

The Effect of Work–Life Balance and Workload on Employee Retention at PT Bio Farma

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Abstract

Employee retention is an important human resource management issue, particularly in the bio-pharmaceutical industry, where organizational sustainability depends on experienced employees, specialized knowledge, and operational continuity. This study aims to examine the relationships of work-life balance and workload with employee retention among permanent employees of PT Bio Farma, Indonesia. A quantitative explanatory survey design was employed, involving 270 respondents selected from a population of 831 permanent employees through proportionate stratified random sampling. Data were collected using a 25-item questionnaire measured on a five-point Likert scale and analyzed using descriptive statistics and multiple linear regression. The findings indicate that work-life balance is positively and significantly associated with employee retention ($\beta = .354$, $t = 5.014$, $p < .001$). In contrast, workload has a negative but statistically insignificant association with employee retention ($\beta = -.092$, $t = -1.300$, $p = .195$). Simultaneously, work-life balance and workload significantly explain variations in employee retention ($F = 27.986$, $p < .001$), with an R^2 of .173. Thus, the model explains 17.3% of the variation in employee retention, while the remaining 82.7% is not explained by the variables included in the model. These findings support the Job Demands–Resources (JD-R) perspective by highlighting work-life balance as an important resource associated with employees' intention to remain in the organization. From a practical perspective, the findings underscore the importance of organizational policies that support work-life balance to help sustain employee retention. Future research may incorporate additional factors, such as organizational support, leadership, compensation, and job satisfaction, to improve the explanatory power of the model.

Keywords:

Employee Retention; Work-Life Balance; Workload; Job Demands–Resources Theory; Human Resource Management.

1. INTRODUCTION

Employee retention has become an important issue in strategic human resource management, particularly in industries that depend heavily on experienced employees, specialized knowledge, and operational continuity. In the pharmaceutical and bio-pharmaceutical industry, maintaining competent employees is particularly important because organizational activities are closely associated with strict quality standards, regulatory requirements, production targets, and specialized technical competencies. PT Bio Farma, as an Indonesian state-owned bio-pharmaceutical company, operates within this demanding environment and requires employees who are able to maintain performance while adapting to changing organizational and operational demands. The importance of employee retention is therefore not limited to reducing employee turnover but also concerns the organization's ability to preserve experience, knowledge, and human capital that support operational sustainability (Becker, 1964; Hausknecht et al., 2009).

The issue of employee retention is increasingly relevant at PT Bio Farma. Based on the research context presented in the final thesis, 30 employees left the company during the 2023–2026 period, mainly through early retirement and resignation. At the same time, employees face working conditions characterized by production demands, shift systems, workload, and strict quality and regulatory requirements. These conditions create a situation in which organizations need to maintain productivity while also ensuring that employees are able to manage their work and personal lives effectively. The thesis identifies work-life balance and workload as two factors that are potentially associated with employees' decisions to remain in the organization.

Work-life balance refers to the ability of employees to manage their work responsibilities and personal lives in a balanced manner. It involves not only the distribution of time between work and non-work activities but also the extent to which employees experience involvement and satisfaction across both domains. Fisher et al. (2009) conceptualize work-life balance through dimensions related to time balance, involvement balance, and satisfaction balance. In organizational settings, a positive work-life balance can contribute to employee well-being, job satisfaction, organizational commitment, and the intention to remain with the organization. Previous studies have also reported that work-life balance is associated with employee retention and other positive employee outcomes (Astuti et al., 2023; Dwitanti et al., 2023; Kuancintami & Heryjanto, 2023).

In contrast, workload represents an important job demand that may influence employees' physical, mental, and emotional resources. Excessive workload may increase work stress and fatigue and may consequently contribute to employees' intention to leave the organization. Previous studies have found relationships between workload and turnover intention, either directly or through variables such as job satisfaction and work stress (Afrianty & Dewi, 2022; Anggraini et al., 2022; Aprilianti et al., 2023; Farida et al., 2023). From the perspective of the Job Demands–Resources (JD-R) theory, workload represents a job demand that requires employees to expend physical and psychological resources, while organizational resources can help employees manage those demands (Bakker & Demerouti, 2007; Bakker et al., 2023).

