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The Influence of Job Boredom and Cyberloafing on Work Engagement of Security and Firefighter Employees at KIS Karawang

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Keywords

Job boredom, Cyberloafing, Work Engagement

Abstract

The rapid development of the manufacturing industry necessitates the implementation of efficient work systems and the establishment of safe working environments. Within the Security and Fire Department of an industrial estate in Karawang, routine and standby work arrangements may contribute to the emergence of job boredom and potentially encourage cyberloafing behavior, which can ultimately influence employees' level of work engagement. Therefore, this study seeks to investigate the effect of job boredom and cyberloafing on employees' work engagement. This study adopted a descriptive quantitative research design involving employees of the Security and Fire Department in an industrial estate located in Karawang. The total population comprised 169 employees, from which 119 respondents were selected as the research sample using Slovin's formula with a margin of error of 5%. Data were gathered through the distribution of questionnaires and subsequently analyzed using Structural Equation Modeling (SEM) with the Covariance-Based SEM (CB-SEM) approach utilizing SmartPLS 4 software. The findings reveal that cyberloafing has a negative influence on work engagement, while job boredom also affects employees' level of work engagement. Furthermore, the structural model demonstrates that job boredom and cyberloafing collectively account for 26.8% of the variance in work engagement (R^2 = 0.268), suggesting that the remaining variance is influenced by other factors beyond the scope of this study. These results emphasize the importance of organizational efforts in addressing job boredom and managing cyberloafing behavior in order to enhance employees' work engagement within industrial settings.

1. Introduction

Indonesia's industrial areas continue to expand in line with increasing manufacturing activities and investment flows. To enhance national competitiveness and create productive and safe working environments, the government has actively promoted the development of industrial estates as integrated centers of economic activity. Karawang Regency in West Java has emerged as one of the strategic locations for manufacturing development in Indonesia. According to the Ministry of Industry of the Republic of Indonesia (2023) , an industrial area refers to a designated location where industrial activities are carried out in a structured manner and supported by adequate infrastructure and facilities.

From a human resource management perspective, employee work engagement plays a crucial role in organizational effectiveness because it reflects employees' enthusiasm, dedication, and concentration in performing their job responsibilities. Employees with high levels of work engagement tend to demonstrate stronger commitment, higher productivity, and better performance outcomes Bakker, (2022). In industrial areas, maintaining employee engagement is particularly important due to the demanding nature of operational and safety-related tasks

Based on Government Regulation No. 24 of 2009 concerning Industrial Areas, security and firefighting units play a critical role in maintaining safety and operational stability within industrial estates. Their responsibilities include conducting surveillance, performing routine patrols, and ensuring preparedness for potential emergencies (Kementerian Sekretariat Negara Republik Indonesia, 2009). However, the nature of this work often involves repetitive tasks and extended standby periods, which may lead to job boredom among employees. Job boredom is a psychological condition characterized by a lack of stimulation, challenge, or meaningful engagement in work activities.

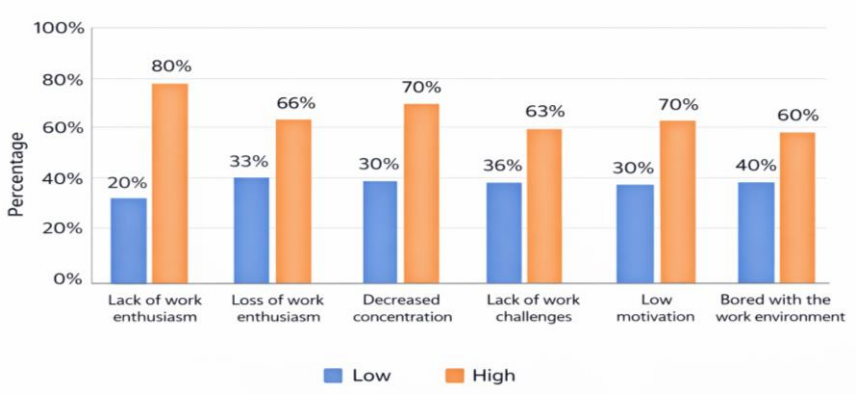

Figure 1 *Interview Data Work Engagement Variable*

Based on Figure 1 showing the results of the preliminary study conducted with 30 respondents, the highest percentage of "Yes" responses reached 80%, while the lowest was 60%, with an average score of 68.33%. This result indicates a tendency toward relatively low levels of work engagement among employees.

