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Profiling Mental Health among Gig Workers: Psychological Characteristics and Risk Factors

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Abstrak

Perkembangan ekonomi gig telah mengubah pola kerja dengan menawarkan fleksibilitas dan otonomi, namun sekaligus menghadirkan risiko psikososial yang khas. Penelitian ini bertujuan mengidentifikasi profil kesehatan mental pekerja gig serta karakteristik psikologis dan faktor risiko pada setiap profil. Penelitian kuantitatif potong lintang melibatkan 387 pekerja gig dari sektor pekerja lepas daring, pengantaran makanan, dan transportasi berbasis aplikasi. Data dikumpulkan menggunakan skala penilaian kesehatan mental pekerja gig yang mencakup sepuluh dimensi, kemudian dianalisis melalui pengelompokan dua tahap dan pengelompokan K-means. Diperoleh lima profil, yaitu Resilient (32,0%), Moderately Engaged (28,7%), At-Risk (21,5%), Vulnerable (13,5%), dan Severely Distressed (4,3%). Perbedaan signifikan ditemukan pada stres finansial, ketidakamanan kerja, beban kerja, ketidakpastian kerja, isolasi sosial, dan akses dukungan psikologis. Stres finansial menunjukkan hubungan bivariat terkuat dengan distres psikologis. Temuan menegaskan bahwa pekerja gig merupakan populasi yang heterogen sehingga dukungan kesehatan mental perlu dibedakan berdasarkan profil kerentanan.
Kata kunci: pekerja gig; kesehatan mental; profiling psikologis; stres kerja; ketidakamanan kerja; kerentanan psikologis.

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Abstract

The expansion of the gig economy has transformed contemporary employment by providing flexibility and autonomy while simultaneously exposing workers to distinctive psychosocial risks. This study aimed to identify distinct mental health profiles among gig workers and examine the psychological characteristics and risk factors associated with each profile. A cross-sectional quantitative study involved 387 gig workers from online freelancing, food delivery, and ride-hailing. Data were collected using the Mental Health Assessment Scale for Gig Workers, a 48-item instrument covering ten psychological and occupational dimensions. A two-stage clustering procedure followed by K-means clustering identified five profiles: Resilient (32.0%), Moderately Engaged (28.7%), At-Risk (21.5%), Vulnerable (13.5%), and Severely Distressed (4.3%). Significant differences were found in financial stress, job insecurity, workload, work uncertainty, social isolation, and access to psychological support. Financial stress showed the strongest bivariate association with psychological distress. The findings demonstrate substantial heterogeneity in gig worker mental health and support the use of profile-based approaches for differentiated prevention, early intervention, and psychological support.

Keywords: *Gig Workers; Mental Health; Psychological Profiling; Occupational Stress; Job Insecurity; Psychological Vulnerability.*

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INTRODUCTION

The growth of digital platforms has fundamentally transformed the organization of work. Employment is increasingly mediated through platforms that connect workers with customers, clients, and task opportunities without necessarily establishing conventional long-term employment relationships. This transformation has contributed to the expansion of gig work, including online freelancing, ride-hailing, food delivery, and other forms of task-based employment.

Gig work offers several potential advantages. Workers may experience greater flexibility in determining their working hours, selecting tasks, and combining multiple sources of income. Nevertheless, flexibility may coexist with substantial occupational insecurity. Research on platform-mediated work has highlighted the role of algorithmic management, performance monitoring, unpredictable work allocation, and weak employment protections in shaping workers' experiences. Duggan et al. (2020), for example, describe algorithmic management as an important mechanism through which platform work is organized and controlled.

The relationship between gig work and psychological well-being is therefore complex. Autonomy and flexibility may provide workers with a sense of control, while unstable income, irregular working hours, excessive workload, and algorithmic control may generate psychological strain. Wood et al. (2019), based on research involving remote gig workers in Southeast Asia and Sub-Saharan Africa, similarly identified a combination of flexibility and autonomy alongside low pay, social isolation, irregular working hours, overwork, sleep deprivation, and exhaustion.