The relationship between work-life balance, workload, and employee retention, however, is not necessarily uniform across organizational contexts. Workload may have negative consequences when job demands exceed available resources, while adequate resources may help employees cope with work demands and maintain positive attitudes toward the organization. Therefore, work-life balance can potentially function as an important resource that supports employees in managing work demands and maintaining their relationship with the organization. The final thesis adopts the JD-R framework to explain this relationship, positioning workload as a job demand and work-life balance as an important resource in understanding employee retention.

Although previous studies have examined work-life balance, workload, turnover intention, and employee retention, several gaps remain. First, relatively limited empirical research has simultaneously examined work-life balance and workload as predictors of employee retention within a state-owned pharmaceutical or bio-pharmaceutical organization. Second, previous research has produced different findings regarding the relationship between workload and employee retention or turnover-related outcomes, suggesting that organizational context may influence the relationship. Third, research specifically examining these relationships within PT Bio Farma remains limited, despite the company's characteristics as a highly regulated bio-pharmaceutical organization with production, research, and development activities. The final thesis consequently identifies the need for quantitative research examining work-life balance, workload, and employee retention comprehensively within PT Bio Farma.

This research therefore addresses the following research questions: how are the levels of work-life balance, workload, and employee retention among employees of PT Bio Farma; does work-life balance significantly affect employee retention; does workload significantly affect employee retention; and do work-life balance and workload simultaneously affect employee retention? These questions are directly derived from the research problem formulated in the final thesis.

The primary objectives of this study are to examine the levels of work-life balance, workload, and employee retention among PT Bio Farma employees; analyze the effect of work-life balance on employee retention; analyze the effect of workload on employee retention; and examine the simultaneous effect of work-life balance and workload on employee retention.

By addressing these objectives, this study contributes empirical evidence concerning employee retention in the Indonesian bio-pharmaceutical sector. The study also contributes to the application of the JD-R framework by examining the role of work-life balance as a resource and workload as a job demand in explaining employee retention. From a practical perspective, the findings may provide evidence for human resource management at PT Bio Farma in developing policies related to employee well-being, work-life balance, workload management, and workforce sustainability. The thesis also identifies potential practical implications involving work scheduling, employee welfare, workload management, job redesign, and organizational support.

This study is also expected to contribute to the broader discussion of human resource management in regulated and knowledge-intensive industries. Employee retention is a multidimensional organizational issue, and the present study provides empirical evidence that can be used as a basis for considering additional factors beyond work-life balance and workload. This is particularly relevant because the final regression model

explains 17.3% of the variation in employee retention, indicating that other organizational and individual factors may also contribute to employees' decisions to remain with the organization.

This paper is structured as follows. The Research Method section describes the research design, population and sample, data collection, measurement instruments, and analytical procedures. The Results and Discussion section presents the characteristics of respondents, descriptive analysis, classical assumption tests, multiple linear regression results, hypothesis testing, and interpretation of the findings in relation to previous studies and the JD-R framework. The Conclusion section summarizes the main findings, theoretical and practical implications, limitations, and directions for future research.

2. RESEARCH METHOD

This study employed a quantitative approach with an explanatory survey design. The research was classified as verification research because it aimed to empirically examine the relationships between work-life balance, workload, and employee retention. The explanatory design was selected because the study sought to explain the effect of the independent variables, namely work-life balance (X1) and workload (X2), on employee retention (Y), both partially and simultaneously. A survey approach was used because the required data were obtained directly from employees through a structured questionnaire. The study used a cross-sectional design, in which data were collected at a particular period, allowing the relationships among the variables to be examined based on employees' perceptions at the time of the study.

The research was conducted at PT Bio Farma (Persero), Bandung, Indonesia. The target population consisted of 831 permanent employees working in the Directorate of Production and Supply Chain and the Directorate of Research and Development in 2026. These organizational units were selected because their activities involve operational complexity, production demands, research responsibilities, and relatively high work requirements, making them relevant to the examination of work-life balance, workload, and employee retention. The sample was determined using the Slovin formula with a 5% margin of error and was established at 270 respondents. To ensure proportional representation across the organizational groups, the study applied proportionate stratified random sampling.

The primary data were collected using a structured questionnaire distributed to the selected respondents, while secondary data were obtained from relevant company documents, organizational profiles, and human resource records. The questionnaire consisted of 25 statements measured using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Work-life balance (X1) was measured using nine items covering three dimensions: time balance, involvement balance, and satisfaction balance. Workload (X2) was measured using nine items representing time load, task load, and mental load. Employee retention (Y) was measured using seven items covering organizational commitment, job satisfaction, and intention to stay.

