The Effect of Work Stress on Job Satisfaction: A Quantitative Evidence

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Abstract. This study is motivated by the need to examine the impact of stress on job satisfaction in IT companies. This study aimed to determine the relationship between occupational stress and employee satisfaction at PT. Digdaya Olah Teknologi Indonesia. This study employs a quantitative methodology and a descriptive-causality design. Seventy respondents were surveyed using a non-probability sampling method. Data analysis techniques include descriptive analysis and simple linear regression analysis. According to the results of a partial hypothesis test, work stress at PT. Digdaya Olah Teknologi Indonesia has a significant negative impact on employee job satisfaction. This study contributes to the body of knowledge regarding the relationship between work stress and employee job satisfaction in the context of the information technology business industry and Indonesia, a developing nation.

Keywords: Stress, satisfaction

1 Introduction

Along with the times, all aspects of human life are also developing, both in the economic, political, social, and cultural fields, including information technology (IT). IT includes everything related to the process, use, engineering, and management of information. The rapid development of IT currently has an influence on people's lives. It cannot be denied that technology is a necessity that cannot be separated from human daily activities. From Figure 1, it can be seen that the IT and telecommunication industry market in Indonesia is growing in a positive direction every year, which indicates that businesses engaged in the IT and telecommunication sector have great opportunities to continue to grow and develop in Indonesia.
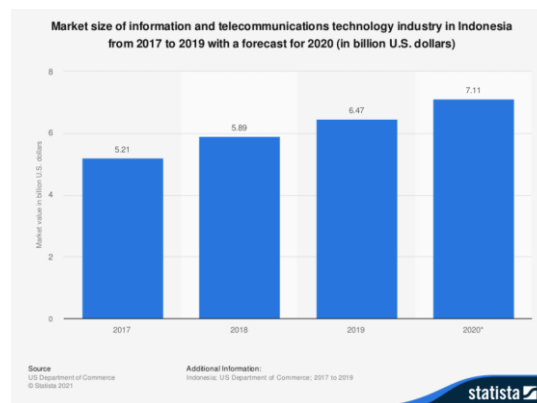

Fig. 1. Statistical Data on the Market Size of the Information Technology and Telecommunication Industry in Indonesia

(Source: US Department of Commerce 2021 in Statista)

With increasing competition in the IT industry sector, companies must pay attention to their human resources in order to survive in the midst of the competition that occurs. Every company or organization has goals that must be achieved [18]. Human resources are crucial to a company or organization's ability to achieve its objectives.

Employee job satisfaction in a company is very important for creating high employee performance, encouraging positive work behavior among employees, and controlling turnover. "Job satisfaction" is how a person thinks about his job positively [7]. An employee's job satisfaction will increase if at least there is no significant difference between what is desired and what is received. The greater the gap between what is desired and what an employee receives, the greater the employee's dissatisfaction with his work [12].

Based on the results of interviews obtained from an informant named Tiara from the human capital division of DOT Indonesia on November 2, 2021, said that "the obstacle experienced by DOT Indonesia today is that there is no measurement of employee job satisfaction." In addition, based on preliminary data, the job satisfaction survey of employees working at DOT Indonesia also shows that it can be assumed that employees are still not fully satisfied with the workload given and communication with their superiors.