In addition, technological advancements and increasing internet accessibility in the workplace have created new behavioral challenges, including cyberloafing. Cyberloafing refers to employees' use of workplace internet access for personal purposes during working hours, such as browsing social media, watching online content, or engaging in other non-work-related online activities (Zhang et al., 2021). The widespread availability of digital technology has made internet access increasingly accessible in daily life (We Are Social & DataReportal, 2024). If not properly managed, cyberloafing behavior may distract employees from their main responsibilities and reduce overall work effectiveness within organizations (Mohammad & Fadli, 2023).

Several previous studies have examined the relationship between job boredom, cyberloafing, and employee work engagement. Harju et al.(2023) found that job boredom has a negative relationship with work engagement, indicating that employees who experience boredom tend to show lower enthusiasm and reduced concentration in their work. Similar findings were reported by Kawada et al. (2024), who highlighted that monotonous work routines and limited skill variety can weaken employee motivation and decrease work engagement. Furthermore, cyberloafing has also been identified as a behavior that may interfere with employees' focus on their primary work tasks and potentially reduce engagement and productivity (Nguyen et al., 2025). Mustapha et al. (2024) further demonstrated that the combination of job boredom and cyberloafing can simultaneously reduce employees' work engagement.

Despite the growing body of literature on job boredom and cyberloafing, limited research has examined these variables within the context of security and firefighting personnel in industrial areas, where work patterns are characterized by routine monitoring and high-alert responsibilities.

The novelty of this study lies in examining the relationship between job boredom and cyberloafing on work engagement among employees working in security and firefighting units within industrial environments. Furthermore, this study applies the Covariance-Based Structural Equation Modeling (CB-SEM) approach to analyze the relationships among these variables in jobs that require high alertness yet involve routine work systems.

Therefore, this study aims to analyze the influence of job boredom and cyberloafing on employees' work engagement in the Security and Fire Department within an industrial estate in Karawang.

2. Literature Review

2.1 Job Boredom

Job boredom refers to a negative emotional condition when employees feel that their work provides little stimulation, challenge or meaning, as explained Schott & Fischer, (2023) who calls it a psychological state resulting from monotonous activity. Sesen & Donkor, (2023) adding that job burnout arises from unchallenging tasks that cause dissatisfaction and lower work enthusiasm, while Spanouli et al., (2023) confirms the same thing as a decrease in energy and motivation due to repetitive work and minimal variation. Based on the perspectives of the scholars above, Job boredom is a negative psychological condition that arises due to monotonous and less challenging work, thus causing a decrease in employee motivation, energy, and involvement in work.

Schott and Fischer (2023) explain that job boredom includes three main dimensions. (1) lack of cognitive stimulation, with indicators (a) Repetitive work routines,(b) Perception of slow work time, (c) Low work challenges and , (d) Minimal job changes. (2) low emotional involvement, namely (a) a condition where employees lose interest and (b) have difficulty maintaining focus while working. (3) reduced meaning of work, namely (a) the perception that the work being done has no value or (b) an important contribution to oneself or the organization.

2.2 Cyberloafing

Cyberloafing refers to the use of the internet at work for personal purposes unrelated to job tasks. According to (Zhang et al., 2022) it encompasses online activities like chatting, gaming, video watching, or shopping during work hours. Krishna & Agrawal, (2023) describe it as using the internet or social media for personal benefits while on the clock, while Cheng et al., (2020) define it as employees' voluntary use of company internet for non-work pursuits, such as reading news or online shopping. Thus, cyberloafing constitutes deviant workplace behavior when staff engage in personal internet use during work time, potentially undermining focus and productivity.

Cyberloafing can be identified through several main dimensions, namely: (1) Sharing, the activity of interacting on social media during working hours, (2) Shopping, the behavior of accessing or making online purchases, (3) Real-time updating, the activity of monitoring news or updating personal information. (4) Accessing online content, the activity of accessing entertainment content such as videos or music. Cyberloafing indicators can be explained as (a) opening social media and personal chat during working hours, (b) visiting online shopping sites, (c) checking the latest news or information for personal interests, (d) watching entertainment videos or streaming music while working (Fuadi et al., 2025).

2.3 Work Engagement

Work engagement represents a positive psychological condition marked by an individual's deep immersion in their job. Wilmar B. Schaufeli & Arnold B. Bakker, (2022) describe it as featuring elevated energy, commitment, and focus among employees while performing duties. Mazzetti et al., (2023) further note that it manifests in enthusiasm and profound dedication, motivating staff to deliver peak performance for the organization. In summary, work engagement is a favorable mindset defined by strong vigor, devotion, and complete absorption in tasks, inspiring employees to contribute maximally to their workplace.

