

The Influence of Workload and Role Ambiguity on Work Stress among Employees of the Department of Trade and Industry of Gowa Regency

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Abstract

Work stress is an important issue in Indonesian public-sector organizations because local government agencies are required to deliver effective public services while operating within bureaucratic procedures, hierarchical structures, and accountability demands. In this context, excessive workload and unclear job responsibilities may reduce employee performance, productivity, and organizational effectiveness. This study aims to analyze the effect of workload and role ambiguity on work stress among employees of the Department of Trade and Industry of Gowa Regency. This research employed a quantitative explanatory design. Data were collected using a structured questionnaire measured with a five-point Likert scale, covering indicators of workload, role ambiguity, and work stress. The population consisted of 45 employees, and a saturated sampling technique was applied, whereby all members of the population were selected as respondents. The data were analyzed using multiple linear regression with SPSS version 29. The findings show that workload has a positive and significant effect on work stress ($\beta = 0.221$; $t = 4.095$; $p < .001$). Role ambiguity also has a positive and significant effect on work stress and shows a stronger influence than workload ($\beta = 0.491$; $t = 9.844$; $p < .001$). Simultaneously, workload and role ambiguity significantly explain work stress, with an F-value of 111.372, $p < .001$, and $R^2 = 0.841$. These results indicate that employee work stress is shaped not only by the amount of work assigned, but also by uncertainty regarding duties, authority, and responsibilities. Practically, the organization should conduct periodic workload assessments, ensure fair task distribution, develop clear job descriptions, improve communication of responsibilities and authority, and establish employee support programs such as supervision, counseling, or stress management training to reduce work stress and improve organizational performance.

Keywords: *Workload, Work Stress, Role Ambiguity*

Introduction

The achievement of organizational goals depends greatly on the effectiveness of human resource management. Therefore, human resources are considered a strategic asset because they support productivity, service quality, and institutional performance (Ama et al., 2024; Nurmelisa et al., 2025). Human resources encompass the potential of individuals, both in terms of quality and quantity, which significantly contributes to organizational development and performance improvement.

The development of human resources is therefore essential because humans are the primary actors who influence and manage organizational environments. Improving the quality of HR is intended to increase work productivity, strengthen organizational competitiveness, and support broader national development goals. In achieving these objectives, organizations are required not only to recruit employees but also to provide training and development

programs that improve employees' knowledge, skills, and adaptability. Training programs enable employees to better understand their responsibilities, organizational systems, and work procedures so that they can perform tasks more effectively and collaboratively (Tufa, 2015).

In the public sector, human resource quality is essential because government institutions are responsible for delivering public services and implementing development programs. The Department of Trade and Industry of Gowa Regency plays a strategic role in promoting trade, industrial development, and the empowerment of micro, small, and medium enterprises (MSMEs). To fulfill these responsibilities, employees are expected to perform professionally, efficiently, and adaptively. However, increasing workloads and unclear job responsibilities often create work-related pressures that may lead to work stress, potentially reducing employee well-being and organizational performance. Understanding these challenges is therefore important for improving public sector effectiveness.

Preliminary observations suggest that employees at the Department of Trade and Industry of Gowa Regency may experience psychological pressure due to increasing workloads, overlapping tasks, and role ambiguity. However, these indications require empirical verification through structured data collection. This is important because previous studies have shown that job stress is related to employee job satisfaction, while effective human resource development contributes to strengthening employee capacity and organizational performance (Hasmariani et al., 2024; Ama et al., 2024). Such conditions can reduce employee motivation, decrease participation in organizational activities, and negatively affect employee performance. Work stress itself refers to an emotional and physical response caused by an imbalance between job demands and an individual's ability to cope with those demands. Indicators of work stress include emotional exhaustion, mental tension, anxiety, decreased concentration, fatigue, and declining job satisfaction (Gurugala & Sobirin, 2023).

Workload is one of the most dominant factors contributing to employee stress. Workload can be defined as a condition that occurs when job demands exceed an individual's capacity and ability to complete assigned responsibilities. Employees naturally possess limitations in terms of physical endurance, mental capability, and time availability. When organizations assign excessive tasks without considering employee capacity, an imbalance emerges between work demands and employee capabilities. This imbalance can reduce work effectiveness, lower productivity, and eventually lead to performance decline (Nurhandayani, 2022). Furthermore, workload analysis is important because it helps organizations identify workforce requirements, determine the appropriate number of employees, and evaluate the distribution of tasks to ensure effectiveness and efficiency in completing organizational objectives (Utami & Magdalena, 2020).

In addition to workload, role ambiguity is another factor that significantly affects employees' psychological conditions. Role ambiguity occurs when employees lack clear information regarding job expectations, responsibilities, authority, and performance standards. Employees who experience role ambiguity often face difficulties in understanding how tasks should be performed, which creates confusion and uncertainty in carrying out responsibilities. As a result, employees tend to work inefficiently and without clear direction, leading to lower work quality, delays in task completion, and reduced organizational effectiveness (Triyono & Prayitno, 2019). Unclear job roles also negatively affect employee performance because employees cannot fully understand their duties and responsibilities, causing inefficiency and reduced productivity (Nur et al., 2016).

Another important factor associated with organizational performance is work stress. Work stress can be interpreted as pressure or tension experienced by employees due to demands within the work environment. Employees who are unable to manage stress effectively generally experience declining motivation, emotional instability, and reduced work effectiveness. Symptoms of work stress include anxiety, physical and mental fatigue caused by excessive workloads, high work pressure, and insufficient support from supervisors (Rahayu & Lamidi, 2025). Work stress also arises due to mismatches between employee capabilities and job demands, which generate physical and psychological pressure (Andreas et al., 2024). Moreover, unmanaged stress often causes employees to have difficulties interacting positively with colleagues and their work environment, eventually affecting organizational performance negatively (Nataria et al., 2019).

