

Unraveling the Complex Interplay of Psychological Well-Being among Employees in the Malaysian Manufacturing Industry: A Structural Equation Modeling Approach

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Abstract

This study investigates the factors influencing the psychological well-being of employees in the Malaysian manufacturing industry, with a focus on stress, organizational culture, work-life balance, job burnout, and psychological well-being. Utilizing Structural Equation Modeling (SEM), data was collected from a sample of manufacturing employees to examine the relationships between these constructs. The results revealed significant negative associations between stress and psychological well-being, and significant positive associations between organizational culture, work-life balance, and psychological well-being. Additionally, job burnout was found to have a significant negative impact on psychological well-being. The findings underscore the importance of addressing stressors, cultivating a supportive organizational culture, promoting work-life balance, and mitigating job burnout to enhance employee well-being and organizational success in the manufacturing sector. These insights have implications for organizational leaders, policymakers, and human resource practitioners in fostering a conducive work environment that prioritizes employee mental health and well-being.

Keywords: Psychological well-being, stress, organizational culture, work-life balance, job burnout, Structural Equation Modeling (SEM), Malaysian manufacturing industry.

Introduction

The manufacturing industry, despite its pivotal role in economic growth, is grappling with a pressing issue: the deteriorating psychological well-being of its workforce. As the backbone of many economies, this sector's productivity heavily relies on the physical and mental health of its employees. However, recent years have witnessed a concerning surge in psychological distress among manufacturing workers, ranging from stress and burnout to depression and anxiety. This research aims to delve into the underlying factors exacerbating these issues and propose evidence-based strategies to address them effectively. The Malaysian manufacturing industry stands as a cornerstone of the nation's economic prosperity, yet it grapples with a growing concern: the deteriorating psychological well-being of its workforce. Against the backdrop of globalization, technological advancements, and fierce market competition, employees in this sector are increasingly

vulnerable to stress, burnout, and mental health challenges. This study endeavors to unravel the intricate web of factors contributing to employees' psychological well-being within the Malaysian manufacturing industry, with a particular focus on stress, organizational culture, work-life balance, and job burnout. Employing a sophisticated statistical approach in the form of structural equation modeling (SEM), this research aims to delineate the complex interplay of these dimensions and their impact on employees' mental health. Addressing the aforementioned challenges within the Malaysian manufacturing industry is of paramount importance for both individual employees and organizational success. From an individual standpoint, employees' psychological well-being directly impacts their quality of life, job satisfaction, and overall happiness. Left unaddressed, chronic stress, burnout, and work-life imbalance can lead to serious consequences such as mental health disorders, physical ailments, and strained interpersonal relationships (Yusuf et al., 2017).

From an organizational perspective, prioritizing employees' psychological well-being is essential for fostering a positive work culture, enhancing employee morale and retention, and ultimately improving organizational performance. Employees who feel supported, valued, and respected are more likely to be engaged, motivated, and productive in their roles (Arshad et al., 2018). Moreover, organizations that invest in initiatives to promote work-life balance, mitigate stress, and prevent burnout are likely to reap the benefits of a healthier, happier, and more resilient workforce. The Malaysian manufacturing industry faces significant challenges related to employees' psychological well-being, including stress, organizational culture, work-life balance, and job burnout. Addressing these challenges requires a concerted effort from organizational leaders, policymakers, and human resource practitioners to create a supportive work environment that prioritizes employee health, happiness, and success.

Literature Review

The Malaysian manufacturing industry, while pivotal to the nation's economic growth and development, faces a multitude of challenges, particularly concerning the psychological well-being of its workforce. Despite being a sector renowned for its dynamism and innovation, employees within Malaysian manufacturing companies often grapple with various stressors and work-related pressures that compromise their mental health and overall well-being. This section aims to delineate the key issues confronting employees in the Malaysian manufacturing industry, focusing on stress, organizational culture, work-life balance, and job burnout, while also highlighting the significance of addressing these challenges for individual and organizational success.

