

Work-life Balance and Sustainability of Millennial and Gen Z Remote Workers in Indonesia's Digital Gig Economy

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Abstract

The rise of the gig economy and remote work is redefining Indonesia's Millennial and Gen Z workforce, replacing fixed schedules and co-location with flexible, technology-enabled arrangements. Grounded in the Job Demands–Resources (JD–R) model, this study surveyed 300 remote professionals in the digital sector using a 33-item instrument spanning job demands, job resources, personal resources, self-efficacy, and work–life balance (WLB). Data were analyzed with Structural Equation Modeling (SEM), yielding excellent fit (CFI = 0.992, TLI = 0.991, RMSEA = 0.071, SRMR = 0.064; $R^2_{\text{WLB}} \approx 0.95$). Results show that the second-order Resources construct (job + personal) is the strongest predictor of WLB ($\beta = +1.02$, $p = .002$), while job demands have a small, non-significant effect ($\beta = -0.06$, $p = .45$); the JD $\times$ self-efficacy interaction is also non-significant. Findings indicate that remote/gig workers form a distinct occupational group whose well-being is resource-contingent rather than demand-driven. In contrast to traditional employment models, their balance depends less on workload and more on access to autonomy, role clarity, peer collaboration, digital coordination, and psychosocial support. Strengthening these organizational and personal resources is therefore the most effective lever to sustain WLB and convert flexibility into long-term sustainability for Indonesia's young digital workforce. The study extends the JD–R framework to digitally mediated work in a developing-economy setting and offers actionable guidance for employers, TVET providers, and policymakers seeking human-centred, equitable productivity in the gig economy.

Keywords: Gen Z, gig economy, millennial, remote work, work–life balance.

1. Introduction

The rapid advancement of digital technology continues to reshape employment structures globally, including Indonesia's rapidly expanding digital economy. According to Labor Force Situation in Indonesia August 2024 issued by Statistics Indonesia (Badan Pusat Statistik, 2024) the national labour force reached 152.11 million people, with 144.64 million employed, and an Open Unemployment Rate (TPT) of 4.91 percent, marking a 0.41 percentage-point decline from the previous year. However, 57.95 percent of workers remain in informal employment, indicating the continuing dominance of non-standard work arrangements such as freelance, remote, and gig-based activities. This shift illustrates how Indonesia's world of work is increasingly defined by flexibility, autonomy,

and digital intermediation. Beyond firm-level practices, Indonesia's policy discourse increasingly frames technological enablement and hybrid work as levers to raise productivity and advance SDG 8 within the gig economy (Alfarizi et al., 2025).

At the global level, the (International Labour Organization, 2025) highlights that nearly two-thirds of ILO member states recognize the urgency of developing new standards to protect platform and remote workers while maintaining the benefits of technological flexibility. Within this evolving ecosystem, Indonesia's demographic advantage amplifies the transformation: with a median age of around 30 years, Millennials and Generation Z now account for more than 60 percent of the national workforce. Findings from the (Deloitte, 2025) reveal that 74 percent of Gen Zs and 71 percent of Millennials consider flexible work arrangements essential to job satisfaction, yet over half report high levels of stress and anxiety linked to digital overload and unclear work boundaries. These insights underscore that while the gig and remote work model expands employability opportunities, it also introduces new psychosocial challenges that directly affect workers' work-life balance, well-being, and productivity. At the same time, gig-mediated services reveal persistent ambiguities in the employment relationship, illustrated by platform ride-hailing, complicating worker protections and HR practices (Muhyiddin et al., 2025). These institutional features shape how remote and platform-based workers experience and pursue work-life balance.

Work-Life Balance (WLB) has consequently become a critical dimension of sustainability in today's labour landscape. The ILO Report V(2): Realizing Decent Work in the Platform Economy underscores that while digital labour platforms expand access to income and flexibility, they also expose workers to irregular hours, intensified workloads, and ambiguous employment relationships, raising concerns about social protection and well-being (International Labour Organization, 2025). Within Indonesia's expanding digital economy, where freelance and remote arrangements are increasingly prevalent, maintaining healthy boundaries and long-term well-being is central to workforce resilience.

