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MICRO ERGONOMICS: THE INFLUENCE OF HUMAN CHARACTERISTICS TOWARDS MENTAL WORKLOAD AMONG ONLINE MOTORCYCLE OJEK DRIVERS

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Abstract: The purpose of this study is to investigate how significant influence of online motorcycle *ojek* drivers' characteristics towards mental workload based on three categories: under load, optimal and overload. Moreover, this study also analysed using two perspectives: burdened and unburdened perspectives with NASA TLX as a measurement method. The research methodology used integrated fields research – non-parametric comparative. Determination of the sample used the Lemeshow method with a total of 70 samples. The test technique used Chi Square and intervention development. The findings of three categories achieved that there was a significant influence of Body Mass Index (BMI) on online motorcycle *ojek* drivers' Mental with a score 0.070<0.1. Furthermore, there was a substantial effect of gender to online motorcycle *ojek* drivers' frustration with score 0.062<0.1. However, the analysis using two categories with burdened and unburdened using NASA TLX demonstrated that there was no effect of drivers' mental, physical, temporal, performance, frustration and effort towards mental workload.
Key words: mental workload; Body Mass Index (BMI); online motorcycle ojek driver; NASA TLX.

1. INTRODUCTION

When Driver welfare is important to maintain and to improve online motorcycle Ojek brands and services that need to be guaranteed. Drivers as employees are one of the assets belong to online motorcycle Ojek industry. Without drivers the online motorcycle Ojek industry cannot achieve their missions and visions. Most of online motorcycle Ojek drivers work flexibly. However, the activities of online motorcycle Ojek drivers were dominant on repeated-static loads with an estimated time of 8 hours to 12 hours per day (Dorrian et al., 2011). Foy and Chapman (2018) found that mental workload during driving might result driver errors related to behavior, physiological responses, eye movements, and brain activity. Moreover, Meteir et al. (2021) Proved mental workload by evaluating and classifying the driver's workload in real-time using physiological data that drives for 25 minutes with an open area intervention. In contrast, Peruzzini et al (2019) and Maynard et al., (2021) measured the mental workload of the driver and found that it was possible to improve the dimensions of the driving area. Therefore, being overloaded will lead to feelings of stress and fatigue.
Lu et al., (2021) and Wang et al., (2020) postulated that the level of driving safety and the ability to follow instructions increased when carrying out tasks given. Thus, the research gap that can be used as an innovation is to measure the characteristics of the workload with reference of NASA TLX using online motorcycle ojek drivers with post-driving stretching interventions. This research has never been done with a case-based integration design. This case will emerge some problems when the muscles of the body receive repeated-static loads and will cause complaints from joints, ligaments and tendons (Kurata et al., 2015; Mohammadian et al., 2022). A driver spends most of the time sitting while riding a motorcycle. This driving condition is called as workload (Chen et al., 2019; Abd Rahman et al., 2020). Online Motorcycle Ojek Drivers spend 10-20 minutes riding motorcycle to carry each passenger. Moreover, the researchers indicated that there was a disturbance of the ojek driver related to his mental. Although this mental condition does not occur to all online motorcycle ojek drivers, this condition requires prevention and minimization to prevent unwanted-accidents and to optimize the drivers' work performance (Muhajir et al., 2021). Thus, both of these situations are important highlights that will be reviewed directly with the NASA-TLX method. The importance of the workload requires further minimization to provide supportive productivity for both drivers and the online motorcycle Ojek industry (Flagel et al., 2019). Therefore, the level of workload needs to be measured using a micro-ergonomic model

using the perspective of Driver characteristics. The driver characteristics dimensions use gender, height, body mass index and age (Mänttäri et al., 2019) Meanwhile, the dimensions of NASA TLX include mental demand, physical demand, temporal demand, performance, frustration, and effort. The test used is Chi Square and intervention design.
Based on research gaps and previous findings, the purpose of this study is to determine how significant is the influence of respondents' characteristics to NASA TLX using the under-load, optimal and overload levels and (2) to determine how large the relationship between respondents' characteristics to NASA TLX using the burdened and unburdened categories. The scope of research is online motorcycle Ojek drivers with specifications for Honda, Yamaha and Suzuki vehicle types. The benefit of this finding is the minimization of the workload according to NASA TLX.