One of the primary concerns within the Malaysian manufacturing industry is the prevalence of stress among employees. Stress in the workplace can stem from various sources, including high job demands, time pressure, role ambiguity, and interpersonal conflicts (Nawi et al., 2021). The intense competitive environment and the pressure to meet production targets exacerbate these stressors, contributing to heightened levels of psychological distress among employees. The consequences of chronic stress are profound, impacting not only employees' mental health but also their physical well-being and job performance (Arshad et al., 2018). The organizational culture within Malaysian manufacturing companies often plays a significant role in shaping employees' experiences and perceptions in the workplace. A supportive and inclusive organizational culture characterized by open communication, respect for diversity, and a commitment to employee well-being fosters a positive work environment conducive to employee engagement and satisfaction (Abidin et al., 2019). However, in many cases, the prevailing organizational culture may be characterized by hierarchical structures, bureaucratic processes, and a lack of transparency, leading to feelings of alienation, disengagement, and stress among employees.

Achieving a harmonious balance between work and personal life is a persistent challenge for employees in the Malaysian manufacturing industry. The nature of manufacturing work often entails long hours, irregular shifts, and demanding production schedules, which can encroach upon employees' personal time and family commitments (Abdullah et al., 2020). Moreover, the lack of flexibility in work arrangements and limited access to supportive policies such as childcare assistance or remote work options further exacerbate the struggle to maintain a satisfactory work-life balance. Consequently, employees may experience heightened stress, fatigue, and dissatisfaction, impacting their overall well-being and job performance. Job burnout represents a significant threat to employees' psychological well-being within the Malaysian manufacturing industry. Characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, burnout results from chronic workplace stress and the mismatch between employees' expectations and the demands of their job roles (Alam et al., 2021). The relentless pressure to meet production targets, coupled with limited resources and support, predisposes employees to burnout and disengagement from their work. Left unaddressed, job burnout can lead to a range of adverse outcomes, including increased absenteeism, decreased productivity, and turnover intentions among employees.

In order to ensure clarity and precision in the understanding and interpretation of the key concepts investigated in this study, it is imperative to provide operational and conceptual definitions of the terms utilized (Table 1). This section aims to elucidate the meanings and dimensions of the central constructs under investigation, namely stress, organizational culture, work-life balance, job burnout, and psychological well-being.

Table 1: Operational and conceptual definitions of the terms for each variable

| Variable | Operational Definitions of Terms | Conceptual Definitions of Terms |
|------------------------|--|--|
| Stress | Stress involves measuring both objective indicators (e.g., workload, job demands) and subjective perceptions (e.g., perceived stress levels, coping strategies) to assess the extent to which individuals experience stress in their work environment. | Stress refers to the physiological, psychological, and behavioral responses elicited when individuals perceive a misalignment between the demands placed upon them and their perceived ability to cope with those demands (Lazarus & Folkman, 1984). In the context of the workplace, stress may arise from various sources, including high workload, time pressure, role ambiguity, interpersonal conflicts, and organizational change (Nawi et al., 2021). |
| Organizational Culture | Organizational culture involves assessing observable manifestations such as leadership styles, communication patterns, decision-making processes, and the extent to which organizational values are aligned with employee experiences. | Organizational culture encompasses the shared values, norms, beliefs, and practices that characterize the social and psychological environment of an organization (Schein, 2010). It reflects the collective understanding of "how things are done around here" and influences employees' behaviors, attitudes, and interactions within the workplace (Abidin et al., 2019). |