Several previous studies have examined the relationship between workload, role ambiguity, and work stress. The literature suggests that employee stress is shaped by the interaction between quantitative job demands and role-related uncertainty. Excessive workload creates pressure by requiring employees to complete many tasks under demanding conditions, which may lead to physical strain, psychological pressure, emotional exhaustion, and decreased concentration (Nurhandayani, 2022; Gurugala & Sobirin, 2023). However, workload becomes more problematic when it is accompanied by role ambiguity, as unclear responsibilities and authority boundaries make it difficult for employees to determine priorities, execute tasks efficiently, and evaluate their performance (Nur et al., 2016; Triyono & Prayitno, 2017). Thus, previous studies collectively show that job stress is not only caused by the volume of work, but also by uncertainty in how the work should be carried out.

Although previous studies have examined workload and role ambiguity separately, several research gaps remain. First, most previous studies focused primarily on private sector organizations, manufacturing companies, or educational institutions, while studies examining public sector organizations at the regional government level remain limited. Second, prior research generally analyzed workload and role ambiguity independently, whereas this study simultaneously examines both variables in influencing work stress. Third, the organizational context of regional government institutions, particularly the Department of Trade and Industry of Gowa Regency, has not been widely explored in previous studies. This is important because public sector organizations often have different organizational structures, bureaucratic systems, and job characteristics compared to private organizations.

Therefore, this study seeks to fill these research gaps by examining the simultaneous effect of workload and role ambiguity on work stress among employees of the Department of Trade and Industry of Gowa Regency. This research is expected to provide more comprehensive empirical evidence regarding the factors influencing work stress in public sector institutions, particularly within regional government agencies.

The novelty of this study lies in its simultaneous testing of workload and role ambiguity as predictors of job stress in a regional public-sector organization. Rather than merely using a different institutional setting, this study highlights how bureaucratic characteristics, such as hierarchical authority, formal procedures, overlapping responsibilities, and accountability demands, may influence employees' stress experiences. By examining the combined effect of task demands and role-related uncertainty, this study contributes to the stress management literature and provides empirical insights for improving human resource management practices in local government institutions.

Based on the explanation above, the author is interested in conducting a study entitled "The Effect of Workload and Role Ambiguity on Work Stress among Employees of the Department of Trade and Industry of Gowa Regency." The selection of this topic is based on direct observations indicating that employees continue to experience relatively high work pressure, which is suspected to arise from excessive workload and unclear role distribution in task implementation. Through this study, the author expects to contribute theoretically to the development of human resource management studies and practically to organizational efforts in reducing employee stress levels and improving work effectiveness within the institution.

Method

This study employs a quantitative approach based on positivist philosophy. As a scientific method, it is empirical, objective, measurable, rational, and systematic, enabling hypothesis testing and the generation of reliable findings to support the development of new knowledge. The term "quantitative" refers to the type of data collected, which consists of numerical data analyzed using statistical techniques (Sugiyono, 2008). This research was conducted at the Department of Trade and Industry of Gowa Regency, located at Jl. Mesjid Raya No. 34, Sungguminasa, Somba Opu District, Gowa Regency, South Sulawesi 92114. The research activities were planned to begin in September and continue until all stages were completed, including the design of research instruments, data collection, data analysis, and preparation of the research report, all carried out at the designated location.

The study utilizes quantitative data in the form of numerical values that can be measured and analyzed statistically. Data were collected through questionnaires distributed to employees, capturing their perceptions regarding workload, role ambiguity, and job stress. These data were then analyzed to examine the relationships and effects between the independent variables and the dependent variable. The data source in this study is primary data, obtained directly from respondents without intermediaries, through questionnaires completed by employees of the Department of Trade and Industry of Gowa Regency. The population in this study consists of all employees within the institution, totaling 45 individuals (Asman, 2021). Given the relatively small population size, this study employs a saturated sampling technique, in which all members of the population are included as the sample. Thus, the total sample size is equal to the population ($n = N = 45$), as suggested (Sugiyono, 2020).

Data collection was conducted using questionnaires and documentation techniques. The questionnaire consisted of structured questions specifically designed to gather information on workload, role ambiguity, and job stress. Respondents were selected based on predefined criteria and were asked to respond using a Likert scale as the measurement instrument. The scale used assigns scores ranging from 1 (strongly disagree) to 5 (strongly agree), reflecting the level of agreement with each statement. The operationalization of variables in this study involves defining measurable indicators for each variable. Workload refers to tasks completed within a specified period, measured by speed, intensity, time adequacy, task quantity, and workload demands. Role ambiguity refers to unclear job expectations, responsibilities, authority, objectives, and procedures. Job stress is a psychological response to work-related pressures, measured through workplace conditions, job demands, organizational support, and the overall work environment.