From an occupational mental health perspective, these conditions are important because psychological outcomes do not necessarily arise from a single occupational stressor. Workers may simultaneously experience financial pressure, uncertainty regarding future work, high workload, and limited access to social or psychological resources. Conversely, some workers may possess stronger resilience, emotional regulation, and social support that buffer the psychological consequences of occupational demands.

The Job Demands–Resources framework provides a useful theoretical perspective for understanding this complexity. The framework proposes that employee well-being is influenced by the balance between job demands and available resources, with resources potentially buffering the negative consequences of occupational demands (Bakker & Demerouti, 2017). In gig work, financial uncertainty, workload, and job insecurity can be conceptualized as demands, whereas resilience, social support, perceived control, and access to psychological resources may function as protective resources.

Despite increasing scholarly interest in gig work, many studies continue to examine psychological outcomes at the aggregate level. Such an approach may obscure important differences among individual workers. Two workers operating under similar occupational conditions may demonstrate very different psychological outcomes because they possess different psychological resources and coping capacities.

A person-centered profiling approach provides an alternative. Rather than asking only whether gig workers experience high or low mental health, profiling seeks to identify groups of individuals characterized by distinct combinations of psychological characteristics and risk factors. This approach is particularly relevant to gig work because occupational arrangements, socioeconomic circumstances, and psychological resources can vary substantially across workers.

Accordingly, the present study investigates mental health heterogeneity among gig workers. Specifically, the study aims to identify distinct mental health profiles, describe the psychological characteristics associated with each profile, examine differences in occupational and psychosocial risk factors across profiles, and identify factors that distinguish relatively resilient workers from psychologically vulnerable workers. The study addresses three questions: What distinct psychological profiles characterize gig workers? How do psychological and occupational risk factors differ across the identified profiles? Which factors are most strongly associated with psychological vulnerability among gig workers? The contribution of this study lies

in moving beyond a homogeneous conceptualization of gig workers and providing an empirically derived profile of mental health vulnerability.

RESEARCH METHODS

This study employed a cross-sectional quantitative descriptive design using a person-centered profiling approach. Cluster analysis was used to identify groups of gig workers who demonstrated similar configurations of psychological characteristics and occupational risk factors. The design was selected because the primary objective was not to establish causal relationships but to identify meaningful patterns of mental health heterogeneity within the gig worker population.

Participants were 387 gig workers recruited from three major sectors: online freelancing (44%), food delivery (32%), and ride-hailing (24%). Participants met four inclusion criteria: aged 18 years or older; at least six months of gig work experience; gig work identified as the primary source of income; and voluntary informed consent.

Tabel 1. Karakteristik Partisipan

Karakteristik	Kategori	n (%)
Gender	Male	287 (74.2%)
	Female	100 (25.8%)
Age	Mean ± SD	31.4 ± 8.2
Education	< High school	89 (23.0%)
	High school	156 (40.3%)
	College+	142 (36.7%)
Gig work duration	<1 year	76 (19.6%)
	1–3 years	198 (51.2%)
	>3 years	113 (29.2%)
Weekly working hours	Mean ± SD	48.3 ± 15.6
Monthly income	< USD 500	134 (34.6%)
	USD 500–1,000	186 (48.1%)
	> USD 1,000	67 (17.3%)

The sample was predominantly male (74.2%), with a mean age of 31.4 years. More than half of the participants (51.2%) had between one and three years of gig work experience. Average reported working time was 48.3 hours per week.

Mental health was assessed using the Mental Health Assessment Scale for Gig Workers. The instrument consists of 48 items organized into ten dimensions: psychological well-being, perceived stress, emotional regulation, resilience, social support, work-related uncertainty, financial stress, workload, job insecurity, and access to psychological support. Psychological well-being was assessed through life satisfaction, purpose, and positive affect; perceived stress included worry, pressure, and coping capacity; emotional regulation represented emotional control and affect modulation; resilience reflected adaptability and recovery following setbacks. Occupational dimensions assessed income unpredictability, schedule variability, financial pressure, workload intensity, recovery opportunities, employment continuity, and dependence on platform systems.

