



THE INFLUENCE OF WORKLOAD ON WORK–LIFE BALANCE AMONG EMPLOYEES IN THE MINING SECTOR

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ABSTRACT

Work–life balance (WLB) has become a strategic concern in high-demand industries such as mining, where extended shifts, heavy workloads, and family demands can undermine employee well-being and organisational sustainability. Although workload is recognised as a key antecedent of WLB, empirical evidence from Indonesia’s mining sector remains limited. This study aimed to examine the influence of workload on WLB among employees of PT Bumi Suksesindo, a copper and gold mining company in Banyuwangi, Indonesia. An analytic observational study with a cross-sectional design was conducted among 100 randomly selected employees. Workload was measured using items adapted from the NASA Task Load Index (NASA-TLX), while WLB was assessed with the Work–Life Balance Scale. Both instruments were tested for validity and reliability before data collection, yielding acceptable content validity and high internal consistency (Cronbach’s alpha = 0.87 for NASA-TLX and 0.84 for WLB Scale). Data were analysed using Pearson correlation, independent t-tests, and multivariate regression with demographic factors as controls. Employees reported moderate to high workload levels (M = 62.3, SD = 11.4) and relatively low WLB (M = 58.7, SD = 10.2). A significant negative correlation was observed between workload and WLB ($r = -0.46$, $p < 0.001$). Regression analysis confirmed workload as the strongest predictor of WLB ($\beta = -0.42$, $p < 0.001$), even after adjusting for demographics. Marital status also emerged as significant ($\beta = -0.19$, $p = 0.032$), with married employees reporting lower balance. Other demographic variables showed no meaningful effects. Workload is a critical determinant of WLB in the mining sector, with marital obligations further compounding its effects. The findings support the Job Demands–Resources model, highlighting the need for workload management strategies, flexible scheduling, and supportive policies to safeguard employee well-being and sustain organisational performance.

Keywords: job demands–resources model; mining industry; work–life balance; workload

INTRODUCTION

Work–life balance (WLB) has shifted from a discretionary human-resources concern to a strategic priority that shapes attraction, retention, safety, and performance across sectors—mining included. Global reviews show that WLB research has expanded rapidly over the past decade and increasingly links balance to both employee wellbeing and organisational outcomes such as engagement and productivity (Verma and Chaurasia, 2024; Zaitouni et al., 2024). Recent evidence also indicates that the effectiveness of WLB policies is contingent on their design and inclusivity rather than their mere presence, underscoring the importance of context-sensitive approaches in high-demand industries (Casper et al., 2024). Within Indonesia’s resource sector, this conversation is especially salient as companies navigate rising output expectations, evolving technologies, and workforce constraints (OECD, 2025). Workload—often operationalised as quantitative load (amount/speed), qualitative or mental load (cognitive complexity), and temporal load (time pressure/long hours)—remains a primary antecedent of WLB. The Job Demands–Resources (JD–R) framework positions workload as a core job

demand that taxes energetic resources and, when chronic, initiates a loss cycle characterised by strain, conflict between roles, and reduced recovery opportunities outside work (Bakker et al., 2023; Li et al., 2025). Systematic evidence further links extended working hours and non-standard schedules to adverse mental-health outcomes and role interference, particularly where job autonomy or recovery is limited (Kim et al., 2024; Yang et al., 2023).

Mining poses distinctive workload patterns. Operations commonly involve long shifts, night work, constrained breaks, and rugged environmental conditions. International syntheses around resource-sector rotation work—including fly-in/fly-out arrangements—consistently describe elevated fatigue, disrupted family routines, and challenges sustaining social ties—mechanisms that plausibly degrade perceived WLB even when pay and rostered leave are attractive (Fruhen et al., 2023; Asare et al., 2022; Asare et al., 2025; Korneeva et al., 2022). Parallel qualitative work in mining organisations highlights that operators report wellbeing impacts arising from workload intensity and schedule design, suggesting that local roster practices and support resources shape the WLB experience (Kau et al., 2025; Havenga et al., 2025). Against this backdrop, the OECD’s recent analysis of mining labour markets stresses mounting pressures from technological change and critical-minerals demand—factors that can intensify workload unless accompanied by redesign and support (OECD, 2025).

Not all workload effects are deterministic. The JD–R programme and adjacent research show that job resources (e.g., discretion over tasks, supportive supervision, predictable rosters, and recovery-enabling policies) can buffer workload’s impact on strain and WLB; conversely, low control and poor managerial inclusion can amplify harm (Bakker et al., 2023; Casper et al., 2024). In contemporary settings, digitalisation can create “work intensification” (more tasks, faster cadence, more meetings), which erodes boundaries unless counterbalanced by norms and tools that protect non-work time (Niazi et al., 2024; Stender et al., 2024). Even outside office contexts, boundary-management competencies and inclusive practices have been proposed as levers to sustain WLB under high demand (Kerksieck et al., 2024).