Data analysis was conducted after all questionnaires were returned, involving scoring and tabulating responses for each variable. The analysis process includes descriptive statistics, data quality testing, classical assumption testing, and hypothesis testing. Descriptive statistics

are used to describe and present data in a way that is easily understood without analyzing relationships between variables (Nasution, 2017). Data quality testing includes validity and reliability tests, where validity assesses whether the instrument accurately measures the intended variables (Arsi, 2021), and reliability evaluates the consistency of the instrument in producing stable results over repeated measurements (Amanda et al., 2019). Furthermore, classical assumption tests were conducted, including normality, multicollinearity, and heteroscedasticity tests. The normality test ensures that the data follow a normal distribution, which is essential for parametric analysis (Wulandari & Junaidi, 2024). Multicollinearity is detected using the Variance Inflation Factor (VIF), where values exceeding 10 indicate serious multicollinearity (Sriningsih et al., 2018). The heteroscedasticity test examines whether residual variances are consistent across observations, with a good regression model requiring homoscedasticity (Sinuhaji, 2014).

Hypothesis testing in this study employs multiple linear regression analysis to examine the relationship between the dependent variable, job stress (Y), and the independent variables, workload (X_1) and role ambiguity (X_2). The regression model used is expressed as $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$, where α represents the constant, β_1 and β_2 are regression coefficients, and e is the error term (Triyanto et al., 2019). The analysis includes the F-test to assess the simultaneous effect of all independent variables on the dependent variable, and the t-test to evaluate the partial effect of each independent variable individually. Additionally, the coefficient of determination (R^2) is used to measure the extent to which the independent variables explain variations in the dependent variable. A higher R^2 value indicates a stronger explanatory power of workload and role ambiguity in predicting job stress, thereby providing a clearer understanding of the factors influencing employee stress within the Department of Trade and Industry of Gowa Regency.

Results

Descriptive Analysis

Descriptive statistics are used to present a general overview of the characteristics of the data obtained in this study. This analysis aims to describe the condition of respondents as well as the distribution of responses to the variables studied without examining the relationships between variables. Through this approach, researchers can understand respondent characteristics based on aspects such as age, length of service, and position. This information is essential as it provides a clear description of the respondents' profiles as the source of research data, thereby facilitating a more accurate and contextual interpretation of the research findings.

Respondent Description

Based on the results of the descriptive statistical analysis, this study involved a total of forty-five employees from the Department of Trade and Industry of Gowa Regency as respondents, with all data declared complete and without any missing values. The characteristics of respondents analyzed include age, length of service, and position.

The data processing results indicate variations in respondent characteristics, as reflected in the mean, median, and mode values for each variable, while the standard deviation values show that the data distribution falls within the normal category. This suggests that respondents come from diverse backgrounds and that the data obtained are appropriate for further analysis.

Respondent Characteristics Based on Age

The classification of respondents based on age was conducted to identify the composition of respondents in this study.

Table 1. Respondents based on age

Age	Number of Respondents	Percentage (%)
30–40	6	13.3%
41–50	27	60.0%
51–60	12	26.7%
Total	45	100.0%

Based on the table, the majority of respondents fall within the age range of 41–50 years, totaling 27 individuals or 60.0%. This is followed by the 51–60 age group with 12 individuals (26.7%), while the smallest group is the 30–40 age range with 6 individuals (13.3%). Overall, these results indicate that respondents are dominated by middle-aged individuals, suggesting that they possess a sufficient level of maturity and experience in performing their work.

Respondent Characteristics Based on Length of Service

The classification of respondents based on length of service aims to describe the level of work experience among respondents in the Department of Trade and Industry of Gowa Regency.

Table 2. Respondents based on length of service

Length of Service	Number	Percentage (%)
1–5 Years	18	40.0%
11–15 Years	5	11.1%
>16 Years	22	48.9%
Total	45	100.0%

Based on Table 2, most respondents have worked for more than 16 years, totaling 22 individuals or 48.9%. Respondents with 1–5 years of service amount to 18 individuals (40.0%), while those with 11–15 years of service represent the smallest group, with 5 individuals (11.1%). In general, these findings indicate that respondents are predominantly individuals with long working tenure, reflecting a relatively high level of work experience in their field.

Respondent Characteristics Based on Position

The classification of respondents based on position aims to determine the proportion of respondents according to the staffing system applied in the Department of Trade and Industry of Gowa Regency.

Table 3. Respondent characteristics based on position

Position	Number	Percentage (%)
Head of Unit	8	17.8%
Staff	37	82.2%
Total	45	100.0%

Based on Table 3, the majority of respondents are staff members, totaling 37 individuals or 82.2%, while those serving as heads of units amount to 8 individuals or 17.8%. Overall, these results indicate that respondents are dominated by employees at the staff level, suggesting that operational roles within the organization are primarily carried out by staff rather than by structural positions such as heads of units.

Variable Description Analysis

Description of Workload Variable (X1)

The workload variable was measured through questionnaires distributed to 45 employees of the Department of Trade and Industry of Gowa Regency. Respondents' answers for each indicator were scored based on the predetermined scoring system, and the results are presented in the following table.

