

The Influence of Work Environment and Communication on Employee Job Satisfaction at PT Spesial Pipa Indonesia, West Jakarta

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Article Info

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Keywords:

Communication;
Employee Job
Satisfaction; Work
Environment

Abstract

This research is motivated by the importance of the work environment and communication in improving employee job satisfaction at PT. Spesial Pipa Indonesia. Job satisfaction is one factor that can influence employee morale, productivity, and loyalty to the company. A comfortable work environment and effective communication are believed to create a conducive work atmosphere, thereby increasing employee job satisfaction. The purpose of this study was to determine the influence of the work environment and communication on employee job satisfaction, both partially and simultaneously. The research method used was quantitative with a descriptive approach. The population in this study was all 45 employees of PT. Spesial Pipa Indonesia, using a saturated sampling technique, so that the entire population served as the research sample. Data were collected through questionnaires and analyzed using SPSS version 26 through validity, reliability, classical assumptions, multiple linear regression, t-test, F-test, and coefficient of determination tests. The results of the study indicate that the work environment has a positive and significant effect on employee job satisfaction, with a calculated t-value of 3.965 and a significance level of 0.000. Communication also has a positive and significant effect on job satisfaction, with a calculated t-value of 3.453 and a significance level of 0.001. Simultaneously, the work environment and communication have a positive and significant effect on employee job satisfaction, with a calculated F-value of 72.060 and a significance level of 0.000. The coefficient of determination (R^2) of 0.774 indicates that the work environment and communication explain 77.4% of employee job satisfaction, while the remaining 22.6% is influenced by factors outside the study.

How to Cite:

Sari, R. W., Karlina, E., & Azlina, Y. (2026). The influence of work environment and communication on employee job satisfaction at PT Spesial Pipa Indonesia, West Jakarta. *Income Journal of Economics Development*, 6(2), 379-397. <https://doi.org/10.54065/ijed.6.2.2026.885>

1. Introduction

Human resources constitute a strategic organizational asset and play an essential role in determining whether an organization can achieve its objectives effectively and sustainably. Organizational success depends not only on financial resources, technology, and physical facilities but also on the ability of employees to perform their responsibilities efficiently and contribute to long-term organizational performance. Contemporary human resource management therefore emphasizes the importance of developing organizational conditions that support employee engagement, well-being, and performance (Arfah, 2026). Within this

context, job satisfaction is particularly important because it reflects employees' attitudes and evaluations of their jobs and work experiences. Higher job satisfaction is generally associated with stronger organizational attachment and more favorable work outcomes, whereas low job satisfaction may contribute to withdrawal behaviors and intentions to leave the organization (Jogi et al., 2025). Job satisfaction is not formed independently but is influenced by various organizational and workplace conditions experienced by employees.

One important determinant is the work environment. The work environment encompasses both physical and non-physical

conditions surrounding employees that can influence their comfort, attitudes, and ability to perform assigned tasks. Physical aspects include workspace conditions, ventilation, temperature, lighting, cleanliness, safety, and the availability of adequate work facilities, whereas non-physical aspects include interpersonal relationships, supervisory support, cooperation among employees, and the overall organizational climate. Recent evidence indicates that a supportive and comfortable work environment contributes positively to employee job satisfaction (Hasna et al., 2026). Similarly, Masrurroh et al. (2026) found that a favorable work environment can strengthen job satisfaction and employee loyalty, highlighting the strategic importance of workplace conditions in employee retention.

Physical environmental quality deserves particular attention because employees may spend substantial periods within the workplace. Poor ventilation, inadequate air circulation, uncomfortable temperatures, or other unfavorable indoor environmental conditions may reduce employees' perceived comfort and well-being. Research on office workers has demonstrated that indoor environmental quality, including air quality, temperature, noise, and lighting, is associated with workplace satisfaction and employee well-being (Parhizkar et al., 2023). Consequently, organizations need to consider the physical work environment not merely as an operational facility but also as an important component of employees' overall work experience.

In addition to the work environment, communication represents a fundamental factor in developing effective working relationships within an organization. Organizational communication facilitates the exchange of information, instructions, ideas, feedback, and organizational expectations between managers and employees as well as among employees across organizational units. Effective communication enables employees to understand their responsibilities, organizational policies, performance expectations, and changes occurring within the organization. A recent literature review by Faisal and Mariana (2025) demonstrated that effective communication contributes to trust, collaboration, employee motivation, satisfaction, productivity, and overall management effectiveness. Furthermore, empirical evidence indicates that internal

communication has a positive relationship with job satisfaction and employee performance (Karsikah et al., 2023). Research published in the *Journal Social Society* also shows that interpersonal communication and the work environment jointly contribute to employee performance, particularly through stronger coordination, clearer feedback mechanisms, and a more supportive organizational climate (Hidayat et al., 2026).

Effective internal communication may also contribute to employee retention. Employees who perceive organizational communication as transparent, adequate, and supportive are more likely to develop favorable perceptions of organizational support and job satisfaction. Duarte and Silva (2023) found that satisfaction with internal communication was associated with lower turnover intention, both directly and indirectly through perceived organizational support and job satisfaction. These findings suggest that communication should not be viewed merely as an information-delivery mechanism but as an important organizational process that can influence employees' attitudes toward their jobs and organizations.

Issues related to the work environment and employee satisfaction are also evident at PT Spesial Pipa Indonesia. Based on the conditions identified within the company, one concern relates to ventilation and air circulation in certain work areas, which have not yet functioned optimally and may cause the workplace to feel uncomfortable or poorly ventilated. Such conditions may reduce employee comfort, particularly when employees are required to remain in the same work area for extended periods.

Considering that workplace environmental quality can influence employees' comfort, well-being, and perceptions of their work experience, improvements in ventilation and other physical working conditions may represent an important organizational consideration (Parhizkar et al., 2023; Hasna et al., 2026). Another issue concerns employee turnover and employees' perceptions regarding the balance between compensation, workload, and job responsibilities. Some employees perceive that the compensation received does not fully correspond to the demands and responsibilities associated with their work. When employees perceive an unfavorable relationship between what they contribute to

the organization and what they receive in return, their evaluation of the job may become less favorable. This condition is relevant because job satisfaction has consistently been identified as an important determinant of employees' intention to remain with or leave an organization. A comprehensive review by Jogi et al. (2025) identified job satisfaction as a central factor associated with turnover intention, while Masruroh et al. (2026) similarly demonstrated that improvements in the work environment and job satisfaction can contribute to stronger employee loyalty.