The dimensions of work engagement refer to the Utrecht Work Engagement Scale (UWES) which consists of 3 main aspects: (1) Vigor, namely, (a) which describes the level of energy and (b) mental resilience in work, (2) Dedication, which shows (a) emotional involvement in the form of enthusiasm, pride and meaning towards work, (3) Absorption, namely the state when an individual is immersed in work so that (a) they are fully focused and (b) they feel that time passes quickly.

2.4 Framework of Thought

In this study, job boredom is defined as a detrimental psychological condition in which employees perceive their tasks as repetitive, unchallenging, and lacking in stimulation, evaluated through three main dimensions: low cognitive engagement, reduced emotional commitment, and decreased task significance Schott & Fischer, (2023), cyberloafing is defined as the practice of using the internet for personal purposes during working hours, evaluated through four dimensions: content sharing, online shopping, real-time updates, and digital media consumption Fuadi et al., (2025). Conversely, work engagement is a beneficial psychological state that reflects employees' total involvement in their roles, measured through vitality, dedication, and absorption Bakker, (2022). Based on previous theories and studies, job boredom and cyberloafing are hypothesized to have a negative influence on work engagement, as increased monotony and off-task internet activities can erode employees' energy, commitment, and focus, ultimately reducing overall work engagement.

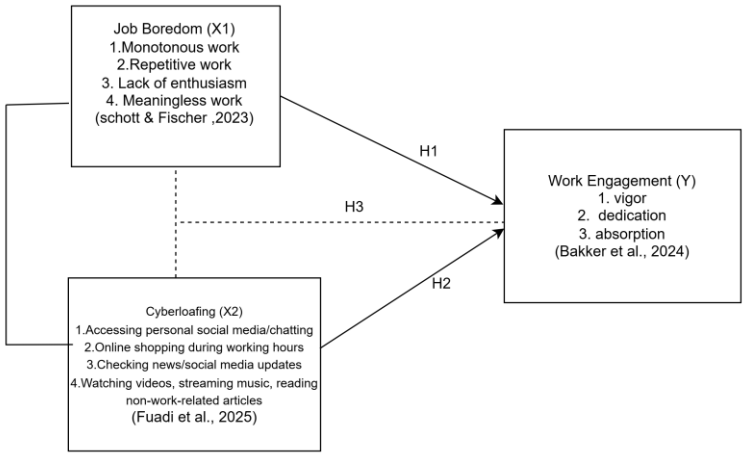

Figure 2 *Research Framework (Fischer et al., 2023, Fuadi et.al., 2025, Bakker et.al., 2024)*

Research Hypotheses

H1: Job boredom (X1) negatively affects work engagement (Y).

H2: Cyberloafing (X2) negatively affects work engagement (Y).

H3: Job boredom (X1) and cyberloafing (X2) together significantly influence work engagement (Y).

3. Research methodology

This study employs a quantitative descriptive research approach to examine employees of the Security and Fire Department within an industrial estate in Karawang. The population consisted of 169 employees, from which a sample of 119 respondents was determined using Slovin's formula with a 5% margin of error. The sampling technique used in this study was non-probability purposive sampling, where respondents were selected based on specific criteria, namely active employees of the Security and Fire Department with a minimum working period of six months.Primary data were collected through a questionnaire distributed online using Google Forms. The questionnaire items were measured using a five-point Likert scale ranging from 1 (very low) to 5 (very high).

Data analysis was conducted using Structural Equation Modeling (SEM) with the Covariance-Based SEM (CB-SEM) approach using SmartPLS 4 software. The analysis consisted of several stages: (1) evaluation of the measurement model, including outer loading, composite reliability (CR), and average variance extracted (AVE) to assess validity and reliability; (2) evaluation of the structural model through path coefficients and R^2 values to analyze the relationships between variables; (3) hypothesis testing using the bootstrapping method; and (4) model fit evaluation using goodness-of-fit indices such as SRMR, RMSEA, CFI, and TLI.

