

The Influence of Workload and Physical Work Environment on the Job Satisfaction of Construction Workers at PT. XYZ

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ABSTRACT

This study aims to analyze the effect of workload and physical work environment on the job satisfaction of construction workers at PT. XYZ. A quantitative method with descriptive and associative approaches was employed. The population consisted of 32 construction workers selected using a saturated sampling technique. Data were collected through questionnaires, interviews, and documentation and analyzed using validity, reliability, classical assumption, multiple linear regression, t-test, F-test, and coefficient of determination analyses with SPSS 27. The results showed that workload was categorized as highly inappropriate, the physical work environment was inadequate, and job satisfaction remained low. The t-test results indicated that workload ($t = 8.569$; $p < 0.05$) and physical work environment ($t = 2.525$; $p < 0.05$) had a positive and significant effect on job satisfaction. The F-test results revealed that both variables simultaneously had a significant effect on job satisfaction. The coefficient of determination (R^2) of 0.944 indicates that 94.4% of the variation in job satisfaction can be explained by workload and physical work environment.

INTRODUCTION

As a growing country, Indonesia regards the construction sector as one of its strategic sectors, playing a key role in infrastructure development and job creation. However, labor conditions in this sector face various challenges. Data indicates a reduction of 770,000 construction workers between August 2024 and February 2025, as well as an increase in layoffs in 2025. These conditions have the capacity to increase work-related stress and affect the job satisfaction of construction workers (Yoenazh Azhar, 2025).

PT. XYZ is a construction services company that relies on field workers to execute projects. Job satisfaction is a critical factor as it relates to productivity, motivation, and workforce retention. Based on the company's internal data, there was an increase in unexcused absences during the January–June 2025 period, as well as a labor turnover involving 22 construction workers and 1 field supervisor. Other indications of declining job satisfaction can be seen in the table below:

Table 1. Construction Workers' Unexcused Absence Data
**CONSTRUCTION WORKERS' UNEXCUSED ABSENCE DATA FOR THE
 JANUARY-JUNE 2025 PT. XYZ**

NO	MONTH	NUMBER OF PEOPLE
1	January	0
2	February	1
3	March	2
4	April	2
5	May	3
6	June	1
TOTAL		7

Based on the attendance data for construction workers at PT. XYZ for the period January–June 2025, the rate of unexcused absences falls into the high category, with percentages ranging from 3.2% to 9.67%. The highest percentage occurred in May at 9.67%. This aligns with Flippo (2016) claim that an absence rate of 3%–10% falls into the high category. Therefore, the absenteeism rate among construction workers at PT. XYZ indicates a problem that requires the company's attention. These phenomena suggest potential issues related to worker job satisfaction.

One factor suspected of influencing job satisfaction is workload. Interview results indicate that workers frequently receive additional tasks beyond their primary responsibilities due to labor shortages and project completion demands. This situation leads to a perceived imbalance in workload and has the potential to reduce job satisfaction. Previous research has shown that an inappropriate workload can cause work-related stress and affect employee satisfaction levels (Siendhang Cahya & Ubaidillah, 2020).

In conjunction with workload, the physical work environment also plays a role in shaping job satisfaction. Observations at PT. XYZ revealed an unoptimal work environment, such as a lack of adequate rest areas and a kitchen area

located in an open space, making it prone to dust. An uncomfortable physical work environment can reduce the concentration, productivity, and job satisfaction of construction workers.

Various previous studies have shown that workload and the physical work environment are related to employee job satisfaction. Therefore this paper aims to investigate the influence of the workload and physical work environment on the job satisfaction of construction workers at PT. XYZ.

THEORETICAL REVIEW

Workload

The number of tasks or assignments that must be completed by an individual or work unit within a certain period of time constitutes the workload according to **(Munandar, 2016)**. According to **Ellyzar & Yunus (2017)**, workload is a series of activities that must be completed systematically to achieve work efficiency and effectiveness. Meanwhile, **Ferrania Paramitadewi (2017)** has defined workload as the number of activities that must be completed by an employee within a specific period. According to **Romi (2024)** however, a workload that exceeds an employee's capacity has the potential to reduce performance, particularly when it is not supported by effective time management practices and a work environment conducive to productivity.

According to **Koesomowidjojo & Mastuti (2017)**, workload is influenced by two factors, which are:

1. External Factors, including the work environment, physical tasks, and work organization related to schedules and work systems.
2. Internal Factors, including the physical and psychological conditions of workers, such as age, gender, health, motivation, perception, and job satisfaction.

Based on **Vanchapo (2020)**, workload consists of:

1. Quantitative Workload, which refers to the burden arising from the volume of tasks or time constraints in completing work.
2. Qualitative Workload, which refers to the burden arising from job demands that exceed the worker's technical and cognitive capabilities.

According to **Mahawati et al. (2021)**, an excessive workload can lead to physical and mental exhaustion, stress, health issues, and reduced performance. Conversely, a workload that is too low can lead to boredom and reduced work motivation. Therefore, appropriate workload management is crucial for maintaining worker productivity and well-being.

