KESANS
International Journal of Health and Science

Analysis of the Causes of Burnout Syndrome Among Workers in the Logistics Industry Sector at PT. X Batam City in 2025

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Abstract
Introduction: *Burnout is an emotional condition that occurs when a person experiences physical and mental exhaustion due to increased responsibilities at work.* ***Objective:*** *The purpose of this study was to analyze the causes of Burnout Syndrome among workers at PT. X, Batam City, in 2025.* ***Method:*** *The research method used was quantitative research with a cross-sectional approach. The sampling technique used total sampling with a sample of 38 workers at PT. X, Batam City. Data were obtained using Chi-square test analysis.* ***Result and Discussion:*** *The results showed that PT. X, Batam City had a high workload category (55%), good work environment category (95%), and moderate worker Burnout Syndrome category (55%). Based on the analysis results, workload (p-value = 0.047), work environment (p-value = 0.043), and work stress (p-value = 0.019) were found to be significant.* ***Conclusion:*** *The conclusion of this study is that there is a significant relationship between workload, work environment, and work stress with Burnout Syndrome at PT. X, Batam City. This research suggests that companies should manage employee burnout well to prevent the occurrence of Burnout Syndrome.*

Analysis of the Causes of Burnout Syndrome Among Workers in the Logistics Industry Sector at PT. X Batam City in 2025

Introduction

In the current era, companies consider human resources (HR) as a special asset, especially in efforts to achieve company goals. Human resources with professionalism, capability, and accountability can certainly advance the company as one way to minimize Burnout Syndrome factors in workers. However, in order to advance and develop the company, a work atmosphere that supports worker productivity is needed so that they always work optimally when carrying out tasks.

Burnout is an emotional condition that occurs when a person experiences physical and mental exhaustion due to increased responsibilities at work. Although the severity, duration, frequency, and impact vary, burnout is characterized as a type of physical, mental, and emotional exhaustion. The word "burnout" describes a condition that is a combination of unique reactions to stress. Continuous reaction to continuous pressure in the workplace is known as burnout.

Every leader must avoid workload that occurs in the workforce so that there is no more Burnout Syndrome, because this becomes one of the causes of decreased work ethic of employees to provide good work performance. According to Wahab in (Dessy & Sanuddin, 2017), the company's need for a system that focuses on the employee work environment is important. So actually, Burnout Syndrome experienced by employees is influenced by workload. If the work environment improves towards work, there will be an increase in the elimination of Burnout Syndrome. However, if the work environment is low towards work, the emerging burnout is also low.

PT. X is a company engaged in the logistics industry. Work at PT. X requires high accuracy and discipline and has time targets in the work process. Based on the initial survey results in June 2025 through initial observations conducted at PT. X Batam City, the work environment conditions were less comfortable and workers had to complete their work projects within a specified time, and one worker said he experienced burnout syndrome. The purpose of this study is to determine the causes of burnout syndrome in workers in the logistics industry sector at PT.X Batam City in 2025.

Literature Review
Workload
1. Definition of Workload

Workload according to (Kusmawan, Izhar, & Aswin, 2024) is everything that includes various variables that reflect the amount or difficulty of a person's work. Workload can also be interpreted as the overall composition of work experienced by a person from daily work including organizational, environmental, personal and situational factors (Umansky & Rantanen, 2016).

2. Workload Indicators

Indicators in workload according to (Hart & Staveland, 1988) with the NASA-TLX measurement method include 6 indicators that must be considered:

1) **Mental Demand (MD):** This indicator shows how much mental and perceptual activity is needed to perform a job, such as thinking, deciding, calculating, memorizing, seeing, searching, and others.

2) **Physical Demand (PD):** This indicator shows how much physical activity a person needs to perform a job, such as pushing, pulling, turning, controlling, and others.

3) **Temporal Demand (TD):** This indicator relates to the pressure felt by the operator based on time while performing the work.
4) **Own Performance (OP):** This indicator shows how much the level of success of a job and the level of operator satisfaction in carrying out their work.
5) **Effort (EF):** This indicator shows how much mental and physical effort is needed by the operator to complete a job.
6) **Frustration (FR):** This indicator shows how much anxiety level is felt compared to feelings of self-satisfaction with their work by the operator while completing a job.