2. LITERATURE REVIEW

Mental workload and volume have happened in various occupations (Cinaz, La Marca, Arnrich, & Tröster, 2010). Mental workload is one of the common concepts in ergonomics and human factors, representing a topic of increasing importance (Sveinsdottir, Biering, & Ramel, 2006). The mental workforce is an effort made by the mind during performing a task and is defined as "a level of intellectual and cognitive need or an analytical effort required by the worker or the staff to fulfill the physical, time and environmental needs of a given task" (Cao, Chintamani, Pandya, & Ellis, 2009). In fact, mental workload affects health, safety, and personal comfort (Haghshenas et al., 2018).
Musculoskeletal disorders (MSDs) occur due to the impact of mental workload on physical and mental factors (Cho, Hwang, & Cherng, 2012). A high incidence rate has been reported for MSDs in healthcare centers caused by various occupational stresses (e.g. high mental workload) (Habibi, Taheri, & Hasanzadeh, 2015). Work-related MSDs are one of the most important factors for the loss of working time, the loss of specialized workforce, and increased compensation, accounting for 48% of all occupational patients (Rahimi Fard, Hashemi Nejad, Choobine, Heidari, & Tabatabaee, 2011).
In a research, Khandan et al. showed a significant relationship between MSDs in different body parts and mental workload (Khandan, Mirshekari, Koorsani, Mosaferchi, & Koohpaei, 2018). Another study demonstrated a positive relationship between MSDs and mental workload (Darvishi, Maleki, Giahi, & Akbarzadeh, 2016). Moreover, a significant relationship was reported between MSDs and various aspects of mental workload in another research (Mohammadzadeh, Habibi, & Hasan-zadeh, 2015).

3. METHOD

The study applied an integrated field research base with a non-parametric comparative test. The basis of the field research is to determine how substantial the influence of workload was reviewed using the perspective of the characteristics of the respondents. While the non-parametric comparative test as a test of the relationship construct and measure the level of strength between the nominal construct and the type of count data.

3.1 Place and time of research
The research took place at the Kendedes Cultural Park, Singosari, Malang district. The research was conducted on 12 May 2022 – 12 August 2022.

3.2 Population and Research Sample
The population of this research was the Online motorcycle ojek drivers in Kendedes Cultural Park, Singosari, Malang Regency. The number of sample was drawn using the Lemeshow Method.

$$n = \frac{z^2 p(1-p)}{d^2} = \frac{1.96^2 \cdot 0.5 \cdot (1-0.5)}{12\%^2} = 67 \text{ minimum sample, then used 70 respondents}$$

The research sample amounted to 70 respondents with the following inclusions:
1.Age between 17 years to 65 years.
2.Types of vehicle brands are Honda, Yamaha and Suzuki.

3.3. Data source
Sources of research data were primary data and secondary data. The primary data of the study were derived

from observations with the NASA TLX instrument. The secondary data of the study were obtained from the parameters of previous research which were collected from national and international indexed articles. The data source of this research was emphasized on the scope of micro ergonomics which reviewed the workload.

3.4. Variable Operations

Operationalization of variables is a presentation of information to reach the conclusions of the study:

Table 1. Variable Operationalization

Variable	Dimensions	Definitions	Measurements	Measuring instruments	Scales
Workload	1.Performance 2.Frustrated 3.Temporal 4.Mental 5.Physical 6.Effort	1.Success rate in activities 2.Stress levels during work 3.Workload rate 4.Rate of estimated time during activity 5.About physical needs during activity 6.How much effort during the activity	NASA TLX	1.NASA TLX Sheet 2.Chi-Square Correlation	Nominal
Characteristics of Respondents	1.Gender 2.Height 3.Physical condition 4.Age	1.Biological differences between men and women 2.Maximum distance of the vertex point to the sole of the foot 3.Level of physical condition before, during and after activity 4.The level of life in terms of year of birth	1.Boys and girls 2.Not tall and tall 3.Not fat and fat 4.Youth, Middle-aged and Old	1.Descriptive statistics 2.Chi-Square Correlation	Nominal

(Source: Proceeded-data, 2022)

3.5. Data analysis method

Research data analysis method was carried out with the following stages:

1.Distribution of NASA TLX questionnaires and withdrawal of NASA TLX questionnaires to online motorcycle ojek driver respondents.

