., Kuntari, C. I. S. R., Dwijayanthy, M., Indrianie, E., Theresia, E., ... & SeTin, S. (2022). *Kesiapan untuk menghadapi tantangan dunia kerja*. Yogyakarta: Zahir Publishing.

[26] Kadolkar, A. (2024). Algorithmic management in the gig economy: A systematic review and research integration. *Journal of Organizational Behavior, 45*(6), 847–871.

[27] Kašpárková, L., Vaculík, M., Procházka, J., & Schaufeli, W. B. (2018). Why resilient workers perform better: The roles of job satisfaction and work engagement. *Journal of Workplace Behavioral Health, 33*(1), 43–62.

[28] Keith, M. G., Harms, P. D., & Long, A. C. (2020). Worker health and well-being in the gig economy: A proposed framework and research agenda. In P. L. Perrewé, P. D. Harms, & C.-H. Chang (Eds.), *Entrepreneurial and small business stressors, experienced stress, and well-being* (pp. 25–54). Bingley, UK: Emerald Publishing Limited.

[29] Khan, M. U., Ali, A., & Sheraz, F. (2025). The effect of gig work on employee well-being: Mediating role of workplace flexibility. *Journal of Management Science Research Review, 4*(2), 1–15.

[30] Khan, N. A., Zhang, J., & Akhtar, M. (2024). Gig work self-efficacy and its effects on flexibility, career adaptability, and adoption in the metaverse: A moderated mediation model. *International Journal of Human–Computer Interaction, 40*(21), 6813–6824.

[31] Kim, M.-S., Oh, J., Sim, J., & Yoon, J.-H. (2023). Association between exposure to violence, job stress and depressive symptoms among gig economy workers in Korea. *Annals of Occupational and Environmental Medicine, 35*(1), 42-51.

[32] Klein, B. (2024). Gig work: Does it get you more happiness? *Managerial and Decision Economics, 45*(3), 1523–1542.

[33] Kossek, E. E., & Perrigino, M. B. (2016). Resilience: A review using a grounded integrated occupational approach. *Academy of Management Annals, 10*(1), 729–797.

[34] Lu, Z., Wang, S., Ling, W., & Guo, Y. (2023). Gig work and mental health during the Covid-19 pandemic: A gendered examination of comparisons with regular employment and unemployment. *Social Science and Medicine, 321*(1), 11-23.

[35] Newlin, B. A., Filetti, M., & Chaves, J. B. (2024). Gig work. In *Elgar encyclopedia of occupational health psychology*. Cheltenham, UK: Edward Elgar Publishing.

[36] Parman, P., Shafar, M. U., & Putri, D. S. A. A. (2025). Balancing the scales: The role of work-life balance and technological support in enhancing gig worker productivity in Indonesia. *The South East Asian Journal of Management, 19*(1), 72–99.

[37] Puspitasari, A., Redjeki, S., & Wulandari, S. (2025). The gig economy in the digital era and employment opportunities: A case study of alumni from SMK Mambaul Ulum Sukowono Jember. *Jurnal Pendidikan Ekonomi (JURKAMI), 10*(2), 563–572.

[38] Quick, J. C., Macik-Frey, M., & Nelson, D. L. (2016). Job stress. In *The curated reference collection in neuroscience and biobehavioral psychology* (pp. 1–8). Amsterdam: Elsevier.

[39] Rai, S., & Mukherjee, S. (2024). Career threat adaptability of gig workers: An integrative conceptual framework. *Current Psychology, 43*(15), 11688–11703.

[40] Ray, A. (2024). Coping with crisis and precarity in the gig economy:'Digitally organised informality', migration and socio-spatial networks among platform drivers in India. *Environment and Planning A: Economy and Space*, *56*(4), 1227-1244.

[41] Schulte, E.-M., Gessnitzer, S., & Kauffeld, S. (2016). I—we—my organization will survive it! The questionnaire to measure individual, team and organizational resilience (FITOR). *Gruppe. Interaktion. Organisation., 47*(1), 3–15.

[42] Scott, B. A., et al. (2024). Work-related resilience, engagement and wellbeing among music industry workers during the Covid-19 pandemic: A multiwave model of mindfulness and hope. *Stress and Health, 40*(2), 34-66.

[43] Singh, R., Sharma, A., Gupta, N., & Kushwaha, R. (2024). Anxiety, mental health, job insecurity and workplace challenges: Exploring the well-being of women gig workers in the gig economy. *Mental Health and Social Inclusion, 29*(4), 362-381.

[44] Supomo, S. (2024). The role of knowledge sharing, job stress, mutations and motivation in improving employee performance. *Jurnal Ilmiah Manajemen Kesatuan, 12*(3), 841–848.

[45] Wan, Z., Zhang, L., Wang, L., & Zhang, F. (2024). Navigating autonomy: Unraveling the dual influence of job autonomy on workplace well-being in the gig economy. *Frontiers in Psychology, 15*(2), 13-28.

[46] Wendra, W., Siregar, D. D., & Abd Samad, K. (2024). The truth about thriving gig workers: Why job demands and coping mechanisms are not enough? *JEMA: Jurnal Ilmiah Bidang Akuntansi dan Manajemen, 21*(2), 227–259.

[47] Wood, A. J., & Lehdonvirta, V. (2023). Platforms disrupting reputation: Precarity and recognition struggles in the remote gig economy. *Sociology*, *57*(5), 999-1016.

[48] Wu, D., & Huang, J. L. (2024). Gig work and gig workers: An integrative review and agenda for future research. *Journal of Organizational Behavior, 45*(1), 3–20.