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THE INFLUENCE OF WORKLOAD AND WORK ENVIRONMENT ON WORK FATIGUE IN GRAMEDIA TERNATE BOOKSHOP EMPLOYEES

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Abstract

This study aims to determine the effect of workload and work environment on fatigue i. This research is a quantitative research. The population in this study were all employees at the Gramedia Bookstore Ternate, using a census study sampling method. The analysis technique used in this study was using multiple linear regression analysis , f test and t test with the help of the SPSS 23 version of the IBN application. The results of this study indicate that: (1) Workload has a positive and significant effect on Work Fatigue, (2) Work Environment has a positive and significant effect on Work Fatigue. Studies indicate that a poor work climate and excessive workload contribute to fatigue, ultimately reducing productivity or performance. The implications of this research highlight the importance of creating a conducive work environment by fostering open communication, cultivating a collaborative work culture, improving shift or overtime arrangements, and ensuring an optimal balance between workload and staffing levels as strategies to mitigate Work Fatigue.

Keywords: *Workload, Work Environment, Work Fatigue, Employee, Gramedia.*

INTRODUCTION

Human resources are individuals who work in an organization, both companies and agencies that function as assets so that training and development is needed for their abilities. Human resources are an important factor that cannot even be separated in an organization. Human resources are also one of the key determinants of organizational development. Because in essence, human resources are employed in an organization as thinkers, movers and planners in order to achieve company goals.

Research conducted by Lestari et al. (2024) indicates that work fatigue is a common workplace issue that requires immediate attention, as it can increase the risk of workplace accidents and decrease productivity. According to Mustofani & Dwiyanti (2019),s with a prevalence ranging from 10% to 40%, a study involving 28,902 workers in the United States found that 37.9% of workers experienced fatigue, resulting in an average productivity loss of 4.1 hours per week.

Along with the current changes in globalization and in the current conditions of society, we often find several problems that cause an agency/company to fail in achieving its goals, both because of its inability to compete and adapt to current technological advances and because of the low performance of the human resources themselves within the agency/company, even though as we all know that humans are the most important factor in the success or failure of an agency/company in achieving its goals.

Companies need human resources or employees in order to achieve its goals effectively and efficiently. The availability of professional resources has become a strategic need for companies or organizations. This need is based on the understanding that humans are the determinant of all organizational performance. Human resources are required to be able to show good work results in the company, human resources are the most important element. Without the role of humans, even though the various factors needed are available, the agency/company will not run. Because humans are the movers and determinants of the course of an organization, therefore the company agency itself should provide positive direction in order to achieve goals. Efforts to improve the performance of employees, including by paying attention to workload, both physical workload and mental workload.

A common problem that is often encountered in the world of work that can occur in the workforce is work fatigue. Work fatigue is a symptom associated with decreased work efficiency, boredom, increased anxiety and decreased skills. The meaning of the word "tired" is different for each individual and is also subjective. Fatigue is a condition experienced by a person after carrying out their activities. These feelings are like tiredness, sleepiness, boredom and thirst which will appear with symptoms of fatigue. Symptoms of fatigue include weakening of activities, motivation and physical exhaustion (Maghsoud et al., 2022).

The research gap in this study lies in the role of workload in exacerbating work fatigue. According to Tayfur & Arslan (2013), high workloads can deplete critical resources such as time, energy, and supervisory support. Mendes et al. (2020) found that workload is closely related to structural and managerial issues. Prominent workload factors include psychological workload, stemming from excessive demands and understaffing; physiological workload, due to overactivity leading to pain and physical fatigue; physical and mechanical workload, resulting from inadequate

workplace environments and equipment; biological workload, caused by exposure to microorganisms; and chemical workload, from exposure to dust and fumes. Additionally, the study by Charoensukmongkol (2022) significantly supports the relationship between workload effects and subordinates' emotional exhaustion in Thailand. Similarly, Dung et al. (2024) highlighted that one of the factors contributing to moderate emotional exhaustion in Vietnam is the high workload among teachers.