2.Designing a descriptive tabulation of the results of filling out the NASA TLX questionnaire.

3.Statistical testing of the Chi-Square Correlation of respondent characteristics (columns) to NASA TLX with sub-indications of underload, optimal and overload (rows).

4.Statistical testing of the Chi-Square Correlation of respondent characteristics (columns) to NASA TLX with sub-indications not burdened and burdened (rows).

5.The basis for decision making is:

H0 = If asymp. Sig < 0.1, it is stated that there is a significant effect between rows and columns.

H1 = If asymp. Sig > 0.1, it is stated that there is no significant effect between rows and columns.

6.Discussion and Research Intervention

4. RESULTS

4.1 Characteristics of Respondents

Table 2. Respondents Characteristics

Characteristics of Respondents		Gender		Category Height		BMI		Age		
		Male	Female	Short	Tall	Thin	Fat	Young	Middle Old	Old
	Frequency	54	16	3	67	57	13	62	7	1
	Percent	77.1	22.9	4.3	95.7	81.4	18.6	88.6	10.0	1.4
	TOTAL	70		70		70		70		

Source: Data analysis, 2022

Based on the respondents' characteristics, the respondents were dominantly male with a percentage of 77.1% while female was only 22.9%. Moreover, the category of height was dominantly tall with a percentage of 95.7% while short was 4.3%. The dominant BMI was thin with a percentage of 81.4% and the dominant age interval is young with a percentage of 88.6%.

4.2. Descriptive Analysis

Table 3. Grade Matrix with Dimensions

Grade (Frequency)		Dimension (Frequency)						Total Answer	Rank
		Mental Ave	Physical Ave	Temporal Ave	Performance Ave	Frustration Ave	Effort Ave		
	Under-load	35	40	20	13	17	51	176	1
	Optimal	17	9	14	13	14	7	74	3
	Overload	18	21	36	44	39	12	170	2
Total		70	70	70	70	70	70	420	

Source: Data analysis, 2022

Based on the table above, in the under-load category there were mental ave with 35 frequency; mental ave 40 and effort ave 51 that dominated the score. Moreover, in overload category, the dominant results were temporal ave 36; performance ave 44 and frustration ave 39 frequencies, Figure 1.

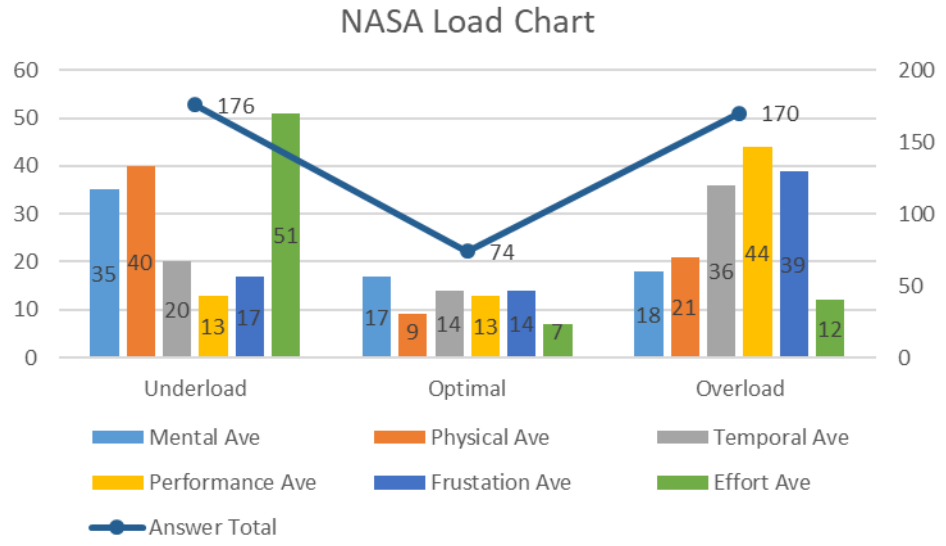

Fig. 1. Category Rating by Aspect

The dominant category with the highest ranking is under-load. It can be stated that the dominant respondent who works as a driver was in the under-load category. Thus, the burden during work is not excessive.