Table 1. Operationalization of Research Variables

Variable	Dimensions	Number of Items	Measurement Scale
Work-Life Balance (X1)	Time balance; involvement balance; satisfaction balance	9	Five-point Likert
Workload (X2)	Time load; task load; mental load	9	Five-point Likert
Employee Retention (Y)	Organizational commitment; job satisfaction; intention to stay	7	Five-point Likert
Total		25	

Source: Adapted from Fisher et al. (2009), Tarwaka (2015), and Hausknecht et al. (2009).

Before the main data analysis, the quality of the research instrument was evaluated through validity and reliability testing. The validity test was conducted using Pearson correlation through the corrected item-total correlation approach. The instrument was tested on 30 respondents, resulting in an *r*-table value of 0.361 at a 5% significance level. All 25 questionnaire items obtained calculated correlation coefficients ranging from 0.61 to 0.75, exceeding the required criterion. Therefore, all questionnaire items were considered valid and retained for the main analysis.

Reliability was assessed using Cronbach's Alpha to examine the internal consistency of the instrument. The results produced a Cronbach's Alpha coefficient of 0.912, while the standardized Cronbach's Alpha was 0.918 for the 25 items. Both values exceeded the minimum reliability criterion of 0.70, indicating that the instrument demonstrated adequate internal consistency for measuring work-life balance, workload, and employee retention.

Data analysis was conducted using IBM SPSS Statistics. The analysis began with descriptive statistics to summarize respondent characteristics and describe the distribution of the three research variables. The analysis then proceeded with classical assumption testing before multiple linear regression was performed. The assumption tests included a normality test, multicollinearity test, and heteroscedasticity test. Multicollinearity was assessed using tolerance and Variance Inflation Factor (VIF), with tolerance values above 0.10 and VIF

values below 10 indicating the absence of multicollinearity. Heteroscedasticity was examined using the significance of the independent variables against the absolute residuals, with a significance value above 0.05 indicating no heteroscedasticity.

Multiple linear regression was subsequently employed to examine the partial and simultaneous effects of work-life balance and workload on employee retention. The regression model was specified as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where Y represents employee retention, X1 represents work-life balance, X2 represents workload, α represents the constant, β_1 and β_2 represent the regression coefficients, and ε represents the error term. Partial effects were examined using the t-test, while the simultaneous effect of the independent variables was assessed using the F-test. The coefficient of determination (R^2) was used to determine the proportion of variation in employee retention explained by the regression model. Statistical significance was evaluated at $\alpha = 0.05$.

The research procedure consisted of several stages. First, the research variables and measurement indicators were established based on the theoretical framework and previous studies. Second, the questionnaire was developed and tested to evaluate the validity and reliability of the measurement items. Third, the questionnaire was distributed to employees selected through proportionate stratified random sampling. Fourth, the collected responses were compiled and processed using IBM SPSS Statistics. Finally, descriptive analysis, classical assumption testing, multiple linear regression, t-testing, F-testing, and coefficient of determination analysis were conducted to address the research objectives and hypotheses.

Ethical considerations were addressed by informing respondents about the purpose of the study and requesting their voluntary participation in completing the questionnaire. The questionnaire explicitly stated that respondents' answers would be kept confidential and used only for academic and scientific research purposes. Respondents were also instructed that there were no right or wrong answers and were encouraged to provide responses according to their actual conditions and experiences.

Several methodological limitations should be considered when interpreting the findings. First, the cross-sectional design captures employee perceptions at a particular point in time and therefore does not capture changes in work-life balance, workload, or retention over time. Second, the study relies on self-reported questionnaire data, which may be influenced by respondents' individual perceptions and experiences. Third, the study was conducted within a single organization, PT Bio Farma, which provides strong contextual relevance but limits the extent to which the findings can be generalized to other industries or organizations. Finally, the respondent composition was dominated by employees from production units and certain demographic groups, which may influence the overall representation of employee perceptions. These limitations were addressed by applying a structured measurement instrument, testing its validity and reliability, and using proportionate stratified random sampling to improve representation across the selected organizational groups.