According to Hariandja [10] the management of work stress is one method for enhancing life quality. Robbins & Judge [23] suggested that work stress is an unpleasant psychological process that occurs as a response to work. Changes and developments in the IT industry sector occur so fast, this causes companies to have the agility to continue to adapt to existing changes, this can trigger stress on employees because they have to always make updates, adapt to changes, jobs change so fast, being chased by deadlines and so on. DOT Indonesia is a company engaged in providing services in the manufacture of software starting from the planning process until the software can be used properly. During the establishment of DOT Indonesia since 2011, this IT-based company focused on creating IT products such as applications on Android and IOS, websites and other software. The existence of stress can also be seen from the turnover data.
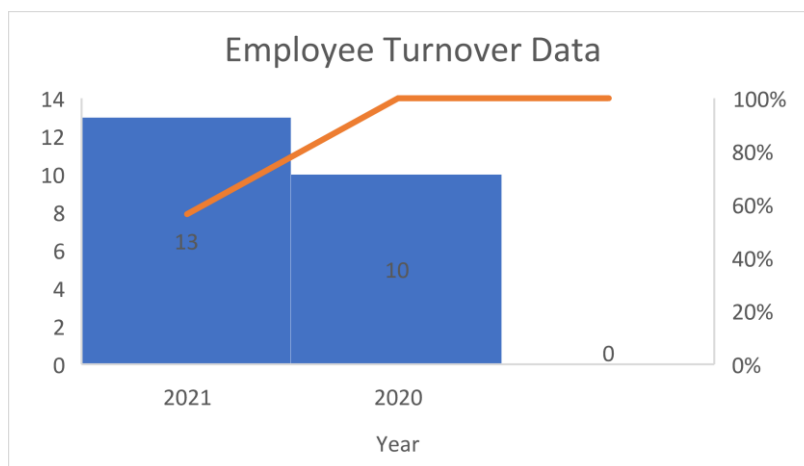

Fig. 2. Employee Turnover Data

(Source: Company Data, 2022)

Based on the employee turnover data in figure 2, it can be seen that there was an increase in employee turnover from 2020, as many as 10 people, to 2021, up to 13 people. Rivai [21], turnover is an employee's desire to quit work for the company voluntarily or move from one place to another according to their own choice.

Work stress has a negative effect on an employee's job satisfaction. This is supported by the perspective of Ahsan [1]. Sinambela [27] stress is defined as a state of pressure and tension that affects a person's emotions, thoughts, and physical condition while at work. Therefore, companies must manage employee work stress well so that employees can be satisfied at work. The author is doing this research to find out how stress affects how satisfied employees are with their jobs.

This study contributes to the empirical research literature on the effect of work stress on employee job satisfaction at Indonesian DOT companies in the context of the IT business industry and Indonesia as a developing nation. The findings of this study can serve as a scientific basis for testing the effects of work stress on job satisfaction in Indonesian DOT organizations.

2 Literature review

2.1 Work Stress

In general, stress is often interpreted as an unpleasant condition which can have both positive and negative effects. Sinambela [27] stated that stress is defined as a state of pressure and tension that affects a person's emotions, thoughts, and physical condition while at work. Stress can also be caused by stimuli that can be physical or psychological and the individual responds to stimuli in various ways. In line with the previous statement, according to Luthans [15] work stress can be understood as an adaptive response to external circumstances that can affect a person's physical and mental health and organizational behavior. The emergence of stress can prevent an employee from focusing on his work. For many people low to moderate levels of stress allow them to do their jobs better, by increasing alertness, and ability to react, but if stress levels are high or even moderate levels are prolonged, it will ultimately reduce company performance. While Robbins & Judge [22] argues that work stress is an unpleasant psychological condition experienced by a person when faced with opportunities, demands or

resources desired by the person and the results are considered important such as job demands. Other factors that cause work stress are also explained by Fahmi [8], the first external factors are task demands, role demands and interpersonal demands that cause ambiguity if employees do not understand what to do. Both internal factors are family problems, economic problems and personality characteristics are one of the problems from within that cause stress at work.

According to Moorhead and Griffin [16], the impact of work stress has individual consequences, which include behavioral, psychological, and medical, as well as organizational consequences, which include a decrease in absenteeism and turnover performance, a decrease in motivation and satisfaction, and fatigue. The impact of work stress can arise from three categories, as described by Robbins & Judge [22], namely physiological effects that can cause increased heart rate, headaches, and changes in body metabolism. Psychological impacts can cause tension, anxiety, boredom, irritability, and procrastination. As stated by Luthans [15], high stress will cause physical problems, psychological problems, and behavioral problems. Work stress will have a different impact on each individual, depending on how the individual responds.

2.2 Job Satisfaction

Basuki [5] argues that job satisfaction is personal and individual because everyone has their own level of satisfaction based on their own values. Job satisfaction is a measure of how a person feels about his or her job. This is evident in the employees' positive outlook on their work and the challenges they face in the workplace.