Communication-related problems have also been identified within PT Spesial Pipa Indonesia. The flow of information from management to employees still encounters several barriers, resulting in some employees perceiving that they do not receive sufficient information regarding organizational policies and developments. Communication across departments has also not always operated effectively, which may hinder coordination and the timely completion of work. Such communication gaps may create misunderstandings regarding responsibilities, weaken collaboration, and negatively shape employees' perceptions of their relationships with management and colleagues. This concern is consistent with previous findings showing that effective internal communication facilitates coordination, organizational understanding, employee satisfaction, and performance (Karsikah et al., 2023; Faisal & Mariana, 2025). In the Indonesian organizational context, Hidayat et al. (2026) further demonstrated that interpersonal communication and supportive workplace conditions are important for improving organizational outcomes.

Although previous studies have provided substantial evidence regarding the importance of the work environment and organizational communication, an empirical gap remains regarding how these factors operate within the specific organizational context examined in the present study. Recent studies have investigated the relationship between the work environment and job satisfaction (Hasna et al., 2026; Masruroh et al., 2026), while other studies have emphasized internal or interpersonal communication in relation to job satisfaction, employee performance, and turnover intention (Duarte & Silva, 2023; Karsikah et al., 2023; Faisal & Mariana, 2025; Hidayat et al., 2026). However, these

relationships may vary across organizational settings, industries, employee characteristics, and workplace conditions. Evidence remains limited regarding the simultaneous contribution of work environment and communication to employee job satisfaction within the specific operational setting of PT Spesial Pipa Indonesia, particularly in the presence of practical concerns related to workplace ventilation, employee turnover, perceived imbalance between job demands and compensation, and communication barriers across organizational levels.

Accordingly, the contribution of this study lies primarily in its contextual and empirical examination of work environment and communication as simultaneous predictors of employee job satisfaction at PT Spesial Pipa Indonesia. Rather than treating the work environment exclusively as a physical construct, the study considers both physical and non-physical workplace conditions, while communication is examined as an organizational mechanism supporting information exchange, coordination, and working relationships. Integrating these dimensions within the actual conditions experienced by employees is expected to provide a more comprehensive understanding of the organizational factors associated with job satisfaction and to generate practical evidence relevant to human resource management in an industrial organizational setting.

Based on the aforementioned considerations, this study aims to analyze the effect of the work environment on employee job satisfaction, examine the effect of communication on employee job satisfaction, and determine the simultaneous effect of the work environment and communication on employee job satisfaction at PT Spesial Pipa Indonesia. The findings are expected to contribute theoretically to the literature on human resource management by strengthening empirical evidence concerning the relationships among work environment, organizational communication, and job satisfaction. From a practical perspective, the findings are also expected to provide management with evidence-based considerations for improving workplace conditions and organizational communication practices in order to enhance employee satisfaction and support employee retention.

2. Literature Review

2.1 Work Environment

The work environment refers to the physical and non-physical conditions surrounding employees that may influence their comfort, attitudes, behavior, and ability to perform assigned responsibilities. The physical work environment includes tangible workplace characteristics such as lighting, temperature, ventilation, noise, spatial arrangement, cleanliness, safety, equipment, and supporting facilities. In contrast, the non-physical work environment encompasses interpersonal relationships, supervisory support, organizational climate, cooperation among employees, and other social conditions experienced during work. Both physical and non-physical workplace conditions play an important role in shaping employee perceptions and work-related outcomes (Febrian & Magito, 2025; Kuncara et al., 2025).

The physical quality of the workplace is particularly important because employees may spend a substantial proportion of their working time within the same environment. Inadequate lighting, poor ventilation, uncomfortable temperatures, excessive noise, and unsuitable workplace arrangements may reduce physical comfort and negatively influence employees' evaluation of their working conditions. Conversely, adequate ventilation, ergonomic conditions, occupational safety, and supportive workplace facilities are associated with higher levels of employee satisfaction (Pereira et al., 2025). Both physical and non-physical work environments have also been shown to contribute positively to employee satisfaction, indicating that physical comfort and supportive interpersonal relationships are important components of a favorable workplace (Kuncara et al., 2025).

The relevance of the work environment is also evident within industrial and manufacturing settings. Appropriate workplace conditions can support employee performance and other positive organizational outcomes in manufacturing organizations (Hati et al., 2026). Accordingly, the work environment in the present study is understood as a multidimensional construct encompassing physical working conditions as well as social and relational conditions experienced by employees within the organization.

2.2 Communication

Communication is the process through which information, ideas, instructions, expectations, and feedback are exchanged among individuals and groups to develop shared understanding and facilitate coordinated action. Within an organization, communication occurs vertically from management to employees and from employees to management, as well as horizontally among individuals and departments. Effective organizational communication enables employees to understand their responsibilities, organizational policies, performance expectations, and changes in organizational activities while facilitating coordination among organizational units.

The effectiveness of internal communication can be reflected in the clarity and transparency of information, accessibility of communication channels, employee participation, consistency of messages, and availability of feedback mechanisms. Transparent information, message clarity, active participation, and consistent feedback are important characteristics of effective internal communication and are positively associated with job satisfaction (Feriandy, 2025). Employees who receive clear information regarding organizational objectives, expectations, results, and progress also tend to report higher levels of overall job satisfaction (Poljak, 2025).

Communication also represents a relational process rather than merely the transmission of information. Employees need opportunities to provide responses, seek clarification, exchange information across organizational levels, and receive feedback regarding their work. Satisfaction with organizational communication has been associated with higher job satisfaction, indicating that both the frequency and quality of communication can influence employees' evaluations of their work experiences (Capitano & Gesualdi, 2025). Therefore, effective communication in this study is reflected in clarity, openness, accessibility, feedback, and the quality of interpersonal and interdepartmental information exchange.

2.3 Job Satisfaction

Job satisfaction represents an employee's evaluative and affective response to the job and the various experiences associated with it. It

reflects the extent to which employees perceive their jobs and organizational experiences favorably or unfavorably. Job satisfaction is therefore not determined by a single organizational condition but may develop through employees' assessments of their work, compensation, supervisory relationships, career opportunities, coworkers, organizational support, and broader workplace conditions.

Job satisfaction can be examined as a multidimensional construct. One established approach conceptualizes job satisfaction through five principal facets: satisfaction with the work itself, pay, opportunities for promotion, supervision, and coworkers (Lee et al., 2023). These dimensions indicate that employees may evaluate satisfaction not only on the basis of financial rewards but also through job characteristics, career development opportunities, leadership relationships, and interactions with colleagues.