Another factor that also influences work fatigue is workload. Work that is too heavy and excessive will accelerate the contraction of the body's muscles so that it will accelerate the occurrence of fatigue (Dix et al., 2021). Provision of an effective workload, agencies/companies can find out to what extent their employees can be given the maximum workload and the extent to which it affects the performance of the agency/company itself, because workload is very important for an agency/company.

Basically the impact of the workload itself comes from the perception of each individual, sometimes there are individuals who are increasingly challenged with a large workload so that the motivation to complete a task is very large and such individuals do not feel excessive workload but feel enthusiastic at work. In addition to workload, another factor that affects employee performance is the work environment. The work environment is one of the most important components in employees completing their work. The creation of a comfortable, safe and enjoyable work environment is one of the company's ways to improve the performance of its employees. An unconducive work environment will make employees /employees fall sick easily, get stressed easily, have difficulty concentrating and decrease work productivity.

PT. Gramedia Asri Media is a subsidiary of the Kompas Gramedia Group which provides a network of bookstores under the name Gramedia Bookstores in several cities in Indonesia. In carrying out its business, Gramedia Bookstore Ternate determines the workload through its sales targets for each employee, this is because if the employee does not meet the targets set, it will have an impact on the incentives received by the employee , these targets are in the form of alternating active targets, my value targets and social media targets. Every employee must meet the set targets every day, and if the targets are not achieved, the employee will get a warning.

LITERATURE REVIEW

Workload

According to Appels et al., (1997) what is meant by workload is the number of tasks with responsibilities that must be carried out by the organization or its units in a unit of time and a certain number of workers. According to Konze et al., (2017) workload can be defined as a difference between the capacity or ability of workers and the demands of the work that must be faced. Given that human work is both mental and physical, each has a different level of loading.

A loading level that is too high allows excessive energy use and overstress occurs, whereas a loading intensity that is too low allows boredom and boredom or understress.

Workload refers to the amount of work that must be managed. In the context of healthcare professionals, workload encompasses the number of patient encounters, the complexity of cases, and the volume of alerts they receive. It includes both quantitative aspects (such as the number of patients or patient volume) and qualitative aspects (such as the complexity of patient conditions) as well as the responsibilities of doctors/nurses in performing their duties (Ancker et al., 2017).

Work environment

A good working environment will have a positive impact on employees in improving employee performance. This is one way that can be taken so that employees can carry out their duties without experiencing interference, because the work environment greatly influences employee performance. The work environment refers to the physical and psychological conditions in which employees perform their tasks. It encompasses various factors that can impact workers' health, safety, and productivity. According to Mahdavi et al. (2020), the work environment is a complex interaction of physical and psychological factors that can significantly affect workers' health and performance, particularly concerning muscle fatigue. Addressing these factors is essential to creating a safer and more productive workplace (Min et al., 2021).

According to Sillehu et al., (2022) and Afandi & Ardiana, (2021) the work environment is everything that is around the workers and which can affect them in carrying out the tasks assigned, for example cleanliness, music, lighting, etc. Physical work environment , the physical work environment can be interpreted as all the circumstances that exist around the workplace, which can affect employee performance. According to Mahdavi et al., (2020), what is meant by the physical work environment is all physical conditions that exist around the workplace which can affect the work of employees either directly or indirectly. The physical work environment includes factors such as noise, lighting, ventilation, vibrations, temperature, and airborne particles. These factors can significantly influence fatigue by creating dynamic interactions between individuals and their surroundings. Work Environment Non Physical , according to Afandi & Ardiana, (2021) non-physical work environment are all conditions that occur related to work relationships, both with superiors and with fellow co-workers, or with subordinates. The non-physical work environment refers to various workplace aspects that are not related to physical conditions but are crucial for employee satisfaction and performance. It encompasses all situations related to interpersonal relationships at work, including interactions with supervisors, colleagues, and subordinates. This environment focuses on the psychological and social elements of the workplace rather than physical conditions.