2.3 The Effect of Work stress on Employee Job Satisfaction

Employees' work-related stress can have an effect on their job satisfaction. If stress at work increases, job satisfaction will decline. If the employee's work stress increases, he or she will experience a tense psychological condition, which can lead to feelings of indecision, irritability, and even anger. Kreitner and Kinicki [13] Employees' work-related stress can have an effect on their job satisfaction. If stress at work increases, job satisfaction will decline. If the employee's work stress increases, he or she will experience a tense psychological condition, which can lead to feelings of indecision, irritability, and even anger.. In line with that, Anoraga [2] stated that the stress experienced by employees and the desired job satisfaction are two conditions that are not only related, but also antagonistic because there is indeed a complex interaction between human stress, work and satisfaction. Stress with a frequent frequency and exceeds the limits of a person's tolerance will be directly related to psychological disorders and physical disabilities. Furthermore, there is a theory of stress from a transactional point of view which explains specifically that stress can arise from transactions between a person and his environment [19]. Someone will evaluate things related to what the demands of the place work as stress. In this case stress is considered as a pressure that results in negative work outcomes related to personal development and goal achievement. The authors can conclude from the preceding description that the effect of work stress on job satisfaction is that if employee experiences work stress, the level of job satisfaction may decrease.

However, it was discovered that work stress and employee job satisfaction are two distinct concepts, although they are related. If the employees of an organization are satisfied with their jobs and do not experience stress at work, this is advantageous for the organization, as it is commonly held that happy workers are productive workers. According to their article C.K [6], work stress has a direct impact on employee job satisfaction and performance. The relationship between work stress and employee job satisfaction is inverse. This has a positive effect on organizational productivity if employees do not experience stress at work and are satisfied with their work. This has a negative effect on organizational performance if employees are stressed at work and dissatisfied with their work.
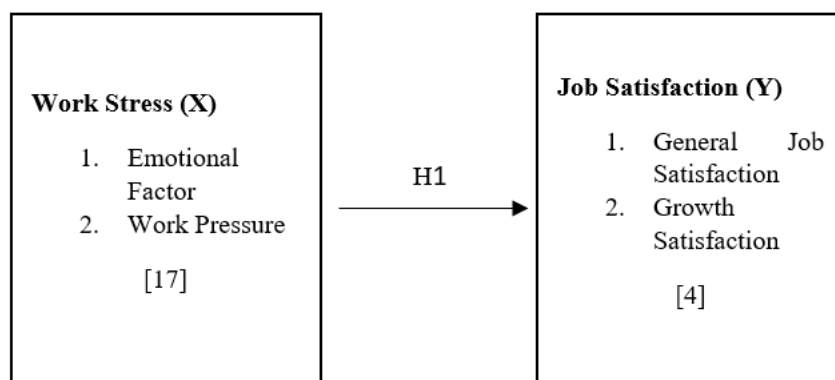

Fig. 3. Research Framework

This study's hypothesis is "Work stress has a substantial impact on employee job satisfaction."

3 Research methods

The method used in this study is a quantitative method. Based on the implementation time using a cross sectional design.

Table 1. Operational Variables

Variable	Dimention	Indicator	No Item
Work stress, definition: feelings of work-related tension, anxiety, frustration, and worry [17]		Feeling tense at work	1
		Feeling frustrated/angry with work done	2
	Emotional Factor	Feeling restless at work	3
		Worrying a lot at work	4
		Feeling disappointed with the work done	6
	Work Pressure	Pressure exerted at work	5
Job Satisfaction, definition: Job satisfaction in terms of general job satisfaction and growth satisfaction represents personal outcomes that are as important. [4]	*General Job Satisfaction*	Satisfied with work	7,8
		Desire to leave work	9,10
		Get the opportunity to grow and develop	11
	Growth Satisfaction	Opportunity to achieve something	12
		Challenges at work	13
		Independent in doing work	14

In this study, the author uses a Likert scale type with 7 answer choices (strongly agree–strongly disagree). Population is a broad category of subjects or objects with specific characteristics and qualities that can be studied and used to draw conclusions by the author [29]. The population of this study comprised a total of 70 employees of the Indonesian DOT. This study employs a non-probability sampling method, namely the census, which samples the entire population. Seventy samples were used in this study.