Empirical research documents how digital and remote workers face technostress, fatigue, and social isolation, which contribute to emotional exhaustion and reduced productivity (Darwin et al., 2025; Ingusci et al., 2021; H. Wang et al., 2024). At the same time, remote or gig-based work can generate positive resources: autonomy, flexibility, and supportive peer networks that sustain WLB when organizational and personal supports are in place (Allgood et al., 2024). This duality reveals a persistent paradox: flexibility can either foster or fragment well-being depending on how job demands and resources are balanced.

The *Job Demands-Resources (JD-R) Model* offers a comprehensive lens for explaining these mechanisms (Demerouti et al., 2021). The model posits two interrelated processes: a health-impairment process, in which excessive demands deplete energy and lead to strain, and a motivational process, in which sufficient resources foster engagement and well-being. In remote and gig contexts, job demands include time pressure, digital workload, and constant availability norms, whereas resources encompass autonomy, role clarity, and supervisor/peer support. Complementing these are personal resources: self-efficacy (Schwarzer & Jerusalem, 1995) emotional intelligence (Schutte et al., 1998) and resilience (Connor & Davidson, 2003) that enable adaptive coping and self-regulation.

However, applications of the JD–R model to Indonesia’s fully remote or platform-mediated work remain limited, particularly for Millennial and Gen Z digital workers, representing a meaningful research gap.

Recent evidence also highlights generational pressures in flexible work. Findings from the *Deloitte Gen Z and Millennial Survey (2025)* show that large majorities of Gen Zs and Millennials prioritize flexible arrangements but simultaneously report elevated stress and boundary-management difficulties in highly connected environments (Deloitte, 2025). In such contexts, JD–R predicts that the availability of resources can substantially weaken the adverse impact of demands, whereas resource scarcity amplifies strain even at moderate workloads (Korkeakunnas et al., 2025). Understanding these dynamics is increasingly vital for human resource management and labour policy as Indonesia’s labour market evolves toward hybrid and digitally mediated settings.

From a Technical and Vocational Education and Training (TVET) perspective, the shift toward remote and gig work necessitates a reconfiguration of employability skills. Conventional TVET curricula have emphasized technical and digital competencies but often under-address psychosocial capabilities: stress management, boundary setting, and adaptive self-regulation, critical for sustainable performance (Harteis et al., 2020; Sudira, 2017). In line with the *UNESCO–UNEVOC Strategy for TVET 2022–2029*, TVET must respond to technological, demographic, and environmental transitions by integrating digital, green, and adaptive soft skills and by promoting lifelong and flexible learning pathways through stronger partnerships with industry and the UNEVOC network (UNESCO, 2021). Accordingly, Indonesian TVET institutions should cultivate graduates who can manage autonomy responsibly, collaborate virtually, and sustain digital well-being in hybrid ecosystems.

Aligned with Indonesia’s *RPJMN 2025–2029* and *Asta Cita* agendas on human-capital development, strengthening both structural resources (work design, clarity, and social support) and personal resources (self-management, resilience) can enhance productivity while safeguarding mental health and social sustainability. Yet, the limited nationally disaggregated evidence on remote and platform-based employment presents an empirical gap. Addressing this, the present study applies the JD–R model to examine determinants of WLB among Millennial and Generation Z remote workers in Indonesia’s digital-technology sector. Specifically, it investigates how job demands, job resources, and personal resources interact to influence WLB and whether self-efficacy moderates these relationships. The study aims to advance JD–R scholarship in non-standard work contexts and inform policy and TVET strategies to foster resource-rich, balanced, and sustainable digital work ecosystems for Indonesia’s young professionals.

2. Research Method

The study adopts a quantitative approach using SEM to analyse the relationships among job demands, job resources, personal resources, self-efficacy, and work–life balance (WLB) among Millennial and Generation Z remote workers in Indonesia’s digital technology sector.