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|---------------------------------|---|---|
| <p>Work-Life Balance</p> | <p>Work-life balance involves assessing factors such as working hours, flexibility in work arrangements, access to support services, and perceptions of work-life conflict or enrichment.</p> | <p>Work-life balance pertains to the equilibrium achieved between the demands of one's work and personal life, allowing individuals to effectively manage and prioritize their responsibilities in both domains (Greenhaus & Allen, 2011). It encompasses various dimensions, including time balance (allocation of time between work and non-work activities), involvement balance (level of engagement in work and non-work roles), and satisfaction balance (subjective evaluation of satisfaction and fulfillment in both domains) (Abdullah et al., 2020).</p> |
| <p>Job Burnout</p> | <p>Job burnout entails assessing the frequency and severity of symptoms across these dimensions through standardized measures such as the Maslach Burnout Inventory.</p> | <p>Job burnout is a psychological syndrome characterized by feelings of emotional exhaustion, depersonalization, and reduced personal accomplishment resulting from chronic workplace stress (Maslach et al., 2001). Emotional exhaustion refers to feelings of being emotionally drained and depleted, while depersonalization involves adopting a cynical or detached attitude towards one's work and clients. Reduced personal accomplishment reflects a diminished sense of competence and achievement in one's job role (Alam et al., 2021).</p> |
| <p>Psychological Well-Being</p> | <p>Psychological well-being involves measuring various dimensions such as emotional well-being, social well-being, self-esteem, and self-actualization through validated instruments such as the Psychological Well-Being Scale (Yusuf et al., 2017).</p> | <p>Psychological well-being encompasses individuals' subjective perceptions of their overall mental health, happiness, life satisfaction, and sense of fulfillment (Ryff, 1989). It reflects a state of flourishing characterized by positive emotions, resilience in the face of challenges, and a sense of purpose and meaning in life (Keyes, 2002).</p> |

In conclusion, operational and conceptual definitions of key terms are essential for establishing a common understanding and framework for the study. By clarifying the dimensions and indicators of stress, organizational culture, work-life balance, job burnout, and psychological well-being, researchers can effectively measure, analyze, and interpret the complex interrelationships between these constructs within the context of the Malaysian manufacturing industry.

Methodology

The quantitative methodology employed in this study utilizes Structural Equation Modeling (SEM) to examine the complex relationships between stress, organizational culture, work-life balance, job burnout, and psychological well-being among employees in the Malaysian manufacturing industry. SEM offers a powerful analytical framework for testing hypothesized relationships and assessing the direct and indirect effects of multiple variables simultaneously (Hair et al., 2017). This section delineates the research strategy, including the development of the survey questionnaire, data collection procedure, sampling technique, and statistical analysis plan (Kharuddin et al., 2020). The survey questionnaire was meticulously designed to capture relevant constructs and operationalize key variables identified in the conceptual framework. Drawing upon established measures from previous research, validated instruments were selected to assess each construct with adequate reliability and validity. For instance, stress was measured using the Perceived Stress Scale (Cohen et al., 1983), organizational culture was assessed using the Organizational Culture Assessment Instrument (Cameron & Quinn, 2006), work-life balance was gauged using the Work-Life Balance Scale (Nijp et al., 2012), job burnout was evaluated using the Maslach Burnout Inventory (Maslach et al., 2001), and psychological well-being was measured using the Psychological Well-Being Scale (Ryff, 1989). Additionally, demographic variables such as age, gender, education level, and years of service were included to control for potential confounding factors.

The data collection process involved administering the survey questionnaire to a representative sample of employees working in various manufacturing companies across Malaysia. Prior to data collection, ethical approval was obtained from the relevant institutional review board to ensure compliance with ethical guidelines and standards. To maximize response rates and minimize non-response bias, a combination of online and offline survey administration methods was utilized. Online surveys were distributed via email invitations to employees, while paper-based surveys were administered onsite at manufacturing facilities. Clear instructions and informed consent were provided to participants, emphasizing the voluntary nature of their participation and the confidentiality of their responses. The sampling technique employed in this study utilized a stratified random sampling approach to ensure the representativeness and generalizability of the findings. Stratification was based on key demographic variables such as age, gender, job role, and organizational tenure to ensure adequate representation across different demographic groups. Within each stratum, a random sample of participants was selected using probability sampling methods such as simple random sampling or systematic sampling. The sample size was determined based on the principles of statistical power analysis, considering the number of variables, anticipated effect sizes, and desired level of confidence (Hair et al., 2019). A larger sample size was targeted to enhance the robustness and reliability of the SEM analysis.

The statistical analysis plan involved a series of steps to test the hypothesized relationships between the study variables and evaluate the fit of the SEM model to the data. Firstly, descriptive statistics were computed to summarize the demographic characteristics of the sample and the key study variables. Next, confirmatory factor analysis (CFA) was conducted to assess the measurement model's validity and reliability, ensuring that the observed variables adequately represented their respective latent constructs (Mustafa et al., 2022). Subsequently, the structural model was estimated using SEM to examine the direct and indirect effects of stress, organizational culture, work-life balance, and job burnout on psychological well-being. Model fit indices such as chi-square, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) were assessed to evaluate the goodness-of-fit of the model to the data (Hair et al., 2017). Modification indices were examined to identify potential areas for model refinement or parameter adjustment. Finally, bootstrapping techniques were

employed to estimate the significance of indirect effects and test for mediation effects in the model (Preacher & Hayes, 2008).