Hypothesis Development

The Effect of Workload on Work Fatigue

Workload is one of the primary factors influencing emotional and physical fatigue in the workplace. High workload is often interpreted as job demands, referring to the number of tasks that must be completed within a limited timeframe. When employees face such conditions, the pressure and stress they experience tend to increase, triggering feelings of exhaustion and emotional fatigue. Additionally, heavy workloads are typically accompanied by time pressure, where employees feel the need to complete tasks quickly. This urgency can lead to mental fatigue as individuals strive to meet deadlines, ultimately resulting in feelings of being overwhelmed (Baeriswyl et al., 2017). Further research by Grech et al. (2009) indicates that workload can induce fatigue through various interconnected factors. Fatigue is defined as a psychophysiological condition characterized by feelings of tiredness and decreased energy, commonly found in industries with demanding work schedules, such as aviation and healthcare. Moreover, based on cognitive-energetic theory, workload acts as an energy driver that affects an individual's level of arousal. Initially, increasing job demands may enhance alertness, but if the workload exceeds an individual's capacity, it requires greater compensatory effort, depletes energy reserves, and eventually leads to fatigue. Similarly, Mustofani & Dwiyanti (2019) observed that the level of work fatigue among workers increases as their physical workload intensifies. In fabrication areas, work schedules run from Monday to Thursday, starting at 8:00 AM and ending at 5:00 PM, with a one-hour lunch break at 12:00 PM. On Fridays, work hours are from 8:00 AM to 5:30 PM, with a 1.5-hour lunch break starting at 11:30 AM. However, no structured work rhythm or additional break times beyond the scheduled lunch breaks are provided. Workers occasionally take short breaks as needed.

H 1 : Workload (X_1) has a positive and significant effect on work fatigue (Y).

The Effect of Work Environment on Work Fatigue

Research by Lestari et al. (2024) highlights that prolonged fatigue can impair cognitive function, increase vulnerability to illness, and reduce productivity. Factors such as a poor work climate and excessive workload exacerbate fatigue and ultimately negatively impact productivity. Mahdavi et al. (2020) analyzed muscle fatigue resulting from demographic, physical, psychosocial, and environmental risk factors. The findings indicate that environmental factors, particularly the physical environment, indirectly influence various forms of work fatigue. This underscores the significant role of both physical and psychosocial aspects of the work environment in mitigating fatigue and enhancing overall employee well-being and performance.

H 2 : Work Environment (X_2) has a positive and significant effect on Work Fatigue (Y).

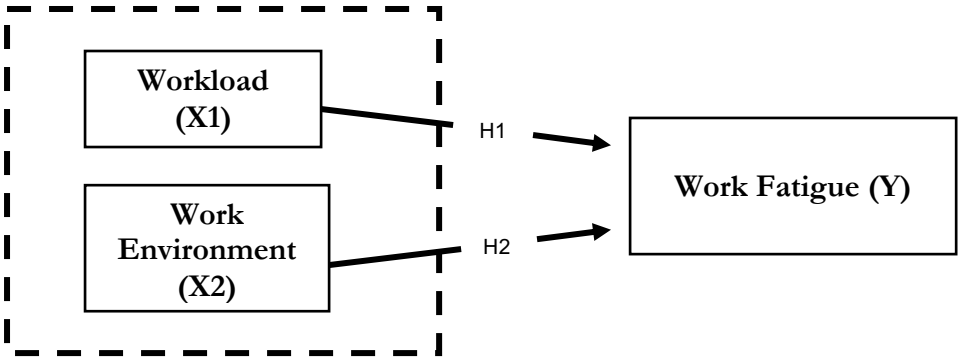

Figure 1. Research Conceptual Framework

Caption :

: Partial Effect

: Simultaneous Influence

METHODOLOGY

Population and Sample

The population describes a large and extensive amount of data in a study by (Sugiyono, 2020). The population in this study, namely all employees who work at the Gramedia Bookstore Ternate, consists of the EDP or data entry section, cashier or administration, front linear or selling area, warehouse or warehouse. According to Sugiyono (2015) the sample is a characteristic or part of the study population. According to Arikunto (2001) stated that if there are less than 100 research subjects, it is better to take all of them. By looking at the statement above, the researcher took a sample, namely 100% of the population. Given that the number of population in this study is less than 100, which is 35 people. So the sample method uses a census study, namely all employees who work at the Gramedia Ternate Bookstore .