Table 1 *Operational variables*

Job Boredom Variable (X1)		
Dimensions	**Indicator**	**Source**
Lack of Cognitive Stimulation	1. Repetitive work routine 2. Perception of slow working hours 3. Low job challenges 4. Minimal job changes	(Schott & Fischer, 2023)
Low Emotional Engagement	1. Decreased work enthusiasm 2. Difficulty focusing on work	(Schott & Fischer, 2023)
Reduced Sense of Meaning in Work	1. Low job meaning 2. Lack of sense of purpose or work contribution	(Schott & Fischer, 2023)
Dimensions	**Indicator**	**Source**

Job Boredom Variable (X1)		
Dimensions	**Indicator**	**Source**
Sharing (Sharing personal activities)	1. Use of social media	Fuadi et al. (2025)
Shopping (Online shopping)	1. Access the online shopping site 2. Make online shopping transactions	Fuadi et al. (2025)
Real Time Updating (activity of monitoring the latest information updates)	1. News and social media monitoring 2. Consume non-work related entertainment content	Fuadi et al. (2025)
Accessing Online Content (Access online content)	1. Access personal information on the internet	Fuadi et al. (2025)
Dimensions	**Indicator**	**Source**
Vigor (Work spirit/energy)	1. High work energy 2. Enthusiasm in facing work difficulties	Bakker (2022)
Dedication (pride of work)	1. Pride in work	Bakker (2022)
Absorption (Dissolution in Work)	1. Focus / Concentration 2. Working hours	Bakker (2022)

4. Results and Discussion

4.1 Respondent Characteristics Data

The number of respondents in this study reached 119 people. Respondent characteristics are described by gender, age, Highest education level, position, and tenure, as presented in the table below.

Table 2 *Respondent Characteristics Data*

Descriptive	information	Frequency	Percentage (%)
Gender	Man	119	100%
	Woman	0	0%
	Amount	119	100%
Age	< 25 years	1	0.84%
	25–35 years	12	10.08%
	36–45 years	34	28.57%
	45 years	72	60.50%
	Amount	119	100%
Position	Security	103	86.5%
	Firefighter	16	13.45%
	Amount	119	100%
Length of work	<1 year	1	0.84%
	1-3 years	6	5.04%
	4-6 years	11	9.24%
	>6 years	101	84.87%
	Amount	119	100%

Respondent characteristics showed that all respondents were male (100%). Most respondents were aged >45 years (60.50%), the majority had a high school/vocational high school education (100%), with 103 (86.55%) as security guards and 16 (13.45%) as firefighters.Furthermore, based on length of service, most respondents have worked for >6 years (84.87%).

4.2 Descriptive Analysis

Descriptive analysis is intended to summarize respondents' characteristics response patterns to the indicators of each research variable. According to Sugiyono, (2020) Descriptive analysis is a statistical technique that functions to describe data as it is without making generalizations.