3. RESULTS AND DISCUSSION

3.1. Respondent Characteristics

A total of 270 permanent employees participated in the study. The respondent characteristics were classified according to organizational unit, age, gender, employment entry period, and educational background. The largest proportion of respondents came from Production, consisting of 171 respondents or 63.33%. Research and Development accounted for 33 respondents or 12.22%, while other units accounted for 66 respondents or 24.44%. Regarding age, 145 respondents (53.70%) were 25–35 years old, 92 respondents (34.07%) were 36–45 years old, and 33 respondents (12.22%) were 46–55 years old. Male respondents represented 178 employees (65.93%), while female respondents represented 92 employees (34.07%). Regarding employment entry period, the largest group consisted of employees who joined the company between 2010 and 2019, totaling 145 respondents (53.70%). In terms of educational background, 204 respondents (75.56%) held a bachelor's degree, 46 respondents (17.04%) had a high-school education, and 20 respondents (7.41%) held a master's degree.

3.2. Descriptive Statistics

The descriptive analysis indicates that work-life balance had a mean score of 3.87, categorized as high. Workload had a mean score of 3.02, categorized as moderate, while employee retention had the highest mean score of 4.01, categorized as high.

Table 2. Descriptive Statistics of Research Variables

Variable	Mean	Category
Work-Life Balance	3.87	High
Workload	3.02	Moderate

Employee Retention	4.01	High
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The results indicate that respondents generally perceived their work-life balance positively. At the same time, workload was perceived as moderate rather than high. Employee retention was categorized as high, suggesting that respondents generally expressed a strong tendency to remain with PT Bio Farma. The distribution of employee retention further supports this finding. Approximately 66.7% of respondents were categorized as having high retention, while 28.1% were categorized as very high.

3.3. Classical Assumption Tests

The regression model was evaluated using normality, multicollinearity, and heteroscedasticity tests. The multicollinearity test produced a tolerance value of 0.623 and VIF of 1.606 for both independent variables. These values indicate that the predictors did not exhibit problematic multicollinearity. The heteroscedasticity test produced significance values of 0.054 for work-life balance and 0.060 for workload. Both values were above 0.05, indicating no evidence of heteroscedasticity based on the procedure reported in the thesis.

3.4. Multiple Linear Regression

Table 3. Multiple Linear Regression Coefficients

Predictor	B	Standardized β	t	p
Constant	19.230	—	6.314	< .001
Work-Life Balance	0.300	0.354	5.014	< .001
Workload	-0.061	-0.092	-1.300	.195

The regression equation is:

$$\text{Employee Retention} = 19.230 + 0.300(\text{Work-Life Balance}) - 0.061(\text{Workload})$$

The coefficient for work-life balance is positive, indicating that higher work-life balance is associated with higher employee retention. The standardized coefficient was $\beta = 0.354$, with $t = 5.014$ and $p < .001$. In contrast, workload had a negative coefficient of -0.061 . However, its standardized coefficient was -0.092 and the significance value was 0.195, indicating that the effect was not statistically significant at the 5% significance level.

3.5. Hypothesis Testing

Table 4. Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	Work-life balance significantly affects employee retention.	Supported
H2	Workload significantly affects employee retention.	Not supported
H3	Work-life balance and workload simultaneously significantly affect employee retention.	Supported

3.5.1. Effect of Work-Life Balance on Employee Retention

The first hypothesis was supported. Work-life balance demonstrated a positive and statistically significant effect on employee retention, with $\beta = 0.354$, $t = 5.014$, and $p < .001$. This result indicates that employees who perceive better balance between work and personal life tend to demonstrate stronger intention to remain with the organization. In the PT Bio Farma context, work-life balance may function as an important organizational resource because employees operate in an environment characterized by production requirements, regulatory demands, and specialized work. The finding is consistent with the JD-R perspective. Job resources can support employee motivation and well-being and may reduce the negative consequences associated with job demands (Bakker & Demerouti, 2007; Bakker et al., 2023). It is also consistent with the Conservation of Resources perspective, in which employees seek to maintain valuable resources such as time, energy, and psychological capacity (Hobfoll, 1989). The finding is also consistent with previous research indicating a relationship between work-life balance and employee retention or related employee outcomes (Astuti et al., 2023; Dwitanti et al., 2023; Kuancintami & Heryjanto, 2023). From a managerial perspective, the finding suggests that policies supporting work-life balance may be relevant to employee retention. Such policies may include proportional work scheduling, support for family-related needs, healthy overtime management, employee well-being programs, and career development opportunities, provided that their implementation remains compatible with operational requirements.