Data Study

The type of data used in this research is quantitative data. The quantitative approach is a research approach that uses data in the form of numbers and analysis using statistics (Sugiyono, 2020). Primary data was obtained through direct field work on research objects and also all original data collection methods by Kuncoro (2009). For this type of data source, the researcher got from the results of distributing the questionnaires that had been distributed to the respondents. In collecting data, the methods used were observation or going directly to the field, question and answer, and distributing questionnaires to the respondents .

Data Collection and Analysis Techniques

The data collection technique used in this research is a questionnaire. Questionnaire is a data collection technique that is carried out by giving a set of written statements to respondents to answer (Sugiyono, 2017). with the unit of measurement using a Likert scale of measurement applied to measure indicators on the dependent variable and the independent variable above is

using a Likert scale (1-5) which has five levels of preference for answers. The analytical model used in this study is a multiple linear regression analysis model. Multiple linear regression analysis was used in this study to show the effect of workload and work environment on work fatigue, using the SPSS version 23 tool.

RESULT & DISCUSSION

Results

Respondents in this study were all employees who worked at the Gramedia Ternate bookstore, the total number of respondents is 30 , of which 15 male respondents and 20 female respondents. Furthermore, ages 18-25 have a value proportion of 48.6%, ages 26-35 have a value proportion of 45.7%, ages 36-40 have a value proportion of 5.7%.

Validity & Reliability Test

Validity test is used to measure whether a questionnaire is valid or not. Scale measurement is said to be valid if it does what it should do and measures what it should measure. The level of validity will indicate the extent to which the data collected does not deviate from the description of the variables studied (Kuncoro, 2013).

Table 1. Validity Test Results

Instrument item no	Person correlation R count	R Table	Significance Value	Information	*Cronbach's Alpha*
X1.1	0.706	0.334	<.005	Valid	0.610
X1.2	0.751	0.334	<.005	Valid	
X1.3	0,528	0.334	<.005	Valid	
X1.4	0,675	0,334	<.005	Valid	
X1.5	0.482	0.334	<.005	Valid	
X2.1	0, 691	0.334	<.005	Valid	0.629
X2.2	0,664	0,334	<.005	Valid	
X2.3	0,719	0.334	<.005	Valid	
X2.4	0,670	0.334	<.005	Valid	
X2.5	0,451	0.334	<.005	Valid	
Y.1	0.685	0,334	<.005	Valid	0.786
Y.2	0,714	0.334	<.005	Valid	
Y.3	0,616	0.334	<.005	Valid	
Y.4	0,681	0,334	<.005	Valid	
Y.5	0.594	0.334	<.005	Valid	
Y.6	0.814	0.334	<.005	Valid	

Source: Processed Primary Data, (2023)

Table 1. shows that all the indicators used to measure the variables used in this study have a correlation value greater than 0.334 or r count is greater than r table , so that the variable is valid. The results showed that all indicators which included workload, work environment and work fatigue were valid. The reliability estimation method that will be used in this study is the *Cronbach*

Alpha estimation method using *SPSS 23 statistical software*. If the *Cronbach alpha value* is more than 0.6 00 , any structure or variable is considered reliable.

Based on the table data above the reliability test above, it can be understood that each variable used in this study has a reliability value with *cronbach'alpha* for the Workload variable of 0.610, Work Environment 0.629, Work Fatigue 0.789. Reliability test value (*Cronbach'Alpha*)> 0.006. Thus it can be concluded that the instrument in this research variable has a good level of reliability and can be used for further testing.

Classic assumption test

Normality test

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residuals
N			35
Normal Parameters [a,b]	Means		,0000000
	Std. Deviation		1,81004797
Most Extreme Differences	Absolute		,193
	Positive		,193
	Negative		-,143
Kolmogorov-Smirnov Z			1,143
Asymp. Sig. (2-tailed)			,147
Monte Carlo Sig. (2-tailed)	Sig.		,133[c]
	99% Confidence Interval	Lower Bound	,124
		Upper Bound	,141

Source: Processed Primary Data, (2023)

In the results of the normality test using the Kolmogorov Smirnov method, a normality result of 0.147 was greater than 0.05. so it can be concluded that the normality tests are normally distributed.