Table 4. Dimension Matrix with Workload Grades and Values

	Underload	Optimal	Overload	Total	Burdened	Unburdened	Percentage Burdened	Rank
Performance Ave	13	13	44	70	57	13	81.4%	1
Frustation Ave	17	14	39	70	53	17	75.7%	2
Temporal Ave	20	14	36	70	50	20	71.4%	3
Mental Ave	35	17	18	70	35	35	50.0%	4
Physical Ave	40	9	21	70	30	40	42.9%	5
Effort Ave	51	7	12	70	19	51	27.1%	6

Source: Data analysis, 2022

Based on the dimension matrix with the level of workload, it is stated that performance is, frustration is and temporal are respectively with overload values 44 respondents, 39 respondents and 36 respondents. While mental are, physical are and effort are dominant underload each with a value of 35 respondents, 40 respondents and 51 respondents, Figure 2.

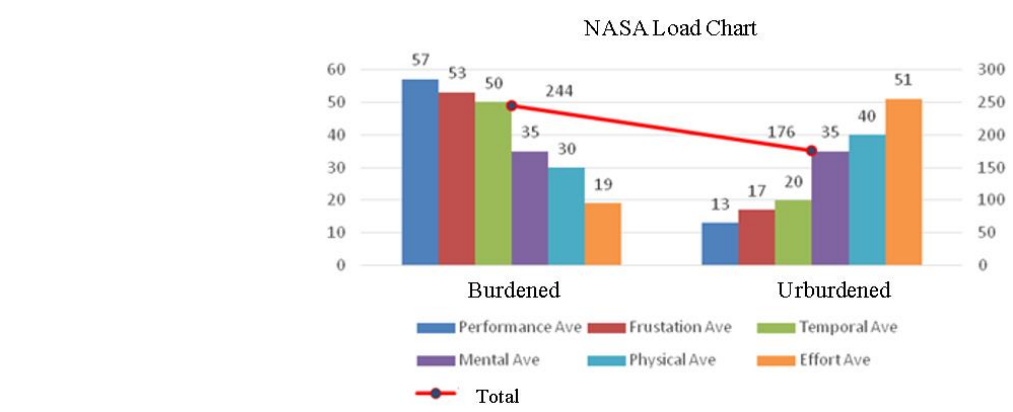

Fig. 2. Workload Aspect Matrix

The workload assessment with the burdened value included the dimensions of performance ave, frustration ave, temporal ave and mental ave with the highest frequency on performance ave 57 respondents. Meanwhile, the unencumbered value includes the mental ave and physical ave dimensions with physical ave as a dominant dimension of 40 respondents. The highest burdened percentage is the performance ave dimension of 81.4%, the second is the frustrated ave of 75.7% and the third is the temporal ave of 71.4%.

4.3.Correlation Analysis

Table 5. Correlation of Characteristics with NASA TLX Load Levels using three categories – under-load, optimal and overload

