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The Relationship Between Physical and Mental Workload on Job Fatigue In Maxim Car Drivers In Kupang City In 2024

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Abstract. Transportation service providers continue to grow to facilitate drivers and passengers, one of which is the existence of online transportation service providers that offer a variety of transportation services to the delivery of goods and provide convenience for passengers to get transportation services, therefore online transportation services are currently in great demand by the public. The same is true in Kupang City, where there are several online transportation companies, one of which is Maxim car transportation, which has the advantage of being quite cheap. The high demand for Maxim online transportation in Kupang City has an impact on the fatigue experienced by drivers. Based on the researcher's initial survey of several Maxim drivers in Kupang city, fatigue often occurs in drivers due to the increasing number of Maxim Car users in Kupang City and the low cost that causes drivers to work more than 8 hours / day to pursue income targets. This type of research is quantitative using analytic survey method and cross sectional research design. The sample in this study amounted to 81 respondents from a total population of 430 drivers selected using accidental sampling method. Data were collected using questionnaires and observations, the data were then processed using SPSS and tabulated into a frequency distribution table and then analyzed descriptively. The results showed that there was no significant relationship between physical load and work fatigue and there was a significant relationship between mental load and fatigue in maxim car drivers in Kupang City. It is recommended for drivers to arrange an efficient work schedule and the company can provide counseling services to drivers.

Keywords: Fatigue, Workload, Driver

INTRODUCTION

Transportation is a system consisting of certain facilities along with the flow and control system that allows people or goods to move from one place to another efficiently at any time to support human activities. Transportation can be divided into 3 types, namely: land transportation, sea transportation, and air transportation. One of the most commonly used means of transportation is land transportation(Papacostas, 1987; Roga et al 2021).

Indonesia as a developing country certainly has a very rapid development of services in the fields of land, sea and air transportation. Transportation owned by the Indonesian Nation certainly has innovations from the past to the present in order to advance transportation services. The development of transportation services is followed by land transportation services, one of which involves public transportation. Taxis are one example of public transportation. Taxi drivers often face significant fatigue challenges due to excessive work time, traffic conditions and insufficient rest time. Fatigue in taxi drivers not only threatens their own safety but can also harm passengers and other road users. Fatigue can reduce performance and increase the rate of work errors that will likely lead to work accidents (Tadi, et al., 2023; Roga, et al, 2021). In an increasingly advanced era, the use of land transportation services is made easier by the existence of online transportation companies, but this also has an impact on fatigue that occurs in drivers, one of which is due to uncertain working hours.

Online transportation companies offer transportation services such as online Ojek, online taxi, goods delivery, food delivery and so on. The advantages of making it easier for users to use their services as well as rational rates set based on mileage, make online transportation currently increasingly in demand by users. so that online transportation companies are growing rapidly. Similarly, in Kupang City, many online transportation companies have spread due to the increasing interest of users. Of all the online transportation companies in Kupang City, Maxim is the most preferred online transportation company by users in Kupang City, in addition to the ease of ordering, Maxim Company also offers the lowest rates compared to other companies.

The high demand for Maxim online transportation in Kupang City has an impact on work fatigue experienced by online transportation drivers. one of which is also felt by Maxim Mobil drivers. Based on the researcher's initial survey of Maxim drivers in Kupang, fatigue often occurs in Maxim Car drivers due to the increase in Maxim Car users in Kupang City..

LITERATURE

Everyone who works has the potential to experience both physical and mental fatigue depending on the type and characteristics of the job. The World Health Organization (WHO) in Zulfikri (2010) states that currently the level of road transportation accidents in the world has reached 1.2 million deaths and more than 30 million injured / disabled victims due to traffic accidents per year 2,739 people and injured 63,013 people

per day. 85% of the victims who died from accidents occurred in developing countries. (Zulfikri, 2010; Roga et al., 2021).

Workload is one of the supporting factors for work fatigue so that the workload received both physically and mentally must be in accordance with the physical and mental abilities of the worker. According to the International Lobour Organization (ILO), every year as many as two million workers die from work accidents caused by fatigue. The study stated that out of 58115 samples, 32.8% of them, around 18828, suffered from fatigue. Occupational fatigue contributes 50% to the occurrence of work accidents. (ILO, 2018; Lona, et al., 2023).

The Central Statistics Agency (BPS) states that from 2019-2021 the increase in the number of traffic accidents reached 6,465, making Indonesia the country with the highest death rate due to road accidents. (BPS, 2022).

METHOD

This study uses a type of quantitative research using analytic survey method and cross sectional research design. The sample in this study amounted to 81 respondents from a total population of 430 Maxim Mobil drivers in Kupang City. The sample was selected using accidental sampling method. Questionnaires were used to collect data and analyzed using the chis-square test to determine the relationship between variables. The independent variable in this study is fatigue, while the dependent variables in this study are physical workload and mental workload. Data analysis using chis-square test on computer aplication software.