Multicollinearity Test

Table 3. Multicollinearity Test

Model	Collinearity Statistics	
	tolerance	VIF
Total _ X1	0.685	1,460
Total X_2	0.685	1,460

Source: 2023 processed data

Based on the results of the multicollinearity test, it is known that the Workload tolerance value is 0.685 > 0.100 and the VIF value is 1.460 <10.00, and the Work Environment is 0.685 > 0.100 and the VIF value is 1.460 <10.00, so it can be concluded that there are no symptoms of multicollinearity.

Heteroscedasticity Test

Table 4. Heteroscedasticity Test

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
		B	std. Error	Betas		
1	(Constant)	4,188	1,802		2,324,	,02 7
	Total_X1	- ,128	,1 02	-,257	-1, 249	, 221
	Total_X2	- ,007	, 085	- ,017	- ,084	, 934

Source: data processed 2023

The results of the heteroscedasticity test show that the significant value of the Workload variable on Work Fatigue is greater than 0.05. So it can be concluded that the regression model does not contain heteroscedasticity.

Multiple Linear Regression Analysis

Table 5. Multiple Linear Regression Test

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	7,612	3,307		2,301	,028
	X1	,457	,188	,366	2,434	,021
	X2	,455	, 156	,437	2,911	,007

Source: 2023 processed data

The table above, it can be seen that the constant value (α) is 7.612 and for workload (β1) is 0.457, the work environment (β2) is 0.455, Then the multiple linear regression equation is as follows:

$$Y = 7.612 + 0.457X\ 1 + 0.455X\ 2$$

Based on the above data exposure, it can be concluded that:

1. Effect of Workload on Work Fatigue

   Workload Variables has a significant value of 0.021> 0.05 and a t- count value of 2.434 <1.695. So it can be concluded that the variable H 0 is accepted and H 1 is rejected. This shows that the variable Workload has a positive and not significant effect on the Work Fatigue variable.

2. The Effect of the Work Environment on Work Fatigue

   The Work Environment variable has a significant value of 0.007 <0.05 and a t-value of 2.911 > 1.695. So it can be concluded that H_0 is rejected and H 2 is accepted. This shows that the variable has a positive and significant effect on the Work Fatigue variable.

Simultaneous Test

Table 6. Simultaneous Test

ANOVA [a]						
Model		Sum of Squares	Df	MeanSquare	F	Sig.
1	Regression	113,578	2	56,789	16,314	,000 [b]
	residual	111,393	32	3,481		
	Total	224,971	34			

Source: 2023 processed data

Based on the above data exposure, it can be concluded that the significant value for the influence of Workload and Work Environment simultaneously on the Work Fatigue variable is 0.00 <0.05 and the calculated f value 16,314 >2, 911 . So it can be concluded that Ho is rejected and Ha is accepted, which means that there is an influence of the Workload and Work Environment variables simultaneously to the variable Work Fatigue.

Test the Coefficient of Determination R 2

Table 7 . R Test Results 2

Summary Model [b]

R	R Square	Adjusted R Square	std. Error of the Estimate
,711 [a]	,505	,474	1,866

Source: Processed Primary Data, (2023)

The test results for the coefficient of determination in the equation T able 4.8 obtained an R Square value of 0.505. Which means that the proportion of the effect of workload on work fatigue is only 5.05 while the remaining 93.87 is influenced by other variables not examined in this study.