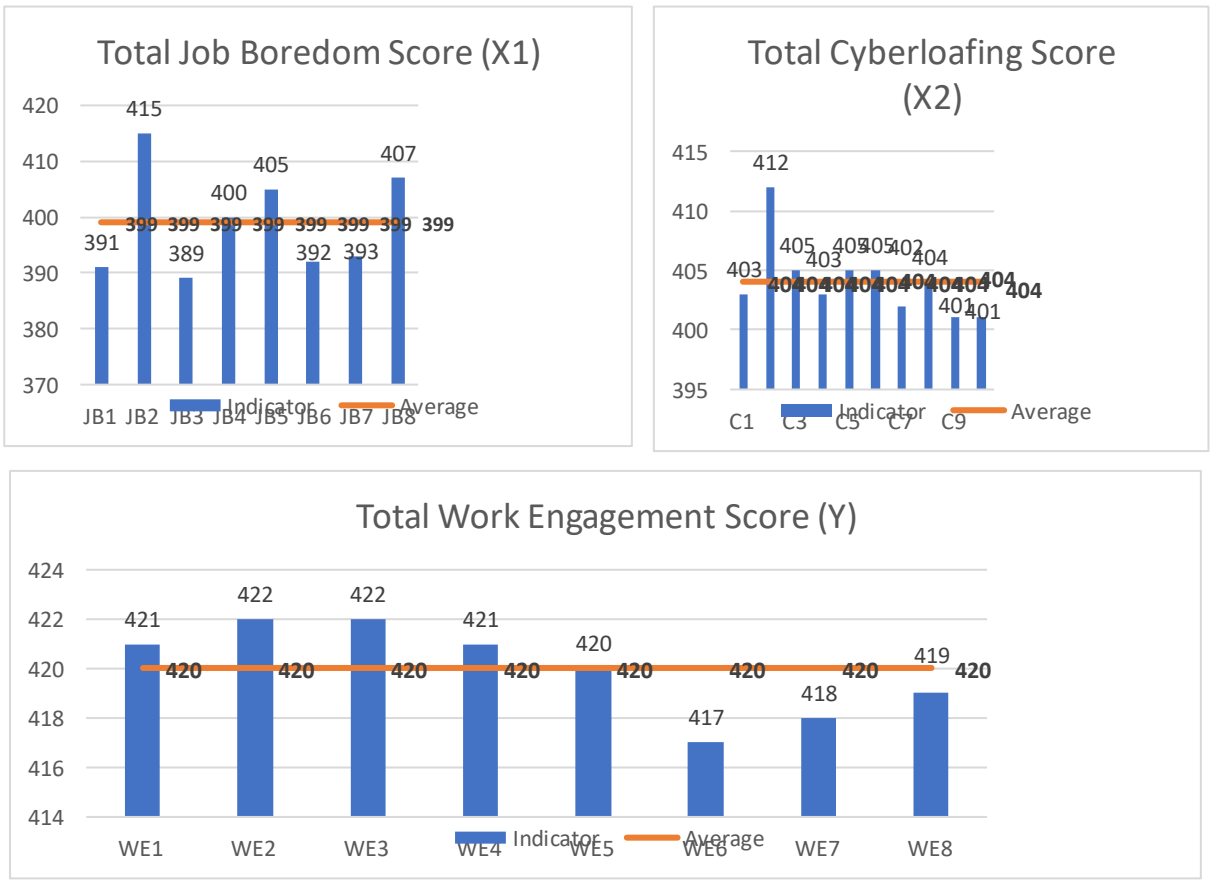

Figure 3 *Descriptive Analysis of Variables*

From the figure, the total score presented by the job boredom indicator reached 3.40 (medium-high category), cyberloafing 3.38 (medium-high), and work engagement 3.58 (high). The mode of all three variables consistently falls in the High category, with the highest indicators being JB2 (415), CF2 (412), and WE2&3 (422), respectively. These findings indicate a significant tendency towards job boredom and cyberloafing among security and firefighter employees, although work engagement remains relatively high.

4.3 Verification Analysis

4.3.1 Convergence Validity Analysis

The measurement model underwent evaluation via convergent validity, reliability, and discriminant validity assessments..An outer loading > 0.70 indicates convergent validity.(Sihombing et al., nd 2024)

Table 3 *outer loading*

Job Boredom (X1)		
Statement Indicator	**Code**	**Outer Loading**
Repetitive work is boring	JB1	0.915
Working hours feel long	JB2	0.843
Less challenging tasks	JB3	0.836
The work atmosphere rarely changes	JB4	0.901

Research in Management of Technology and Business Vol. 7 No. 1 (2026) p. 1207-1218

Job Boredom (X1)		
Statement Indicator	**Code**	**Outer Loading**
Difficulty focusing while working	JB5	0.87
Decreased morale	JB6	0.844
Less meaningful work	JB7	0.878
Work contribution	JB8	0.878
Cyberloafing(X2)		
Statement Indicator	**Code**	**Outer Loading**
Opening social media during work hours	C1	0.877
Watching videos	C2	0.899
Browsing information	C3	0.908
Reading non-work related news during work hours	C4	0.909
Cyberloafing(X2)		
Statement Indicator	**Code**	**Outer Loading**
online shopping sites or applications during working hours	C6	0.874
online shopping transactions during working hours	C7	0.888
Stream music or videos during work hours	C8	0.913
Reading news on the internet while working	C9	0.87
Personal online activities reduce work focus	C10	0.919
Work Engagement (Y)		
Statement Indicator	**Code**	**Outer Loading**
High work energy	WE1	0.806
The spirit of facing work difficulties	WE2	0.867
Focus and concentrate on work	WE3	0.849
Working time passes quickly	WE4	0.791
Proud of work	WE5	0.84
Focus on the task	WE6	0.786
Lost in work	WE7	0.72
It's hard to get away from work	WE8	0.702

The test results showed the highest outer loading at C10 (0.919) and the lowest at WE8 (0.702). All indicators were >0.70, thus meeting the validity criteria.

4.3.2 Construct Reliability Test and Average Variance Extracted (AVE)

Reliability tests were performed to assess the consistency of indicators in measuring latent constructs. These were evaluated using Cronbach's Alpha and Composite Reliability (CR), while convergent validity was gauged via AVE; constructs were deemed satisfactory if Alpha and CR ≥ 0.70, and AVE ≥ 0.50 (Hair et al., 2021).