Utilizing a survey with a questionnaire to collect primary data is the method used for this study's data collection. Questionnaires were distributed online with the help of enumerators, namely members of the human capital division. The questionnaires were distributed online through Google Forms for ten days. In this study, we used a closed questionnaire [3]. Next is the examination of data outliers using the SPSS 25.0 application.

Table 2. Work Stress Validity Test

	No Item	R_{count}	Description
Work Stress (X)	*1*	0.673	Valid (>0.312)
	2	0.656	Valid (>0.312)
	3	0.807	Valid (>0.312)
	4	0.666	Valid (>0.312)
	5	0.730	Valid (>0.312)
	6	0.646	Valid (>0.312)

Table 3. Job Satisfaction Validity Test

	No Item	R_{count}	Description
	1	0.657	Valid (>0.312)
	2	0.770	Valid (>0.312)
	3	0.694	Valid (>0.312)

Job Satisfaction (Y)	*4*	0.588	Valid (>0.312)
	5	0.863	Valid (>0.312)
	6	0.852	Valid (>0.312)
	7	0.810	Valid (>0.312)
	8	0.629	Valid (>0.312)

The following are the outcomes of processing data with the IBM SPSS 25.0 application to determine the level of dependability. The following table displays the outcomes of the operational reliability test for the X variable, which is work stress.

Table 4. Work Stress Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	*N of Items*
0.769	**6**

The researcher obtained a Cronbach's Alpha value of 0.769, which indicates that it is greater than 0.6, as shown in table 4. This indicates that each item in the statement of the work stress variable can be deemed reliable.

Table 5. Job Satisfaction Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	*N of Items*
0.875	**8**

The researcher obtained a Cronbach's Alpha value of 0.875, which indicates that it is greater than 0.6, as shown in table 5. This indicates that each item of the employee job satisfaction variable statement can be deemed reliable or reliable. This study's data processing utilized statistical software, namely SPSS 25.0 for Windows. Before testing the hypothesis, the classical assumptions must be examined. This study's classical assumption test was conducted using IBM SPSS 25.0.

The following is a classic assumption test in this study:
a. Normality test
b. Heteroscedasticity Test
c. Linearity Test

This study employed simple linear regression analysis to determine the relationship between work stress and employee job satisfaction. According to Somantri [28], Partial correlation is a value that indicates a strong relationship between two or more independent variables and the dependent variable, when a portion of one of the independent variables is considered constant or fixed.

a) Ho : 1 = 0, then job satisfaction is not significantly affected by work stress.

b) Ha : 1 ≠ 0, then work stress has a significant impact on job satisfaction.

According to Riduwan & Kuncoro [20] the determination coefficient measures how well the model describes the dependent variable. The closer the regression results are to zero, the worse they are, as the independent variable cannot adequately explain the dependent variable.

4 Result and discussion

The data returned and deserved to be processed (free of outliers) were 70 questionnaires or it can be said that the questionnaire data was 100% returned (response rate).
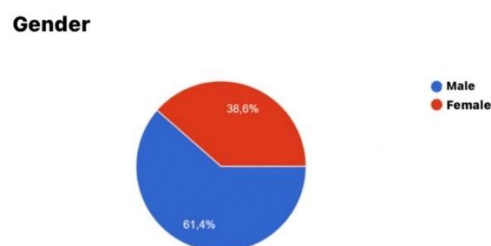

