

Factors That Influence Turnover Intention at PT XYZ

Alvin Paulus Silitonga*, Achmad Ghazali

Institut Teknologi Bandung, Indonesia

Email: alvinsilitonga@gmail.com*

ABSTRACT

High employee turnover rates represent a critical challenge in human resource management, particularly in joint venture companies operating in the power generation sector, where maintaining workforce stability is essential for operational excellence and technology transfer. Therefore, this research aims to analyze the influence of these two variables on turnover intention by considering important dimensions such as conditions for engagement, opinion engagement, engagement behavior, career development, work environment, employee relationships with management, and compensation and benefits. The study employs a mixed-methods approach, combining Partial Least Squares Structural Equation Modeling (PLS-SEM) for quantitative analysis with in-depth qualitative interviews to provide comprehensive insights. The quantitative findings reveal that job satisfaction ($\beta = -0.578$, $p < 0.001$) exerts a stronger negative influence on turnover intention compared to employee engagement ($\beta = -0.382$, $p < 0.001$), collectively explaining 70.2% of the variance in turnover intention ($R^2 = 0.702$). Specifically, career development, work environment, and employee relationships with management emerged as significant predictors of turnover intention, while opinion engagement showed no significant direct effect. Qualitative insights revealed underlying issues, including unclear certification pathways, cultural and communication barriers between local and expatriate staff, insufficient management support during high-pressure situations, and perceived inequities in compensation structures. This research provides theoretical contributions by extending the understanding of job satisfaction and engagement dimensions in cross-cultural joint venture contexts, while offering practical implications through targeted business solutions, including transparent career path development, compensation benchmarking, enhanced management communication strategies, and systematic training programs.

KEYWORDS Career Development, Employee Engagement, Job Satisfaction, Turnover Intention, Work Environment



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INTRODUCTION

The global power generation sector faces unprecedented challenges related to energy security, sustainable development, and workforce management, particularly in developing economies experiencing rapid industrialization and energy transition. According to the International Energy Agency (IEA, 2023), developing nations in Asia are projected to account for 75% of global electricity demand growth through 2030, necessitating massive investments in generation capacity, technological modernization, and human capital development. Within this context, workforce stability has emerged as a critical success factor, as high employee turnover disrupts operational continuity, increases training costs, compromises safety

standards, and impedes the crucial transfer of advanced technologies from international partners to local workforces (Harzing & Pinnington, 2011).

The World Bank (2022) estimates that replacing a skilled technical employee in the energy sector costs between 50–200% of their annual salary when accounting for recruitment, training, productivity losses, and operational disruptions. These challenges are particularly acute in joint venture (JV) arrangements between developed and developing country partners, where cultural differences, dual management systems, and perceived inequities in career advancement and compensation create additional retention pressures beyond those experienced in traditional single-ownership facilities.

From the supply side, Indonesia's installed power generation capacity reached around 84 GW in 2023, with the energy mix still dominated by *Coal-Fired Power Plants (CFPP)*, which contribute more than 60% of the total capacity. The contribution of new renewable energy sources, such as solar, hydro, and bioenergy, remains in the range of 14–15%, far from the 23% target set by the government for 2025. Meanwhile, from the demand side, national electricity demand is growing by around 4–6% per year, in line with population growth, urbanization, and industrial area expansion. The Java–Bali system is the largest peak-load absorber but faces challenges of overcapacity, while eastern Indonesia still lacks reliable capacity.

Human resource challenges in the power generation sector have been documented in multiple contexts. Zhang et al. (2021) examined turnover intentions among Chinese power plant employees and found that perceived organizational support and career development opportunities were the strongest predictors of retention, accounting for 48% of turnover variance. Their study highlighted that technical employees in joint ventures experienced 35% higher turnover rates compared to wholly domestic-owned facilities, primarily due to role ambiguity and limited advancement pathways. Similarly, Kumar and Singh (2020) investigated employee retention in Indian thermal power plants, revealing that work-life balance, compensation equity, and management communication quality significantly influenced turnover intentions ($R^2 = 0.56$). They noted that employees in public–private partnership arrangements reported 27% lower job satisfaction scores compared to purely public sector counterparts, attributing this to conflicting organizational cultures and dual reporting structures.

Nguyen et al. (2022) conducted a longitudinal study of Vietnamese energy sector employees, demonstrating that employee engagement mediated the relationship between job satisfaction and turnover intention (indirect effect $\beta = -0.31$, $p < 0.01$). Their findings emphasized that engagement programs focusing solely on organizational commitment without addressing tangible job satisfaction factors (compensation, career growth, work conditions) yielded limited retention benefits. Park and Lee (2023) analyzed Korean nuclear power plant workforce dynamics, identifying that safety climate perceptions, training adequacy, and supervisor support collectively predicted 62% of turnover intention variance ($R^2 = 0.62$). They found that expatriate–local employee tensions in international technology transfer projects increased turnover risk by 42% when not properly managed through cultural sensitivity training and equitable policy implementation. These studies collectively reveal a research gap: while existing literature addresses turnover in energy sector contexts and separately examines joint

venture HR challenges, limited research has systematically investigated the combined effects of job satisfaction and employee engagement on turnover intention specifically within Indonesian joint venture power generation companies, where unique cultural, regulatory, and operational factors converge.