Table 4 *Reliability test results*

Variables	Alpha	CR	AVE
Cyberloafing(X2)	0.975	0.975	0.798
Job Boredom (X1)	0.962	0.962	0.758
Work Engagement (Y)	0.933	0.934	0.635

The table shows that all variables have Alpha and CR values above 0.70, as well as AVE values above 0.50. Therefore, the research construct is considered reliable and valid for further analysis.

4.3.3 Discriminant Validity Test

Discriminant validity tests were conducted using HTMT and Fornell-Larcker. According to Hair et al., (2021), HTMT < 0.90 and the square root of AVE > inter-construct correlation indicates that discriminant validity is met.

Table 5 *Goodness of Fit Model*

Heterotrait–Monotrait Ratio (HTMT)	Mark
Job Boredom (X1) ↔ Cyberloafing (X2)	0.888
Work Engagement (Y) ↔ Cyberloafing (X2)	0.430
Work Engagement (Y) ↔ Job Boredom (X1)	0.253

Fornell–Larcker Criterion	X2	X1	Y
Cyberloafing(X2)	0.894		
Job Boredom (X1)	0.890	0.871	
Work Engagement (Y)	-0.442	0.270	0.797

Test results show all HTMT values below 0.90, confirming sufficient differentiation among constructs. Additionally, diagonal values in the Fornell-Larcker table exceeded inter-variable correlations. Thus, the model satisfies discriminant validity criteria, allowing constructs to proceed to structural analysis.

4.4 Structural Model

According to Hair et. al., (2016) Structural Model Evaluation is a process to test and assess the suitability and effectiveness of a model that describes the relationship between variables in a study.

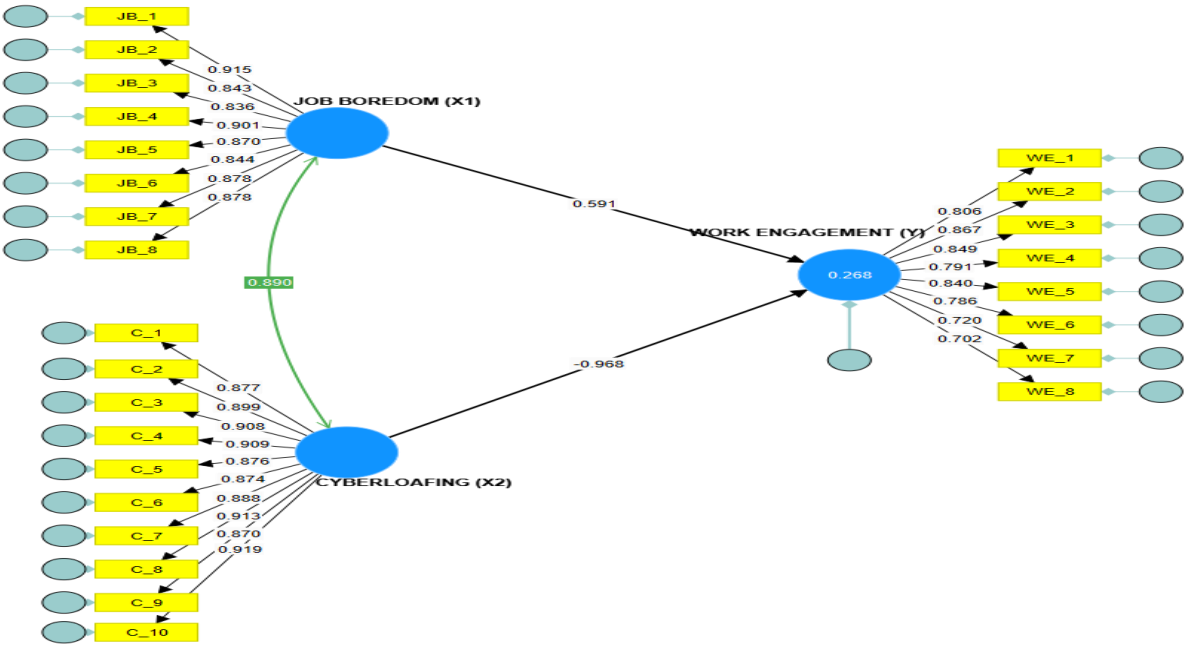

Figure 4 *inner model*

This structural model analyzes the impact of Job Boredom (X1) and Cyberloafing (X2) on Work Engagement (Y). The results show a path coefficient of 0.591 for Job Boredom and -0.968 for Cyberloafing, indicating that cyberloafing has a negative impact on employee work engagement, while job boredom shows a positive relationship with it.