Table 4. Respondents' responses to workload

Indicator	Respondents' Response Scores										Mean	
	1		2		3		4		5			
	F	%	F	%	F	%	F	%	F	%		
X1.1	1	2,2%	1	2.2%	0	0%	36	80.0%	7	15.6%	4.04	
X1.2	0	0%	1	2.2%	2	4.4%	28	62.2%	14	31.1%	4.22	
X1.3	1	2.2%	1	2.2%	2	4.4%	31	68.9%	10	22.2%	4.07	
X1.4	0	0%	1	2.2%	1	2.2%	31	68.9%	12	26.7%	4.20	
X1.5	0	0%	1	2.2%	1	2.2%	30	66.7%	13	28.9%	4.22	
X1.6	1	2.2%	1	2.2%	2	4.4%	29	64.4%	12	26.7%	4.11	
X1.7	1	2.2%	1	2.2%	4	8.9%	34	75.6%	5	11.1%	3.91	
X1.8	0	0%	2	4.4%	2	4.4%	27	60.0%	13	28.9%	4.16	
X1.9	1	2.2%	1	2.2%	3	6.7%	31	68.8%	9	20.0%	4.02	
X1.10	0	0%	2	4.4%	4	8.9%	29	64.4%	10	22.2%	4.04	
X1.11	0	0%	1	2.2%	2	4.4%	31	68.9%	11	24.4%	4.16	
X1.12	0	0%	3	6.7%	1	2.2%	33	73.3%	8	17.8%	4.02	
X1.13	0	0%	2	4.4%	1	2.2%	38	84.4%	4	8.9%	3.98	
X1.14	1	2.2%	1	2.2%	3	6.7%	31	68.9%	9	20.0%	4.02	
X1.15	0	0%	2	4.4%	2	4.4%	30	66.7%	11	24.4%	4.11	
X1												
Average of Workload Variable												4.09

Based on the table of respondents' responses to the workload variable, it can be concluded that, in general, respondents provided high ratings for all indicators studied. This is evident from the dominance of responses in the score categories 4 and 5 across almost all indicators, indicating that most respondents perceive a relatively high level of workload in carrying out their duties. On the other hand, only a small number of respondents gave low ratings (scores 1 and 2), suggesting that respondents' perceptions of workload tend to be relatively consistent.

When viewed from the mean values of each indicator, indicators X1.2 and X1.5 obtained the highest mean values of 4.22, indicating that these aspects are perceived as the most significant contributors to workload by respondents. Meanwhile, the lowest mean value is found in indicator X1.7 with a value of 3.91, although it still falls within the high category. Overall, all indicators have mean values above 3.90, indicating that the level of workload experienced by employees is high and evenly distributed across all measured aspects.

Furthermore, these findings illustrate that employees of the Department of Trade and Industry of Gowa Regency face considerable job demands, both in terms of workload volume, deadlines, and responsibilities that must be fulfilled. The high workload may be influenced by task complexity and the demands for achieving organizational performance targets. Therefore, this condition requires attention from management to ensure a balanced workload distribution in order to prevent negative impacts on employee performance and well-being.

Description of Role Ambiguity Variable (X2)

Based on the study of the role ambiguity variable involving 45 employees of the Department of Trade and Industry of Gowa Regency through questionnaires, respondents' answers for each indicator were obtained based on the scoring system provided in the appendix. The results of respondents' responses are presented in the following table.

Table 5. Respondents' responses to role ambiguity

Indicator	Respondents' Response Scores										Mean
	1		2		3		4		5		
	F	%	F	%	F	%	F	%	F	%	
X2.1	1	2.2%	2	4.4%	10	22.2%	30	66.7%	2	4.4%	3.67
X2.2	0	0%	2	4.4%	5	11.1%	29	64.4%	9	20.0%	4.00
X2.3	0	0%	2	4.4%	4	8.9%	28	62.2%	11	24.4%	4.07
X2.4	0	0%	2	4.4%	9	20.0%	29	64.4%	4	8.9%	3.80
X2.5	0	0%	3	6.7%	7	15.6%	24	53.3%	9	20.0%	3.91
X2.6	0	0%	2	4.4%	10	22.2%	30	66.7%	3	6.7%	3.76
X2.7	0	0%	2	4.4%	6	13.3%	33	73.3%	4	8.9%	3.87
X2.8	0	0%	2	4.4%	6	13.3%	28	62.2%	8	17.8%	3.95
X2.9	0	0%	3	6.7%	3	6.7%	34	75.6%	5	11.1%	3.91
X2.10	0	0%	3	6.7%	4	8.9%	33	73.3%	5	11.1%	3.89
X2.11	0	0%	3	6.7%	3	6.7%	32	71.1%	7	15.6%	3.96
X2.12	0	0%	2	4.4%	3	6.7%	29	64.4%	11	24.4%	4.09
X2.13	0	0%	2	4.4%	3	6.7%	39	86.7%	1	2.2%	3.87
X2.14	0	0%	2	4.4%	3	6.7%	28	62.2%	12	26.7%	4.11
X2.15	0	0%	2	4.4%	2	4.4%	36	80.0%	5	11.1%	3.98
X2											
Average of Role Ambiguity											3.92

Based on the table of respondents' responses to the role ambiguity variable, it can be concluded that respondents generally provided relatively high ratings across all indicators studied. This is reflected in the dominance of responses in the score category 4 for almost all indicators, indicating that most respondents experience a certain level of role ambiguity in carrying out their duties. Meanwhile, responses in the lower score categories (1 and 2) are very minimal, suggesting that respondents' perceptions of role ambiguity tend to be consistent. When examined based on the mean values of each indicator, the highest mean is found in indicator X2.14 with a value of 4.11, indicating that this aspect is most strongly perceived by respondents. Meanwhile, the lowest mean value is found in indicator X2.1 at 3.67, although it still falls within a relatively high category. Overall, the mean values of all indicators range from 3.67 to 4.11, indicating that the level of role ambiguity experienced by employees is relatively high and evenly distributed across all measured aspects.

Furthermore, these results indicate that employees of the Department of Trade and Industry of Gowa Regency still face uncertainty in carrying out their roles, including aspects related to task distribution, clarity of authority, and job responsibilities. This condition may be influenced by several factors, such as ineffective communication, suboptimal coordination among work units, and unclear dissemination of information regarding tasks and functions. In addition, the high level of role ambiguity has the potential to impact employee performance. Unclear roles can lead to confusion in task execution, reduce work effectiveness, and trigger job stress. Therefore, management efforts are needed to improve task clarity, enhance organizational communication, and strengthen coordination among employees to reduce role ambiguity and optimize organizational performance.