3.5.2. Effect of Workload on Employee Retention

The second hypothesis was not supported statistically. Workload showed a negative coefficient, $\beta = -0.092$, but the effect was not significant ($t = -1.300$, $p = .195$). The negative direction suggests that higher workload was associated with a tendency toward lower employee retention in the estimated model. However, the statistical result does not provide sufficient evidence to conclude that workload has a significant direct effect on employee retention in the population represented by this study. This result should be interpreted alongside the descriptive finding that workload was categorized as moderate, with a mean score of 3.02. The thesis discussion indicates that the workload experienced by respondents may not have reached a level sufficiently intense to become a major determinant of their decision to remain with the organization. The result differs from studies that have reported significant relationships between workload and turnover-related outcomes. Such differences may arise from variations in workload intensity, organizational support, job characteristics, organizational culture, and respondent characteristics. Within the JD-R framework, workload represents a job demand. However, a job demand does not necessarily produce a significant retention effect when employees have sufficient resources to manage the demand. Therefore, the non-significant result does not imply that workload is irrelevant. Rather, it indicates that workload was not a statistically significant direct predictor of employee retention in this particular research context.

3.5.3. Simultaneous Effect of Work-Life Balance and Workload on Employee Retention

The third hypothesis was supported. The simultaneous regression model was statistically significant, with $F = 27.986$ and $p < .001$.

Table 5. Regression Model Summary

Statistic	Value
F	27.986
Significance	< .001
R ²	.173

The coefficient of determination was $R^2 = .173$, meaning that work-life balance and workload jointly explained 17.3% of the variance in employee retention. The remaining 82.7% was not explained by the variables included in the model. Importantly, the significant F-test should not be interpreted as evidence that both predictors are individually significant. The partial results show that work-life balance was significant, while workload was not. Thus, the simultaneous significance reflects the explanatory contribution of the model as a whole. The result supports the JD-R framework because employee retention can be understood through the interaction between job demands and job resources. Work-life balance represents a resource that may support employee well-being and organizational attachment, whereas workload represents a demand that may consume employee resources. The relatively modest R^2 also indicates that employee retention is a multidimensional phenomenon. Other organizational and individual factors may contribute to employees' decisions to remain, including compensation, career development, leadership, organizational culture, employee engagement, perceived organizational support, job satisfaction, work environment, and promotion opportunities. The final thesis similarly identifies these factors as possible explanations for the remaining 82.7% of variance.

4. CONCLUSION

This study examined the effects of work-life balance and workload on employee retention among permanent employees of PT Bio Farma using a quantitative explanatory design and the Job Demands–Resources framework. The descriptive results show that work-life balance was categorized as high ($M = 3.87$), workload as moderate ($M = 3.02$), and employee retention as high ($M = 4.01$). The regression results demonstrate that work-life balance has a positive and statistically significant effect on employee retention ($\beta = .354$, $p < .001$). Therefore, employees who perceive better balance between work and personal life tend to demonstrate stronger retention. Meanwhile, workload has a negative but statistically insignificant effect on employee retention ($\beta = -.092$, $p = .195$). The negative direction indicates a tendency toward lower retention as workload increases, but the evidence is insufficient to establish a statistically significant direct effect. When considered simultaneously, work-life balance and workload significantly explain employee retention ($F = 27.986$, $p < .001$). However, the model explains only 17.3% of the variance, indicating that other factors contribute substantially to employee retention. The findings have theoretical implications for the application of JD-R theory in the Indonesian biopharmaceutical sector. The results particularly highlight the role of work-life balance as a job resource associated with employee retention. From a managerial perspective, PT Bio Farma may consider strengthening organizational practices that support work-life balance while continuing to monitor workload so that job demands remain proportional to available resources. Future studies may incorporate additional variables such as organizational support, leadership, compensation, career development, organizational culture, job satisfaction, and employee engagement. This study is limited by its focus on a single organization, its cross-sectional design, and its use of perceptual questionnaire data. Therefore, future research may employ

longitudinal designs, compare multiple organizations, or examine mediating and moderating variables to provide a more comprehensive explanation of employee retention.

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