Fig.4. Characteristics of Respondents Based on Gender

Based on Figure 4, the number of male respondents was 43 people or 61.4%, while the number of female respondents was 27 people or 38.6%.
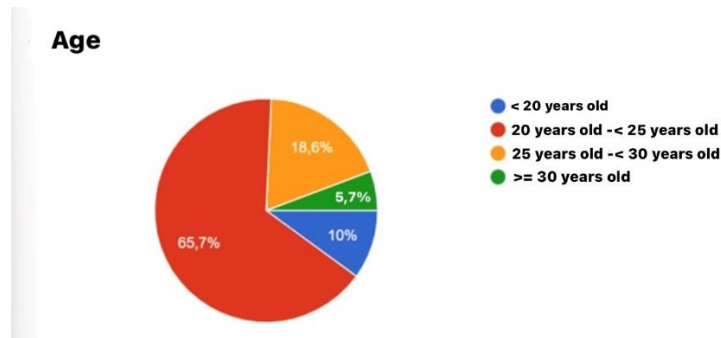

Fig.5. Characteristics of Respondents Based on Age

According to Figure 5, characteristics based on age are dominated by workers aged 20 to less than 25 years., namely 46 people, or 65.7%. Then followed by employees aged 25 years – < 30 years, namely 13 people or 18.6%, while employees aged < 20 years were seven people or 10% and employees aged >= 30 years were four people or 5.7%.
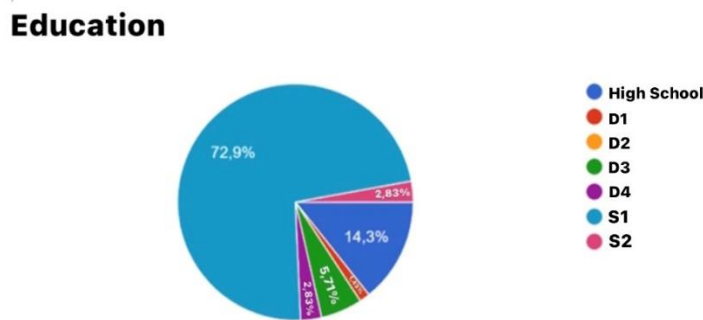

Fig.6. Characteristics of Respondents Based on Last Education

Viewed from Figure 6, it can be seen that the characteristics based on the latest education are dominated by employees with the latest bachelor's education, as many as 51 people, or 72.9%. This was followed by 10 employees with the latest high school education, or 14.3%. Meanwhile, there are four employees with the latest D3 education, or 5.71%. Then there are two employees with the last education of S2 and D4 each, or 2.83%. One employee had a D1 education at the end, or 1.43%.
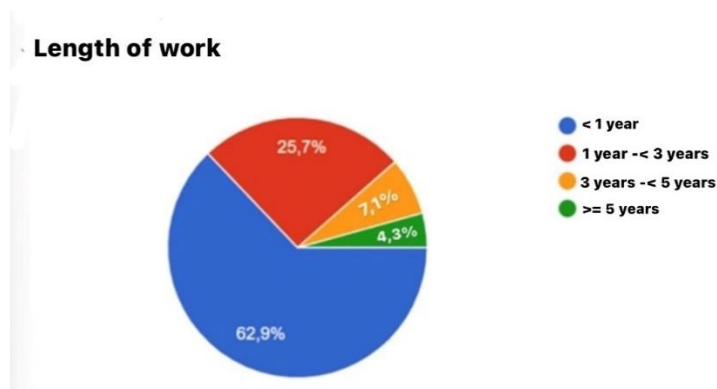

Fig.7. Characteristics of Respondents Based on Length of Work

Viewed from Figure 7, it can be seen that the characteristics based on length of service are dominated by employees who have worked for <1 year, namely 44 people or 62.9%. Then, followed by employees who worked

for 1 year – < 3 years, namely 18 people, or 25.7%. The employees who worked for 3 years – < 5 years were five people, or 7.1%, and the employees who worked for >= 5 years were three people, or 4.3%.