H1: Workload affects the job satisfaction of construction workers at PT. XYZ

Physical Work Environment

A conducive work environment can provide employees with a sense of safety and comfort, enabling them to perform their duties optimally. The higher the level of comfort perceived by employees, the greater their tendency to remain and work comfortably in the workplace.

The physical work environment also plays an important role in supporting such comfort through adequate lighting, appropriate room temperature, cleanliness, and ergonomic workplace layout. Good physical conditions not only help reduce fatigue but also enhance employees' focus, productivity, and enthusiasm in carrying out their tasks. According to **Tonia & Vrans Romi (2025)**, the physical work environment is one of the important factors that supports employees' work activities. A comfortable, safe, and conducive environment can improve work effectiveness and help employees achieve optimal performance.

According to **Zulfah et al. (2021)**, the work environment encompasses everything surrounding employees, both physical and non-physical, that may influence their work. Meanwhile, according to **Sedarmayanti (2018)**, the physical work environment consists of all the equipment and facilities that support the achievement of organizational goals..

Based on **Sedarmayanti (2018)**, the physical work environment consists of two categories, namely:

1. The primary environment, which is the environment that directly
2. interacts with workers as they perform their duties.
3. The secondary environment, which is the environment that indirectly influences workers' conditions and comfort while working.

H2: The physical work environment affects the job satisfaction of construction workers at PT. XYZ

Job Satisfaction

Job satisfaction is the positive or negative feeling an employee has toward their job as a result of evaluating various aspects of the work they perform. Job satisfaction is an employee's emotional response to their job that arises from evaluating various perceived job characteristics (**Lestari & Rahardianto, 2021**). **Syamsudhuha & Rizal Abdurahman (2024)** states that job satisfaction is an important factor for organizations because it plays a role in maintaining optimal employee performance and supporting the achievement of organizational goals. Meanwhile, according to **Meiliyana & Lestari (2024)**, job satisfaction is the emotional feeling an employee has toward their work, whether pleasant or unpleasant.

H3: Workload and physical work environment affect the job satisfaction of construction workers at PT. XYZ

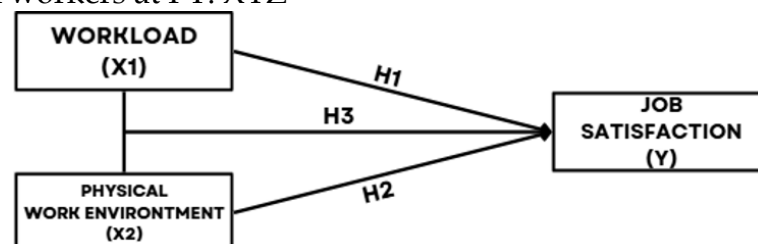


Figure 1. Conceptual Framework

METHODOLOGY

The population was used to determine the respondents in this study. The study population consisted of 32 construction workers at PT. XYZ. The researcher selected questionnaires, interviews, and documentation as the data collection methods. A reliability test was conducted as a measurement tool to evaluate the data. Validity tests, reliability tests, classical assumption tests, multiple regression tests, and hypothesis tests through the interpretation of SPSS 27 analysis were employed to analyze the data in this study. The researcher conducted a survey to collect data and information for this study by distributing questionnaires to the Board of Directors. Quantitative descriptive and quantitative associative methods were employed to analyze the data. Hypothesis testing aimed to determine the extent to which the independent variables (X) contribute, both partially and simultaneously, to the dependent variable (Y). The findings of the testing are expected to indicate acceptance or rejection of the formulated hypotheses.

RESULTS

Validity & Reliability Test

In order to obtain information regarding workload, the physical work environment, and job satisfaction, the researcher distributed a questionnaire to the head of the board of directors, who then distributed it to 32 construction workers. The researcher used SPSS 27 to test the validity and reliability of the data.

Table 2. Validity Test

Variable	r _{count}	r _{table}	Description
Workload			
X1.1	0.815	0,349	Valid
X1.2	0.750		Valid
X1.3	0.782		Valid
X1.4	0.656		Valid
X1.5	0.666		Valid
X1.6	0.599		Valid
X1.7	0.818		Valid
X1.8	0.593		Valid
X1.9	0.610		Valid
Physical Work Environment			
X2.1	0.692	0.349	VALID
X2.2	0.654		VALID
X2.3	0.802		VALID
X2.4	0.655		VALID
X2.5	0.590		VALID
X2.6	0.367		VALID
X2.7	0.691		VALID
X2.8	0.698		VALID
X2.9	0.669		VALID
X2.10	0.742		VALID
Job Satisfaction			
Y1	0.722	0.349	VALID
Y2	0.737		VALID
Y3	0.738		VALID
Y4	0.740		VALID
Y5	0.723		VALID
Y6	0.741		VALID
Y7	0.622		VALID
Y8	0.549		VALID
Y9	0.530		VALID
Y10	0.819		VALID
Y11	0.703		VALID
Y12	0.691		VALID
Y13	0.681		VALID

Based on Table 1 above, the validity test results indicate that all statements in the questionnaire were deemed valid because the calculated r value (0.349) was greater than the critical r value. This finding indicates that the research instrument is capable of accurately measuring the variables under study.