In response to high investment demands in power plant development, the Indonesian government has developed an *Independent Power Producer (IPP)* scheme through partnership mechanisms with the private sector, including foreign investors. One form of *IPP* commonly implemented is the *Joint Venture Company (JVC)*, in which local and foreign entities jointly build, operate, and sell electricity to PLN over the long term based on a *Power Purchase Agreement (PPA)*. A notable example of this scheme is the *Jawa 7 CFPP* project, managed by a *JVC* resulting from collaboration between PT Indonesia Power and Guohua Electric Power Co., Ltd, a subsidiary of China Energy Investment Corporation. This $2 \times 1,050$ MW project employs *Ultra Super Critical (USC)* technology and is one of the most efficient *CFPP* plants in Southeast Asia, as it can improve efficiency by up to 15% compared to non-*USC* technology.

Despite its many benefits, *JVC* management in the power generation sector faces significant challenges, particularly in human resources (HR). One of the main issues is the high rate of employee turnover, especially among local technicians and operators. This high turnover rate can be attributed to various factors, including differences in organizational culture between local and foreign parties, differing work expectations, dual management systems that cause role confusion, and unequal access to training, promotions, or incentives between local and expatriate employees. Field studies of several *JVC* projects in the energy sector indicate that work discomfort and perceived injustice often prompt local employees to resign (Harzing & Pinnington, 2011; IEEFA, 2022).

This phenomenon poses major challenges to maintaining operational sustainability, improving efficiency, and ensuring optimal technology transfer. If unmanaged, high turnover in *JVCs* will not only affect the organization's internal stability but will also hinder national energy security and transition goals. Therefore, research into the dynamics of the power generation industry—particularly from the perspective of *IPP* partnerships, joint venture impacts on operational performance, and the effects of turnover on HR performance—is essential to develop more adaptive and sustainable policy recommendations in the future.

This research is built upon the following research questions: How do job satisfaction and employee engagement influence turnover intention at PT XYZ for Indonesian employees? According to the survey, what factors need to be improved to reduce turnover intention? The objectives of this research are as follows: to analyze job satisfaction, employee engagement, and turnover intention at PT XYZ; and to provide solutions for the business issue. Employees at PT XYZ consist of two categories, with a focus on Indonesian employees in PT XYZ—a joint venture between two countries—assessing the impact of *JSQ* and *EEQ* on turnover intention. The research is limited to one company, excludes the perspectives of Chinese employees, relies on self-reported data, and does not measure the long-term impact of training.

METHOD

This study employed a mixed-methods approach, using quantitative data to objectively measure and analyze the relationship between key variables. The main objective was to determine the extent to which job satisfaction and employee engagement influenced turnover

intention among employees at PT XYZ. The qualitative component was conducted to deepen and validate the quantitative findings through interviews with selected organizational stakeholders who had significant insights into employee behavior and management dynamics.

This research adopted a causal-comparative design to identify the influence of independent variables—job satisfaction and employee engagement—on the dependent variable, turnover intention.

Data collection was carried out using a survey method by distributing structured questionnaires to respondents selected based on predetermined criteria. The questionnaire was developed from validated theories and indicators in previous studies and measured with a Likert scale. This approach enabled the collection of reliable data efficiently. Through this design, the study sought to provide a comprehensive understanding of how job satisfaction and employee engagement affected turnover intention and to identify factors that could assist PT XYZ in formulating strategies to enhance employee satisfaction and engagement while reducing turnover rates.

RESULTS AND DISCUSSION

Descriptive Analysis of JSQ

Career Development (CDJSQ)

Based on the results of descriptive analysis of the JSQ1 indicator representing the career development dimension in the job satisfaction variable, an average value (mean) of 3.52 was obtained from a Likert scale of 1 to 5. This value indicates that in general respondents have a fairly high level of satisfaction with the career development aspect in the company. This indicates that most employees feel that there are opportunities or support in their career development.

However, the standard deviation value of 1.09 and the minimum value of 1.00 indicate that there is a fairly large diversity of opinions among respondents. Some employees rate the career development aspect very low, which reflects dissatisfaction or limited access to professional development opportunities for some individuals. Meanwhile, the maximum value of 5.00 indicates that some respondents gave the highest rating, meaning they are very satisfied with the career support they receive.

The standard error of mean value of 0.12 indicates that the average obtained has a fairly good level of precision in representing the entire population surveyed. The variance value of 1.19 further confirms the existence of a fairly wide spread of values from the average, strengthening the finding of differences in experience among respondents on this dimension.

Overall, although there is a positive tendency towards the career development dimension, organization still need to pay attention to groups of employees who feel they are not getting enough career development. This is important to avoid potential turnover intentions that can arise due to dissatisfaction in aspects of self-development and long-term career prospects.