		Gender		Heigh		BMI		Age		
		Female	Male	Tall	Short	Fat	Thin	Young	Middle old	Old
Mental	Underload	8	27	34	1	8	27	32	3	0
	Optimal	5	12	17	0	0	17	14	2	1
	Overload	3	15	16	2	5	13	16	2	0
	Sig.	0.669		0.225		0.070*		0.498		
	Alpha	0.100		0.100		0.100		0.100		
Physical	Underload	7	33	39	1	8	32	35	5	0
	Optimal	3	6	8	1	2	7	8	1	0
	Overload	6	15	20	1	3	18	19	1	1
	Sig.	0.449		0.511		0.824		0.527		
	Alpha	0.100		0.100		0.100		0.100		
Temporal	Underload	3	17	19	1	4	16	17	2	1
	Optimal	2	12	14	0	2	12	13	1	0
	Overload	11	25	34	2	7	29	32	4	0
	Sig.	0.287		0.673		0.898		0.606		
	Alpha	0.100		0.100		0.100		0.100		
Performance	Underload	3	10	13	0	2	11	12	1	0
	Optimal	3	10	12	1	5	8	12	0	1
	Overload	10	34	42	2	6	38	38	6	0
	Sig.	0.999		0.620		0.123		0.171		
	Alpha	0.100		0.100		0.100		0.100		
Frustation	Underload	2	15	16	1	5	12	15	2	0
	Optimal	1	13	14	0	3	11	11	2	1
	Overload	13	26	37	2	5	34	36	3	0
	Sig.	0.062*		0.670		0.325		0.315		
	Alpha	0.100		0.100		0.100		0.100		
Effort	Underload	14	37	48	3	11	40	45	5	1
	Optimal	2	5	7	0	2	5	7	0	0
	Overload	0	12	12	0	0	12	10	2	0
	Sig.	0.117		0.558		0.174		0.782		
	Alpha	0.100		0.100		0.100		0.100		
Nasa TLX	Underload	4	10	14	0	0	14	11	3	0
	Optimal	6	15	21	0	5	16	21	0	0
	Overload	6	29	32	3	8	27	30	4	1
	Sig.	0.523		0.209		0.135		0.240		
	Alpha	0.100		0.100		0.100		0.100		

Source: Data analysis, 2022

The table with three categories above demonstrated that most of the respondents worked optimally or rather under-load. However, there were significant influences that implied overload result. First, there was significant influence of the online motorcycle ojek drivers BMI towards the drivers' physical condition as the value obtained showed 0.70 < 0.1 which evidently indicated substantial influence. Most of the respondents BMI were identified as thin or fit category – 81.5% and only 18.5% were classified as fat. Body Mass or Size is crucial in riding motorcycle, particularly as an online motorcycle Ojek driver. A rider or driver must be in fit size due to their duty carrying passengers and sharing seat with passengers with maneuvering the motorcycle as well. In addition, customers have right to choose a fit and suitable ojek drivers as their Ojek driver because the customer must have measured both the driver and the customer's capacity in one motorcycle. Therefore, most respondents in the study were classified as fit or thin so the fit respondents could obtain numerous passengers and could carry out their duty perfectly.

Moreover, there was an effect of the online motorcycle ojek drivers' Gender towards their Frustration with a value 0.062 < 0.1. Gender difference influenced the respondents' frustration due to diverse interest and necessity between male and female working as online motorcycle Ojek drivers. Male ojek drivers had responsible to fulfill their family needs financially. Hence, male ojek drivers also had strength and high durability in driving motorcycle. In the other side, 13 or 86% of the female ojek drivers had overload mental workload. This condition was happened because most of the female ojek drivers were single parents and they had big responsibility to fulfill family needs and to earn money independently. Thus, female ojek drivers work more to obtain more and experienced more stressful workload that led to frustration.

Table 6. Correlation of Characteristics with NASA TLX Load Value Dimensions using two categories – burdened and unburdened