All items were scored using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with negative items reverse scored. Internal consistency was acceptable (Cronbach's α = .82), with subscale coefficients ranging from .71 to .87. Exploratory factor analysis produced a KMO value of .81, while expert evaluation produced an Aiken's V value of .83.

Data were collected through an online survey between March and August 2023 through WhatsApp, Telegram, and gig worker networks. The questionnaire required approximately 12–18 minutes to complete. Of 544 individuals approached, 387 complete responses were obtained, producing a reported response rate of 71.2%. Ethical approval was reported as obtained from the relevant local ethics committee (Approval No. 2023-45). Participants were informed about voluntary participation, confidentiality, and the right to withdraw.

Data analysis proceeded in four stages. First, descriptive statistics were calculated, normality was examined using Shapiro–Wilk tests, and multicollinearity was assessed using variance inflation factors, with values below 3 considered acceptable. Second, scores were standardized using z-scores. Third, two-step cluster analysis was followed by K-means clustering, with solutions ranging from two to six clusters evaluated using the silhouette coefficient and Calinski–Harabasz index. The five-cluster solution showed the most favorable balance between interpretability and statistical separation, with a silhouette coefficient of 0.58. Finally, one-way ANOVA and Tukey HSD post-hoc comparisons were used to examine differences between profiles. Because the study used cross-sectional data, associations are interpreted as relationships rather than causal effects

RESULT AND DISCUSSION

The descriptive results demonstrate a complex psychological pattern among the participating gig workers. The highest mean scores were observed for work uncertainty (M = 4.12), financial stress (M = 4.01), and workload (M = 3.94), while access to psychological support showed the lowest mean score (M = 2.34). Psychological well-being remained at a moderate level (M = 3.42), despite moderate-to-high perceived stress (M = 3.68). This coexistence of relatively preserved well-being and substantial occupational stress provides initial evidence of heterogeneity in psychological functioning.

Tabel 2. Statistik Deskriptif Dimensi Kesehatan Mental

Dimension	M	SD	Interpretation
Psychological well-being	3.42	0.98	Moderate
Perceived stress	3.68	0.92	Moderate–High
Emotional regulation	3.31	1.05	Moderate
Resilience	3.18	1.09	Moderate
Social support	2.89	1.12	Low–Moderate
Work uncertainty	4.12	0.87	High
Financial stress	4.01	0.91	High
Workload	3.94	0.96	High
Job insecurity	3.87	1.04	Moderate–High
Support access	2.34	1.28	Low

The cluster analysis identified five distinct mental health profiles. The Resilient profile represented the largest group (32.0%), followed by the Moderately Engaged profile (28.7%). The At-Risk group accounted for 21.5%, while 13.5% were categorized as Vulnerable. The smallest

group, Severely Distressed, represented 4.3% of the sample. Taken together, the Vulnerable and Severely Distressed profiles represented 17.8% of the sample, indicating that approximately one in six participants demonstrated substantial psychological vulnerability.

Tabel 3. Profil Kesehatan Mental Pekerja Gig

Profile	n (%)	Main Characteristics	Vulnerability
Resilient	124 (32.0%)	High well-being, low stress, strong resilience and support	Low
Moderately Engaged	111 (28.7%)	Balanced well-being and stress, moderate resilience	Moderate
At-Risk	83 (21.5%)	Reduced well-being, elevated stress, limited support	Moderate–High
Vulnerable	52 (13.5%)	Low well-being, high stress, poor resilience	High
Severely Distressed	17 (4.3%)	Severe impairment across psychological domains	Critical

The Resilient group consisted of 124 workers (32.0%) and demonstrated the most favorable psychological functioning. Psychological well-being was high (M = 4.31), while perceived stress was comparatively low (M = 2.41). Emotional regulation and resilience were also relatively strong. These workers continued to report occupational risks, indicating that resilience was not necessarily associated with the absence of occupational stressors. Rather, stronger psychological and social resources appeared to support management of those demands. The profile was also characterized by longer average gig work tenure (3.1 years), relatively higher educational attainment, additional household income sources, and stronger social networks.