Table 1. Descriptive Analysis of Career Development (CDJSQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
JSQ1	82	5	1	3.52	0.12	1.09	1.19

Compensation and Benefit (CnBJSQ)

The compensation and benefit dimension is one of the important aspects in creating employee job satisfaction. Based on the analysis of the JSQ2 and JSQ3 indicators, an average value of 3.63 was obtained, indicating that in general employees feel quite satisfied with the compensation and benefits provided by the company. This value is above the midpoint of the Likert scale, which is 5, reflecting a perception that tends to be positive towards the compensation system implemented.

The JSQ2 indicator shows an average value of 3.65, making it the indicator with the highest score on this dimension. This indicates that most respondents are satisfied with the direct compensation they receive, such as basic salary and other incentives. However, the standard deviation value of 1.24 indicates a fairly high variation in perception, meaning that there are still a number of employees who feel dissatisfied with this aspect.

Meanwhile, the JSQ3 indicator has an average value of 3.61, which describes employee perceptions of additional benefits such as allowances, insurance, or work facilities. The standard deviation value of 1.11 indicates that the variation in answers to this indicator is slightly lower than JSQ2, indicating that perceptions of benefits are relatively more uniform. However, the minimum value for both indicators remain at 1, indicating that there are respondents who are very dissatisfied with the compensation and benefits they receive. Overall, the average standard error value of 0.13 confirms that the average estimate is quite stable and can represent the population. However, the existence of variations in perception needs to be a concern for company management. To increase job satisfaction evenly, companies need to evaluate the existing compensation and benefit systems, and ensure fairness, transparency, and affordability of benefits for all employees. This is important to reduce the potential for turnover intention and increase employee retention.

Table 2. Descriptive Analysis of Compensation and Benefit (CnBJSQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
JSQ2	82	5	1	3.65	0.14	1.24	1.54
JSQ3	82	5	1	3.61	0.12	1.11	1.23
Average				3.63	0.13	1.175	1.385

Employee Relationship with Management (ERJSQ)

The employee relationship with management dimension reflects the extent to which employees feel they have a good, open, and constructive relationship with the company's management. Based on descriptive data, this dimension is measured through three indicators: JSQ4, JSQ5, and JSQ6, each of which shows a fairly high and consistent average value.

The JSQ4 indicator has an average value of 3.70, with a standard deviation of 1.06, indicating that most respondents feel quite satisfied with the working relationship with management, although there is still a slight variation in views. A minimum value of 1 and a maximum of 5 indicate differences in perception among respondents, from very dissatisfied to very satisfied. The JSQ5 indicator shows the highest average value of 3.77, with a standard deviation of 1.09. This indicates that employees feel quite comfortable in communicating or expressing opinions to management.

Meanwhile, the JSQ6 indicator recorded an average value of 3.74, with a standard deviation of 1.06, illustrating the consistency of positive perceptions of management support and attention to employees. Overall, the combined average value of the three indicators is 3.74, with a standard error of 0.12 and an average standard deviation of 1.07, indicating a good level of satisfaction but still a diversity of perceptions. These results indicate that the relationship between employees and management in general has been going quite well.

Table 3. Descriptive Analysis of Employee Relationship with Management (ERJSQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
JSQ4	82	5	1	3.7	0.12	1.06	1.13
JSQ5	82	5	1	3.77	0.12	1.09	1.19
JSQ6	82	5	1	3.74	0.12	1.06	1.13
Average				3.74	0.12	1.07	1.15

Work Environment (ERJSQ)

The Work Environment dimension consists of seven indicators, namely JSQ7 to JSQ13, with an overall average of 3.61. This value indicates that in general respondents feel quite satisfied with their work environment. The indicator with the highest average value is JSQ11 (3.77), which indicates that the aspect of good relations with coworkers is considered very positive by most respondents.

Meanwhile, the lowest value is in JSQ12 (3.51), which is still in the category of quite satisfied, but indicates that there is room for improvement. The average standard deviation of 1.15 indicates that there is a moderate variation in perception, reflecting that although many respondents are satisfied, some still have different views on the conditions of the work environment.

The standard error value of 0.13 indicates that this average is quite stable and can be trusted as a representation of the population. Overall, these results reflect that the work environment is considered quite supportive, but the company still needs to maintain and improve certain aspects to ensure equal job satisfaction across all employees.

Table 4. Descriptive Analysis of Work Environment (WEJSQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
JSQ10	82	5	1	3.72	0.12	1.09	1.19
JSQ11	82	5	1	3.77	0.13	1.17	1.37
JSQ12	82	5	1	3.51	0.12	1.1	1.22
JSQ7	82	5	1	3.57	0.14	1.23	1.51
JSQ8	82	5	1	3.52	0.13	1.22	1.49
JSQ9	82	5	1	3.61	0.13	1.15	1.33
JSQ13	82	5	1	3.57	0.12	1.08	1.16
Average				3.61	0.13	1.15	1.32

Job Satisfaction in General (GJSQ)

The Job Satisfaction in General dimension is measured through three indicators with an overall average of 3.58. This value indicates that employees are generally quite satisfied with

their jobs as a whole, although they have not reached a very high level of satisfaction. The indicator with the highest value is JSQ15 (3.68), indicating that respondents generally do not like their jobs. Meanwhile, the indicator with the lowest value is JSQ16 (3.50), indicating that there are still some respondents who are dissatisfied with the general components of their jobs.