2.1. Research Design

This study employs a cross-sectional quantitative design grounded in the Job Demands–Resources (JD–R) Model (Demerouti et al., 2001, 2021). The conceptual framework integrates five core variables: Job Demands (JD), Job Resources (JR), Personal Resources (PR), Self-Efficacy (SE), and Work–Life Balance (WLB). Job and personal resources are treated as components of a higher-order latent construct, Resources (RES), which represents the combination of both structural and individual supports available to workers. The conceptual relationships among variables are presented in Figure 1. Job Demands (JD) are hypothesised to have a negative effect on Work–Life Balance (WLB), whereas Resources (JR + PR) are expected to have a positive effect. Self-Efficacy (SE) is proposed as a moderating variable that strengthens the relationship between Job Demands and Work–Life Balance.



Figure 1. Conceptual Framework

Source: Adapted from Demerouti et al. (2021) and Schwarzer & Jerusalem (1995)

In the structural equation, WLB is predicted by JD and RES, while SE moderates the relationship between JD and WLB:

$$WLB = a + b_1JD + b_2RES + b_3(JD \times SE) + e$$

where WLB represents work–life balance, JD denotes job demands, RES denotes resources (job + personal), SE is self-efficacy, a is a constant, b_1 – b_3 are path coefficients, and e is the error term.

2.2 Data and Participants

2.2.1 Type and Source of Data

Primary data were obtained through an online questionnaire distributed to remote and hybrid workers in Indonesia’s digital technology industry. Secondary data from national statistics (Labour Force Situation in Indonesia, February 2024, 2024) supported contextual interpretation of employment structures.

2.2.2 Population and Sample

Respondents consisted of 300 remote and hybrid workers from various regions in Indonesia, representing the Millennial (1981–1996) and Generation Z (1997–2012) cohorts. They were employed in diverse digital-technology sectors, including information technology and software development

(17.3%), digital marketing and content creation (19.3%), design and creative industries (17.7%), digital business and administration (18.3%), and online education and e-learning (22.0%). The sampling technique used was purposive sampling, targeting individuals who had been engaged in remote or hybrid work arrangements for at least three months.

Table 1. Demographic Profile of Respondents (N = 300)

Variable	Category	n	%
Generation	Millennial (1981–1996)	158	52.7
	Gen Z (1997–2012)	142	47.3
Gender	Female	173	57.7
	Male	127	42.3
Work Arrangemen	Remote full-time	276	92.0
	Hybrid	24	8.0
Work Experience	< 1 year	27	9.0
	1–3 years	106	35.3
	4–6 years	154	51.3
	> 10 years	13	4.3
Major Work Field	Online Education / E-Learning	66	22.0
	Digital Marketing & Content Creation	58	19.3
	Digital Business & Administration	55	18.3
	Design & Creative (UI/UX, graphics, multimedia)	53	17.7
	Information Technology & Software Development	52	17.3
	Others (Creative, Sales, Manufacturing, etc.)	16	5.3

Source: Processed primary data (2025)

3.1. Data Collection Techniques

Data were collected through an online survey using a structured questionnaire consisting of 33 Likert-type items (1 = strongly disagree to 5 = strongly agree). The items were adapted from validated scales: Job Demands (JD): workload, time pressure, and task complexity Job Resources (JR): autonomy, role clarity, and supervisor/peer support (Demerouti et al., 2001), Personal Resources (PR): emotional intelligence and resilience (Schutte et al., 1998), Self-Efficacy (SE): generalized self-efficacy scale (Schwarzer & Jerusalem, 1995) Work–Life Balance (WLB): time, strain, and satisfaction balance (Fisher-Mcauley et al., 2003; Hayman, 2009).

As presented in Table 2, all measurement constructs demonstrated strong reliability and validity. The standardized factor loadings for each item ranged from 0.73 to 0.90, exceeding the recommended threshold of 0.60, indicating good item convergence. Cronbach’s α and McDonald’s ω values were above 0.78 for all constructs, confirming high internal consistency. Moreover, Average Variance Extracted (AVE) values above 0.50 and Composite Reliability (CR) values above 0.80 further supported convergent validity. The overall CFA model showed excellent fit indices (CFI = 0.992, TLI

= 0.991, RMSEA = 0.071, SRMR = 0.064), confirming that the measurement model was adequate for subsequent structural analysis.