The Moderately Engaged profile included 111 workers (28.7%). Workers demonstrated relatively balanced psychological functioning, with mean psychological well-being of 3.45 and perceived stress of 3.22. Resilience was moderate, suggesting that workers were generally able to manage occupational demands without substantial psychological deterioration. The group tended to include newer workers, with an average gig work tenure of 1.8 years, possibly reflecting an adaptation stage in which strategies for managing platform-based employment were still developing.

The At-Risk profile included 83 workers (21.5%). Psychological well-being declined to a mean of 2.89, while perceived stress increased to 3.98 and resilience was relatively low (M = 2.76). This profile was particularly characterized by high workload (M = 4.45), financial pressure (M = 4.23), and limited psychological support (M = 2.18). Although these workers did not demonstrate the severe impairment observed in the Vulnerable and Severely Distressed groups, the combination of elevated occupational demands and declining psychological resources indicates a potentially important prevention target.

The Vulnerable profile comprised 52 workers (13.5%). Psychological well-being was substantially lower (M = 2.14), while perceived stress was high (M = 4.54). Emotional regulation was also relatively poor (M = 2.31). The group was characterized by multiple co-occurring risk factors, including high workload, financial pressure, social isolation, and limited access to psychological support. This pattern suggests that psychological vulnerability may be particularly pronounced when several occupational stressors occur simultaneously without adequate protective resources.

The Severely Distressed profile consisted of 17 workers (4.3%) and demonstrated the most severe psychological difficulties across the assessed domains. Psychological well-being was very low (M = 1.65), perceived stress was extremely high (M = 4.89), and emotional regulation was substantially compromised (M = 1.47). The profile was characterized by multiple simultaneous occupational and personal stressors, limited social support, and restricted access to psychological resources. Given the severity of the indicators, workers exhibiting this profile

should not be managed solely through general wellness or self-help programs; professional psychological assessment and appropriate referral pathways are warranted.

Tabel 4. Faktor Risiko pada Setiap Profil Kesehatan Mental

Risk Factor	Resilient	Moderately Engaged	At-Risk	Vulnerable	Severely Distressed	F(4,382), p
Financial stress	2.89	3.67	4.23	4.67	4.91	127.4, <.001
Job insecurity	2.94	3.45	4.12	4.56	4.78	98.7, <.001
Workload	3.12	3.78	4.45	4.89	4.94	103.2, <.001
Work uncertainty	3.34	3.89	4.45	4.72	4.88	87.6, <.001
Social isolation	2.11	2.67	3.45	4.12	4.56	94.3, <.001
Support access	3.67	3.12	2.18	1.34	0.94	156.8, <.001

All six risk factors differed significantly across the five profiles ($p < .001$). Financial stress demonstrated the strongest reported bivariate association with psychological distress ($r = .71$, $p < .001$), and the pattern increased progressively from the Resilient to the Severely Distressed group. Similar gradients were observed for job insecurity, workload, work uncertainty, and social isolation. Conversely, access to psychological support demonstrated the opposite pattern, with greater access among the Resilient group and very limited access among the Vulnerable and Severely Distressed groups.

The primary finding is that gig workers do not constitute a psychologically homogeneous population. The five profiles demonstrate that occupational conditions alone do not fully determine psychological outcomes. Workers may experience similar structural conditions while displaying substantially different combinations of psychological resources and vulnerabilities. From a Job Demands–Resources perspective, resilience, social networks, and other resources may buffer the psychological consequences of occupational demands.

The Resilient profile demonstrates that occupational uncertainty does not necessarily result in poor psychological functioning for every gig worker. Longer work experience, additional income sources, and stronger social networks may provide protective resources. The Moderately Engaged profile represents an intermediate condition and is particularly relevant for prevention because early support during the adaptation period may help workers develop effective coping strategies before occupational stress accumulates.