The average standard deviation of 1.03 and the standard error of 0.11 indicate that the level of variation between respondents is moderate and the average value is quite stable. This indicates that the majority of employees have similar perceptions, but there is still room for improvement in terms of general satisfaction. Overall, these results illustrate that job satisfaction is generally at a positive level, but companies still need to pay attention to this dimension to maintain employee enthusiasm and loyalty in the long term.

Table 5. Descriptive Analysis of Job Satisfaction in General (GJSQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
JSQ14	82	5	1	3.55	0.12	1.07	1.14
JSQ15	82	5	1	3.68	0.11	1.02	1.03
JSQ16	82	5	1	3.5	0.11	1	0.99
Average				3.58	0.11	1.03	1.05

Descriptive Analysis of EEQ

Conditions for Engagement (CEEQ)

The Conditions for Engagement dimension is measured through seven indicators (EEQ1–EEQ7), with an overall average of 3.50, indicating that the level of employee engagement is in the fairly good but not optimal category. The indicators with the highest scores are EEQ6 (3.66) and EEQ7 (3.63), indicating that employees feel quite strongly about the work environment conditions that support engagement, such as management recognition of performance and training provided by the company. Meanwhile, the lowest scores were recorded in EEQ4 (3.33) and EEQ2 (3.39), indicating that some aspects of work conditions were felt to be less than optimal by some respondents, such as the company's financial stability and the work itself.

The average standard deviation of 1.17 and standard error of 0.13 indicate that there is quite a large variation in employee perceptions, although the average can still be said to be stable. This reinforces the need to evaluate the conditions underlying employee engagement. Overall, although the majority of respondents showed quite positive engagement in the context of work conditions, management needs to pay attention to the gap in perception between individuals. Improvements in lower-level aspects can increase overall engagement and reduce the risk of turnover intention.

Table 6. Descriptive Analysis of Conditions for Engagement (CEEQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
EEQ1	82	5	1	3.52	0.11	1.02	1.04
EEQ2	82	5	1	3.39	0.12	1.13	1.28
EEQ3	82	5	1	3.43	0.13	1.2	1.43
EEQ4	82	5	1	3.33	0.13	1.19	1.41
EEQ5	82	5	1	3.57	0.13	1.22	1.48
EEQ6	82	5	1	3.66	0.14	1.27	1.61

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
EEQ7	82	5	1	3.63	0.13	1.19	1.42
Average				3.50	0.13	1.17	1.38

Engagement Opinions (OEEQ)

The Engagement Opinions dimension is measured through eight indicators (EEQ8 to EEQ15), with an overall average of 3.46. This value indicates that employee opinions regarding their involvement in the organization are at a fairly good level, although not yet high. The indicator with the highest average value is EEQ13 (3.54), which indicates that most employees feel passionate and happy about their respective jobs. On the other hand, the lowest values are shown by EEQ11 (3.37) and EEQ8 (3.40), which reflect that there are several aspects of engagement that are still felt to be less than optimal by some respondents, such as being distracted by both external and internal factors, causing them to not focus on their work, and perhaps feeling that there is no purpose in their work.

The average standard deviation of 1.30 indicates that there is a fairly large variation in perception among respondents. This is reinforced by the average variance value of 1.69, which indicates that the experience of engagement is not yet completely even. However, the standard error of 0.14 still shows that the average estimate is quite stable statistically. Overall, employee opinions on engagement are quite positive but still contain variations. Therefore, companies are advised to strengthen comprehensive and sustainable engagement strategies, such as expanding participation space and increasing two-way communication to create a stronger sense of belonging.

Table 7. Descriptive Analysis of Engagement Opinions (OEEQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
EEQ8	82	5	1	3.4	0.15	1.39	1.92
EEQ9	82	5	1	3.45	0.14	1.25	1.56
EEQ10	82	5	1	3.41	0.14	1.3	1.7
EEQ11	82	5	1	3.37	0.14	1.3	1.69
EEQ12	82	5	1	3.51	0.15	1.33	1.76
EEQ13	82	5	1	3.54	0.14	1.31	1.71
EEQ14	82	5	1	3.51	0.14	1.27	1.61
EEQ15	82	5	1	3.49	0.14	1.25	1.56
Average				3.46	0.14	1.30	1.69

Engagement Behaviors (BEEQ)

The Engagement Behaviors dimension is measured through four indicators (EEQ16 to EEQ19), with an overall average of 3.55. This value indicates that employee engagement behavior is at a fairly positive level, indicating that most employees tend to show an active attitude in their work. The indicators with the highest values are EEQ18 (3.61) and EEQ16 (3.59), which indicate that many employees show productive and engaged work behaviors, such as initiative, dedication, or focus on work. Conversely, the lowest value is in EEQ19 (3.41), which may reflect the continued doubt or obstacle in showing engagement consistently, due to frequent unexpected changes in work situations.