3. Workload Measurement

There are several ways to measure workload. One of them is using the National Aeronautics and Space Administration Task Load Index (NASA-TLX) method. This method emerged due to the need for subjective measurements that are easier but more sensitive. This method is used to analyze the mental workload felt by workers who perform their work activities, based on the emergence of subjective measurement needs consisting of nine indicator scales: task difficulty, time pressure, type of activity, physical effort, mental effort, performance, frustration, burnout, and fatigue. From these nine factors, they were then simplified to six indicators: Mental Demand, Physical Demand, Temporal Demand, Own Performance, Effort, Frustration Level (Sari, 2017).

The measurement steps using the NASA-TLX method according to (Sari, 2017) are as follows:

Weighting: In this section, respondents are asked to choose one of two indicators that are felt to be more dominant in causing mental workload for that job. The NASA-TLX questionnaire given is in the form of paired comparisons. From this questionnaire, the number of tallies is calculated to become weights for each mental load indicator.

Rating: In this section, respondents are asked to give values to the six indicators. This assessment is subjective according to what the respondent feels while completing a job.

Calculating Product Value: At this stage, the product value is obtained by multiplying the weight and rating given by the respondent, so it will produce a product value from each indicator. Product Value = Rating × Weight = ...

Calculating Weighted Workload (WWL): Calculate WWL by summing the six indicators for each respondent. WWL = Σ product value

Calculating Average WWL: Obtained by dividing the obtained WWL by the total weight, which is 15. Score = Σ product value / 15 = ...

Score Interpretation: The output of calculations using the NASA-TLX method is the level of mental workload felt by respondents:

Table 1
Mental workload felt by respondents

Workload Category	Value
Low	0 - 9
Moderate	10 - 29
Somewhat High	30 - 49
High	50 - 79
Very High	80 - 100

Work Environment

Definition of Work Environment: According to Alex S. Nitisemitono in (Wang, Huang, Zhang, Liu, & Chen, 2025), work environment is everything that exists around workers and can influence them in carrying out the tasks assigned to them. Work environment is divided into:

Physical Work Environment: Physical work environment consists of things around workers that can be felt physically through the senses and can influence workers in carrying out the tasks assigned to them.

Non-Physical Work Environment: Non-physical work environment consists of things or something around workers that can only be felt psychologically, not through the senses, and can influence workers in carrying out the tasks assigned to them.

Factors Affecting Work Environment: According to Alex S. Nitisemito in (Wang et al., 2025), work environment factors include: a. Coloring b. Cleanliness c. Air circulation d. Lighting e. Music f. Noise g. Security h. Communication i. Interaction j. Atmosphere

Work Stress

Definition of Work Stress

According to Robbins, work stress is a condition where someone is treated with disrespectful behavior that does not match their expectations (Priyantika, 2018). Several factors that contribute to work stress include physical strength and stamina, individual ability to organize themselves, attachment to positive things, and personal characteristics (Mahendra, 2021).

Work stress can occur due to workload that is felt to be too heavy, additional working time beyond limits, and work environment that is not supportive. According to Luthans (2002), one cause of organizational stress is the structure within the organization formed through existing organizational design, such as conflicts in employee relationships and unsupportive environment (Khairunnisa, 2015).

Burnout Syndrome

Definition of Burnout Syndrome

Burnout is an emotional condition that occurs when a person experiences physical and mental exhaustion due to increased responsibilities at work. Although the severity, duration, frequency, and impact vary, burnout is characterized as a type of physical, mental, and emotional exhaustion.

The emotional status of community-based human service professionals, including teachers, police officers, and hospital nurses, is reflected in burnout. Workers face difficult and emotionally burdensome situations when providing services, such as dealing with patient pain and facing resistant clients.

Method

This study used quantitative research methods with quantitative or statistical data analysis, and this research falls under the Cross-Sectional research approach. This research activity was conducted at PT. X Batam City located in Sekupang District, Riau Islands Province, Indonesia. This research was carried out in June 2025. The research subjects were all workers at PT.X Batam City in 2025.