Recent empirical research further demonstrates that job satisfaction is influenced by various organizational and individual factors. Psychological and motivational factors have been shown to contribute significantly to employees' levels of job satisfaction, indicating that satisfaction is a dynamic evaluation resulting from different aspects of the employment experience (Hasmariani et al., 2024). Accordingly, job satisfaction in the present study represents employees' favorable evaluation of their jobs, particularly in relation to the work itself, compensation, promotion opportunities, supervision, and coworker relationships.

2.4 The Effect of Work Environment on Job Satisfaction

A supportive work environment can enhance job satisfaction by providing employees with the physical and psychological conditions necessary to perform their work comfortably and effectively. Adequate facilities, lighting, ventilation, temperature, cleanliness, safety, and ergonomic arrangements can reduce physical discomfort, while supportive interpersonal relationships and a positive organizational climate can improve employees' psychological experiences at work. Employees who perceive their workplace as safe, comfortable, and supportive are therefore more likely to evaluate their jobs positively.

Empirical studies have demonstrated that both physical and non-physical work

environments have positive and significant effects on employee satisfaction (Kuncara et al., 2025). Physical and psychological work environments have also been found to positively influence employee job satisfaction, with psychological workplace conditions providing a substantial contribution to employees' evaluations of their jobs (Febrian & Magito, 2025). In a manufacturing context, the physical work environment has similarly been found to significantly influence job satisfaction among non-production employees (Lestari et al., 2025).

Nevertheless, empirical findings are not entirely consistent across organizational contexts. Some evidence indicates that the physical work environment does not exert a statistically significant partial effect on employee job satisfaction, although broader models involving workplace conditions and compensation remain significant (Saputra et al., 2024). This inconsistency suggests that the strength of the relationship may depend on organizational characteristics, employee expectations, and the presence of other workplace factors. Such variation provides further justification for examining the relationship specifically within PT Spesial Pipa Indonesia.

Based on the theoretical arguments and empirical evidence, the first hypothesis is formulated as follows:

H1: The work environment has a positive effect on employee job satisfaction at PT Spesial Pipa Indonesia.

2.5 The Effect of Communication on Job Satisfaction

Effective communication can contribute to job satisfaction by reducing uncertainty and providing employees with clear information concerning their duties, organizational policies, responsibilities, performance expectations, and organizational developments. Open communication also allows employees to express concerns, obtain feedback, and participate more effectively in organizational activities. As information becomes clearer and communication becomes more reciprocal, misunderstandings can be minimized and working relationships can be strengthened.

Internal communication characterized by transparency, clarity, participation, and appropriate feedback has been shown to positively influence employee job satisfaction (Feriandy, 2025). Satisfaction with internal

communication is also strongly associated with employees' overall job satisfaction, particularly when information regarding organizational objectives, expectations, results, and progress is clearly communicated (Poljak, 2025). Organizational communication satisfaction has also been associated with greater job satisfaction, reinforcing the importance of communication quality in shaping employee attitudes toward their work (Capitano & Gesualdi, 2025).

Similar findings have been reported in Indonesian organizational settings. Internal communication has been shown to exert a significant effect on job satisfaction and may become one of the dominant organizational factors explaining variations in employee satisfaction in manufacturing companies (Lestari et al., 2025). These findings indicate that employees are more likely to experience job satisfaction when organizational communication provides clear information, appropriate feedback, and effective coordination across organizational units.

Accordingly, the second hypothesis is formulated as follows:

H2: Communication has a positive effect on employee job satisfaction at PT Spesial Pipa Indonesia.

2.6 The Effect of Work Environment and Communication on Job Satisfaction

Employee job satisfaction is formed through the interaction of multiple workplace experiences rather than through a single organizational factor. The work environment provides the physical and psychosocial conditions within which employees perform their responsibilities, whereas communication provides the informational and relational mechanisms through which employees coordinate activities, understand expectations, exchange feedback, and maintain relationships with supervisors and coworkers. These two dimensions may therefore complement one another in shaping employees' overall evaluations of their jobs.

Physical and psychological work environments together with internal communication have been identified as significant predictors of employee job satisfaction within multivariate models (Febrian & Magito, 2025). Positive and significant effects of both work environment and communication on employee job satisfaction have also been reported in other

organizational contexts (Widiantara et al., 2025). Similar evidence has been obtained in the manufacturing sector, where physical work environment and internal communication contribute significantly to employee job satisfaction (Lestari et al., 2025).

More recent evidence further highlights the importance of integrating workplace environmental conditions and communication. Physical work environment and internal communication have been incorporated into models in which job satisfaction serves as an important mechanism linking workplace experiences with employees' turnover intentions, indicating that improvements in workplace conditions and internal communication can influence subsequent employee attitudes through job satisfaction (Kristanto et al., 2026). These findings are particularly relevant to the present study because PT Spesial Pipa Indonesia operates within an industrial context in which physical workplace conditions and coordination among employees represent important components of daily organizational activities.

Based on these theoretical considerations and empirical findings, the third hypothesis is formulated as follows:

H3: Work environment and communication simultaneously affect employee job satisfaction at PT Spesial Pipa Indonesia.

2.7 Conceptual Framework

The conceptual framework of this study describes the relationships between the independent and dependent variables based on the theoretical foundations and empirical evidence discussed above. Work environment (X1) and communication (X2) are positioned as the independent variables, while employee job satisfaction (Y) serves as the dependent variable. The work environment represents the physical and non-physical conditions experienced by employees, whereas communication represents the process through which information, instructions, feedback, and organizational messages are exchanged among organizational members.

The framework proposes that a more conducive work environment is associated with higher employee job satisfaction because appropriate physical facilities and supportive interpersonal conditions contribute to employees' comfort and positive workplace experiences. Similarly, effective communication is expected to increase job

satisfaction by improving information clarity, coordination, feedback, and interpersonal relationships. When supportive workplace conditions and effective communication are present simultaneously, employees are expected to develop more favorable evaluations of their jobs.

Accordingly, the empirical model examines three relationships: the effect of work environment (X1) on employee job satisfaction (Y), the effect of communication (X2) on employee job satisfaction (Y), and the simultaneous effect of work environment (X1) and communication (X2) on employee job satisfaction (Y) at PT Spesial Pipa Indonesia.