The average standard deviation of 1.32 and variance of 1.75 reflect the existence of quite large variations in perceptions and behaviors between respondents. This shows that although most respondents have good engagement behavior, there are still groups of employees who show lower work engagement. The standard error of 0.14 shows that the average value is quite stable as a representation of the population. In general, engagement behavior in the workplace has shown a positive direction, but companies still need to encourage consistency and create a work environment that facilitates the full expression of employee engagement in the form of productive behavior.

Table 8. Descriptive Analysis of Engagement Opinions (OEEQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
EEQ16	82	5	1	3.59	0.14	1.3	1.68
EEQ17	82	5	1	3.6	0.14	1.29	1.68
EEQ18	82	5	1	3.61	0.14	1.31	1.72
EEQ19	82	5	1	3.41	0.15	1.39	1.92
Average				3.55	0.14	1.32	1.75

Descriptive Analysis of TIQ

The Turnover Intention variable is measured through three indicators (TI1 to TI3), with an overall average of 2.38. This value is below the midpoint of the Likert scale, indicating that in general the employee's desire to leave the organization is relatively low. The TI3 indicator has the highest average value of 2.43, indicating that some respondents show a slightly higher tendency to consider staying in their jobs for the next year. Meanwhile, the TI2 indicator has the lowest average value of 2.35, indicating that the aspect measured by the item least reflects the intention to resign within the 12-month duration.

The average standard deviation of 1.17 indicates that there is a variation in perception among respondents regarding the desire to leave the company. The standard error of 0.13 indicates that the average value obtained is quite stable in representing the population. Overall, these results indicate that the level of turnover intention is still relatively low, this indicates that many employees are still watching and waiting for changes from the organization to become better in the future.

Table 9. Descriptive Analysis of Turnover Intention (TIQ)

	Count	Max	Min	Mean	St. Error	St. Dev	Variance
TI1	82	5	1	2.37	0.14	1.27	1.62
TI2	82	5	1	2.35	0.13	1.2	1.44
TI3	82	5	1	2.43	0.12	1.05	1.11
Average				2.38	0.13	1.17	1.39

Convergent Validity

Convergent validity is an important part of the evaluation of the reflective measurement model in the SEM-PLS method. This validity measures the extent to which the indicators of a construct converge to adequately represent the construct. In this research, convergent validity testing was carried out by looking at two main criteria, namely:

1. Outer Loadings

According to Hair et al. (2022), the ideal outer loading value is greater than 0.708 to indicate that more than 50% of the indicator variance is explained by the measured construct. In the results of this analysis, all indicators in each construct have an outer loading value above the threshold of 0.708, thus meeting the convergent validity criteria.

2. Average Variance Extracted (AVE)

AVE shows the average proportion of variance explained by the indicators in one construct. An AVE value ≥ 0.50 indicates that the construct explains at least half of the variance of its indicators, indicating adequate convergence. Based on the analysis results, all constructs in this model have an AVE value above 0.50, which confirms that the indicators are strongly correlated and reflect the constructs consistently.

With the fulfillment of these two criteria, it can be concluded that all constructs in this model have met convergent validity. This strengthens the belief that the indicators used in this research consistently reflect the latent variables measured and can be continued to the stage of evaluating discriminant validity and structural model analysis.

Table 10. Outer Loading List

	Item	Outer Loading	Information
Dimension	Employee Engagement		
CEEQ	EEQ1	0.718	Valid
	EEQ2	0.743	Valid
	EEQ3	0.751	Valid
	EEQ4	0.726	Valid
	EEQ5	0.851	Valid
	EEQ6	0.800	Valid
	EEQ7	0.786	Valid
OEEQ	EEQ8	0.725	Valid
	EEQ9	0.828	Valid
	EEQ10	0.784	Valid
	EEQ11	0.81	Valid
	EEQ12	0.746	Valid
	EEQ13	0.839	Valid
	EEQ14	0.738	Valid
	EEQ15	0.787	Valid
BEEQ	EEQ16	0.710	Valid
	EEQ17	0.768	Valid
	EEQ18	0.792	Valid
	EEQ19	0.74	Valid
Dimension	Job Satisfaction		
CDJSQ	JSQ1	0.801	Valid
CnBJSQ	JSQ2	0.814	Valid
	JSQ3	0.784	Valid
ERJSQ	JSQ4	0.729	Valid
	JSQ5	0.785	Valid
	JSQ6	0.717	Valid
WEJSQ	JSQ7	0.821	Valid
	JSQ8	0.831	Valid
	JSQ9	0.791	Valid
	JSQ10	0.702	Valid

	Item	Outer Loading	Information
GJSQ	JSQ11	0.718	Valid
	JSQ12	0.817	Valid
	JSQ13	0.771	Valid
	JSQ14	0.816	Valid
	JSQ15	0.834	Valid
	JSQ16	0.761	Valid
Turnover Intention			
	TI1	0.823	Valid
	TI2	0.855	Valid
	TI3	0.900	Valid

The results of the convergent validity test show that all indicators in this research have outer loading values that meet the convergent validity criteria. The Employee Engagement variable measured by 19 indicators (EEQ1-EEQ19) shows outer loading values ranging from 0.710 to 0.851, with the highest value on the EEQ5 indicator (0.851) and the lowest on EEQ16 (0.710). The Job Satisfaction variable consisting of 16 indicators (JSQ1-JSQ16) obtained outer loading values in the range of 0.702 to 0.834, with the highest value on JSQ15 (0.834) and the lowest on JSQ10 (0.702). Meanwhile, the Turnover Intention variable measured by 3 indicators (TI1-TI3) shows very good outer loading values, namely 0.823, 0.855, and 0.900. All outer loading values are above the minimum threshold of 0.70, which indicates that all indicators are valid and able to measure their latent constructs well.