Evidence from Indonesia and comparable contexts aligns with these mechanisms. Recent studies report that heavier workloads and longer hours are associated with poorer WLB, partly via elevated stress; organisational support moderates these relationships (Natanael and Kustini, 2023; Rony et al., 2023). Meanwhile, meta-analytic and longitudinal findings from allied sectors show that overtime and night work elevate risks of burnout and psychological distress—outcomes closely entwined with diminished WLB (Kim et al., 2024; Giusti et al., 2024). Although much of the post-pandemic WLB literature centres on hybrid or remote knowledge work, qualitative analyses still converge on the same JD–R logic: load increases and meeting proliferation undermine balance unless offset by autonomy, coordination, and recovery opportunities (Stender et al., 2024).

PT Bumi Suksesindo (BSI), a copper and gold operation in Banyuwangi, operates within these industry-specific constraints while employing a diverse workforce across production, maintenance, health and safety, and administration. For such a site, understanding how workload—as experienced on the ground—relates to employees’ WLB is crucial to designing rosters, staffing levels, and supervisory practices that safeguard wellbeing and sustain performance. Grounded in the JD–R framework and contemporary evidence from mining and high-demand settings, this study investigates the association between workload and WLB among BSI employees. Specifically, we test the proposition that higher perceived workload is associated with poorer WLB and explore the role of organisational resources that may attenuate this effect. Findings aim to inform evidence-based workload management and WLB interventions tailored to the operational realities of Indonesia’s mining sector (Bakker et al., 2023; Fruhen et al., 2023; Casper et al., 2024). Research Objective The purpose of this study is to examine the influence of workload on work–life balance among employees in the mining sector. Specifically, it aims to determine whether higher perceived workload is associated with lower levels of WLB and to explore

demographic factors that may influence this relationship. The findings are expected to inform evidence-based strategies for workload management, flexible scheduling, and organizational support programs to enhance employees' work-life balance and overall well-being.

METHOD

This study employed an analytic observational design with a cross-sectional approach, which is considered suitable for examining the association between workload and work–life balance (WLB) within a specific time frame (Setia, 2016). The research was carried out at PT Bumi Suksesindo (BSI), a copper and gold mining company located in Banyuwangi, East Java, Indonesia. The mining industry is characterised by demanding work schedules, long shifts, and high job responsibilities, making it an ideal setting to explore how workload affects employees' ability to maintain a balance between professional and personal life. The study population comprised all 1,346 permanent employees of PT BSI. From this population, a total of 100 respondents were selected using simple random sampling to ensure equal representation across departments. Eligibility criteria required participants to be active employees with at least six months of service, aged between 20 and 55 years, and willing to provide informed consent. Employees who were on extended medical leave or with a prior diagnosis of psychiatric disorders were excluded. The sample size was determined using a standard formula for cross-sectional studies (Taherdoost, 2022; Pourhoseingholi et al., 2023).

Two main variables were examined in this study. The independent variable was workload, which was measured using selected items adapted from the NASA Task Load Index (NASA-TLX). This instrument is widely used to assess perceived workload across various dimensions, including mental demand, temporal demand, and physical effort (Hart and Staveland, 1988). The dependent variable was work–life balance, assessed using the Work–Life Balance Scale developed by Fisher et al. (2009), which evaluates balance in terms of time, involvement, and satisfaction. In addition, demographic characteristics such as age, gender, marital status, job division, and length of service were collected to control for potential confounding effects. The collected data were processed and analysed using SPSS version 26. Descriptive statistics were first used to describe the demographic characteristics of respondents and the distribution of the study variables. Bivariate analysis was conducted using Pearson correlation and independent *t*-tests to explore associations between workload and WLB. Finally, multivariate linear regression was performed to identify the predictive effect of workload on WLB after adjusting for demographic characteristics. Statistical significance was determined at $p < 0.05$.

RESULT

A total of one hundred employees of PT Bumi Suksesindo participated in this study, representing different divisions within the organisation. The average age of respondents was 34.5 years ($SD = 7.8$), with the youngest being 22 years old and the oldest 55 years old. The workforce was predominantly male (72%), while 28% were female. In terms of marital status, the majority were married (65%), and the remainder were single. The average length of service was 8.2 years ($SD = 5.1$), reflecting a relatively experienced workforce. With respect to workload, employees generally reported moderate to high levels, with an average NASA-TLX score of 62.3 ($SD = 11.4$). This finding suggests that most participants perceived their roles as demanding, both in terms of mental effort and time pressure. Meanwhile, the average score for work–life balance was 58.7 ($SD = 10.2$), indicating that employees faced challenges in maintaining an equilibrium between professional and personal domains.

Bivariate analysis revealed a significant negative correlation between workload and work–life balance ($r = -0.46$, $p < 0.001$). This suggests that employees experiencing higher workloads tended to report lower levels of balance in their lives. Further analysis showed that married employees had significantly lower work–life balance compared to their single counterparts ($p = 0.04$). However, no meaningful differences were observed between male and female employees, nor across different age groups or lengths of service.