Table 3. Reliability Test

Variable	Cronbach's Alpha	N Of Items	Description
Workload (X1)	0.870	9	Reliable
Physical Work Environment (X2)	0.857	10	Reliable
Job Satisfaction (Y)	0.930	15	Reliable

Based on the results of the reliability test in Table 3, all Cronbach's Alpha values are greater than 0.70, so the questionnaire is considered consistent and suitable for use as a research instrument.

Classical assumption Test

The results of the classical assumption tests indicate that the regression model satisfies all required assumptions for regression analysis. The normality test produced a significance value of 0.080, which exceeds the threshold of 0.05, confirming that the data are normally distributed. The multicollinearity test showed a tolerance value of 0.242 and a VIF value of 4.138, indicating the absence of multicollinearity among the independent variables. In addition, the heteroscedasticity test yielded significance values of 0.645 for workload and 0.513 for the physical work environment, both exceeding 0.05, suggesting that heteroscedasticity is not present in the model. Therefore, the regression model is considered appropriate and reliable for subsequent analysis.

Table 4. Multiple Linear Regression Test

VARIABLE	Unstandardized Coefficients
	β
Constant	1,870
Workload	1,349
Physical Work Environment	0,380
<i>Dependent variable Job Satisfaction</i>	

Table 4 presents the results of the multiple linear regression analysis, which yielded the following regression equation:

$$Y = 1,870 + 1,349X_1 + 0,380X_2$$

The results of the multiple regression analysis show a constant value of 1.870. The workload variable has a positive regression coefficient of 1.349, while the physical work environment has a positive regression coefficient of 0.380. These findings indicate that workload and the physical work environment have a positive effect on job satisfaction; thus, improvements in these two variables tend to be accompanied by an increase in job satisfaction among construction workers.

Table 5. Coefficient of Determination

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971 ^a	.944	.940	1.959

a. Predictors: (Constant), T.X2, T.X1
b. Dependent Variable: T.Y

According to Table 5, the R-squared value of 0.944 indicates that workload and the physical work environment together account for 94.4% of the variation in job satisfaction, while the remaining 5.6% is influenced by other factors outside the research model.

Partial Test (t-Test)

The effect of the variables work load (X1) and physical work environment (X2) on job satisfaction (Y) was tested partially using a t-test with the aid of SPSS version 27. The decision to accept or reject the hypothesis was based on a comparison between the calculated t-value and the critical t-value. The critical t-

value was obtained by first calculating the degrees of freedom (df) using the formula $df = N - k$, where N is the number of respondents and k is the number of variables. With 32 respondents and three research variables, the df was 29, so the critical t-value used was 2.045.

Table. 6 Partial Test Result

Variable	t _{count}	t _{table}	Sig.	Prob.	Information
Workload	8,569	2,045	0.000	0,05	Influential
Physical Work Environment	2,525	2,045	0,017	0,05	Influential

The results of the partial hypothesis test indicate that workload has a positive and significant effect on job satisfaction (calculated t-value = 8.569 > critical t-value = 2.045). These findings suggest that appropriate and balanced workload management can enhance employee job satisfaction. These results are consistent with a previous research (Talo et al., 2020).

The results also indicate that the physical work environment has a positive and significant effect on job satisfaction ($t = 2.525 > t\text{-table} = 2.045$). Improvements in workplace conditions, including lighting, air quality, and workspace organization, can enhance employees' well-being and overall job satisfaction. These findings support previous research on the relationship between physical work environment and job satisfaction according to (Nurhaisya et al., 2023).

Simultaneous Test (f-Test)

A simultaneously test was conducted in this study to examine influence of the workload and physical work environment on the job satisfaction of construction workers at PT. XYZ. The results of the simultaneous test indicate that workload and the physical work environment together have a significant effect on job satisfaction, as evidenced by the calculated F-value (243.095) being greater than the critical F-value (3.33) and a significance level of $0.001 < 0.05$.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research findings, it can be concluded that the workload of construction workers at PT. XYZ falls into the "highly unsuitable" category, the physical work environment falls into the "inadequate" category, and job satisfaction levels remain low. The results of the hypothesis testing indicate that workload and the physical work environment have a positive and significant effect on job satisfaction, both partially and simultaneously. Together, these two variables account for 94.4% of the variation in job satisfaction ($R^2 = 0.944$), while the remaining 5.6% is influenced by other factors outside the scope of this study.

Recommendations

or the XYZ Company, it is recommended to improve workload management through a more equitable distribution of tasks, effective scheduling of work hours, and support for workers' physical and psychological well-being. Additionally, the

company needs to improve the physical work environment, such as by enhancing lighting, air circulation, work facilities, and break rooms to create a safer and more comfortable work environment. These efforts are expected to improve job satisfaction, productivity, and loyalty among construction workers.

FURTHER STUDY

For future researchers, it is recommended to include other variables that may influence job satisfaction, such as work motivation, work-related stress, compensation, work-life balance, and organizational citizenship behavior (OCB). Additionally, the study could be expanded to include different subjects and sectors to yield more comprehensive results.

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