Discriminant Validity

Discriminant validity is needed to ensure that each construct in the model truly represents a different concept and does not overlap with each other. In this research, discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT) approaches as suggested in PLS-SEM.

As a more sensitive and modern method for testing discriminant validity, HTMT measures the ratio between cross-construct correlations (heterotrait) to correlations within the same construct (monotrait). Hair et al. (2022) recommend that the HTMT value should be below 0.90 (or 0.85 for a very conservative model). Based on the results of data processing, all pairs of constructs have HTMT values below the threshold of 0.90, which indicates that there is no correlation that is too high between constructs, and each construct has succeeded in capturing different concepts. Thus, discriminant validity has been achieved based on the HTMT approach.

Based on the discriminant validity test using the Heterotrait-Monotrait (HTMT) method in the Table IV.5, it shows results that require special attention. Several HTMT values indicate discriminant validity problems, especially in the relationship between Compensation and Benefits with Turnover Intention (0.875), Job Satisfaction with Turnover Intention (0.867), and Work Environment with Employee Relationship with Management (0.887). These values are above the recommended threshold of 0.85, indicating a high similarity between these constructs. However, most other construct pairs show HTMT values below 0.85, such as Conditions for Engagement with Career Development (0.306) and Compensation and Benefits

with Work Environment (0.272), indicating that these constructs have adequate discriminant validity.

Structural Model Specification

SEM analysis in this research consists of hypothesis testing consisting of direct and indirect influence tests, followed by a goodness of fit test to assess the accuracy of the model formed. The results of the structural model Structural Equation Modeling (SEM) can be seen in the following Figure 1.

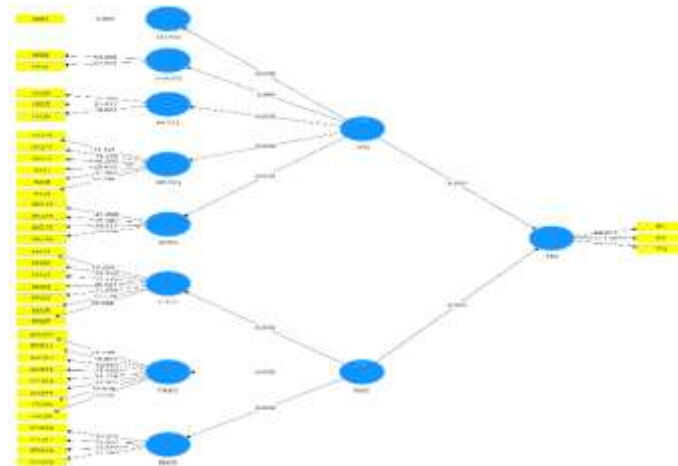


Figure 1. Structural model results for Structural Equation Modeling (SEM)

Table 11. Multicollinearity Test (VIF)

	Turnover intention
Employee Engagement	1.339
Job Satisfaction	1.339

The multicollinearity test aims to ensure that there is no high correlation between independent constructs in the structural model that can interfere with the estimation of path coefficients. One method used to detect multicollinearity is to look at the Variance Inflation Factor (VIF) value.

According to Hair et al. (2022), the ideal VIF value is below 5.0, while some more conservative literature suggests a maximum limit of 3.3 to ensure that there is no disturbing multicollinearity. Based on Table 11, it is known that the VIF value for Employee Engagement on Turnover Intention is 1.339, the same is true for the VIF value for Job Satisfaction on Turnover Intention which is also 1.339

Both VIF values are far below the critical limits of 5.0 and 3.3, indicating that there is no multicollinearity problem among the independent constructs in predicting the dependent variable Turnover Intention. Thus, the structural model is worthy of further analysis without the need for improvements related to multicollinearity.

Hypotheses Testing

After the model is declared free from multicollinearity problems based on the low VIF value (see Table 11), the next stage is to test the path coefficients between latent constructs and their statistical significance. This test is carried out to determine whether the influence between

variables in the structural model is statistically significant, as well as to test the truth of the hypothesis that has been proposed in this research.

