



## THE INFLUENCE OF MENTAL WORKLOAD AND INDIVIDUAL CHARACTERISTICS ON WORK STRESS

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### ABSTRACT

Work stress is a problem that is often faced by employees in various industrial sectors, including in the electricity sector. One of them is the electricity sector at the state-owned company PT X Site Jakarta Raya. Prolonged work stress can have a negative impact on employee performance and well-being. Work stress can cause physiological, psychological and behavioral changes in employees. Data shows that the resignation rate for employees at PT X is quite high. The significant rate of employee resignation in recent years shows that work stress is a problem that needs to be taken seriously. Therefore, this topic needs further research. This research aims to analyze the influence of mental workload and individual characteristics on work stress among employees at the state-owned company PT X Site Jakarta Raya. The method used in this research is quantitative with a purposive sampling technique. In this study there were 125 samples. Data was collected using standard questionnaires from the NIOSH Generic Job Stress Questionnaire (GJSQ) with 41 questions for work stress and NASA-TLX with 15 questions for mental workload. Next, the data was tested using T test analysis. The results of the T test hypothesis analysis show that mental workload (significance = 0.003) and marital status (significance = 0.006) have a significance value of <0.05. Therefore, Ha is accepted and H0 is rejected. Conclusion: Mental workload and marital status have a partially significant influence on the dependent variable of work stress.

Keywords: individual characteristics; mental workload; work stress

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### INTRODUCTION

Stress is a physiological and psychological response that occurs when someone faces pressure or demands that exceed their ability to cope. Stress can arise in a variety of situations and can be temporary or chronic. This is the body's natural reaction to challenges, threats, or changes in daily life. Stress can have varying impacts on individuals, including feelings of anxiety, physical tension, sleep disturbances, mood changes, increased heart rate, and other physical health problems. In addition, long-lasting or intense work stress can have serious consequences on a person's physical, mental and emotional well-being. Apart from that, this can cause decreased productivity and a detrimental reduction in quality of life. (Mangkunegara, 2015)

Therefore, heavy and excessive workloads can produce physical and mental stress, and increase the risk of stress at work. Job stress caused by excessive workload can cause mental and physical health problems, reduce productivity levels, and have a negative impact on personal life. In addition, work stress can spread into personal life, damage social and family

relationships, and disrupt the overall quality of life . ( Nurhanifah, 2022 ) Individual characteristics such as age , gender, age at marriage, and length of service have a significant role in determining a person's level of vulnerability to work stress. Factors such as ability to cope with stress, level of patience, perception of control, and level of self-confidence can influence how individuals respond to pressure in the workplace. Knowing one's own characteristics and developing strategies for managing stress that are appropriate to these characteristics can help individuals face challenges in the work environment more effectively . ( Olivia, 2022 )

Data from the Health and Safety Executive (HSE , 2020 ) shows that there were 828,000 workers affected by work stress, depression or anxiety in the period 2019 to 2020. The average prevalence of work-related stress, depression and anxiety in the industrial sector reached 1,579 cases. per 100,000 workers . According to a report from the International Labor Organization (ILO , 2020 ), around 779 out of every 100,000 workers experienced non-fatal work accidents in 2019, while 23.6 per 100,000 workers experienced fatal accidents . (ILO, 2020) Based on the results of pre-observations research using observation and interview methods on CSO workers at the state - owned company PT They often face stressful situations, such as dealing with emotional customers, completing reports quickly, and working under tight time pressure. This research aims to analyze the influence of mental workload and individual characteristics on work stress among employees at the state-owned company PT X Site Jakarta Raya .