Description of Job Stress Variable (Y)

The job stress variable (Y) describes the level of stress experienced by employees in carrying out their assigned duties and responsibilities. Job stress is a psychological condition that arises due to an imbalance between job demands and individual capabilities and is influenced by workload and role ambiguity. The level of job stress can be observed through feelings of pressure, fatigue, anxiety, and decreased concentration at work.

Table 6. Respondents' responses to job stress

Indicator	Respondents' Response Scores										Mean
	1		2		3		4		5		
	F	%	F	%	F	%	F	%	F	%	
Y.1	0	0%	1	2.2%	5	11.1%	34	75.6%	5	11.1%	3.96
Y.2	0	0%	3	6.7%	3	6.7%	22	48.9%	17	37.8%	4.18
Y.3	0	0%	2	4.4%	1	2.2%	32	71.1%	10	22.2%	4.11
Y.4	0	0%	1	2.2%	3	6.7%	34	75.6%	7	15.6%	4.04
Y.5	0	0%	2	4.4%	2	4.4%	30	66.7%	11	24.4%	4.11
Y.6	0	0%	1	2.2%	0	0%	38	84.4%	5	11.1%	4.07
Y.7	0	0%	2	4.4%	3	6.7%	34	75.6%	6	13.3%	3.98
Y.8	0	0%	1	2.2%	4	8.9%	28	62.2%	12	26.7%	4.13
Y.9	0	0%	1	2.2%	4	8.9%	31	68.9%	9	20.0%	4.07
Y.10	0	0%	1	2.2%	5	11.1%	36	80.0%	3	6.7%	3.91
Y.11	1	2.2%	2	4.4%	4	8.9%	27	60.0%	11	24.4%	4.00
Y.12	1	2.2%	1	2.2%	3	6.7%	27	60.0%	13	28.9%	4.11
Y											
Average of Job Stress											4.06

Based on the table of respondents' responses to the job stress variable (Y), it can be concluded that, in general, the level of job stress among employees falls into the high category, with an average (mean) value of 4.06. This indicates that the majority of respondents experience stress in performing their duties and responsibilities.

Further analysis shows that all indicators of the job stress variable have relatively high mean values, ranging from 3.91 to 4.18. The highest mean value is found in indicator Y.2 at 4.18, indicating that this aspect is one of the most strongly perceived contributors to stress among employees. The lowest mean score was 3.91 (Y.10), remaining within the high category and indicating consistently high job stress. Most respondents selected "agree" or "strongly agree," while few chose lower categories, confirming that job stress is commonly experienced among employees in their work activities.

The high level of job stress may be influenced by the magnitude of workload and the presence of role ambiguity. High workload tends to cause both physical and mental fatigue, while role ambiguity creates uncertainty in task execution, leading to confusion and pressure. These two factors collectively contribute to the emergence of various job stress symptoms, such as fatigue, anxiety, and decreased concentration. Thus, it can be concluded that the level of job stress among employees is high and requires serious attention. If not properly managed, this condition may negatively affect employee performance and organizational effectiveness. Therefore, organizational efforts are needed to balance workload and clarify roles and responsibilities in order to reduce the level of job stress experienced by employees.

Research Instrument Testing

Validity Test

The validity test in this study involved three variables, namely workload, role ambiguity, and job stress. The assessment of instrument validity was carried out based on the Item-Total

Statistics table by comparing the calculated r-value (r-count) with the r-table value, or by examining the Cronbach's Alpha value that exceeds the critical alpha threshold, indicating that the statement items are appropriate for use. All validity testing processes were conducted using the Statistical Package for the Social Sciences (SPSS) for Windows version 29 to determine the validity of each item in every research variable.

Table 7. Validity test results

NO	Question Item	R-Count	r-table (df = N – 2, significance level)	Description
1	X1.1	0,306	0,294	Valid
2	X1.2	0,641	0,294	Valid
3	X1.3	0,781	0,294	Valid
4	X1.4	0,537	0,294	Valid
5	X1.5	0,558	0,294	Valid
6	X1.6	0,829	0,294	Valid
7	X1.7	0,779	0,294	Valid
8	X1.8	0,780	0,294	Valid
9	X1.9	0,772	0,294	Valid
10	X1.10	0,729	0,294	Valid
11	X1.11	0,686	0,294	Valid
12	X1.12	0,732	0,294	Valid
13	X1.13	0,600	0,294	Valid
14	X1.14	0,735	0,294	Valid
15	X1.15	0,535	0,294	Valid
19	X2.1	0,654	0,294	Valid
20	X2.2	0,820	0,294	Valid
21	X2.3	0,804	0,294	Valid
22	X2.4	0,651	0,294	Valid
23	X2.5	0,718	0,294	Valid
24	X2.6	0,772	0,294	Valid
25	X2.7	0,799	0,294	Valid
26	X2.8	0,696	0,294	Valid
27	X2.9	0,784	0,294	Valid
28	X2.10	0,731	0,294	Valid
29	X2.11	0,621	0,294	Valid
30	X2.12	0,857	0,294	Valid
31	X2.13	0,526	0,294	Valid
32	X2.14	0,652	0,294	Valid
33	X2.15	0,649	0,294	Valid
53	Y.1	0,737	0,294	Valid
54	Y.2	0,715	0,294	Valid
55	Y.3	0,606	0,294	Valid
56	Y.4	0,635	0,294	Valid
57	Y.5	0,746	0,294	Valid
58	Y.6	0,631	0,294	Valid
59	Y.7	0,725	0,294	Valid
60	Y.8	0,623	0,294	Valid
61	Y.9	0,573	0,294	Valid
62	Y.10	0,756	0,294	Valid
63	Y.11	0,692	0,294	Valid
64	Y.12	0,563	0,294	Valid