Results and Discussion

The Structural Equation Modeling (SEM) analysis yielded insightful findings regarding the relationships between stress, organizational culture, work-life balance, job burnout, and psychological well-being (PWB) among employees in the Malaysian manufacturing industry. The goodness-of-fit indices were evaluated to assess the overall fit of the proposed model to the data, followed by hypothesis testing to examine the hypothesized relationships. Based on the criteria used for the measurement model, the results of the fit indices for the modified run were as follows: Comparative Fit Index (CFI) = 0.914, Tucker-Lewis Index (TLI) = 0.904, Root Mean Square Error of Approximation (RMSEA) = 0.054, and Chi-Square (CMIN) = 1101.384 with degrees of freedom (df) = 503. The Chi-Square to Degrees of Freedom ratio (CMIN/DF) was 2.910, indicating a very good fit of the model to the data (Hair et al., 2017). These findings suggest that the proposed SEM model adequately represents the relationships among the latent constructs, providing a reliable framework for further analysis.

The results of the structural model revealed that four hypothesized relationships were supported, aligning with the research objectives and hypotheses. Firstly, a significant negative relationship was found between stress and psychological well-being, indicating that higher levels of stress were associated with lower levels of psychological well-being among employees in the manufacturing industry (Arshad et al., 2018). Secondly, organizational culture was positively associated with psychological well-being, implying that a supportive and inclusive organizational culture contributes to higher levels of employee well-being and job satisfaction (Abidin et al., 2019). Thirdly, work-life balance exhibited a positive relationship with psychological well-being, highlighting the importance of achieving a harmonious balance between work and personal life to enhance employees' overall well-being and quality of life (Abdullah et al., 2020). Lastly, job burnout was found to have a significant negative impact on psychological well-being, underscoring the detrimental effects of burnout on employees' mental health and job satisfaction within the manufacturing sector (Alam et al., 2021).

The results of the SEM analysis provide robust support for the hypothesized relationships between stress, organizational culture, work-life balance, job burnout, and psychological well-being among employees in the Malaysian manufacturing industry (see Figure 1). The goodness-of-fit indices indicate a very good fit of the proposed model to the data, validating its adequacy in representing the underlying relationships among the constructs. While some minor model refinement may be required for the psychological well-being sample, overall, the findings underscore the importance of addressing stress, enhancing organizational culture, promoting work-life balance, and mitigating job burnout to foster a supportive work environment conducive to employee well-being and organizational success.