## METHOD

This research is a quantitative analysis study using a cross-sectional research design. The population in this study were all subjects or all CSOs of the BUMN PT. X Site Jakarta Raya and Information with a total of 256 CSOs, with a research sample determined by purposive sampling of 125 people. The independent variable in this research is mental workload, along with individual characteristics (age, gender, marital status and length of service), while the dependent variable is work stress. Data was collected using a questionnaire for individual characteristics data which includes: age, gender, marital status and years of work, as well as a standardized questionnaire from the NIOSH Generic Job Stress Questionnaire (GJSQ) with 41 questions for job stress and NASA-TLX with 15 questions. questions for mental workload. Frequency distribution analysis is descriptive, while T test statistics use a computer program

## RESULTS

### Work stress

Work stress is a perception of an individual's abilities that are not in accordance with the tasks given as assessed by physiological, psychological and behavioral changes in the last 1 month. Table 1 shows that of the 125 respondents studied, the average work stress score obtained was 1.99 with a score range between 1.09 to 3.46. The distribution of work stress scores for CSO employees at Company X can be seen in the following table:

Table 1 .

Distribution of Job Stress among CSO Employees at Company

Variable	Mean $\pm$ SD	Min-Max	n
Job Stress	1.99 $\pm$ 0.55	1.09-3.46	125

### Mental workload

Table 2 shows that of the 125 respondents studied, the majority of CSO employees at Company X had a mental workload in the high category, namely 114 people (91.2%). The

distribution of mental workload on CSO employees at Company X can be seen in the following table:

Table 2 .

Distribution of Mental Workload among CSO Employees in Company

Category	f	%
Tall	114	91.2
Very high	11	8.8

#### Age

Table 3 shows that of the 125 respondents studied, the average age of CSO employees at Company X was 31.39 with an age range of between 25 and 42 years. The age distribution of CSO employees at Company X can be seen in the following table:

Table 3 .

Age Distribution of CSO Employees at Company

Variable	Mean $\pm$ SD	Min-Max	n
Age	31.39 $\pm$ 4.89	25-42	125

#### Gender

Table 4 shows that of the 125 respondents studied, the majority of CSO employees at Company X were female, namely 73 people (58.4%). The gender distribution of CSO employees at Company X can be seen in the following table:

Table 4 .

Gender Distribution of CSO Employees at Company

Category	f	%
Man	52	41.6
Woman	73	58.4

#### Marital status

Table 5 shows that of the 125 respondents studied, the majority of CSO employees at Company X were married, namely 67 people (53.6%). The distribution of marital status among CSO employees at Company X can be seen in the following table:

Table 5 .

Distribution of Marital Status among CSO Employees at Company

Category	f	%
Not married yet	58	46.4
Married	67	53.6

#### Years of service

the 125 respondents studied, the average length of service for CSO employees at Company X. The distribution of years of service for CSO employees at Company X can be seen in the following table:

Table 6 .

Distribution of Years of Service for CSO Employees at Company

Variable	Mean $\pm$ SD	Min-Max	n
Years of service	34.21 $\pm$ 28.83	1.-115	125

The Influence of Mental Workload, Age, Gender, Marital Status and Work Period on Work Stress.

Table 7 shows that the results of the T test analysis show that the variables that have a significance value  $> 0.05$  are mental workload and marital status. So, it can be interpreted that the mental workload variable, marital status has a significant influence on the work stress variable

Table 7.  
T Test Analysis Results

Variable	B	S.E	Significance	CI (95%)
Constant	1,643	0.324		
Mental workload				
Tall	Reference			
Very high	-0.515	0.168	0.003	-0.849 - -0.182
Age	0.014		0.160	-0.006 – 0.033
Gender				
Man	Reference			
Woman	-0.149		0.130	-0.342 – 0.044
Marital status				
Single	Reference			
Marry	0.312		0.006	0.092 – 0.533
Years of service	-0.003		0.098	-0.007 – 0.001

## DISCUSSION

### Overview of work stress

In this study, the distribution of work stress scores can be seen in Table 1. In Table 1. shows that the average work stress score of CSO employee respondents at PT When compared with the median average for the overall work stress score, which is 1.90, the interpretation is that the average value is above the median value. So, it can be interpreted that the work stress experienced by CSO employees at the BUMN PT X tends to be quite high. This means that there are several work stress scores that are high enough to be able to increase the average score. This condition can occur if there are several respondents who have very high work stress scores so that they can significantly influence the average.