The testing process was carried out using the bootstrapping method with 500 subsamples, which produced estimates of the path coefficient values, standard deviation (STDEV), T-statistic, and p-value. These results are used to determine whether the relationship between constructs in the model is statistically acceptable or rejected

Table 12. Hypotheses Evaluation

	Original Sample (O)	STDEV	T	P Values
EEQ -> CEEQ	0.947	0.012	81.743	0.000
EEQ -> BEEQ	0.935	0.014	67.357	0.000
EEQ -> OEEQ	0.969	0.008	122.840	0.000
EEQ -> TIQ	-0.382	0.088	4.356	0.000
JSQ -> CDJSQ	0.801	0.043	18.537	0.000
JSQ -> CnBJSQ	0.884	0.024	37.564	0.000
JSQ -> ERJSQ	0.875	0.030	28.711	0.000
JSQ -> GJSQ	0.927	0.018	51.483	0.000
JSQ -> TIQ	-0.578	0.069	8.379	0.000
JSQ -> WEQ	0.959	0.009	102.211	0.000

Based on table 12 Hypotheses Evaluation shows that all path relationships in the model show very high statistical significance (P-value <0.05 and T-statistic > 1.96), so that all hypotheses proposed in the model are accepted. Employee Engagement (EEQ) is proven to have a very strong and significant positive influence on all of its constituent dimensions, with the highest path coefficient on Engagement Opinions (OEEQ) (0.969; $t = 122.840$), followed by Conditions for Engagement (CEEQ) (0.947; $t = 81.743$), and Engagement Behaviors (0.935; $t = 67.357$) where the T-statistic value is extraordinarily high (> 67). However, Employee Engagement shows a significant negative influence on Turnover Intention (-0.382; $t = 4.356$), indicating that the higher the level of employee engagement, the lower their intention to leave the organization. Job Satisfaction (JSQ) also shows a strong positive influence on its various dimensions, with the highest coefficient values on Work Environment (WEJSQ) (0.959; $t = 102.211$), Job Satisfaction in General (GJSQ) (0.927; $t = 51.483$). More importantly, it is followed by compensation and benefits (CnBJSQ) (0.884; $T = 37.564$). Job Satisfaction shows a significant and stronger negative influence on Turnover Intention (-0.578; $t = 8.379$) compared to Employee Engagement.

Table 13. Goodness of Fit Testing

	R Square	R Square Adjusted
Turnover intention	0.702	0.694

Table 13. shows the results of the Goodness of Fit test through the analysis of the R Square (R^2) and Adjusted R Square values, especially for the dependent variable Turnover Intention in the structural model that has been developed. The R^2 value of 0.702 indicates that 70.2% of the variability in the Turnover Intention construct can be explained by the independent constructs in the model, namely Job Satisfaction and Employee Engagement. This

is a high value in the context of social and organizational behavior research, and according to Hair et al. (2022), the R^2 value can be interpreted as follows:

1. $R^2 \geq 0.75$ = Substantial
2. $0.5 < R^2 < 0.75$ = moderate
3. $0.25 < R^2 < 0.50$ = low

Thus, the R^2 value of 0.702 is included in the "moderate to substantial" category, indicating that the model has good predictive power for the Turnover Intention construct. Meanwhile, the Adjusted R^2 value of 0.694 takes into account the number of predictor constructs in the model. This value is slightly lower than the usual R^2 , but still shows the consistency and stability of the model, especially when adding or subtracting predictor variables. The very small difference between R^2 and Adjusted R^2 (0.702 vs 0.694) indicates that the number of predictor constructs in the model is still within a reasonable number and does not cause overfitting.

Business Solution

Based on the analysis described above, the researcher proposes a solution to increase job satisfaction and employee engagement as a strategy to reduce the turnover intention, the solution is as follows:

Job Satisfaction

The low average value (mean= 3.52) on the career development indicator compared to the others job satisfaction dimension indicate that most employees feel that opportunities to develop within the organization are still limited. This condition has the potential to reduce job satisfaction and increase the risk of turnover intention, especially for young employees and non-managerial professionals who highly consider career growth as a reason to stay in a company.

Theoretically, this finding is in line with Herzberg's Two Factor Theory (1959), which states that compensation and benefits are included in the category of hygiene factors. Although these factors do not always create job satisfaction in a positive sense, their absence can significantly cause job dissatisfaction. Therefore, the existence of a fair compensation system and adequate benefit programs are minimum requirements for creating stable working conditions and supporting job satisfaction.

In addition, the Equity Theory by Adams (1963) also explains that employees evaluate job satisfaction based on a comparison between the input they provide and the output they receive, including salary, benefits, and other facilities. When employees feel that the compensation and benefit, they receive are equal or better than those of their peers in comparable situations, this will increase the perception of fairness and ultimately strengthen job satisfaction. This is also in line with the results of qualitative data collection on the sample, namely as follows:

"If we talk about what happened in 2023 and 2024, maybe until now, I will answer "yes", because it can be felt directly that the bonuses given are not permanent and the desired criteria for getting the bonus are not very "clear", recently there have been updates related to compensation and benefit policies that can provide benefits for employees, but it seems that it is still not running clearly, hopefully in the future it can be better and clearer."

- NIA, SPV BOP specialty for maintenance department at PT XYZ

“Compensation and benefits provided by the company are important aspects in maintaining employee satisfaction and work motivation. If not managed fairly and transparently, this can be one of the factors that reduce employee satisfaction with their work results, as well as affect the overall retention rate.”