Table 2. Construct Reliability and Validity

Variable	No. of Items	Standardized Loading Range	Cronbach's α	McDonald's ω	AVE	CR
Job Demands (JD)	6	0.75–0.90	0.87	0.88	0.66	0.89
Job Resources (JR)	6	0.73–0.80	0.82	0.84	0.61	0.85
Personal Resources (PR)	6	0.74–0.79	0.80	0.82	0.59	0.84
Self-Efficacy (SE)	7	0.76–0.89	0.88	0.89	0.64	0.87
Work–Life Balance (WLB)	7	0.75–0.81	0.84	0.86	0.63	0.85
Overall Model Fit	—	—	—	—	—	CFI = 0.992; TLI = 0.991; RMSEA = 0.071; SRMR = 0.064

Source: Author's analysis in R (2025)

2.4 Data Analysis Techniques

Quantitative data were analyzed using SEM in R with the robust maximum-likelihood estimator (MLR). Data screening included treatment of missing values, detection of multivariate outliers, and assessment of normality. The higher-order construct Resources (RES) was modeled according to the *Job Demands–Resources (JD–R) framework*, combining Job Resources (JR) and Personal Resources (PR) as first-order dimensions. To examine the moderating role of Self-Efficacy (SE), a latent interaction term ($JD \times SE$) was generated using the *semTools* package with mean-centering and residual-centering procedures to stabilize estimation. Model adequacy was evaluated through Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR), following the goodness-of-fit benchmarks of Hu and Bentler (1999): $CFI/TLI \geq 0.90$; $RMSEA \leq 0.08$; $SRMR \leq 0.08$. The final model achieved excellent fit: $\chi^2 (294) = 789.13$, $p < .001$; $CFI = 0.992$; $TLI = 0.991$; $RMSEA = 0.071$; $SRMR = 0.064$, confirming that the model specification was robust and theoretically consistent with the JD–R model.

2.5 Ethical Considerations

Participation in this study was voluntary, and all respondents provided informed consent electronically prior to completing the questionnaire. Data collection complied with research ethics for human participants, ensuring anonymity, confidentiality, and adherence to the principles of beneficence, respect, and integrity in social research.

3. Results and Discussion

3.1 Model Fit and Measurement Validation

The overall structural model demonstrated excellent fit to the data, $\chi^2(294) = 789.13$, $p < .001$; CFI = 0.992, TLI = 0.991, RMSEA = 0.071 (90% CI: 0.065–0.077), SRMR = 0.064, confirming that the model specification was robust. All standardized factor loadings exceeded 0.70 (JD = 0.75–0.90; JR/PR = 0.73–0.80; WLB = 0.75–0.81), indicating strong convergent validity. Reliability tests yielded Cronbach's $\alpha = 0.78$ –0.89 and McDonald's $\omega = 0.80$ –0.91, while AVE (> 0.50) and CR (> 0.80) confirmed construct reliability. These indices support both convergent and discriminant validity for the five latent variables (JD, JR, PR, SE, and WLB).

3.2 Structural Relationships and Direct Effects

The SEM results revealed that the higher-order Resources (RES) factor, comprising job and personal resources had a large, positive, and significant effect on Work–Life Balance ($\beta = +1.02$, $p = .002$). This indicates that access to job and personal supports such as autonomy, peer collaboration, emotional intelligence, and resilience enhances employees' ability to maintain balance between professional and personal domains. Conversely, Job Demands (JD) showed a small, non-significant negative relationship with WLB ($\beta = -0.06$, $p = .45$), suggesting that workload and time pressure do not substantially diminish WLB once resources are accounted for. The model explained 95% of the variance in WLB ($R^2 = 0.95$), underscoring the dominant role of resources in remote-work well-being.