Multivariate regression analysis confirmed that workload was the strongest predictor of work–life balance, even after adjusting for demographic variables. The regression model demonstrated that a higher workload was associated with reduced balance ($\beta = -0.42, p < 0.001$). Marital status also emerged as a significant factor, with married employees more likely to experience difficulties in balancing work and personal responsibilities ($\beta = -0.19, p = 0.032$). Other factors, such as age, gender, and length of service, did not exert a significant influence. Overall, the model explained 28 per cent of the variance in work–life balance. Taken together, these results indicate that workload plays a crucial role in shaping employees’ ability to achieve balance between their work and personal lives. Furthermore, the additional pressures associated with marriage appear to exacerbate the challenges faced by workers in managing competing demands.

DISCUSSION

The findings of this study demonstrate a significant negative association between workload and work–life balance (WLB) among employees of PT Bumi Suksesindo. Specifically, higher workload levels were found to be strong predictors of reduced WLB, even after adjusting for demographic factors. This result supports the argument that excessive job demands, particularly in industries with high physical and temporal intensity such as mining, can undermine employees’ capacity to maintain a healthy integration between work responsibilities and personal life. These findings are consistent with the Job Demand–Resources (JD–R) model, which posits that high job demands (e.g., workload, time pressure, and mental strain) can lead to strain and reduce well-being when not matched with sufficient resources (Bakker and Demerouti, 2017). In the current study, workload acted as a key demand that negatively influenced employees’ ability to manage their personal domains, thereby lowering their WLB. Similar results have been reported in other industrial contexts, such as the oil and gas sector (Ong and Jantan, 2020), healthcare (Zhang et al., 2021), and manufacturing (Rahman et al., 2022), highlighting the universality of workload as a critical determinant of balance across occupational settings.

An interesting finding of this study is the influence of marital status on WLB. Married employees reported lower balance compared to single employees, suggesting that family obligations exacerbate the impact of workload. This aligns with previous research by Greenhaus and Powell (2006), who highlighted that individuals with multiple roles often experience inter-role conflict when professional demands interfere with family responsibilities. The dual burden of meeting organisational expectations while fulfilling domestic duties may explain why married employees in this study reported poorer WLB outcomes. Contrary to expectations, demographic factors such as age, gender, and length of service were not significantly associated with WLB. This suggests that the effects of workload may transcend these characteristics, exerting a universal impact across employee subgroups. This finding contrasts with some earlier studies that reported gender differences, particularly with women experiencing more challenges in balancing work and family life (Allen et al., 2020). The absence of gender disparity in this study may reflect organisational practices at PT BSI, where male employees constitute the majority of the workforce and similar working conditions are applied irrespective of gender.

The practical implications of these findings are noteworthy. As mining is an industry characterised by demanding work schedules, companies must implement strategies to mitigate the negative effects of workload. This could include workload redistribution, flexible work arrangements, and provision of employee assistance programmes that support family and social well-being. Furthermore, interventions such as resilience training, stress management workshops, and policies promoting work–family integration could enhance employees’ ability to cope with high job demands (Carnevale and Hatak, 2020). From a theoretical standpoint, the study contributes to the growing body of evidence that workload remains a central factor influencing work–life outcomes. It highlights the need to re-examine organisational practices in high-demand industries, particularly in emerging economies such as Indonesia, where rapid industrial growth often places pressure on workers (Rahman et al., 2022).

Nevertheless, this study has several limitations. First, the cross-sectional design limits causal inference, as the relationship between workload and WLB may be bidirectional. Second, self-reported measures may introduce response bias, despite the use of validated instruments. Third, the sample was restricted to one mining company, which may limit the generalisability of the findings to other sectors or cultural contexts. Future research could employ longitudinal designs, include multi-industry comparisons, and explore potential mediating factors such as job satisfaction, social support, or organisational culture (Carnevale and Hatak, 2020).

CONCLUSION

This study examined the influence of workload on work–life balance among employees of PT Bumi Suksesindo, a mining company in Banyuwangi, Indonesia. The findings revealed that workload had a significant negative impact on employees' ability to achieve balance between their professional and personal domains. Married employees were found to be particularly vulnerable, as family responsibilities appeared to intensify the strain associated with heavy workloads. The results confirm the theoretical assumptions of the Job Demand–Resources model, whereby excessive job demands undermine well-being in the absence of sufficient resources. They also underscore the universal role of workload as a determinant of balance, regardless of age, gender, or length of service. From a practical perspective, the study highlights the need for organisations in high-demand industries to adopt strategies aimed at mitigating workload pressures. Such measures may include flexible scheduling, redistributing tasks, enhancing supervisory support, and developing programmes that facilitate work–family integration. By prioritising these interventions, organisations can promote employee well-being, reduce work–family conflict, and foster sustainable productivity. Although this study provides valuable insights, several limitations should be acknowledged. The cross-sectional design restricts causal inference, and the reliance on self-reported data may introduce bias.

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