- EPB, Manager of Operation department at PT. XYZ

based on these problems, organizations must be able to design a compensation and benefit system that can provide a sense of justice, and can meet the needs of life well so that it can increase satisfaction with the results of their work and can reduce turnover intention in themselves. The following are things that need to be improved in this dimension:

1. Periodically evaluate the compensation structure by benchmarking against salary standards in similar industries to ensure that the salary structure remains competitive, and implementing a transparent performance-based pay system so that compensation reflects the actual contribution of employees.
2. Adjust the benefit package to the real needs of employees by providing flexible benefits, such as family insurance options, pension programs, education subsidies, and transportation allowances. Conduct an internal survey to find out the types of benefits that are most appreciated by employees.
3. Increase transparency and communication regarding compensation so that all employees understand the applicable compensation and benefit system. Provide a discussion space so that employees can convey their aspirations regarding the reward system.

Work Environment

The work environment significantly influences both job satisfaction and employees' intention to leave the organization. A supportive environment, encompassing not only physical safety but also positive social relationships and a healthy organizational culture, creates psychological comfort and enhances motivation, thereby fostering loyalty. Conversely, a stressful or unfair atmosphere can trigger work stress and increase turnover intention. This is supported by employee testimonials which reveal that while physical facilities are adequate, social friction due to cultural differences and leadership behavior during high-pressure situations creates discomfort, highlighting the complex interplay between physical, social, and psychological factors in the workplace.

To address these challenges, organizations can implement targeted business solutions. Key strategies include improving work facilities and security to provide physical and psychological comfort, strengthening a positive and collaborative organizational culture to prevent conflict and foster a sense of belonging, and ensuring supportive leadership and healthy coworker relationships so employees feel valued. By integrating these strategies, a company can create a work environment that not only boosts job satisfaction but also crucially strengthens employee retention, thereby ensuring human resource stability and supporting overall organizational performance.

Career Development

The results of the research show that career development has a positive and significant effect on job satisfaction. Employees who see opportunities to develop in their careers tend to

feel more satisfied with their jobs. Conversely, lack of opportunities for career development can reduce job satisfaction and increase turnover intention.

A research by Dewi and Nurhayati (2021) revealed that career development has a positive effect on job satisfaction and a negative effect on turnover intention. This means that the better the career development program offered by the company, the higher the employee's job satisfaction and the lower their desire to leave the company.

Based on the results of data collection using qualitative methods, it appears that there are differences of opinion between users, namely the Operation and Maintenance (O&M) department as the user of the certification itself and the HR department as the department that determines the certification and career development. This can be seen when the O&M department said that they had not received proper training and certification, but on the other hand, the HR department said that the main focus was on the transfer of knowledge from existing technology, as in the quote below:

“Until now there is still no training that can be said to be adequate, maybe in some divisions (specialties) there is adequate and adequate training, but if we talk about it as a whole, it is still not there, finally there is information related to registration for training and certification that employees want, but there has been no follow-up to this, it is hoped that it can be done immediately so that employees can feel the obligations they carry are balanced with adequate skills and knowledge too.”

- NIA, SPV BOP specialty for maintenance department at PT XYZ

“In general, the company has attempted to provide training and certification that is appropriate and relevant to the employee's field of work. However, periodic evaluation and adjustment to competency needs in the field are still needed so that HR development programs are more effective and on target.”

- EPB, Manager of Operation department at PT. XYZ

“Training and certification are adjusted to the mandatory provisions of the laws and regulations. Other training is based on the required field conditions, because the main target initially was the transfer of knowledge from existing technology in the company.”

- GGI, Vice Manager for HR department at PT XYZ

Thus, companies need to pay attention to the career development aspect as a strategy to increase job satisfaction and reduce turnover intention. Steps that can be taken include:

1. Conducting an internal survey to determine the type of certification and training needed by users, especially in this case the O&M department to support competence and capability to work.
2. Providing ongoing training and development programs.
3. Establishing a clear and transparent career path.
4. Providing promotion opportunities based on performance and competence.

Implementing an effective career development strategy not only increases employee job satisfaction but also strengthens their loyalty to the organization, thereby reducing turnover intention and improving overall organizational performance.

CONCLUSION

This study found that both job satisfaction and employee engagement had significant negative effects on turnover intention among Indonesian employees at PT XYZ, a joint venture power generation company. Job satisfaction ($\beta = -0.578$) had a stronger influence than employee engagement ($\beta = -0.382$), with both variables explaining 70.2% of the variance in turnover intention. Key factors influencing this relationship included career development, compensation, work environment, and management relations, while qualitative insights highlighted issues such as unclear certification pathways, cultural and communication barriers, perceived compensation inequities, and limited managerial support. Although overall turnover intention remained moderate, targeted improvements in these areas were essential to reduce attrition. Future research should employ longitudinal methods to examine how organizational and economic changes affect these relationships over time and include comparative studies involving expatriate employees or multiple joint ventures to enhance understanding of cross-cultural retention dynamics and develop more adaptive models for international HR management.

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