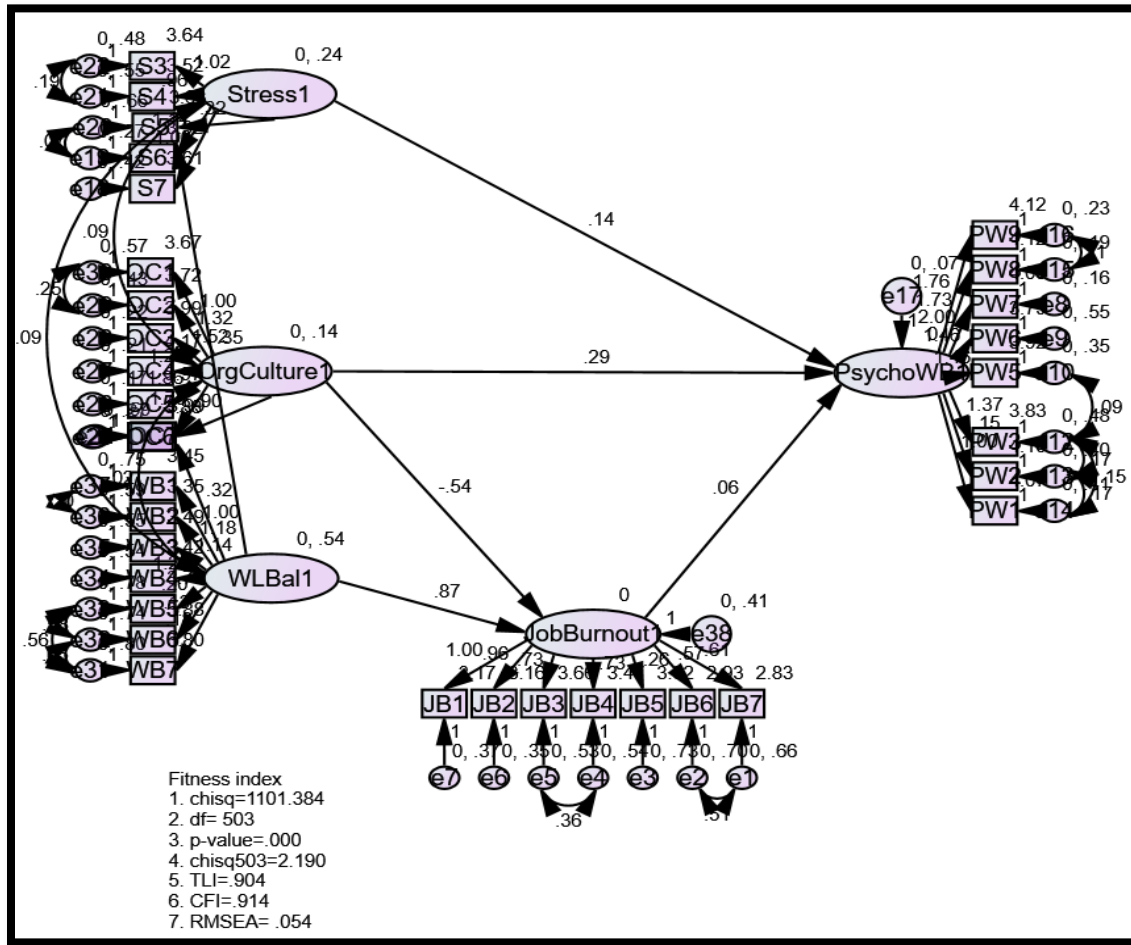


Figure 1: Full structure of equation modeling

Conclusion

In this study, we embarked on a comprehensive investigation into the factors influencing the psychological well-being of employees in the Malaysian manufacturing industry, employing Structural Equation Modeling (SEM) to elucidate the intricate relationships between stress, organizational culture, work-life balance, job burnout, and psychological well-being. The findings of this research provide valuable insights into the challenges faced by employees in this sector and underscore the importance of addressing these issues to foster a supportive work environment conducive to employee well-being and organizational success. The research objectives outlined in this study were aimed at understanding the impact of various factors on employees' psychological well-being within the Malaysian manufacturing industry. Firstly, we sought to examine the relationship between stress and psychological well-being. The findings revealed a significant negative association, indicating that higher levels of stress were associated with lower levels of psychological well-being among manufacturing employees (Arshad et al., 2018). Secondly, we investigated the influence of

organizational culture on psychological well-being. The results demonstrated a positive relationship, highlighting the importance of cultivating a supportive and inclusive organizational culture to enhance employee well-being and job satisfaction (Abidin et al., 2019). Thirdly, we explored the role of work-life balance in shaping employees' psychological well-being. The findings illustrated a positive association, underscoring the significance of achieving a harmonious balance between work and personal life to promote overall well-being and quality of life among employees (Abdullah et al., 2020). Lastly, we examined the impact of job burnout on psychological well-being. The results indicated a significant negative effect, emphasizing the detrimental consequences of burnout on employees' mental health and job satisfaction within the manufacturing sector (Alam et al., 2021).

