

The Effect Of Work Shift On Subjective Fatigue At Pt. Sumber Setia Budi Kolaka Sultra Workers

Arfandi Ahmad¹, Zulkarnain Alnazar²

^{1,2*}Industrial Engineering, Industrial Technology Faculty, Indonesian Muslim University, , Jl. Urip Sumoharjo KM.5 Makassar Sulawesi Selatan, Indonesia

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ABSTRACT

PT. Sumber Setia Budi is a company engaged in the nickel mining industry as a contractor partner for the central company PT. Antam Tbk UBPN Sultra is located in Kolaka district, Pomalaa sub-district. The purpose of this study was to determine the effect of work shifts on subjective fatigue in the Mechanic Workshop section using a Cross-Sectional approach with multiple linear regression analysis, the sample amounted to 21 respondents. The instrument used is a Subjective Self Rating Test (SSRT) questionnaire and the types of data are primary and secondary data. The results of the analysis using multiple linear regression with the f test simultaneously show that the significant value and calculated F value between groups of the morning (X1), afternoon (X2), and night (X3) shift simultaneously on subjective fatigue (Y) is $F_{count} 2,571 > F_{table} 3.13$ and a significant value of $0.229 > 0.05$, so it can be concluded that there is an effect between the morning shift (X1), afternoon shift (X2) and night shift (X3) on subjective fatigue but the effect is not significant. To reduce and overcome fatigue experienced by workers, the company should further improve the comfort and facilities of the work environment to create a more comfortable and ergonomic work environment.

*Corresponding Author

Name: Ebang

E-mail:

alnazar.zulkarnain33@gmail.com

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1. INTRODUCTION

Work fatigue is a subjective feeling accompanied by a decrease in efficiency and the need for work. Every workplace and type of work can cause work fatigue in workers, this can lead to decreased performance and increased work errors, thus providing opportunities for work accidents in the industry[1]. Work fatigue is one of the health and safety problems that can be a risk factor for accidents at work, one of the causes of work fatigue is work shifts that are not by applicable regulations[2].

PT. Sumber Setia Budi (SSB) is a company engaged in the nickel mining industry as a contractor partner for the central company PT. Antam Tbk UBPN Sultra which is located in Kolaka district, Pomalaa sub-district, this company has been established in 1989[3][4]. In the implementation of work in this company, to increase productivity is to increase working hours by implementing shift work. Shift work as a pattern of working time, namely working for 24 hours continuously which is applied by the company and will have a major impact on the workforce and subjective complaints. In the process of work at PT. Sumber Setia Budi in the Workshop section Mechanic, namely as a place of maintenance, repair, and manufacture for the productivity of the company's performance as a partner in the nickel mining area of PT. Antam Tbk. The working hours in this company are 8 working hours. For shift 1 from 06.00 - 14.00. For shift 2 hours 14.00 – 22.00. For shift 3 from 22.00 - 06.00. The workforce in this company works eight hours a day without a break with an overtime calculation of one hour per day and this company does not yet have specific regulations regarding the determination of work shift rotation. Based on interviews that researchers conducted with several employees on the night shift, they complained of headaches, felt tired, and said they often yawned while working and felt sleepy, this may be due to monotonous activities at work and the effects of the work environment that occur in every work shift schedule[5][6]. employee. Calculation of the level of fatigue in a company is very important to provide information to the company as a reference in making policies for better HR management to minimize the occurrence of work fatigue which can affect company productivity and reduce the risk of work accidents[7][8].

2. RESEARCH METHODS

2.1 Time and Place of Research.

The study was carried out on 27 November 2021 at PT. Sumber Setia Budi (SSB), Pomalaa District, Kolaka Regency. Southeast Sulawesi Province

2.2 Data Collection.

2.2.1 Primary Data

The primary data in this study are worker profile data and the results of subjective fatigue questionnaire scores experienced by workers after working on certain shifts.