3. Research Method

3.1 Research Design

This study employed a quantitative explanatory design to examine the effects of work environment and communication on employee job satisfaction at PT Spesial Pipa Indonesia. A quantitative approach was considered appropriate because the variables were measured numerically using standardized questionnaire items and statistically analyzed to test the proposed hypotheses. Quantitative survey designs are commonly applied in organizational and human resource studies to objectively examine relationships between measurable variables using structured data collection and statistical procedures (Risno et al., 2025; Tahir et al., 2026).

The research model consisted of two independent variables, namely work environment (X1) and communication (X2), and one dependent variable, namely employee job satisfaction (Y). The relationships among these variables were examined both partially and simultaneously using multiple linear regression analysis. Similar quantitative studies involving organizational variables have employed questionnaires, statistical testing, and regression analysis to evaluate the effects of multiple predictors on employee-related outcomes (Juhernawati et al., 2026; Mutmainnah et al., 2024).

3.2 Population and Sample

The population of this study consisted of all 45 employees of PT Spesial Pipa Indonesia. Because the population was relatively small and all members were accessible, the study employed a saturated sampling or census technique, in which every member of the

population was included as a respondent. Thus, the final sample consisted of 45 employees.

The use of saturated sampling enables researchers to include the entire target population when the number of eligible participants is relatively limited, thereby avoiding the exclusion of potentially relevant observations. This technique has been applied in recent quantitative organizational studies involving relatively small employee populations (Juhernawati et al., 2026; Mutmainnah et al., 2024). A similar approach has also been applied in quantitative studies examining employee job satisfaction using the entire accessible population as the research sample (Risno et al., 2025).

3.3 Variables and Measurement

This study examined three variables comprising two independent variables and one dependent variable. Work environment (X1) represented the physical and non-physical workplace conditions experienced by employees. The variable was measured using indicators related to lighting, temperature, cleanliness, noise, workplace facilities, interpersonal relationships, and other non-physical workplace conditions. Both physical and psychosocial workplace conditions are relevant dimensions in assessing employees' experiences of their work environment.

Communication (X2) represented the exchange of information, instructions, ideas, and feedback among organizational members. The variable was measured through indicators covering information clarity, openness, feedback, regularity of information, interpersonal relationships, accessibility of information, communication frequency, information quality, message comprehension, and attitudinal responses. Effective internal communication is generally characterized by clear and accessible information, openness, participation, and appropriate feedback mechanisms.

Employee job satisfaction (Y) represented employees' evaluations and affective responses toward their jobs. The construct was measured through five principal dimensions: satisfaction with the work itself, pay, promotion opportunities, supervision, and coworkers. These dimensions represent widely recognized facets used to assess employees' evaluations of different aspects of their jobs.

All questionnaire items were measured using a five-point Likert scale ranging from 1 =

strongly disagree to 5 = strongly agree. Five-point Likert scales are widely employed in quantitative surveys to measure respondents' attitudes and perceptions because they provide structured ordinal responses that can be systematically analyzed (Park, 2024; Prias & Kurniawati, 2025).

3.4 Data Collection Techniques

The study primarily used primary data obtained directly from employees through observation and a structured questionnaire. Direct observation was conducted at PT Spesial Pipa Indonesia in West Jakarta to obtain contextual information regarding workplace conditions and organizational activities relevant to the study variables.

The questionnaire consisted of closed-ended statements developed according to the indicators of work environment, communication, and job satisfaction. It was distributed to all 45 employees included in the study, and respondents were asked to answer each item according to their actual experiences and perceptions while working at the company. Structured questionnaires combined with saturated sampling and Likert-scale measurements are widely used in recent quantitative employee studies because they allow individual perceptions to be transformed into systematically analyzable data (Juhernawati et al., 2026; Prias & Kurniawati, 2025).

Documentation was additionally used to complement the primary data and to support the theoretical and methodological foundations of the study. Relevant journal articles, organizational information, and other scientific sources were reviewed to support the development of the research variables, indicators, and analytical procedures. Similar combinations of questionnaires, primary data, and quantitative statistical analysis have been employed (Mutmainnah et al., 2024).

3.5 Data Analysis

The collected data were analyzed quantitatively using IBM SPSS Statistics. The analytical procedures consisted of instrument quality assessment, classical assumption testing, multiple linear regression analysis, hypothesis testing, and coefficient of determination analysis. Quantitative organizational studies using SPSS commonly apply validity and reliability testing prior to regression and hypothesis testing to ensure

that the measurement instrument provides adequate data for subsequent statistical analysis (Mutmainnah et al., 2024; Tahir et al., 2026).

Instrument quality was evaluated through validity and reliability tests. Item validity was examined by comparing the calculated item correlation coefficient (r -calculated) with the critical correlation coefficient (r -table) at a significance level of 5%. An item was considered valid when r -calculated exceeded r -table. Evaluating the quality of measurement instruments before hypothesis testing is important because empirical conclusions depend on the ability of measurement items to adequately represent the constructs being examined (Cheung et al., 2024).

Instrument reliability was evaluated using Cronbach's alpha to assess the internal consistency of questionnaire items within each construct. In this study, an instrument was considered reliable when its Cronbach's alpha coefficient exceeded 0.60. Cronbach's alpha remains one of the most frequently applied measures of internal consistency in research using multi-item Likert-type instruments, although reliability coefficients should be interpreted in relation to the characteristics and purpose of the measurement instrument (Park, 2024).

Before estimating the multiple regression model, classical assumption tests were performed to examine residual normality, multicollinearity, and heteroscedasticity. Testing these assumptions is important for assessing whether the regression model satisfies the statistical conditions required for reliable estimation and interpretation (Mardiatmoko, 2024).

Residual normality was assessed using the One-Sample Kolmogorov-Smirnov test. The residuals were considered normally distributed when the significance value was greater than 0.05. The use of a significance threshold of 0.05 for evaluating normality has been commonly applied in regression-based empirical studies (Mardiatmoko, 2024; Zacharias et al., 2025).

Multicollinearity was evaluated using tolerance values and the Variance Inflation Factor (VIF). The regression model was considered free from serious multicollinearity when the tolerance value exceeded 0.10 and the VIF was below 10. These diagnostic criteria are commonly used to determine whether

excessive linear relationships exist among predictors in a multiple regression model (Mardiatmoko, 2024; Zacharias et al., 2025).