DISCUSSION

Distribution of respondents

Table 1

Distribution of Respondents Based on Age

No	Age	Total Respondents	Percentage
1	20-30	37	45.7
2	31-40	39	48.1
3	41-50	3	3.7
4	51-60	2	2.5
	Total	**81**	**100**

Based on Table 1, it can be seen that of the 81 respondents, most were aged 31-40 years, namely 39 respondents (48.1%) and the least respondents were respondents aged 51-60 years, namely 2 respondents (2.5%). In this study, the lowest age of respondents was 20 years and the highest age of respondents was 53 years.

Table 2

Distribution of Respondents Based on Gender

No	Gender	Total Respondent	Percentage
1	Male	77	95.1
2	Female	4	4.9
		Total	**100**

Based on Table 2, it can be seen that the most respondents were men as many as 77 respondents (95.1%) and the least were women as many as 4 respondents (4.9%)

Univariate Analysis

Table 3

Distribution of respondents according to the variables of job fatigue, physical load and mental workload

Variables	Total Respondent	Percentage
Work Fatigue		
Heavy	69	85.2 %
Light	12	14.8 %
Physical workload		
Heavy	34	42.0 %
Light	47	58.0 %
Mental Workload		
Somewhat High	26	32.1 %
High	29	35.8 %
Very High	26	32.1 %

The results showed that based on the work fatigue variable, respondents who were at risk of experiencing work fatigue were 69 (85.2%) and respondents who did not experience fatigue were 12 (14.8%). The physical workload variable showed that 34 (42.0%) respondents had a heavy workload level and 47 (58.0%) had a light workload level. And on the mental workload variable, the results showed that 26 (32.1%) respondents experienced a rather high mental workload, 29 (35.8%) respondents experienced a high mental workload and 26 (32.1%) respondents experienced a very high mental workload.

Bivariate Analysis

Table 4

Distribution of the relationship between physical load and job fatigue in maxim drivers

Work Fatigue	Physical Load				Total		P.Value
	Heavy		Light				
	N	%	N	%	n	%	
Heavy	27	39.1%	42	60.9%	69	100.0%	
Light	7	58.3%	5	41.7%	12	100.0%	0,860
Total	34	42.0%	47	58.0%	81	100.0%	

The results showed that 42 (60.9%) respondents experienced severe fatigue and light physical load. Next, there were 5 (41.7%) respondents who experienced mild fatigue and light physical load. Next there were 27 (39.1%) respondents who experienced severe fatigue and heavy physical load. And there are 7 (58.3%) respondents who experience mild fatigue and heavy physical load. The results of statistical tests using the chi-square test obtained a p-value of 0.860, meaning that there is no relationship between physical workload and fatigue in maxim drivers in Kupang City.

This study is in line with research (Saputra, 2021) entitled "The relationship between age, weight and workload on the incidence of fatigue in city transportation drivers (ANGKOT) in Depok City in 2020" where the p-value is 0.169 with a value of r (0.153) a weak relationship which means there is no relationship between workload and fatigue.

Table 5
Distribution of the relationship between mental workload and job fatigue in maxim drivers

Work Fatigue	Mental Load						Total		P.Value
	Somewhat High		Hight		Very High				
	N	%	N	%	N	%	N	%	
Heavy	22	31.9 %	24	34.8%	23	33,3%	69	100.0%	
Light	4	33.3 %	5	41.7%	3	25.0%	12	100.0%	0,037
Total	26	32.1 %	29	35.8%	26	32.1%	81	100.0	

The results showed that there were 22 (31.9%) respondents who experienced severe fatigue and a rather high mental load. Next there were 4 (33.3%) respondents who experienced mild job fatigue and a rather high mental load. There were 24 (34.8%) respondents who experienced severe job fatigue and also high mental load. There were 5 (41.7%) respondents who experienced mild job fatigue and high mental load. Next there were 23 (33.3%) respondents who experienced severe fatigue and very high mental load. And finally there were 3 (25.0%) respondents who experienced mild fatigue and very high

mental load. The results of statistical tests using the chi-square test obtained a p-value of 0.037, meaning that there is a relationship between mental workload and job fatigue in maxim drivers in Kupang City.

This research is in line with research (Putri Al-Bana et al., 2020) entitled "mental workload analysis of go-jek drivers using the nasa tlx method", there are 21 people who have high mental workload with the effort indicator having the most dominant influence of the six indicators with a value of 29.808% and the correlation between indicators and mental workload scores has a correlation level of 0.811 which means that the relationship between indicators is close.

CONCLUSION

Based on research on the Relationship between Physical Load and Mental Load with Fatigue in Maxim Car Drivers in Kupang City, the following conclusions are drawn:

1. Maxim car drivers in Kupang City mostly experience light physical workload with a presentation of 47 drivers which is 58%.
2. Maxim car drivers in Kupang City mostly experience high mental workload with a presentation of 29 drivers which is 35.8%
3. Maxim car drivers in Kupang City mostly experience severe job fatigue with a presentation of 69 drivers which is 85.2%.
4. There is no association between physical workload and job burnout and there is an association between mental workload and job burnout among maxim car drivers in Kupang City.

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