		Gender / Sex		Height		BMI		Age		
		Female	Male	Tall	Short	Fat	Thin	Young	Middle-age	Old
Mental	unburdened	3	17	19	1	4	16	17	2	1
	burdened	13	37	48	2	9	41	45	5	0
	Sig.	0.322		0.852		0.846		0.281		
	Alpha	0.100		0.100		0.100		0.100		
Physical	unburdened	3	10	13	0	2	11	12	1	0
	burdened	13	44	54	3	11	46	50	6	1
	Sig.	0.983		0.398		0.743		0.844		
	Alpha	0.100		0.100		0.100		0.100		
Temporal	unburdened	2	15	16	1	5	12	15	2	0
	burdened	14	39	51	2	8	45	47	5	1
	Sig.	0.211		0.709		0.187		0.822		
	Alpha	0.100		0.100		0.100		0.100		
Performance	unburdened	14	37	48	3	11	40	45	5	1
	burdened	2	17	19	0	2	17	17	2	0
	Sig.	0.134		0.280		0.291		0.826		
	Alpha	0.100		0.100		0.100		0.100		
Frustration	unburdened	1	13	14	0	4	10	12	1	1
	burdened	15	41	53	3	9	47	50	6	0
	Sig.	0.117		0.376		0.282			0.125	
	Alpha	0.100		0.100		0.100		0.100		
Effort	unburdened	14	37	48	3	11	40	45	5	1
	burdened	2	17	19	0	2	17	17	2	0
	Sig.	0.134		0.280		0.291			0.826	
	Alpha	0.100		0.100		0.100		0.100		
Nasa TLX	unburdened	1	13	14	0	4	10	12	1	1
	burdened	15	41	53	3	9	47	50	6	0
	Sig.	0.117		0.376		0.282			0.125	
	Alpha	0.050		0.100		0.100		0.100		

Source: Data analysis, 2022

The table above demonstrates correlation between both variables using two categories – burdened and unburdened. Correlation between mental and gender was not found because the result from Chi square was 0.322 > 0.1, which showed that there was no correlation between mental and gender of Online Motorcycle Ojek Drivers. The result explained that the online motorcycle ojek drivers did not feel burdened by their duties and it did not affect their mental condition. Moreover, there was no effect between the respondents' height and mental as the result showed 0.852 > 0.1. The result reflected there was no influence of the respondents' height on the

respondents' mental. The respondents realized that height was not a burden. Furthermore, the respondents' BMI (Body Mass Index) was not a burden with 0.846 > 0.01 score. The score was higher than the alpha 0.1 which illustrated unaffected relation between the respondents' BMI and the respondents' mental. In addition, the correlation between the respondents' age and mental showed a score – 0.281 > 0.1 which meant no influence of the respondents' age affected their mental. Thus, based on the data above illustrated that there was no influence of Gender, height, BMI, and Age towards the respondents' mental workload and most the respondents agreed that there was no burden on their mental based on those human characteristics.

Significance value between gender and Physical characteristic resulted 0.983 > 0.1 exposed insignificant relation and showed unburdened physical workload among the respondents. Moreover, height and physical obtained 0.398 > 0.1 clearly showed uncorrelated significance. BMI and physical characteristics showed unrelated correlation with the significance value – 0.743 > 0.1. Further, there was no significant relation between the respondents' age and Physical characteristics – 0.844 > 0.1 resulted unburdened category.

The insignificant relation also emerged between Temporal and Gender – 0.211 > 0.1 directly showed irrelevant effects. Moreover, the value between height and temporal showed no correlation at all. The insignificant score was also showed between BMI and temporal – 0.187 > 0.1 which meant there is no influence between BMI and temporal characteristics of the respondents. Age also insignificantly influence temporal characteristics of the Online motorcycle ojek drivers as the value showed 0.822 > 0.1 with unburdened category obtained.

Moreover, there was no influence of Gender, height, BMI and age towards the respondents' performance in serving customers with inconsequential scores 0.134 > 0.1; 0.280 > 0.1; 0.291 > 0.1; 0.826 > 0.1 respectfully. These scores obviously showed irrelevant correlations and implied unburdened situation among online motorcycle ojek drivers.

In addition, the study found that Gender, Height, BMI and Age of the respondents did not affect their Frustration. The result revealed 0.117 > 0.1; 0.376 > 0.1; 0.282 > 0.1; 0.125 > 0.1 respectfully and disclosed unrelated effect between Gender, Height, BMI and Age towards Frustration among online motorcycle ojek drivers. Thus, the respondents discovered as unburdened.

Besides, the respondents' Gender, Height, BMI and Age did not affect the respondents' effort. The value showed 0.134 > 0.1; 0.280 > 0.1; 0.291 > 0.1; 0.826 > 0.1 implied the insignificance of the online motorcycle ojek drivers' characteristic on their Effort. Therefore, the respondents felt unburdened by their duties as online motorcycle ojek drivers.