Heteroscedasticity was examined to determine whether the residual variance remained sufficiently constant across observations. The Glejser test was used, with a significance value greater than 0.05 indicating no evidence of heteroscedasticity. The Glejser procedure and the 0.05 significance criterion have been applied in recent regression studies to assess whether the homoscedasticity assumption is adequately satisfied (Mardiatmoko, 2024; Zacharias et al., 2025).

Multiple linear regression analysis was subsequently employed to estimate the direction and magnitude of the effects of work environment and communication on employee job satisfaction. Multiple linear regression is appropriate when a study examines the contribution of two or more independent variables to variation in a dependent variable and allows both individual regression coefficients and overall model explanatory power to be evaluated (Tahir et al., 2026).

The regression model was specified as follows:

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

where:

Y = Employee job satisfaction

α = Constant

β_1, β_2 = Regression coefficients

X_1 = Work environment

X_2 = Communication

ε = Error term

Hypothesis testing was conducted using the t-test and F-test at a significance level of 5% ($p < .05$). The t-test was used to determine the partial effect of each independent variable on employee job satisfaction, whereas the F-test was used to evaluate the simultaneous effect of work environment and communication on employee job satisfaction. Statistical significance was established when the corresponding p-value was less than .05. The use of partial and simultaneous hypothesis testing is consistent with multiple regression procedures applied in recent organizational research (Mardiatmoko, 2024; Tahir et al., 2026).

Finally, the coefficient of determination (R^2) was used to determine the proportion of variation in employee job satisfaction explained jointly by work environment and communication. An R^2 value closer to 1 indicates that a greater proportion of variance

in the dependent variable is explained by the predictors included in the regression model. R^2 is therefore useful for evaluating the explanatory capacity of a regression model, although it should be interpreted together with the regression coefficients and statistical significance tests rather than as a standalone indicator of model quality (Zacharias et al., 2025).

4. Results and Discussion

4.1 Respondent Characteristics

This study involved all 45 employees of PT Spesial Pipa Indonesia. Since saturated sampling was applied, all members of the population were included as respondents. Respondent characteristics were analyzed based on gender, age, educational background, department, and length of service to provide an overview of the individuals who constituted the data source for this study.

Table 1. Respondent Characteristics by Gender

Gender	Frequency	Percentage (%)
Male	15	33.3
Female	30	66.7
Total	45	100.0

Source: Processed data, 2026.

Table 1 shows that most respondents were female, accounting for 30 employees or 66.7%, while male respondents accounted for 15 employees or 33.3%. Thus, the respondent composition was predominantly female. Nevertheless, because all employees were included in the study, the findings represent the entire employee population of PT Spesial Pipa Indonesia.

Table 2. Respondent Characteristics by Age

Age	Frequency	Percentage (%)
< 19 years	3	6.7
20–30 years	41	91.1
31–41 years	1	2.2
Total	45	100.0

Source: Processed data, 2026.

Table 2 indicates that most respondents were between 20 and 30 years old, comprising 41 employees or 91.1%. Three respondents or 6.7% were under 19 years old, while only one respondent or 2.2% was between 31 and 41 years old. These findings indicate that the workforce at PT Spesial Pipa Indonesia was predominantly composed of relatively young employees who were generally at the early or developmental stages of their careers.

Table 3. Respondent Characteristics by Educational Background

Educational Background	Frequency	Percentage (%)
Senior High School/Vocational High School	32	71.1
Diploma	1	2.2
Bachelor's Degree	12	26.7
Total	45	100.0

Source: Processed data, 2026.

Table 3 shows that 32 respondents or 71.1% had completed senior or vocational high school, 12 respondents or 26.7% held bachelor's degrees, and one respondent or 2.2% held a diploma qualification. These results indicate that most respondents had a secondary education background, although the educational levels of employees were relatively diverse.

Table 4. Respondent Characteristics by Department

Department	Frequency	Percentage (%)
Office	30	66.7
Warehouse	15	33.3
Total	45	100.0

Source: Processed data, 2026.

Table 4 shows that 30 respondents or 66.7% worked in the office department, while 15 respondents or 33.3% worked in the warehouse department. The respondent composition was therefore dominated by office employees. However, the inclusion of employees from both departments enabled the study to capture perceptions of the work environment, communication, and job satisfaction across different working conditions.

Table 5. Respondent Characteristics by Length of Service

Length of Service	Frequency	Percentage (%)
< 1 year	14	31.1
2-3 years	18	40.0
> 4 years	13	28.9
Total	45	100.0

Source: Processed data, 2026.

Table 5 indicates that the largest group of respondents had worked for the company for 2-3 years, accounting for 18 employees or 40.0%. This was followed by 14 employees or 31.1% with less than one year of service and 13 employees or 28.9% with more than four years of service. These results indicate that the respondents had varied levels of work

experience in evaluating workplace conditions, communication patterns, and organizational policies.

4.2 Validity Test

With 45 respondents, the degree of freedom was calculated as $df = n - 2 = 45 - 2 = 43$. At a significance level of 5%, the critical r -value was 0.294. An item was considered valid when its calculated r -value exceeded 0.294.

Table 6. Validity Test Results for Work Environment (X1)

Item	Calculated r	Critical r	Result
X1.1	0.703	0.294	Valid
X1.2	0.494	0.294	Valid
X1.3	0.541	0.294	Valid
X1.4	0.574	0.294	Valid
X1.5	0.676	0.294	Valid
X1.6	0.602	0.294	Valid
X1.7	0.735	0.294	Valid
X1.8	0.590	0.294	Valid
X1.9	0.596	0.294	Valid
X1.10	0.574	0.294	Valid
X1.11	0.688	0.294	Valid
X1.12	0.727	0.294	Valid
X1.13	0.698	0.294	Valid

Source: Processed data, 2026.

Table 6 shows that the calculated correlation coefficients for the 13 work environment items ranged from 0.494 to 0.735, all of which exceeded the critical value of 0.294. Therefore, all items used to measure the work environment variable were considered valid and suitable for subsequent analysis.

4.3 Communication Validity Test

Table 7. Validity Test Results for Communication (X2)

Item	Calculated r	Critical r	Result
X2.1	0.789	0.294	Valid
X2.2	0.772	0.294	Valid
X2.3	0.849	0.294	Valid
X2.4	0.873	0.294	Valid
X2.5	0.879	0.294	Valid
X2.6	0.749	0.294	Valid
X2.7	0.852	0.294	Valid
X2.8	0.888	0.294	Valid
X2.9	0.877	0.294	Valid
X2.10	0.767	0.294	Valid

Source: Processed data, 2026.