In addition, Job Boredom and Cyberloafing show a correlation of 0.890, reflecting a very strong positive relationship—indicating that bored employees are more likely to engage in cyberloafing. The R-square value of 0.268 for Work Engagement means that 26.8% of its variance is explained by these two predictors in the model.

4.5 Model Goodness of Fit Evalution

Model fit testto assess the model's fit to the data using the Chi-square/df, RMSEA, SRMR, CFI, TLI, and NFI indices in CB-SEM(Hair Jr., 2021).

Table 7 *Goodness of Fit Model*

Model Fit Index	Mark
Chi-square/df	2,283
RMSEA	0.104
RMSEA Low 90% CI	0.094
RMSEA High 90% CI	0.114
SRMR	0.068
NFI	0.83
TLI	0.886

In the CB-SEM approach, model fit is evaluated using various model fit indices, such as Chi-square/df, RMSEA, SRMR, CFI, TLI, and NFI. Table 8 shows a Chi-square/df value of 2.283, which indicates a fairly good fit because the value is below the general threshold of 3. The SRMR value of 0.068 reflects low residual error between the observed data and the model, indicating acceptable fit. However, the RMSEA value of 0.104 (90% CI: 0.094–0.114) exceeds the recommended limit, thus not meeting the ideal standard. Similarly, CFI (0.896), TLI (0.886), and NFI (0.830) indicate marginal fit, approaching but not quite reaching the 0.90 threshold. Overall, this model shows moderate fit and remains viable for further analysis.

4.5.1 R-Square (R^2) Aanalysis

Table 8 *R-square*

Variables	R-Square
Work Engagement (Y)	0.268

The R-square value reached 0.268 indicating that job boredom and cyberloafing can explain 26.8% of the variation in work engagement, while 73.2% is influenced by other factors.

4.6 Hypothesis Testing Results

Structural equation modeling seeks to elucidate relationships among multiple variables through t-test procedures. This study evaluates hypotheses using path coefficients and indirect effects The results of the hypothesis testing are explained below.

Table 9 *Hypothesis Testing Result*

Connection	Coefficient (β)	t-statistic	p-value	Hypothesis Decision
Job boredom (X1) → Work Engagement(Y)	0.591	2,647	0.008	H0 is rejected, H1 is accepted
Cyberloafing(X2) → Work Engagement (Y)	-0.968	5,129	<0.001	H0 is rejected, H2 is accepted

The findings presented in Table 9 show that Job Boredom (X1) has a positive and statistically significant impact on Work Engagement (Y), indicated by a coefficient value of 0.591, a t-statistic of 2.647 (greater than 1.96), and a p-value of 0.008 (less than 0.05). These values confirm the existence of a significant direct relationship between the variables. In contrast, Cyberloafing (X2) demonstrates a significant negative influence on Work Engagement (Y), as reflected by a coefficient of -0.968, a t-value of 5.129 (greater than 1.96), and a p-value below 0.001 (less than 0.05). This indicates that increasing levels of cyberloafing during working hours are associated with lower levels of employee work engagement. Consequently, both direct effect hypotheses are supported due to their statistical significance.

4.7 Discussion

The Influence of Job Boredom on Work Engagement

The results of the hypothesis testing indicate that job boredom has a significant effect on work engagement. The analysis produced a p-value of 0.008, which is lower than the significance level of 0.05, indicating that the relationship between job boredom and work engagement is statistically significant. In addition, the t-statistic value of 2.647 exceeds the critical t-value of 1.96, further confirming the significance of the relationship. The original sample estimate of 0.591 indicates that job boredom significantly influences work engagement.

These results suggest that employees who experience higher levels of job boredom due to monotonous and repetitive work tasks tend to experience a decline in motivation, energy, and concentration in performing their duties, which ultimately reduces their level of work engagement. In this context, job boredom can weaken employees' psychological involvement in their work activities. Therefore, Hypothesis H1 is accepted.

Indicating that boredom caused by repetitive work is the most dominant indicator representing job boredom in this study.These findings are consistent with previous research conducted by Kawada et al. (2024) which states that job boredom is associated with decreased work engagement because it reduces employees' motivation, energy, and concentration at work.