SEM Model: Job Demands & Resources → Work–Life Balance

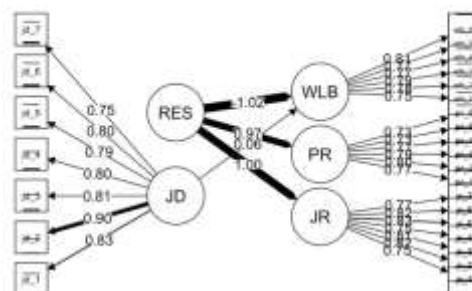


Figure 2. Path diagram of SEM model (JD & RES → WLB)
Source: Author's analysis in R (2025)

3.3 Moderation Analysis

The moderation analysis revealed that the interaction term Job Demands $\times$ Self-Efficacy (JD $\times$ SE) was statistically insignificant ($\beta = 0.07$, $p = 0.55$), indicating that self-efficacy did not significantly moderate the relationship between job demands and work–life balance. As illustrated in Figure 3, the simple slopes for low (-1 SD), mean, and high ($+1$ SD) levels of self-efficacy were nearly parallel and close together, suggesting minimal variation across efficacy levels. This pattern implies that in remote digital contexts, self-efficacy alone does not buffer the strain caused by high job demands. These findings corroborate recent evidence (Demerouti & Bakker, 2023; Mäkikangas et al., 2022) that in remote and hybrid work, structural and social resources, rather than personal efficacy are stronger predictors of balance and well-being. Hence, work–life outcomes among Millennial and Gen Z digital workers depend more on environmental and organizational supports than individual psychological traits.

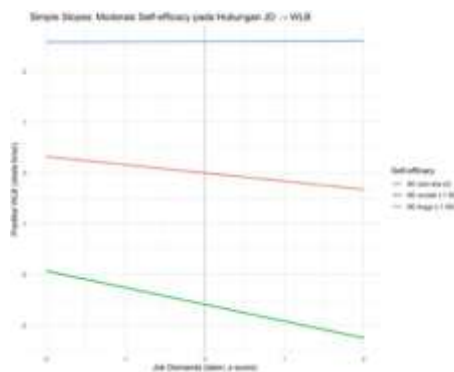


Figure 3. Simple Slope Plot of the JD $\times$ Self-Efficacy Interaction on Work–Life Balance

Source: Author's analysis in R (2025)

The three simple slope lines representing low (-1 SD), mean, and high ($+1$ SD) levels of self-efficacy are nearly parallel and closely aligned. This pattern indicates that self-efficacy does not significantly moderate the relationship between job demands and work–life balance. The plot reinforces the statistical result that the interaction term (JD $\times$ SE) was non-significant ($\beta = 0.07$, $p = 0.55$), suggesting that in remote digital work contexts, self-efficacy alone is insufficient to buffer the strain effects of high job demands.

Beyond statistical moderation, capability-building is central to sustaining balance in flexible work. Evaluations with ICT educators show that intentional soft-skills pedagogy, targeting self-regulation, resilience, and collaboration strengthens graduate readiness (Llorens et al., 2025). Evidence from online graduate cohorts likewise links soft-skills development with improved employability outcomes (Bedoya-Guerrero et al., 2024). Within the IR4.0 context, competence frameworks emphasise a blended portfolio of technical and non-technical skills for sustainable employability (Nasreen et al., 2024) and exposure to authentic online learning environments has been shown to enhance students' perceived employability supporting the integration of remote, project-based assessments (Martínez-Argüelles et al., 2023).

3.4 Group Differences: Millennials vs Generation Z

A supplementary multi-group analysis by generation indicates that the **structural pattern is consistent** for Millennials and Gen Z. In both cohorts, the **second-order Resources (RES)** factor, combining job and personal resources remains the **strongest positive predictor of WLB**, and the magnitude/direction of this effect **does not differ significantly** across groups, aligning with core JD-R propositions that resources are the primary drivers of well-being and buffering (Demerouti et al., 2021; Demerouti & Bakker, 2023). By contrast, **Job Demands (JD)** shows a **small, negative, and non-significant** association with WLB in both cohorts once resources are accounted for consistent with evidence that, in digitally mediated work, resource availability (e.g., autonomy, clarity, support) can offset demand load (Shirmohammadi et al., 2022; B. Wang et al., 2021). The hypothesized **JD × Self-Efficacy (SE)** moderation on WLB is likewise **non-significant** in both groups; simple-slope probes at $SE = -1/0/+1$ SD are small and statistically unreliable. Substantively, these results suggest that **how work is resourced** (autonomy, role clarity, supportive supervision/peers, effective digital coordination) matters more for WLB than **how much** work there is, **for both generations**, echoing recent findings in remote/hybrid contexts (Korsakienė et al., 2024; Lyzwinski, 2024). Accordingly, WLB interventions should prioritize **resource-enhancing work design and personal capability building** as cross-generational levers rather than tailoring strategies primarily by cohort.