Table 7 indicates that all communication items obtained calculated correlation coefficients ranging from 0.749 to 0.888, which were higher than the critical value of 0.294. These results demonstrate that all statements adequately represented the communication construct and were valid for further analysis.

4.4 Job Satisfaction Validity Test

Table 8. Validity Test Results for Job Satisfaction (Y)

Item	Calculated r	Critical r	Result
Y1	0.568	0.294	Valid
Y2	0.465	0.294	Valid
Y3	0.750	0.294	Valid
Y4	0.798	0.294	Valid
Y5	0.786	0.294	Valid
Y6	0.847	0.294	Valid
Y7	0.793	0.294	Valid
Y8	0.841	0.294	Valid
Y9	0.601	0.294	Valid
Y10	0.555	0.294	Valid

Source: Processed data, 2026.

Table 8 shows that the calculated correlation coefficients for all job satisfaction items ranged from 0.465 to 0.847 and exceeded the critical value of 0.294. Therefore, all items were considered valid and appropriate for measuring employee job satisfaction.

4.5 Reliability Test

Table 9. Reliability Test Results

Variable	Cronbach's Alpha	Minimum Threshold	Result
Work Environment (X1)	0.867	0.60	Reliable
Communication (X2)	0.948	0.60	Reliable
Job Satisfaction (Y)	0.889	0.60	Reliable

Source: Processed data, 2026.

Table 9 shows that the Cronbach's alpha values were 0.867 for work environment, 0.948 for communication, and 0.889 for job satisfaction. All coefficients exceeded the minimum threshold of 0.60. Therefore, all measurement instruments were considered reliable and demonstrated adequate internal consistency for further statistical analysis.

4.6 Classical Assumption Tests

4.6.1 Normality Test

Table 10. Kolmogorov-Smirnov Normality Test Results

Statistic	Value
N	45
Test Statistic	0.107
Asymp. Sig. (2-tailed)	0.200

Source: Processed data, 2026.

Table 10 shows an Asymp. Sig. (2-tailed) value of 0.200, which was greater than the significance level of 0.05. Therefore, the regression residuals were considered normally

distributed, indicating that the regression model satisfied the normality assumption.

4.6.2 Heteroscedasticity Test

Table 11. Glejser Heteroscedasticity Test Results

Variable	B	t	Sig.
Work Environment (X1)	0.059	0.998	0.324
Communication (X2)	-0.016	-0.272	0.787

Source: Processed data, 2026.

Table 11 shows that the significance values for work environment and communication were 0.324 and 0.787, respectively. Both values exceeded 0.05, indicating no evidence of heteroscedasticity in the regression model. This finding was also consistent with the scatterplot pattern, in which the residuals were randomly distributed around the zero line.

4.6.3 Multicollinearity Test

Table 12. Multicollinearity Test Results

Variable	Tolerance	VIF	Result
Work Environment (X1)	0.346	2.894	No multicollinearity
Communication (X2)	0.346	2.894	No multicollinearity

Source: Processed data, 2026.

Table 12 shows that both work environment and communication had a tolerance value of 0.346, which was greater than 0.10, and a VIF value of 2.894, which was below 10. Therefore, no multicollinearity was detected between the independent variables. Consequently, both variables could be included simultaneously in the multiple linear regression model.

4.7 Multiple Linear Regression Analysis

Table 13. Multiple Linear Regression Results

Variable	B	Std. Error	Beta	t	Sig.
Constant	0.640	3.505	–	0.183	0.856
Work Environment (X1)	0.433	0.109	0.494	3.965	< 0.001
Communication (X2)	0.388	0.112	0.431	3.453	0.001

Source: Processed data, 2026.

Based on Table 13, the multiple linear regression equation was formulated as follows:

$$Y = 0.640 + 0.433X_1 + 0.388X_2 + \varepsilon$$

The constant value of 0.640 represents the predicted value of job satisfaction when work environment and communication are

held at zero. The work environment coefficient of 0.433 indicates that a one-unit increase in work environment is associated with a 0.433-unit increase in employee job satisfaction, assuming that communication remains constant. Similarly, the communication coefficient of 0.388 indicates that a one-unit increase in communication is associated with a 0.388-unit increase in job satisfaction, assuming that the work environment remains constant. The positive coefficients indicate that both independent variables have positive relationships with employee job satisfaction.

The standardized regression coefficients further indicate that the work environment had a slightly stronger contribution ($\beta = 0.494$) than communication ($\beta = 0.431$) within the regression model. Nevertheless, both variables contributed significantly to explaining variations in employee job satisfaction.

4.8 Hypothesis Testing

4.8.1 Partial Test (t-Test)

Table 14. Partial Hypothesis Test Results

Variable	t-value	Critical t	Sig.	Decision
Work Environment (X1)	3.965	2.018	< 0.001	H1 supported
Communication (X2)	3.453	2.018	0.001	H2 supported

Source: Processed data, 2026.

Table 14 shows that work environment obtained a t -value of 3.965, which exceeded the critical t -value of 2.018, with $p < 0.001$. Therefore, work environment had a positive and statistically significant effect on employee job satisfaction, supporting H1. Communication obtained a t -value of 3.453, which was also greater than the critical t -value of 2.018, with $p = 0.001$. Thus, communication had a positive and statistically significant effect on employee job satisfaction, supporting H2.

4.8.2 Simultaneous Test (F-Test)

Table 15. Simultaneous Hypothesis Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1,497.296	2	748.648	72.060	< 0.001
Residual	436.349	42	10.389	-	-
Total	1,933.644	44	-	-	-

Source: Processed data, 2026.

Table 15 shows an F -value of 72.060, which exceeded the critical F -value of 3.22, with $p < 0.001$. Therefore, work environment and communication simultaneously had a

statistically significant effect on employee job satisfaction. Accordingly, H3 was supported, indicating that the regression model was statistically significant in explaining employee job satisfaction at PT Spesial Pipa Indonesia.

4.9 Coefficient of Determination

Work Environment and Job Satisfaction

Table 16. Coefficient of Determination for Work Environment and Job Satisfaction

R	R Square	Adjusted R Square	Std. Error
0.843	0.710	0.704	3.610

Source: Processed data, 2026.

Table 16 shows an R^2 value of 0.710, indicating that work environment alone explained 71.0% of the variation in employee job satisfaction in the simple regression model. The remaining 29.0% was associated with factors outside the model. The correlation coefficient of 0.843 also indicates a strong positive relationship between work environment and job satisfaction.