Likewise, NASA TLX also displayed insignificant relation between Gender, Height, BMI and Age of the online motorcycle ojek drivers with values of 0.117 > 0.1; 0.376 > 0.1; 0.282 > 0.1 and 0.125 > 0.1. Although the score achieved slightly higher than the alpha, it showed irrelevant influence among the respondents' characteristics.

5. DISCUSSION AND INTERVENTION

The study discovered 2 significant findings. The first finding is that there was an influence of BMI on mental with a correlation value of 0.070. Moreover, there was influence of gender towards frustration with a correlation value of 0.062 with under-load, optimal and overload levels. The second finding found that there was no relationship between drivers' characteristics and mental, physical, temporal, performance, frustration, effort and NASA TLX.

The driving activities that were influenced by BMI were; driving safety and the trouble of moving space. The findings in this study stated that the dominant online motorcycle ojek drivers had a BMI in the non-fat category. Thus, from the safety aspect and the space for movement could be controlled. If the online motorcycle ojek driver has a obesity or overweight, it will result dangerous conditions. The first danger might arise because most of vehicles had a strength level of 100 kg. If it exceeds the vehicle's power capacity, it will damage the suspension components and threaten the safety of the driver.

The BMI mental workload level was indicated by under-load. Where the level of load that occurs during work does not endanger themselves or others. Therefore, it has a significant value of 0.070. The influence of BMI with mentality becomes a benchmark which states that demands during driving when taking passengers are dominant are the daily targets. The purpose of this daily target is to consider the wages received by the driver from the driver application used. Thus, the level of frustration has a value of 0.062 for gender. This is because the frustration level of men is higher than women who work as online motorcycle ojek drivers.

The driving role that is influenced by gender will give different respondents. The response of men in driving will focus more on the speed level of passengers to quickly arrive at their destination by considering passenger safety. Tolerable considerations regarding helmet use and correct sitting position while riding. Meanwhile, the response of women in driving will focus more on the level of passenger safety by considering the estimated time to arrive at a location with a safer route. From these two findings, it can be stated that the response of driving

speed and driving safety are important benchmarks. Although, we have not measured how high the importance of driving speed and driving safety. However, we can show in our judgment the frustration of the rider. Gender affects the level of frustration with a value of 0.062. Where this role has an impact on the driver while carrying passengers. This will play a role with response speed and security. On the other hand, the assessment of frustration is dominant in males. This is due to the mindset achieved about driving speed in order to immediately get passengers back to meet the daily targets on the driver application. However, as many as 15 respondents admitted that they did not feel that they had a high burden while waiting for passengers who ordered through the application. This indicates that frustration occurs because they have not received passenger orders within a certain time. Thus, the achievement of targets that cannot be achieved causes frustration with a frequency of 12 respondents, Figures 3-5.

Karageorghis (2021) acknowledged that the individual's emotional condition became the highest potential for the emergence of a mental workload. The workload is valence optimization and affective desire to drive. This caused a bias condition that did not show the influence of gender, height, BMI and age. This bias condition is not significant because most likely, the individual who drives has a psychological condition that needs to be measured further. Thus, the consideration of mental, Physical, Temporal, Performance, Frustration, Effort and NASA TLX dimensions have not shown real significance. While Onninen et al., (2021) discovered that the level of drivers or riders had to be reviewed from the perspective of the working hours. Therefore, this fit perfectly with the temporal dimension used in this study. Temporal has a dominant male-encumbered frequency value, height, not overweight, and age is classified as youth. In addition, this study uses 3 types of vehicles, namely Honda, Yamaha and Suzuki. The study of vehicle types also provides participation in increasing the workload of online motorcycle ojek drivers. Errors in making decisions in choosing the type of vehicle will have an impact on the safety of drivers and passengers. Radhakrishnan et al., (2021) stated that the level of workload will affect the type of vehicle used. Thus, type of vehicle plays a role in the driver's performance.