The Effect of Cyberloafing on Work Engagement

The results of the hypothesis testing indicate that cyberloafing has a significant negative effect on work engagement. The analysis produced a p-value of 0.000, which is below the significance level of 0.05, indicating a statistically significant relationship between cyberloafing and work engagement. In addition, the t-statistic value of 5.129 exceeds the critical t-value of 1.96, further confirming the significance of the relationship. The original sample estimate of -0.968 indicates that cyberloafing has a strong negative influence on work engagement. These findings suggest that higher levels of cyberloafing behavior—such as accessing social media or engaging in personal online activities during working hours—can reduce employees' work engagement. This occurs because cyberloafing diverts employees' attention from their primary work tasks and weakens their emotional and cognitive commitment to their responsibilities.

The findings of this study are consistent with previous research conducted by Fuadi et al. (2025) and Sabila Nadhirah Kurnia and Oki Mardiawan (2023), which state that cyberloafing negatively affects work engagement because it reduces employees' focus, responsibility, and involvement in their work. Furthermore, the outer model analysis shows that indicator has the highest loading value. This indicator reflects the extent to which personal online activities during working hours reduce employees' focus and work motivation. This suggests that personal internet use, such as accessing social media or engaging in non-work-related online activities, plays a dominant role in representing cyberloafing behavior among employees.

The influence of job boredom and cyberloafing together on work engagement

The results of the structural model analysis indicate that job boredom and cyberloafing simultaneously influence work engagement. The analysis shows that these two variables explain 26.8% of the variance in work engagement, while the remaining 73.2% is influenced by other factors not examined in this study. This result indicates that although job boredom and cyberloafing contribute to changes in employees' work engagement, other organizational and psychological factors may also play an important role in shaping employees' level of engagement at work. Furthermore, the outer model evaluation indicates that the indicator related to employees' work energy and their ability to remain resilient when facing work-related challenges represents the most dominant aspect of work engagement. This finding suggests that employees still demonstrate a relatively strong level of psychological involvement in their work, reflected in their ability to maintain enthusiasm and persistence when dealing with work demands.

This finding is consistent with the Job Demands–Resources (JD-R) theory proposed by Bakker (2022), which explains that work engagement is influenced by working conditions that may either support or deplete employees' psychological resources. In this context, monotonous work conditions and personal internet use during working hours may reduce employees' psychological energy, which ultimately affects their level of work

engagement. Moreover, the results of this study support previous research conducted by Kawada et al. (2024) as well as Sabila Nadhirah Kurnia and Oki Mardiawan (2023) which indicate that job boredom and cyberloafing jointly influence employees' work engagement. Therefore, organizations need to manage job boredom and control cyberloafing behavior simultaneously in order to enhance employees' work engagement.

5. Conclusion

Based on the results and discussions of this study, it can be concluded that job boredom (X1) has a significant relationship with work engagement (Y) in security and firefighter employees in an industrial area in Karawang. This shows that the level of job boredom can affect employee engagement in carrying out their work. In addition, cyberloafing (X2) is proven to have a negative and significant effect on work engagement (Y). This implies that higher levels of cyberloafing behavior during working hours tend to reduce employees' engagement and concentration on their job tasks.

6. Implications

Based on the above conclusions, it can be seen that job boredom and cyberloafing have an important role in influencing work engagement in security and firefighter employees in industrial environments. The implication of this study is that companies need to pay attention to working conditions that can cause boredom, such as monotonous tasks and long standby times. Companies are advised to create a more varied work system, increase motivation, and provide programs that can maintain employee engagement in work. In addition, controlling cyberloafing behavior also needs to be done, because using the internet for personal purposes during working hours can reduce employee dedication and concentration. The results of the study also show that there is an aspect of work engagement that is relatively weak compared to other indicators, namely difficulty in detaching from work. Therefore, companies need to strengthen this aspect by increasing task variety, work support, and creating a more conducive work environment.

However, work engagement is influenced not only by job boredom and cyberloafing, but also by other factors not examined in this study. Therefore, further research is recommended to examine additional variables that may influence work engagement in industrial settings.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Author's Contribution

The authors confirm their contributions to this paper as follows: **conception and design of the study**: Najla Dhiya Ardian, Uus Mohammad Darul Fadli and Ery Rosmawati; **data collection**: Najla Dhiya Ardian, Uus Mohammad Darul Fadli and Ery Rosmawati; **analysis and interpretation of results**: Najla Dhiya Ardian, Uus Mohammad Darul Fadli and Ery Rosmawati; **preparation of the draft manuscript**: Najla Dhiya Ardian, Uus Mohammad Darul Fadli and Ery Rosmawati; reviewed the results and approved the final version of the manuscript.

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