DISCUSSION

Workload is a demand from work that is obtained by each employee, belonging to the ability of each individual - how to bear it all, because each individual has his own level of work fatigue from the workload obtained. However, in the results of research conducted by researchers it was found that workload had a significant effect. This can be seen from the results of the statistical test t test (partial test) showing the value of tcount > ttable or 2.432 > 1.695 while a significant value of 0.021 <0.05 means that the workload variable has a positive and significant effect on work fatigue, this shows that workload has a positive and significant effect on work fatigue of Gramedia Ternate bookstore employees. The first hypothesis H1 which states that workload has a positive and significant effect on work fatigue is accepted. The results of this study are in line with research conducted by Gore, (2017) which states that workload has effect on work fatigue. According to Mendes et al. (2020), the sources of workload that contribute to fatigue are similar across the five regions studied, indicating a strong influence of both psychological and physiological workload on fatigue among workers. However, workload can be reduced by distributing and planning team actions, along with implementing mentorship models. Conversely, research by Dung et al. (2024) suggests that when teachers feel capable of performing their tasks, they are at a lower risk of burnout. This study supports the relationship between burnout and workload as psychological concepts, and highlights the importance of psychological training programs to improve teachers' self-efficacy as a way to reduce burnout. Further strengthening this view, Maghsoud et al. (2022) highlight that emotional exhaustion is considered the most critical component of work fatigue. Nurses experiencing high levels of emotional exhaustion suffer from work fatigue and have a reduced ability to provide quality care. This suggests that addressing emotional exhaustion is crucial in preventing work fatigue and ensuring optimal work performance.

The Effect of the Work Environment on Work Fatigue. The work environment is the environment where employees work and do work. Work environment is one of the factors that influence employee performance. A good working environment will make the work done by employees easier, on the other hand, if a person's work environment is not good, it will interfere with work activities, causing excessive fatigue for employees. The work environment referred to in this case is the physical work environment and non-physical work environment . However, in the results of research conducted by researchers it was found that workload had a significant effect. This can be seen from the results of the statistical test t test (partial test) showing the value of tcount > ttable or 2.911 > 1.695 while a significant value of 0.007 <0.05 means that the work environment variable has a positive and significant effect on work fatigue, this shows that the work environment has a positive and significant effect on work fatigue of Gramedia Ternate bookstore

employees. The second hypothesis H2 which states that the work environment has a positive and significant effect on work fatigue is accepted. The results of this study are in line with research conducted by Ma'mari et al., (2020) which states that the work environment has a positive and significant effect on work fatigue. Research by Mahdavi et al. (2020) indicates that the work environment is an important factor influencing fatigue, though its impact is often indirect. Poor work environments frequently lead to work-related obstacles, such as absenteeism and a decline in performance. This highlights the need for addressing environmental factors to mitigate their negative effects on employee well-being and productivity.

Based on the explanation above, it can be intified that workload and work environment are very influential on work fatigue. Workload is something or a group of tasks that are carried out by a job position which can be completed within a specified time period. However, in the results of research conducted by researchers, it was found that workload and work environment had a significant effect. This can be seen from the results of the statistical test f test (simultaneous test) showing the value of fcount > ftable or 16.314 > 2.911 while a significant value of 0.00 <0.05 means that the workload and work environment variables have a positive and significant effect on work fatigue, this shows that the influence of workload and work environment has a positive and significant effect on work fatigue of Gramedia Ternate bookstore employees. The second hypothesis H3 which states that the workload of the work environment has a positive and significant effect on work fatigue is accepted. The results of this study are in line with research conducted by Mustofani & Dwiyanti, (2019) which states that workload and work environment have a positive and significant effect on work fatigue. Research by Barker & Nussbaum (2011) supports the finding that all dimensions and conditions of fatigue negatively affect performance. Longer shifts and extended weekly work hours are associated with higher levels of physical fatigue, mental fatigue, and overall exhaustion. Therefore, creating different work environments and schedules can help reduce fatigue levels, ultimately leading to a decrease in medical errors. This emphasizes the importance of managing work hours and shift length to improve both employee well-being and work outcomes.

CONCLUSION

Results analysis show that workload influential positive and significant against work fatigue. Influence the signify that the more tall workload then the more tall also work fatigue. Rather more low given workload the more low also work fatigue that occurs in employees. Results analysis show that work environment has a positive effect and significant to work fatigue. Matter the signify that the more The better the work environment that employees get, the lower the level of fatigue, and vice versa if the work environment is not conducive or not good, the higher the

level of fatigue obtained by employees.The results of the analysis show that workload and work environment have a positive and significant effect on work fatigue. This indicates that the higher the workload given to employees and the work environment around them employees are not good, the higher the level of fatigue that occurs in employees, conversely, the lower the workload and good work environment, the lower the level of fatigue given.

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