The interpretation of work stress as a continuum line based on descriptive statistical calculations is illustrated in greater detail in the following figure:
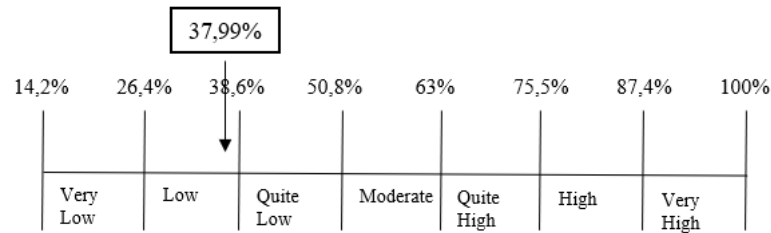

Fig.8. Continum Line Regarding Work Stress

Based on Figure 8, work stress at PT Digdaya Olah Teknologi Indonesia is between 26.4 and 38.6 percent, so it can be concluded that work stress at DOT Indonesia is low. The figure below illustrates in greater detail how descriptive statistical calculations can be used to interpret job satisfaction as a continuum line:
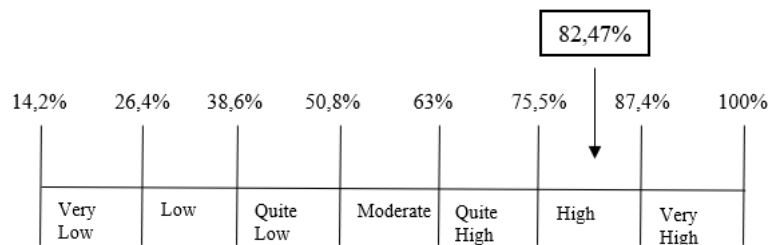

Fig.9. Continuum Line Regarding Job Satisfaction

Based on Figure 9 regarding employee job satisfaction at PT Digdaya Olah Teknologi Indonesia, the percentage of employee job satisfaction is 82.47% in the range of 75.5% and 87.4%, so it can be said that employee job satisfaction at DOT Indonesia is high. The normality test was performed to determine if the variables in the regression model had a normal distribution. This is because a good regression model has residual values that are normally distributed [26]. This study will employ the P-P Plot normality test method, the histogram graph, and the Kolmogorov-Smirnov test.
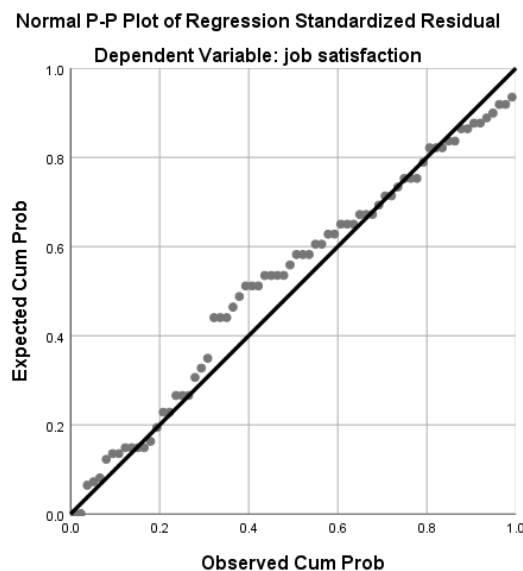

Fig. 10. P-P Plot Graph of Job Satisfaction Variables

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In Figure 10, the P-P Plot graph indicates that the data is distributed along the diagonal line. On the basis of the graph, the data are therefore normally distributed.
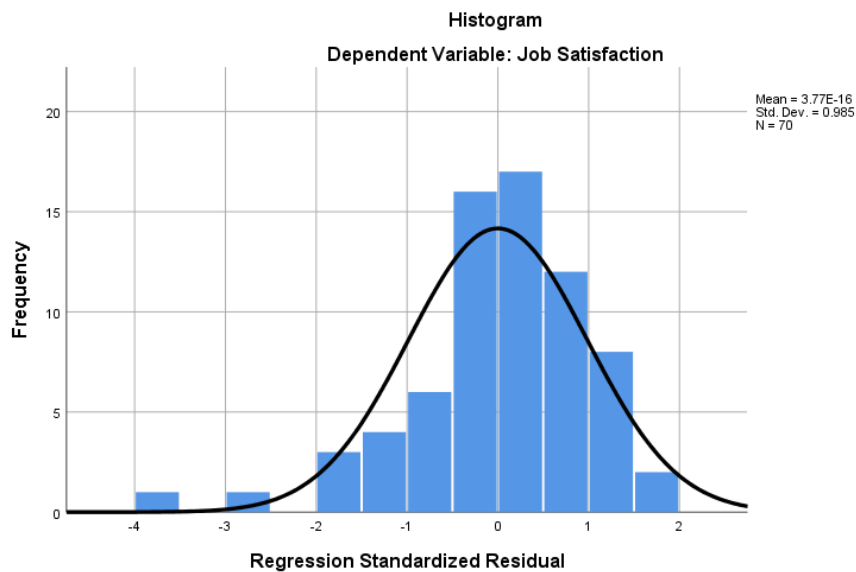