Communication and Job Satisfaction

Table 17. Coefficient of Determination for Communication and Job Satisfaction

R	R Square	Adjusted R Square	Std. Error
0.831	0.690	0.683	3.734

Source: Processed data, 2026.

Table 17 indicates an R^2 value of 0.690, showing that communication alone explained 69.0% of the variation in employee job satisfaction in the simple regression model. The remaining 31.0% was associated with other factors outside the model. The R value of 0.831 indicates a strong positive relationship between communication and employee job satisfaction.

4.10 Simultaneous Coefficient of Determination

Table 18. Simultaneous Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error
0.880	0.774	0.764	3.223

Source: Processed data, 2026.

Table 18 shows an R^2 value of 0.774, indicating that work environment and communication jointly explained 77.4% of the variation in employee job satisfaction at PT Spesial Pipa Indonesia. The remaining 22.6% of the variation was associated with other factors not included in the research model, such as compensation, leadership, work motivation,

career development, organizational culture, and individual characteristics. The adjusted R^2 value of 0.764 further indicates that the model had relatively strong explanatory power.

5. Discussion

5.1 The Effect of Work Environment on Employee Job Satisfaction

The results indicate that the work environment has a positive and statistically significant effect on employee job satisfaction at PT Spesial Pipa Indonesia. The work environment variable produced a t -value of 3.965, which exceeded the critical t -value of 2.018, with $p < .001$. The positive regression coefficient of 0.433 further indicates that improvements in the work environment are associated with increased employee job satisfaction.

These findings demonstrate that both physical and non-physical workplace conditions constitute important components of employees' overall work experience. Adequate lighting, comfortable temperature and ventilation, cleanliness, controlled noise levels, appropriate workplace facilities, and supportive interpersonal conditions can contribute to greater workplace comfort and more favorable employee perceptions. Recent evidence shows that indoor environmental quality, including air quality, temperature, lighting, and acoustics, is closely associated with employees' satisfaction with their workplace environment and broader work-related outcomes (Felgueiras et al., 2025).

The finding is particularly relevant to the empirical conditions identified at PT Spesial Pipa Indonesia, especially the problems related to ventilation and air circulation. Improving these physical conditions may enhance employee comfort during working hours and consequently contribute to more favorable evaluations of the workplace. Evidence from office environments also indicates that appropriate ventilation conditions and improvements in air quality can contribute to higher levels of worker satisfaction with the indoor environment (Asaoka et al., 2025).

The importance of workplace conditions is also supported by recent evidence from Indonesian organizations, where improvements in the work environment were associated with positive employee outcomes and organizations were encouraged to improve workplace facilities and supportive working conditions (Permatasari et al., 2026). Although

the outcome examined in that study was employee performance rather than job satisfaction, the findings reinforce the importance of workplace support and adequate facilities as components of effective human resource management.

The simple regression model produced an R^2 value of 0.710, indicating that work environment alone explained 71.0% of the variation in employee job satisfaction. This value should be interpreted as the explanatory power of the separate bivariate model rather than as the unique contribution of work environment after controlling for communication. Nevertheless, the result demonstrates a strong empirical association between employees' perceptions of their work environment and their level of job satisfaction.

The results are consistent with more recent research showing that work environment has a positive and significant direct effect on employee job satisfaction. Evidence from an organizational study involving 110 employees demonstrated that work environment positively influenced job satisfaction, confirming that favorable workplace conditions contribute to employees' positive evaluation of their employment experiences (Nawangwulan et al., 2025). More recent evidence also demonstrates that the work environment has a positive and statistically significant effect on job satisfaction even when communication and leadership-related factors are incorporated into the analytical model (Saraswati et al., 2026).

The present findings therefore provide additional empirical support for the relationship between workplace conditions and employee satisfaction within an industrial company. Consequently, H1, which proposed that the work environment has a positive effect on employee job satisfaction at PT Spesial Pipa Indonesia, is supported.

5.2 The Effect of Communication on Employee Job Satisfaction

The results demonstrate that communication has a positive and statistically significant effect on employee job satisfaction at PT Spesial Pipa Indonesia. Communication produced a t -value of 3.453, exceeding the critical t -value of 2.018, with $p = .001$. The regression coefficient of 0.388 indicates that improvements in organizational communication are associated with higher employee job satisfaction when the work

environment is held constant.

This finding suggests that clear, open, consistent, and understandable communication accompanied by appropriate feedback can help employees understand their duties, responsibilities, organizational policies, and workplace developments. Effective internal communication is not limited to the transmission of information but also facilitates coordination, employee participation, feedback, and mutual understanding between management and employees and among coworkers.

Empirical evidence indicates that internal communication directly influences job satisfaction because effective organizational communication reduces informational uncertainty and strengthens employees' understanding of organizational activities. Internal communication has also been shown to influence job satisfaction indirectly through increased work motivation, demonstrating that communication can affect employee attitudes through both informational and motivational mechanisms (Santos et al., 2024).

This finding is particularly relevant to PT Spesial Pipa Indonesia because the initial observations identified barriers in the flow of information from management to employees and limitations in communication across departments. Strengthening information clarity, openness, feedback mechanisms, and interdepartmental coordination may therefore reduce misunderstandings and provide employees with greater certainty regarding their responsibilities and organizational developments. Recent empirical evidence similarly demonstrates a positive and significant direct relationship between communication and employee job satisfaction (Nawangwulan et al., 2025).

The simple regression model produced an R^2 value of 0.690, indicating that communication alone explained 69.0% of the variation in employee job satisfaction. Similar to the separate R^2 for the work environment, this value represents the explanatory capacity of the bivariate model and should not be interpreted as the unique contribution of communication after controlling for the work environment. Nevertheless, the result demonstrates that communication has a strong empirical relationship with job satisfaction among employees of PT Spesial Pipa Indonesia.

The findings are also supported by recent evidence showing that effective

communication can significantly improve employee job satisfaction when analyzed together with workplace environmental factors. Digital communication was found to have a positive and statistically significant effect on employee job satisfaction, indicating that the quality of information exchange remains important even when communication channels and organizational contexts differ (Saraswati et al., 2026).

However, the relationship between communication and job satisfaction may vary across organizational settings. A study conducted at PD Semangat Jaya found that the work environment significantly affected job satisfaction, whereas communication did not demonstrate a statistically significant partial effect (Setiawan & Dunan, 2024). This contrasting result suggests that the effect of communication may depend on organizational characteristics, communication structures, employee expectations, and other contextual factors.