2.2.2 Secondary Data

The secondary data in this study is the Standard Scale of the Subjective Self Rating Test Method

2.3 Data Processing.

The data processing used in this study uses the multiple linear regression analysis methods which is used to determine whether there is an influence of the independent variable on the dependent variable, the data processing uses the SPSS program, following the stages of data processing:

1. Validity Test

A validity test is used to measure the validity or validity of a questionnaire. A questionnaire is said to be valid if the questions on the questionnaire are to reveal something that will be measured by the questionnaire[9].

2. Reliability Test

The reliability test is useful for determining whether the instrument, in this case, the questionnaire, can be used more than once, at least by the same respondent, and will produce consistent data.

3. F test (simultaneous/combined test)

The F test is used to determine the effect of the independent variables simultaneously (simultaneously) on the dependent variable.

4. T-test (Partial Test)

The t-test is used to determine whether the independent variables partially have a significant effect or not on the dependent variable

3. RESULTS AND DISCUSSION

Data collection is done by distributing questionnaires to employees of PT. Sumber Setia Budi part of the Mechanic Workshop. Respondents in this study amounted to 21 people from a combined work shift schedule, with the following working hours:

1. Morning Shift (hours 06.00 – 14.00), there are 7 respondents

2. Afternoon Shift (14.00 – 22.00), there are 7 respondents
3. Night Shift (22.00 – 06.00), there are 7 respondents

Data collection is carried out by distributing the Subjective Self Rating Test questionnaire

3.1 Recapitulation of the Results of the Subjective Self Rating Test

No	ID. Responden	Shift	Usia	Masa Kerja	Skor	Ket.
1	Muhairil	1	26 tahun	5 tahun	45	Rendah
2	Andi Rauf	1	28 tahun	8 tahun	38	Rendah
3	Taufikkurahman	1	28 tahun	5 tahun	55	Sedang
4	Mulyadi	1	34 tahun	8 tahun	41	Rendah
5	Ismail ramelan	1	25 tahun	3 tahun	37	Rendah
6	Wibalgar	1	28 tahun	8 tahun	60	Sedang
7	Usamah	1	38 tahun	8 tahun	51	Rendah
8	Andi fachrul	2	22 tahun	3 tahun	47	Rendah
9	Abu	2	21 tahun	2 tahun	36	Rendah
10	Zulham	2	27 tahun	5 tahun	63	Sedang
11	Nasrulah	2	25 tahun	5 tahun	49	Rendah
12	Firman	2	23 tahun	3 tahun	46	Rendah
13	Jamaluddin	2	27 tahun	2 tahun	35	Rendah
14	Amir	2	27 tahun	2 tahun	57	Sedang
15	Khaidir	3	25 tahun	3 tahun	48	Rendah
16	Andi ilham	3	27 tahun	5 tahun	55	Sedang
17	Rahmat hidayat	3	25 tahun	5 tahun	55	Sedang
18	Sofyan aras	3	25 tahun	6 tahun	66	Sedang
19	Agung arif	3	25 tahun	5 tahun	50	Rendah
20	Dermawan	3	23 tahun	2 tahun	55	Sedang
21	Nurhidayat	3	26 tahun	3 tahun	65	Sedang

Sumber : pengambilan data 2021

the total value obtained will describe the fatigue category of each respondent. These categories include:

- a. 30-52 = Low Fatigue
- b. 53-75 = Moderate Fatigue
- c. 76-98 = High Fatigue
- d. 99-120 = Very High Fatigue

3.2 Validity Test

correlations

Item Pertanyaan	r Tabel	r Hitung	Ket.
1	0,433	0,482	Valid
2	0,433	0,892	Valid
3	0,433	0,768	Valid
4	0,433	0,923	Valid
5	0,433	0,482	Valid
6	0,433	0,532	Valid
7	0,433	0,482	Valid
8	0,433	0,532	Valid
9	0,433	0,482	Valid
10	0,433	0,532	Valid
11	0,433	0,586	Valid
12	0,433	0,532	Valid
13	0,433	0,985	Valid
14	0,433	0,532	Valid
15	0,433	0,964	Valid
16	0,433	0,532	Valid
17	0,433	0,984	Valid
18	0,433	0,532	Valid
19	0,433	0,482	Valid
20	0,433	0,532	Valid
21	0,433	0,482	Valid
22	0,433	0,532	Valid