The At-Risk profile represents an important intervention population because psychological functioning has begun to deteriorate while occupational stress remains high. The combination of high workload, financial pressure, and limited support is particularly concerning. Preventive psychological support, stress management, financial coping resources, and improved access to professional services may be appropriate.

The Vulnerable and Severely Distressed profiles demonstrate the consequences of multiple simultaneous risk factors. Workers in these groups reported low psychological well-being and high perceived stress alongside high financial stress, workload, job insecurity, work uncertainty, and social isolation. Psychological vulnerability should therefore not be addressed exclusively at the individual level. Teaching workers to cope with stress may be insufficient when stress is continuously generated by structural occupational conditions.

Financial stress demonstrated the strongest bivariate association with psychological distress ($r = .71$, $p < .001$). Unpredictable income may create persistent concerns about basic needs, encourage longer working hours, and reduce opportunities for recovery. However, the cross-sectional design does not permit the conclusion that financial stress causes psychological distress; the observed relationship should be interpreted as an important empirical association requiring further longitudinal investigation.

Another important finding concerns low social support and psychological support access among vulnerable workers. Workers with better psychological functioning reported greater access to support, whereas vulnerable workers reported substantially lower access. Improving access to psychological services should therefore be considered an important component of gig worker mental health policy.

IMPLICATION

The five-profile structure provides a basis for differentiated psychological intervention. Resilient workers primarily require maintenance through mental health promotion and resilience strengthening. Moderately Engaged workers may benefit from preventive counseling and coping skills. At-Risk workers represent a priority for early intervention involving stress management, psychological support, and workload management. Vulnerable workers may require psychological assessment and structured intervention. Severely Distressed workers warrant professional assessment, crisis support, and referral.

Digital platforms can contribute to worker well-being by providing confidential mental health screening, accessible psychological support, peer-support mechanisms, predictable scheduling mechanisms, information about income and workload management, crisis-support information, and referral pathways to qualified mental health professionals. Such interventions should avoid shifting responsibility for mental health entirely onto workers; structural occupational conditions should also be addressed.

For counselors and mental health professionals, the profiling framework may support a more efficient counseling and triage process. Prevention and psychological strength development may be emphasized for Resilient workers; early detection, stress management, coping, and social resource strengthening for At-Risk workers; structured psychological intervention for Vulnerable workers; and professional mental health assessment and referral for Severely Distressed workers.

At the policy level, gig worker mental health should be integrated into broader discussions concerning decent work and occupational protection. Relevant responses include greater income stability, protection against excessive workload, transparency in algorithmic management, access to social protection, accessible mental health services, and mechanisms for reporting occupational and psychological risks. Mental health in the gig economy should therefore be considered both an individual psychological issue and a structural occupational issue.

LIMITATIONS

Several limitations should be considered. First, the cross-sectional design prevents causal conclusions. Second, the study relied on self-report measures, which may be influenced by recall, interpretation, or social desirability. Third, the sample was concentrated in three gig work sectors, so other forms of gig work may produce different psychological profiles. Fourth, the study did not examine longitudinal transitions between profiles. Finally, profile membership should not be interpreted as a clinical diagnosis; psychological screening results require appropriate professional interpretation, particularly for individuals showing severe distress.

CONCLUSION

This study demonstrates that gig workers represent a heterogeneous population in terms of mental health. Five distinct profiles were identified: Resilient (32.0%), Moderately Engaged (28.7%), At-Risk (21.5%), Vulnerable (13.5%), and Severely Distressed (4.3%). Approximately 17.8% of participants belonged to the Vulnerable or Severely Distressed profiles and demonstrated combinations of low psychological well-being, high stress, limited resilience, and elevated occupational risk.

Financial stress, job insecurity, workload, work uncertainty, and social isolation differed significantly across profiles, with financial stress showing the strongest bivariate association with psychological distress. The findings highlight the importance of moving from a one-size-fits-all approach toward profile-based mental health support. At the same time, interventions should not

place responsibility solely on individual workers; structural characteristics of gig work must also be addressed. Future research should employ longitudinal designs to examine transitions between mental health profiles and investigate whether profile-matched interventions can improve psychological outcomes.

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