Based on the validity test results presented in the table, all statement items for variables X1, X2, and Y are declared valid. This is indicated by the r-count values of each item being greater than the r-table value of 0.294 at the specified significance level. For the workload variable (X1), all items (X1.1 to X1.15) have r-count values ranging from 0.306 to 0.829, thus meeting the validity criteria. Similarly, for the role ambiguity variable (X2), all items (X2.1 to

X2.15) have r-count values between 0.526 and 0.857, indicating that all items are valid. Meanwhile, for the job stress variable (Y), all statement items (Y.1 to Y.12) have r-count values ranging from 0.563 to 0.756, which are also higher than the r-table value. Overall, it can be concluded that all items in the research instrument meet the validity requirements and are suitable for use as data collection tools.

Reliability Test

The reliability test was conducted to assess the consistency and dependability of the research instrument in measuring the studied variables. An instrument is considered reliable if it has a Cronbach's Alpha value ≥ 0.60 . In this study, the reliability test was applied to all variables, namely workload, role ambiguity, and job stress, using the Cronbach's Alpha method.

Table 8. Reliability test results

Variable	Cronbach's Alpha	Reliability Standard	Description
Workload	0.924	0.60	Reliable
Role Ambiguity	0.952	0.60	Reliable
Job Stress	0.887	0.60	Reliable

Based on the reliability test results, all variables in this study exhibit a high level of reliability. This is indicated by the Cronbach's Alpha values of each variable exceeding the minimum threshold of 0.60. The workload variable has a Cronbach's Alpha value of 0.924, indicating excellent reliability. The role ambiguity variable has a value of 0.952, reflecting very high internal consistency. Meanwhile, the job stress variable has a value of 0.887, also indicating strong reliability. Thus, it can be concluded that all instruments used in this study are reliable and suitable as consistent data collection tools.

Classical Assumption Tests

Normality Test

Q-Q Plot Test

To determine whether the data are normally distributed, a Normal Q-Q Plot was used. This test compares the distribution of the observed data with a normal distribution. The decision rule states that if the data points lie around and follow the diagonal line, the data can be considered normally distributed.

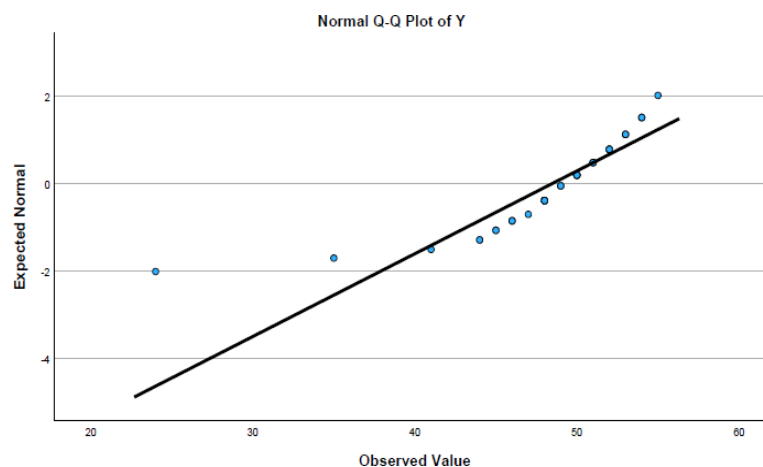


Figure 1. Normality Test

The results indicate that the data for variable Y are normally distributed, as the points are spread around and follow the diagonal line. Therefore, the normality assumption is satisfied, allowing further statistical analysis.

Kolmogorov-Smirnov Test

Table 9. Kolmogorov-smirnov test results

N	46	
Normal Parametera ^{a,b}	Mean	0,0000000
	Std. Deviation	2.09839268
Most Extreme Differences	Absolute	0,117
	Positive	0,117
	Negative	-0,067
Test Statistic		0,117
Asymp. Sig. (2-tailed) ^c		0,141
Monte Carlo Sig. (2-tailed) ^e	Sig	0,125
	Confidence Interval 99 % Lower Bound	0,116
	Upper Bound	0,134

Based on the Kolmogorov-Smirnov test results, the sample size (N) is 46. The mean residual value is 0.0000000 with a standard deviation of 2.09839268. The maximum difference (absolute) is 0.117, with a positive value of 0.117 and a negative value of -0.067. The Kolmogorov-Smirnov statistic is 0.117, and the Asymp. Sig. (2-tailed) value is 0.141, which is greater than 0.05. Additionally, the Monte Carlo Sig. (2-tailed) value is 0.125 with a 99% confidence interval ranging from 0.116 to 0.134. Thus, it can be concluded that the data are normally distributed, and the normality assumption is fulfilled.

Multicollinearity Test

The multicollinearity test determines whether independent variables are highly correlated within the regression model. This test was conducted using Tolerance and Variance Inflation Factor (VIF) values. If Tolerance > 0.10 and VIF < 10, then no multicollinearity problem exists.

Table 10. Multicollinearity test results

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Workload	0,706	1,415
	Role Ambiguity	0,706	1,415

a. Dependent Variable: Job Stress

The results show that both workload and role ambiguity variables have a tolerance value of 0.706 and a VIF value of 1.415. Since the tolerance value is above 0.10 and the VIF value is below 10, it can be concluded that the regression model is free from multicollinearity.