From the results of the questionnaire validity test, the r count is greater than the r table, which is 0.433 with a significance of 5%, so all questions can be used as many as 30 items. These data indicate that the correlation between each indicator to the overall variables shows significant results.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.450	26.250		.855	.455
	Shift_Pagi	-.778	1.286	-.1081	-.605	.588
	Shift_Sore	.633	1.105	1.013	.573	.607
	Shift_Malam	.499	.477	.539	1.047	.372

a. Dependent Variable: Kelelahan_Subjektif

Sumber : data primer yang diolah SPSS tahun 2021

3.2 Reliability Test

From the table, it can be seen that the Cronbach alpha value for all questionnaires is greater than

0.6. Thus the questions from the distributed questionnaires are said to be reliable because the Cronbach alpha value is greater than 0.6

3.3 f test (simultaneous)

23	0,433	1000	Valid
24	0,433	0,607	Valid
25	0,433	0,987	Valid
26	0,433	0,532	Valid
27	0,433	0,482	Valid
28	0,433	1000	Valid
29	0,433	0,987	Valid
30	0,433	0,678	Valid

Sumber : data primer yang diolah SPSS tahun 2021

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.028	3	.343	2.571	.229 ^b
	Residual	.400	3	.133		
	Total	1.429	6			

a. Dependent Variable: kelelahan subjektif

b. Predictors: (Constant), shift malam, shift sore, shift pagi

Sumber : data primer yang diolah SPSS tahun 2021

From the test results above, it is known that the significance value and calculated F value between groups of morning (X1), afternoon (X2) and evening (X3) work shifts simultaneously on subjective fatigue (Y) is F count 2.571 > F table 3.13 and significant value 0.229 > 0.05, so it can be concluded that there is an effect between the morning shift (X1), afternoon shift (X2) and night shift (X3) on subjective fatigue but the effect is not significant

3.4 t test (partial)

Reliability Statistics

Cronbach's Alpha	N of Items
.763	30

Sumber : data primer yang diolah SPSS tahun 2021

From the test results above, it is known that the significance value and the calculated t value between the work shift groups are partially X1, X2, X3 on subjective fatigue, namely:

a. The first hypothesis (H1), it is known that the significance value for the effect of the morning

shift (X1) on subjective fatigue (Y) is 0.588 > 0.05 and the t value is 0.605

< t table 3.182, so it can be concluded that H1 is rejected which means that there is no significant effect of the morning shift (X1) on subjective fatigue (Y)

b. The second hypothesis (H2), it is known that the significance value for the effect of the afternoon shift (X2) on subjective fatigue (Y) is 0.607 > 0.05 and the t value is 0.573

< t table 3.182, so it can be concluded that H2 is rejected which means there is no significant effect of afternoon shift (X2) on subjective fatigue (Y)

c. Third hypothesis (H3), it is known that the significance value for the effect of the night shift (X3) on subjective fatigue (Y) is 0.372 > 0.05 and t count 1.047 < t table 3.182, so it can be concluded that H3 is rejected which means there is no effect significant night shift (X3) on subjective fatigue (Y)

4. CONCLUSION

4.1 Conclusion

Based on the research results obtained and described previously, the conclusions in this study in accordance with the research objectives are: There is no significant effect of work shifts on subjective fatigue because it is known from the partial t test results and the overall F test results, namely the morning shift, afternoon and evening there is an effect on subjective fatigue with an F value of 2.571 > F table value of 3.13 but the effect is not significant because the significance value is 0.229

> 0.55. The results of the analysis show that work shifts have no significant effect on fatigue, meaning that the work shift schedule is appropriate. Therefore, to overcome the problem of worker fatigue, companies must pay more attention to other factors and improve facilities in the work environment of the Mechanic Workshop PT. Sumber Setia Budi

4.2 Suggestions

There are several suggestions for improvement that can be considered by the company to reduce the fatigue level of workers who use the shift system, namely:

1. The company should create a comfortable working environment for workers and can provide a place to drink that is located close to the workers.
2. For further researchers, it is recommended to use the Bourdon Wiersma Test objective analysis method in measuring fatigue levels

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