4. Conclusion and Recommendations

This study set out to explain how WLB operates for Millennial and Generation-Z remote workers in Indonesia's digital economy using the Job Demands–Resources (JD–R) framework. The overall pattern is clear: WLB in remote and hybrid settings is resource-dominant. When workers have enabling job resources: autonomy, role clarity, supportive leadership, dependable collaboration tools, and fair coordination together with strong personal resources such as self-management, emotional regulation, and resilience, balance is attainable even under meaningful workloads. Conversely, when those resources are thin or poorly designed, flexibility quickly turns into fragmentation regardless of individual effort. The absence of a reliable moderation by self-efficacy underscores that good work design cannot be replaced by personal confidence, people thrive when systems are sound. These findings mark remote workers as a distinct occupational archetype defined by digital interdependence. Their effectiveness and well-being hinge less on physical co-presence and more on the architecture of connection, how goals are specified, how information flows, how decisions are shared, and how recovery is protected in always-on environments. In such contexts, the traditional reflex to “manage demand” (e.g., cutting tasks) is often less effective than engineering resources that convert flexible schedules into predictable rhythms, protect attention, and sustain belonging.

For organizations, the imperative is to translate flexibility into structured freedom by setting explicit norms for availability and the right to disconnect, planning workloads transparently and agreeing team cadences, upskilling managers in empathetic, data-informed supervision, investing in reliable, low-friction collaboration stacks with shared protocols, and embedding continuous listening on well-being and recovery within performance conversations. WLB should be positioned not as a perk but as a control for risk and productivity, reducing rework, attrition, and silent disengagement

while improving learning speed and quality. Human resource development should embed WLB throughout the talent lifecycle: realistic job previews for remote roles; onboarding that trains boundary setting, meeting hygiene, and tool fluency; role charters that clarify outcomes and guardrails; growth pathways that reward sustainable performance rather than mere online presence; peer-based supports (communities of practice, buddy systems); and brief, repeatable micro-interventions on focus, recovery, and digital well-being to stabilize balance as intensity fluctuates.

TVET providers can close the school-to-work gap by integrating WLB literacy into competency standards: self-management under ambiguity, asynchronous collaboration, digital etiquette and ethics, reflective practice, and resilience while work-integrated learning projects simulate remote team workflows. Assessment should value planning, coordination, and recovery alongside technical outputs, and co-designed modules with industry should ensure learners experience realistic sprints, retrospectives, and boundary practices prior to employment. At the policy level, a sustainable platform and remote economy requires social as well as digital infrastructure: guidance on the right to disconnect, fair standards for coordination load, inclusive social protection for platform-mediated work, and a lightweight national observatory on digital labour to track quality, safety, and inclusion, enabling adaptive regulation and evidence-based support for youth employment and human-capital agendas.

This study is limited by its cross-sectional, self-report data from digital occupations, which constrains causal inference and generalization to non-digital sectors. Future research should adopt longitudinal designs, incorporate objective indicators of workload and coordination, compare cohorts across industries and regions, and experimentally test resource-building interventions within the JD–R architecture. In sum, for Indonesia’s young digital workforce, resources, not mere reductions in demands are the lever that turns flexibility into durability. When organizations design for autonomy with clarity, equip people with collaborative and psychological resources, and when education and policy reinforce these capacities, remote work shifts from a stop-gap to a strategic asset that supports productivity, equity, and human sustainability in the gig-enabled economy.

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