Decrease in mental workload and recovery might occur gradually. It cannot be done in a short time. This proved that the driving activity of an online motorcycle ojek driver is not easy. Stretching activity is also indicated by de Sa et al., (2019) which is important for workers to stretch. This shows that stretching after work is quite effective in preventing musculoskeletal disorders. The best post-work activities are activities that provide a role to increase productive roles. In other words, excessive workloads can be reduced by stipulating the severity of the risks that occur. Therefore, the intervention of workload among online motorcycle ojek drivers can be designed as a continuous intervention (Pradana et al., 2022; Rahayuningsih & Pradana, 2019; Pradana, 2021).

Stretching area in the picture above showed some movements such as back and waist stretching to improve musculoskeletal conditions after stressful workload. Stretching was also demonstrated by Naweed et al., (2021) that invented interpersonal factors significantly affected musculoskeletal that influenced work performances.

Hence, stretching is advantageous for both improving blood circulation and maintaining body balance that helps reducing exhaustion. In addition, stretching is also useful to maintain fitness and reduce muscle pain in the hip and back area (Stankovic, et al., 2012; Cleland et al., 2016; Pourahmadi et al., 2019). The hip and back areas are important highlights of stretching activities. This is because the Most of Ojek drivers using these body parts to drive motorcycle between 10 - 20 minutes for each passenger. Therefore, the online motorcycle ojek drivers can do stretching in those body areas according to the suggested stretching above.

Fig.1. Stretching Area, Source: observation, 2022

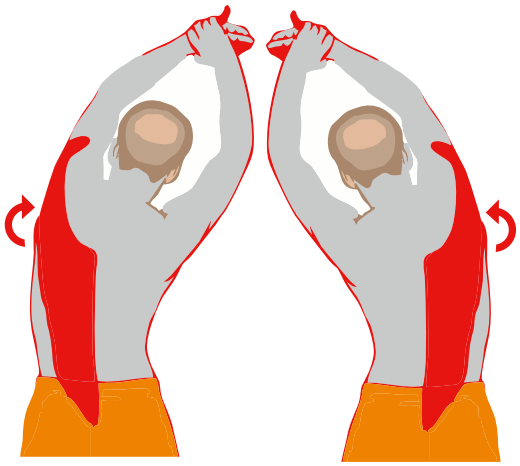

Fig. 4. Back Stretch, Source: visual Corel draw, 2022

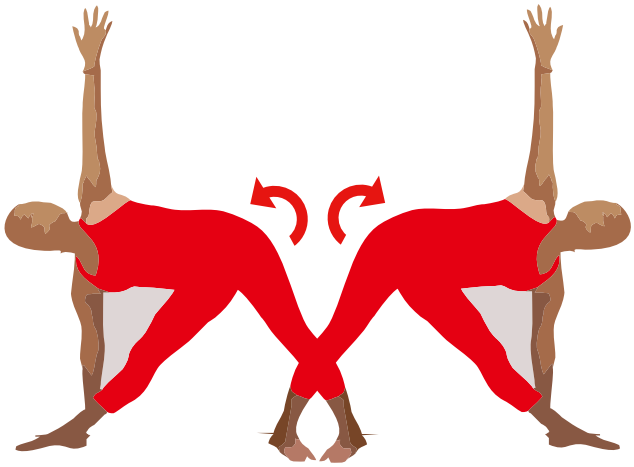

Fig. 5. Waist Stretch, Source: visual Corel draw, 2022

6. CONCLUSIONS

The conclusions of the study are (1) the findings of three categories achieved that there was a significant influence of Body Mass Index (BMI) on online motorcycle *ojek* drivers' mental with a score 0.070<0.1. Furthermore, there was a substantial effect of gender to online motorcycle *ojek* drivers' frustration with score 0.062<0.1. However, the analysis using two categories with burdened and unburdened using NASA TLX demonstrated that there was no effect of drivers' mental, physical, temporal, performance, frustration and effort towards mental workload. Moreover, the implication of this research found that implementation of the stretching design in the waist and back area with an estimated driving time of 10-20 minutes was recommended as an important stretching activity for online motorcycle ojek drivers. The stretching should be done in at least 3-5 minutes.

CONFLICT OF INTEREST

The authors confirm that there is no conflict of interest to declare for this publication.

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