The significant communication effect identified at PT Spesial Pipa Indonesia therefore contributes additional evidence to the literature by demonstrating that communication remains an important determinant of job satisfaction in the specific organizational setting examined in this study. Accordingly, H2, which proposed that communication has a positive effect on employee job satisfaction at PT Spesial Pipa Indonesia, is supported.

5.3 The Simultaneous Effect of Work Environment and Communication on Employee Job Satisfaction

The simultaneous test demonstrates that work environment and communication jointly have a statistically significant effect on employee job satisfaction at PT Spesial Pipa Indonesia. The regression model produced an F -value of 72.060, which exceeded the critical F -value of 3.22, with $p < .001$. These findings indicate that workplace conditions and organizational communication collectively provide a meaningful explanation of variations in employee job satisfaction.

The multiple correlation coefficient of 0.880 indicates a strong positive relationship between the predictors and employee job satisfaction. Furthermore, the R^2 value of 0.774 shows that work environment and communication jointly explained 77.4% of the variation in employee job satisfaction, while

the remaining 22.6% was associated with factors outside the model. The adjusted R^2 value of 0.764 further indicates that the model retained substantial explanatory power after adjustment for the number of predictors.

The simultaneous contribution of these variables suggests that employee job satisfaction is better understood through an integrated perspective rather than by examining physical workplace conditions or organizational communication independently. A favorable work environment provides employees with physical and psychological comfort, whereas effective communication provides information clarity, coordination, feedback, and stronger organizational relationships. When these conditions occur simultaneously, employees are more likely to develop positive evaluations of their overall work experiences.

Recent empirical evidence provides strong support for this interpretation. A study examining work environment and communication simultaneously found that both variables had positive and statistically significant direct effects on job satisfaction, with the model explaining a substantial proportion of the variance in employee satisfaction (Nawangwulan et al., 2025). More recent research similarly demonstrates that communication and work environment simultaneously constitute important determinants of employee job satisfaction, although their effects may also interact with leadership characteristics and other organizational conditions (Saraswati et al., 2026).

The standardized regression coefficients in the present study further show that work environment ($\beta = 0.494$) made a somewhat stronger statistical contribution than communication ($\beta = 0.431$) within the multiple regression model. This difference should not be interpreted as implying that communication is unimportant, because both variables remained statistically significant after being included simultaneously. Rather, the results indicate that workplace conditions may have a slightly stronger association with job satisfaction in the specific context of PT Spesial Pipa Indonesia.

The importance of an integrated organizational approach is also consistent with recent Indonesian evidence emphasizing that workplace support, adequate facilities, leadership communication, and other organizational conditions need to be managed

together to improve employee-related outcomes (Permatasari et al., 2026). Effective human resource management similarly requires organizations to integrate employee development, performance management, workplace support, and other HR practices rather than addressing individual organizational factors in isolation (Ama et al., 2024).

The remaining 22.6% of unexplained variation also indicates that job satisfaction may be associated with factors not incorporated into the present model, such as compensation, leadership, work motivation, career development, organizational culture, workload, and individual characteristics. Therefore, the relatively high R^2 value should not be interpreted as indicating that work environment and communication are the only determinants of employee job satisfaction. Instead, the findings indicate that these two variables constitute important predictors within the organizational context examined.

Accordingly, H3, which proposed that work environment and communication simultaneously affect employee job satisfaction at PT Spesial Pipa Indonesia, is supported. From a managerial perspective, improving employee satisfaction requires PT Spesial Pipa Indonesia to combine improvements in physical workplace conditions, particularly ventilation and indoor comfort, with stronger internal communication practices. Management should therefore improve information clarity, establish consistent feedback mechanisms, strengthen communication between departments, and ensure that employees have access to a physically comfortable and supportive workplace.

Table 19. Summary of Hypothesis Testing

Hypothesis	Relationship	Statistical Result	Decision
H1	Work Environment → Job Satisfaction	Positive and significant ($t = 3.965$; $p < .001$)	Supported
H2	Communication → Job Satisfaction	Positive and significant ($t = 3.453$; $p = .001$)	Supported
H3	Work Environment + Communication → Job Satisfaction	Significant simultaneous effect ($F = 72.060$; $p < .001$)	Supported

Source: Processed data, 2026.

Overall, the findings address all research objectives. Work environment has a positive and statistically significant effect on employee job satisfaction, communication has a positive and statistically significant effect on employee job satisfaction, and both variables jointly explain 77.4% of the variation in employee job satisfaction at PT Spesial Pipa Indonesia. These findings indicate that improving job satisfaction requires simultaneous attention to workplace quality and organizational communication rather than relying on a single organizational intervention.

6. Conclusion

Based on the findings obtained from 45 employees of PT Spesial Pipa Indonesia, it can be concluded that work environment and communication have positive and statistically significant effects on employee job satisfaction. Partially, the work environment variable produced a t-value of 3.965 with $p < .001$, while communication produced a t-value of 3.453 with $p = .001$. Simultaneously, both variables produced an F-value of 72.060 with $p < .001$. The coefficient of determination (R^2) of 0.774 indicates that work environment and communication jointly explain 77.4% of the variation in employee job satisfaction, while the remaining 22.6% is associated with other factors outside the research model. These findings imply that employee job satisfaction can be improved by enhancing workplace conditions, particularly physical comfort, facilities, ventilation, noise control, and interpersonal relationships, as well as by strengthening communication that is clear, open, consistent, and responsive between management and employees.

This study has several limitations. First, the research was conducted in only one company with a relatively small sample of 45 employees; therefore, the findings should be generalized cautiously to organizations with different characteristics. Second, the study examined only two independent variables, namely work environment and communication, while employee job satisfaction may also be influenced by other organizational and individual factors. In addition, the use of self-reported questionnaires means that the data depend on respondents' perceptions and may therefore be subject to response subjectivity. Future studies are recommended to involve larger and more diverse samples across different organizations or industrial sectors to

improve the generalizability of the findings. Further research may also incorporate additional variables that potentially influence job satisfaction, such as compensation, work motivation, leadership style, organizational culture, career development, work discipline, and job stress. The use of additional data collection methods, such as interviews, direct observations, or mixed-method approaches, may also provide a more comprehensive understanding of the factors that shape employee job satisfaction.

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