Fig.11. Histogram Graph of Job Satisfaction Variables

In Figure 11, the histogram graph provides an interpretation that the data follows the direction of the histogram line. Therefore, based on the figure, the data is normally distributed.
1. If the Asymp value. Sig. (2-tailed) 0.05 then the data does not experience normal distribution disturbances.
2. If the value of Asymp. Sig. (2-tailed) < 0.05 then the data has a normal distribution disorder.

Table 6. Kolmogorov-Smirnov test Output

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		70
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	5.86668106
Most Extreme Differences	Absolute	.101
	Positive	.092
	Negative	-.101
Test Statistic		.101
Asymp. Sig. (2-tailed)		.071[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on table 6, the probability value of Asymp is calculated to be 0.071% (two-tailed). Since the data is greater than 0.05, it can be concluded that there are no deviations from the normal distribution. Heteroscedasticity testing determines whether or not there is an inequality of variables between residual observations and other observations within a regression model. If one observation is related to another, it is referred to as homoscedasticity, whereas if the reality is different, it is referred to as heteroscedasticity [11]. The method for testing heteroscedasticity is the scatterplot, which involves plotting the predicted value against the residual value.
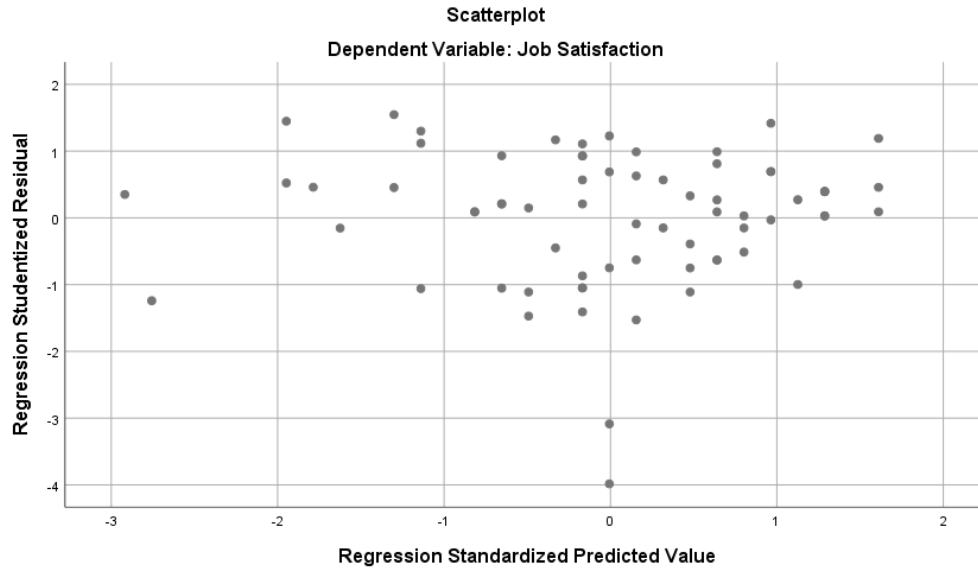
Fig.12. Job Satisfaction Variable Scatterplot Test Output

Figure 12 demonstrates that the points are distributed arbitrarily and do not form a pattern. They are also distributed above and below zero on the Y axis, indicating that heteroscedasticity was not present in the examined data. A linearity test is used to determine the linearity of the studied variables. According to Santoso [24], a linearity test was performed to determine whether the relationship between the dependent variable and the independent variable was linear. The following constitutes the basis for linearity test decision-making:
1) If the value of Sig. deviation from linearity is greater than 0.05, then the independent variable and the dependent variable have a linear relationship.
2) There is no linear relationship between the independent variable and the dependent variable if the value of the sig. deviation from linearity is less than 0.05.