Heteroscedasticity Test

The heteroscedasticity test was conducted using the Glejser test and Scatterplot analysis. The Glejser test results show that all independent variables have significance values greater than 0.05, indicating no significant effect on the absolute residual values.

Table 11. Glejser test

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	T	Sig.
(Constant)	6.791	1.857		3.658	<0,001
Workload	-0,033	0,033	-0,166	-0,996	0.325
Role Ambiguity	-0,055	0,031	0-,301	-1.801	0,079
a. Dependent Variable: ABS_RES					

Table 11 presents the results of the Glejser test for detecting heteroscedasticity. The significance values for workload (0.325) and role ambiguity (0.079) are both greater than the 0.05 threshold, indicating that neither independent variable significantly affects the absolute residuals. Therefore, the regression model is free from heteroscedasticity, suggesting that the residual variance is constant across observations and that the homoscedasticity assumption has been satisfied. Consequently, the regression model is appropriate for further hypothesis testing.

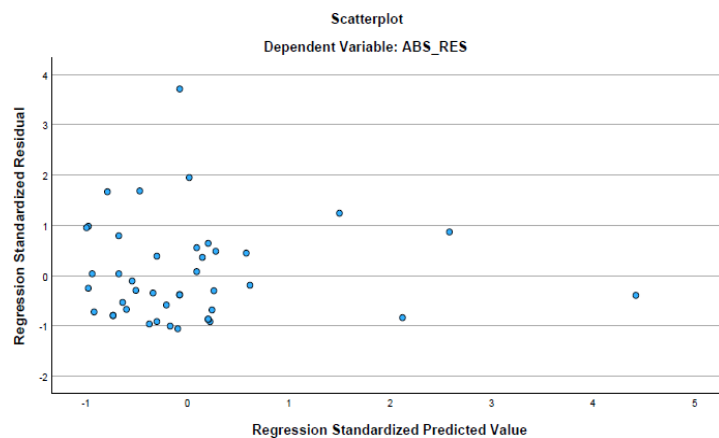


Figure 2. Heteroscedasticity

This result is supported by the Scatterplot graph, where residual points are randomly distributed without forming a specific pattern and are spread above and below zero. Therefore, the model is free from heteroscedasticity.

Hypothesis Testing Results

Multiple Linear Regression Test

Multiple linear regression analysis was used to examine the effect of workload and role ambiguity on job stress.

Table 12. Multiple linear regression results

Model	Koefsien ^a			T	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
1 (Constant)	6,258	3,012		2,078	0,044
Workload	0,221	0,054	0,299	4,095	<0,001
Role Ambiguity	0,491	0,050	0,720	9,844	<0,001
a. Dependent Variable: Job Stress					

The regression equation is formulated as follows:

$$Y = 6.258 + 0.221X_1 + 0.491X_2$$

Where:

Y = Job Stress

X1 = Workload

X2 = Role Ambiguity

The constant value of 6.258 indicates the baseline level of job stress when independent variables remain constant. The workload coefficient (0.221) shows that an increase in workload leads to an increase in job stress. The role ambiguity coefficient (0.491) indicates a stronger positive effect on job stress.

Simultaneous Test (F-Test)

Table 13. F-Test results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1027.501	2	513.751	111.372	<0.001 ^b
Residual	193.743	42	4.613		
Total	1221.244	44			
a. Dependent Variable: Y (Job Stress)					
b. Predictors: (Constant), X2 (Role Ambiguity), X1 (Workload)					

The F-value is 111.372 with a significance level < 0.001, indicating that workload and role ambiguity simultaneously have a significant effect on job stress. Thus, the regression model is considered feasible.

Partial Test (t-Test)

Table 14. t-Test Results

Koeffisien ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6,258	3,012		2,078	0,044
Workload	0,221	0,054	0,299	4,095	<0,001
Role Ambiguity	0,491	0,050	0,720	9,844	<0,001
a. Dependent Variable: Job Stress					

The workload variable has a t-value of 4.095 ($p < 0.001$), indicating a positive and significant effect on job stress. The role ambiguity variable has a t-value of 9.844 ($p < 0.001$), indicating a stronger positive and significant effect.

Coefficient of Determination (R^2)

Table 15. Coefficient of determination results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.917	0.841	0.834	2.14777
a. Predictors: (Constant), Role Ambiguity, Workload				
b. Dependent Variable: Job Stress				

The R value is 0.917, indicating a very strong relationship. The R Square value of 0.841 means that 84.1% of the variation in job stress is explained by workload and role ambiguity. The remaining 15.9% is influenced by other factors outside the model. The Adjusted R Square value is 0.834, while the Standard Error of the Estimate is 2.14777, indicating a relatively good predictive ability of the model.

Discussion

The Effect of Workload on Job Stress

The results of the linear regression analysis show that the workload variable has a regression coefficient (β) of 0.221 with a significance level of < 0.001 . This finding indicates that workload has a positive and significant effect on job stress. A positive coefficient means that every one-unit increase in workload will be followed by an increase in job stress of 0.221 units.

In the workload variable, the indicator with the highest value shows that employees perceive a relatively high level of job demands in completing their tasks. Meanwhile, the indicator with the lowest value indicates that in some situations, task distribution has not been fully equitable. These results confirm that the higher the workload received by employees, the higher the level of job stress they experience. Based on the Job Demands-Resources (JD-R) theory, excessive workload represents a job demand that requires sustained physical and psychological effort. When these demands exceed an individual's available resources, they may lead to physical fatigue, mental pressure, and reduced ability to perform tasks effectively (Demerouti et al., 2001).