In general, work stress is seen as a disability, an adverse emotional state, a burden, a response to work pressure, a psychological condition, and a dependency trait. Job stress means the inability to face challenges or pressure from work due to a mismatch between the capabilities of the workforce and the conditions and needs of the job . ( Liu , 2020 ) The high level of work stress experienced by *customer service* can be caused by several factors. Monotonous activities , complaints about interacting with customers who behave unpleasantly can become triggers work stress in employees *customer service* . A similar situation that does not improve can cause health problems characterized by complaints of dizziness after work and feelings of emotional instability. (Sinaga , 2022 ) It is feared that work stress experienced by CSO employees could reduce employee performance. Therefore, we need a way to reduce stress in the workplace which will have a good impact on employee performance. Studies show that time management skills can reduce stress levels in the workplace. (Mata *et al*, 2021) Other research shows that stress management training has very good effectiveness in reducing work stress. (Azad, 2022).

### Mental work load with work stress on CSO employees at PT

Based on the data analysis carried out in this research, the results showed that the mental workload variable had an effect on the work stress variable. So  $H_a$  is accepted and  $H_0$  is rejected. This is in line with previous research which states that mental workload has a strong correlation with work stress. (Trisminingsih, 2019) Mental workload has a regression coefficient of -0.515 and is negative, which means that if the mental workload variable increases by 1 unit, the dependent variable, namely work stress, will decrease by 0.515. In other words, the higher the mental workload of CSO employees at PT X, the lower the work stress level of CSO employees at PT This indicates that even though CSO employees at PT

This statement is quite relevant to the results of this research which can be seen in the mental workload distribution table. These results show that the mental workload felt by respondents is still dominated by the high mental workload category, namely 114 respondents (91.2%), not very high mental workload. In this sense, the mental workload felt by employees is still at a normal level for workers, so it is not considered a significant obstacle in the long term, but can be used as motivation for work. Such conditions can reduce work stress levels. This is in line with previous studies which show the results that the higher the job satisfaction obtained, the lower the level of work stress. (Jaafar. et al, 2021)

### **Characteristics of respondents with work stress among CSO employees at PT**

This research also analyzes the influence of respondents' characteristics on work stress, including age, gender, marital status and length of service. The findings show that only marital status has a significant effect on work stress. So  $H_a$  is accepted and  $H_0$  is rejected. Based on the data analysis carried out, it shows that the marital status variable has a significant influence on the work stress variable. This is in line with previous studies which stated that marital status was related to work stress. The marital status variable has a regression coefficient value of 0.312 and is positive, which means that if the marital status variable increases by 1 unit, the dependent variable, namely work stress, also increases by 0.312. In other words, for every 1 unit increase in marital status (for example, from single to married), the dependent variable of work stress increases by 0.312 units. (Sari. et al 2021)

In other words, if respondents were previously unmarried and are now married, their work stress levels tend to increase. Therefore, it can be interpreted that the level of work stress experienced by CSO employee respondents with married marital status tends to be higher than that of unmarried employees. This is in accordance with previous research which states that in general, married workers find it difficult to divide their time between household work and office work. (Mustajab, 2020) Apart from that, several other respondent characteristic variables including age, gender, and length of service do not have a significant influence on the work stress experienced by CSO employees at PT This is in accordance with previous research which states that age does not have a significant relationship with work stress. Gender also has no influence on the work stress variable. (Awalia. et al, 2021) This is also in line with other research which states that gender has no relationship with work stress. (Rosanna. Et al, 2021). The work period variable has no effect on the work stress variable. This is in line with one study which states that work experience has no relationship with work stress. . (Rosanna. Et al, 2021). Other research also shows similar results that work experience does not have a significant relationship to work stress. Therefore, overall it can be interpreted that the work stress experienced by CSO employees is not influenced by differences in age, gender, or the length of time the employees have worked at the company. (Hidayat, et al, 2019)

### **CONCLUSION**

The average work stress score of respondents was 1.99 with a score range between 1.09 to 3.46. Most of the CSO employees at Company X have a mental workload in the high category, namely 114 people (91.2%). Mental workload and marital status have a partially significant influence on the dependent variable work stress .

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