Table 7. Linearity Test Results

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Job Satisfaction * Work Stress	Between Groups	(Combined)	916.313	21	43.634	1.385	.174
		Linearity	292.643	1	292.643	9.289	.004
		Deviation from Linearity	623.671	20	31.184	.990	.490
	Within Groups		1512.272	48	31.506		
	Total		2428.586	69			

Using table 7, the sig value is calculated. The deviation from linearity is 0.490 more than 0.05, so it can be concluded that the independent variable and the dependent variable have a linear relationship. According to Sekaran and Bougie [25], simple linear regression analysis measures the effect of the independent variable on the dependent variable.

Table 8. Simple Linear Regression Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.502	1.866		27.600	.000
	Work Stress	-.333	.109	-.347	-3.052	.003

a. Dependent Variable: Job Satisfaction

Based on the results of the SPSS output displayed previously, the regression coefficient value is calculated using the coefficient "B" value without standardization. Then, the following simple linear regression equation is obtained:

$$Y = 51.502 - 0.333X \qquad (1)$$

From the results of the above regression equation, we can say the following about each variable:
1) The constant value of 51.502 means that if the independent variable is zero and there is no change, it is predicted that employee job satisfaction is worth 51.502.
2) The value of work stress is -0.333, which means that if work stress increases by one or higher, it can be predicted that employee job satisfaction will decrease by -0.333.

The purpose of hypothesis testing is to determine the extent to which the independent variable influences the dependent variable. Significance level = 5 percent/2 = 2.5 percent = 0.025 (2-sided test). Then, perform the calculation df (degrees of freedom) = the number of observations (n) minus 2 or 70 minus 2 equals 68. For a 2-sided t-table test, the value is 1.995.

a. Testing Criteria

By significance:
1) If significance is less than 0.05, H0 is rejected.
2) If significance is greater than 0.05, then H0 is accepted.

b. Make decision

t value < t table (-3.052 < 1.995) and significance 0.05 (0.03 < 0.05) indicate that H0 is rejected and Ha is accepted, indicating that work stress has a significant impact on job satisfaction among Indonesian DOT employees.

The coefficient of determination test is used to determine the extent to which the work stress variable (X) partially influences the job satisfaction variable (Y).

Table 9. Coefficient of Determination Test Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.347[a]	.120	.108	5.60454

a. Predictors: (Constant), Work Stress

This table indicates that 12 percent of the Y variable (job satisfaction) can be accounted for by variations in the X variable (work stress). The remaining 88 percent is explained by factors outside the scope of the study. According to Kreitner and Kinicki [13], there is a negative relationship between feelings of stress and job satisfaction, which is supported by the findings of this study. The significant negative relationship between work stress and job satisfaction indicates that as work stress increases, job satisfaction will decrease, and vice versa. The majority of Indonesian DOT employees have worked for less than one year, indicating that they are still adjusting to and gaining experience with their work. This makes an employee extremely susceptible to workplace stress. Previous research conducted by Kuo, Lin, and Li [14] revealed that job satisfaction has an effect on reducing work stress and employee intentions to leave the company. These findings are supported by this study. This is also supported by the findings of Goswami [9], which indicate that there is a significant relationship between job satisfaction, work stress, and the effects of stress.

5   Conclusion

The findings of this study indicate that work stress has a substantial and negative impact on employee satisfaction at DOT Indonesia. Work stress is known to have a negative impact on employee job satisfaction, and this study's findings corroborate the findings of several previous studies. It is anticipated that the company will use this research as a reference when making decisions regarding issues of work stress and employee job satisfaction. Then, it is suggested that future research utilize variables other than work stress, as it is believed that there are other variables that could influence employee satisfaction with their jobs.

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