This finding indicates that workload has a positive effect on job stress, meaning that higher workload tends to increase the level of stress experienced by employees. This result is consistent with previous research, which found that workload significantly contributes to job stress (Putri & Rahyuda, 2019). However, the present finding should not only be understood as a repetition of previous results, but also as an indication that workload creates stress through several work-related pressures.

Employees may experience higher stress when they are required to complete many tasks within limited time, especially when the job demands exceed their physical and psychological capacity. In this context, workload does not only refer to the quantity of tasks, but also includes time pressure, task complexity, and the limited resources available to complete the work effectively. Therefore, compared with previous studies that mainly emphasize the direct relationship between workload and job stress, this study provides a more critical explanation by showing that workload becomes stressful when job demands are not balanced with adequate employee capacity and organizational support (Putri & Rahyuda, 2019).

The Effect of Role Ambiguity on Job Stress

The results of the linear regression analysis show that the role ambiguity variable has a regression coefficient (β) of 0.491 with a significance level of < 0.001 . This result indicates that role ambiguity has a positive and significant effect on job stress. A positive coefficient means that every one-unit increase in role ambiguity will be followed by an increase in job stress of 0.491 units. In the role ambiguity variable, the indicator with the highest value shows that employees still experience a lack of clarity in the distribution of tasks and responsibilities. Meanwhile, the indicator with the lowest value indicates that some employees have a fairly good understanding of their roles, although they are not yet entirely clear.

This finding is consistent with previous research showing that workload contributes to job stress because excessive job demands require employees to complete many tasks within limited time and may reduce their ability to work effectively (Putri & Rahyuda, 2019). However, job stress in the present study is not only explained by workload, but also by role ambiguity,

which creates uncertainty regarding duties, responsibilities, work procedures, and performance expectations. Unlike workload, which mainly reflects the quantity and intensity of tasks, role ambiguity creates stress through lack of clarity, reduced perceived control, and increased cognitive effort in interpreting job responsibilities.

Therefore, these findings suggest that job stress may arise from both excessive task demands and unclear role expectations, although the mechanisms behind each factor are different (Alblihed et al., 2022). Uncertainty regarding tasks, authority, and responsibilities can create confusion and pressure at work, which ultimately increases job stress. This finding is consistent with previous research showing that role ambiguity has a positive effect on job stress. Unclear tasks, responsibilities, and authority in the workplace can create confusion and psychological pressure for employees, which in turn can increase job stress levels (Triyono & Prayitno, 2017).

The Effect of Workload and Role Ambiguity on Job Stress

The results of the multiple linear regression analysis show that workload and role ambiguity variables simultaneously have a significant effect on job stress. This is indicated by the F-value of 111.372 with a significance level of < 0.001 , which is lower than 0.05. Thus, both independent variables jointly have a significant effect on job stress. In addition, the coefficient of determination (R Square) of 0.841 indicates that 84.1% of the variation in job stress can be explained by workload and role ambiguity, while the remaining 15.9% is influenced by other factors outside the research model. These results indicate that workload and role ambiguity are important factors that simultaneously influence the level of job stress among employees. The higher the workload and the greater the role ambiguity experienced, the higher the level of job stress. Therefore, proper workload management and clear role definition are necessary to minimize job stress levels.

The results also show that workload and role ambiguity have a significant effect on job stress. Partially, workload has been proven to have a positive and significant effect, meaning that the greater the workload received by employees, the higher the level of stress experienced. This condition occurs because high job demands can create both physical and mental pressure. In addition, role ambiguity also has a positive and significant effect on job stress. Uncertainty regarding tasks, authority, and responsibilities causes employees to feel confused in performing their work, thereby triggering an increase in job stress. Simultaneously, workload and role ambiguity together have a significant effect on job stress. This indicates that both variables are important factors influencing employees' stress levels. Therefore, proportional workload management and clear role definition are necessary to reduce job stress levels.

This finding is consistent with previous research showing that workload and role conflict simultaneously have a significant relationship with job stress. These findings reinforce that multiple job-related factors can simultaneously influence the level of stress experienced by individuals (Sajad & Safrizal, 2024).

Conclusion

This study concludes that workload and role ambiguity are important factors contributing to job stress among employees of the Department of Trade and Industry of Gowa Regency. Workload creates stress when job demands exceed employees' available time, energy, and capacity. Meanwhile, role ambiguity increases stress by creating uncertainty regarding duties,

authority, procedures, and performance expectations. These findings indicate that job stress in public-sector organizations is shaped not only by the amount of work employees must complete, but also by the clarity of roles within bureaucratic work systems.

Practically, the organization needs to strengthen human resource management practices to reduce employee stress. This can be done by developing clear job descriptions, ensuring balanced task distribution, conducting periodic workload assessments, and improving communication regarding responsibilities and authority. In addition, employee support programs, such as counseling, stress management training, supervisory assistance, and internal discussion forums, should be established to help employees manage work pressure more effectively.

This study has several limitations. First, it was conducted only at one regional government institution, so the findings may not be fully generalizable to other organizations. Second, this study only examined workload and role ambiguity, while other factors such as leadership style, organizational support, work environment, compensation, and job satisfaction were not included. Third, the use of a quantitative survey limits deeper exploration of employees' personal experiences. Future research is recommended to involve broader organizational settings, additional variables, and mixed-method approaches to provide a more comprehensive understanding of job stress.

Acknowledgment

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