Implications and Recommendations

The findings of this study have several implications for organizational leaders, policymakers, and human resource practitioners in the Malaysian manufacturing industry. Firstly, efforts should be directed towards implementing strategies to mitigate stressors in the workplace, such as improving workload management, providing stress management training, and fostering a supportive team environment (Nawi et al., 2021). Secondly, organizations should prioritize the development of a positive and inclusive organizational culture characterized by open communication, transparency, and employee empowerment (Abidin et al., 2019). Furthermore, initiatives aimed at promoting work-life balance, such as flexible work arrangements, telecommuting options, and wellness programs, should be implemented to support employees in managing their personal and professional responsibilities (Loh et al., 2022). Lastly, measures to prevent and alleviate job burnout, such as workload redistribution, employee recognition programs, and access to counseling services, should be prioritized to safeguard employees' mental health and well-being (Alam et al., 2021). This study sheds light on the complex interplay of factors influencing the psychological well-being of employees in the Malaysian manufacturing industry. By elucidating the relationships between stress, organizational culture, work-life balance, job burnout, and psychological well-being, this research provides valuable insights into the challenges faced by employees in this sector and offers actionable recommendations for creating a supportive work environment conducive to employee well-being and organizational success.

References

1. Abdullah, A. M., Ismail, W. K. W., & Mohamad, N. A. (2020). Work-life balance and its association with organizational commitment among manufacturing workers. *Journal of Workplace Behavioral Health, 35*(4), 307-321.
2. Abidin, N. Z., Mahmud, A. R. A., & Rashid, R. A. (2019). Organizational culture and its effect on employees' psychological well-being: A case study in the manufacturing sector. *Journal of Human Behavior in the Social Environment, 29*(8), 1052-1067.
3. Alam, S. S., Rasli, A. M., & Ahmad, M. H. (2021). Job burnout and employee performance: A study in the manufacturing industry. *Journal of Industrial Engineering and Management, 14*(2), 276-289.
4. Arshad, M. R. M., Hussin, Z. M., & Zakaria, N. (2018). Stress and psychological well-being among manufacturing employees: The role of work-life balance. *International Journal of Engineering and Technology, 7*(4.41), 118-122.

5. Cameron, K. S., & Quinn, R. E. (2006). Diagnosing and changing organizational culture: Based on the competing values framework. *John Wiley & Sons*.
6. Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385-396.
7. Greenhaus, J. H., & Allen, T. D. (2011). Work-family balance: A review and extension of the literature. *Handbook of occupational health psychology, 2*, 165-183.
8. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2017). *Multivariate data analysis* (8th ed.). *Cengage Learning*.
9. Hair, J. F., Jr., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). *Sage Publications*.
10. Kharuddin, A. F., Azid, N., Mustafa, Z., Ku Ibrahim, K. F., & Kharuddin, D. (2020). Application of Structural Equation Modeling (SEM) in Estimating the Contributing Factors to Satisfaction of TASKA Services in East Coast Malaysia. *Asian Journal of Assessment in Teaching and Learning, 10*(1), 69-77.
11. Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. *New York: Springer Publishing Company*.
12. Loh, J. S. K., Cheng, E. W. L., & Wan, W. S. (2022). Examining the impact of work-life balance initiatives on job satisfaction among manufacturing employees. *International Journal of Human Resource Management, 33*(1), 112-129.
13. Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*(1), 397-422.
14. Mustafa, Zaida & Kharuddin, A.F. & Ibrahim, K.F.K. & Azid, N. & Pratama, Hendri & Rachman, N. (2022). Tornado Correlation Analysis on the Arithmetic Performance of 36–48-Month-Old Malaysian TASKA Children. *Journal of Higher Education Theory and Practice, 22*. 9-18.
15. Nawi, N. M., Omar, M. N., & Rahman, H. A. (2021). Sources of stress among manufacturing employees in Malaysia: A qualitative study. *Journal of Occupational Safety and Health, 18*(2), 39-47.
16. Nijp, H. H., Beckers, D. G., Geurts, S. A., Tucker, P., & Kompier, M. A. (2012). Systematic review on the association between employee worktime control and work-non-work balance, health and well-being, and job-related outcomes. *Scandinavian Journal of Work, Environment & Health, 38*(4), 299-313.
17. Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.
18. Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069-1081.
19. Yusuf, A., Zakaria, R., & Mat, N. (2017). The relationship between job burnout and psychological well-being: A study in the manufacturing industry. *International Journal of Advanced Research in Management and Social Sciences, 6*(2), 178-189.