The sampling technique used by the researcher was total sampling with 38 respondents. The independent variables in this factor are workload and work environment. The dependent variable in this study is Burnout Syndrome. The type of data

collection is primary data. Data collection technique was in the form of questionnaires given to all respondents. Data analysis in the study included univariate and bivariate analysis with Chi-Square test analysis.

Result and Discussion
1.   Result
Workload

Table 2
Workers' workload at PT. X Batam City in 2025 is in the high category

Workload	Frequency	Percentage (%)
Low	0	0%
Moderate	5	13%
Somewhat High	2	5%
High	21	55%
Very High	10	26%
Total	**38**	**100%**

The table above shows that most workers' workload at PT. X Batam City in 2025 is in the high category, totaling 21 workers (55%), while the least is workers who have workload in the somewhat high category, namely 2 workers (5%), and there are no workers at PT. X Batam City who have workload in the low category.

Work Environment

Table 3
Workers who have a work environment at PT. X Batam City in the good category

Work Environment	Frequency	Percentage (%)
Low	2	5%
Good	36	95%
Total	**38**	**100%**

The table above shows that workers who have a work environment at PT. X Batam City in the good category number 36 workers (95%), while those who have a not good work environment number 2 workers (5%).

Work Stress

Table 4
Workers who have work stress at PT. X Batam City in the low stress category

Work Stress	Frequency	Percentage (%)
Low Stress	12	31.6%
Moderate Stress	26	68.4%
Total	**38**	**100%**

The table above shows that workers who have work stress at PT. X Batam City in the low stress category number 12 workers (31.6%), while those who have moderate work stress number 26 workers (68.4%).

Burnout Syndrome

Table 5

Burnout Syndrome levels

Burnout Syndrome	Frequency	Percentage (%)
Low	2	5%
Moderate	21	55%
High	13	34%
Very High	2	5%
Total	**38**	**100%**

From the table above, it is known that out of 38 workers at PT. X Batam City in 2025, 21 workers or 55% have moderate Burnout Syndrome levels, with the least being 2 workers or 5% who have low Burnout Syndrome and very high Burnout Syndrome levels.

Relationship between Workload and Burnout Syndrome among Workers at PT. X Batam City

Based on the Chi-square test results, there is a relationship between workload and Burnout Syndrome with a significance level (0.047) < α (0.05), which shows that p-value < α, meaning reject H0, which means there is a relationship between workload and Burnout Syndrome among workers at PT. X Batam City in 2025.

Relationship between Work Environment and Burnout Syndrome among Workers at PT. X Batam City

Based on the Chi-square test results, there is a relationship between work environment and Burnout Syndrome with a significance level (0.043) < α (0.05), which shows that p-value < α, meaning reject H0, which means there is a significant relationship between work environment and Burnout Syndrome among workers at PT. X Batam City in 2025.

Relationship between Work Stress and Burnout Syndrome among Workers at PT. X Batam City

Based on the Chi-square test results, there is a relationship between work stress and Burnout Syndrome with a significance level (0.019) < α (0.05), which shows that p-value < α, meaning reject H0, which means there is a significant relationship between work stress and Burnout Syndrome among workers at PT. X Batam City in 2025.

2. Discussion
Workload

Workload calculation in this study was performed using the NASA-TLX questionnaire. Workload according to (Kusmawan, Izhar, & Aswin, 2024) is everything consisting of various variables that illustrate the amount or challenge in an individual's work. (Kusmawan, Izhar, & Aswin, 2024) specifically explain the types of workload: quantitative workload, qualitative workload, physical workload, and mental workload.

As much as 55% of workers at PT. X Batam City in 2025 are in the high workload category. This is in line with research conducted by (Amri & Herizal, 2017) with research results on workers at PT. Toba Pulp Lestari showing that 70% of workers are in the high workload category. Research conducted by (Sari, 2017) at PT. Tranka Kabel also shows that workers' workload at PT. Tranka Kabel is in the high category.

Analysis of the Causes of Burnout Syndrome Among Workers in the Logistics Industry Sector at PT. X Batam City in 2025

According to the researcher's assumption, the high workload of PT. X Batam City workers in 2025 is due to work demands given by the company to workers that do not match the capabilities possessed by workers, whether in terms of time, energy, or knowledge. So employees tend to force themselves to work beyond the limits of the workers' own capabilities.

Work Environment

This study shows that the physical and non-physical work environment of workers at PT. X Batam City in 2025 is in the good category with a percentage of 95%. This research is in line with the case study by Rizki, et al (2016) at PT. PLN Distribusi Jawa Timur Area Pelayanan Malang with results showing that the work environment studied is in the good category.

According to Alex S. Nitisemitono in (Wang et al., 2025), work environment is everything that exists around workers that can influence workers when carrying out the tasks entrusted to them. Work environment is divided into physical work environment and non-physical work environment, where this work environment will influence the work performed by workers.

Burnout Syndrome

(Edú-Valsania, Laguía, & Moriano, 2022) states that burnout is a negative human response due to excessive pressure and demands. (Chen, Liu, Wang, & Zhang, 2022) argues that Burnout Syndrome is a condition as a result of a subject's experience in the form of interaction between a person and a work environment that intimidates and psychologically, physiologically, and behaviorly pressures that person.

The level of Burnout Syndrome at PT. X Batam City in 2025 is moderate Burnout Syndrome, with research results showing 21 workers out of 38 workers have moderate Burnout Syndrome levels indicated by scores of 105-139. This is in line with research by (Fahamsyah, 2017) where 6 respondents out of 11 research samples experienced moderate Burnout Syndrome.

Relationship between Workload and Burnout Syndrome

Based on Chi-square test results, there is a relationship between workload and Burnout Syndrome with a significance level $(0.047) < \alpha$ (0.05), which shows that p-value $< \alpha$, meaning reject H0, which means there is a relationship between workload and Burnout Syndrome among workers at PT. X Batam City in 2025.

This research is in line with (Romadhoni, 2015) where the significance results show that workload has a relationship with Burnout Syndrome. It is explained that employees need support in facing problems and issues in the workplace.

Relationship between Work Environment and Burnout Syndrome

Based on Chi-square test results, there is a significant relationship between work environment and Burnout Syndrome with a significance level $(0.043) < \alpha$ (0.05), which shows that p-value $< \alpha$, meaning reject H0, which means there is a significant relationship between work environment and Burnout Syndrome among workers at PT. X Batam City in 2025.

Analysis of the Causes of Burnout Syndrome Among Workers in the Logistics Industry Sector at PT. X Batam City in 2025

Relationship between Work Stress and Burnout Syndrome

Based on Chi-square test results, there is a significant relationship between work stress and Burnout Syndrome with a significance level (0.019) < α (0.05), which shows that p-value < α, meaning reject H0, which means there is a significant relationship between work stress and Burnout Syndrome among workers at PT. X Batam City in 2025.

Conclusion

Workload of PT. X Batam City workers is in the high workload category based on calculations using the NASA-TLX method with a percentage of 55%. Work environment at PT. X Batam City in 2025 is classified as a good work environment with a percentage of 95%. Based on Burnout Syndrome calculations that have been performed, PT. X Batam City workers in 2025 are at moderate Burnout Syndrome levels with a percentage of 55%. Based on analysis testing that has been conducted, there is a significant relationship between workload and Burnout Syndrome among workers at PT. X Batam City in 2025 with p-value (0.047) < α (0.05). The conclusion is that there is a relationship between workload and Burnout Syndrome among workers at PT. X Batam City in 2025. Based on analysis testing that has been conducted, there is a significant relationship between work environment and Burnout Syndrome among workers at PT. X Batam City in 2025 with p-value (0.043) < α (0.05). The conclusion is that there is a relationship between work environment and Burnout Syndrome among workers at PT. X Batam City in 2025. Based on analysis testing that has been conducted, there is a significant relationship between work stress and Burnout Syndrome among workers at PT. X Batam City in 2025 with p-value (0.019) < α (0.05). The conclusion is that there is a relationship between work stress and Burnout Syndrome among workers at PT. X Batam City in 2025.

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