
The Effect of Work Motivation and Teamwork on Employee Performance with Job Satisfaction as an Intervening Variable in Asahan District Office

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Abstract: Employee performance is a strategic determinant of an organization's effectiveness and sustainability, especially in government institutions that have the primary mandate to deliver public services. At the Public Works and Spatial Planning Office (PUTR) of Asahan Regency, organizational issues persist, including suboptimal work motivation, weak team coordination, and differences in job satisfaction among employees, which could hinder performance. This study aims to analyze the influence of work motivation and teamwork on employee performance, both directly and indirectly through job satisfaction as a mediating variable. This quantitative research uses a structured questionnaire on employees of the Asahan Regency PUTR Office. The data were analyzed in SPSS version 27 using validity and reliability tests, classical assumption tests, path analysis, and Sobel tests to assess mediation. The results showed that work motivation and teamwork had a positive, significant effect on job satisfaction, and that job satisfaction had a positive, significant impact on employee performance. Job satisfaction has also been shown to partially mediate the influence of work motivation and teamwork on employee performance. These findings are expected to serve as a basis for government agencies to design performance-improvement strategies that strengthen work motivation, foster teamwork, and sustainably increase job satisfaction.

Keywords: Work Motivation, Teamwork, Job Satisfaction, Employee Performance

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INTRODUCTION

Government agencies are required to provide public services effectively, particularly in infrastructure development. The Asahan Regency Public Works and Spatial Planning Office (PUTR) serves as the leading institution for the provision and maintenance of regional infrastructure, including road networks, drainage systems, irrigation systems, and various other public facilities that support community activities and regional development. Thus, employee performance quality is a strategic factor in determining the success of regional development missions.

Nevertheless, the public works sector still faces considerable challenges. Data for 2023 shows that the good road condition in Asahan Regency has only reached 34.04% of the entire road network. This percentage reflects the poor quality of infrastructure, which can be influenced by the organization's performance and the



human resources involved in planning, implementing, and supervising projects (Final Report of the PUTR Infrastructure Index Study of Asahan Regency, 2024).

The Asahan Regency Infrastructure Index in 2023 also shows a PUTR sector value of 0.686, which is in the medium category, with an average infrastructure index of 0.586. This value indicates the need to improve employee performance to achieve development targets more effectively. Internally, employee performance continues to face various problems, such as weak coordination across fields, suboptimal workload allocation, and inconsistencies in achieving fieldwork targets. This condition highlights human resource issues with implications for the organization's overall performance.

Work motivation is one of the main factors in achieving organizational goals. Motivation is understood as the encouragement that comes from within and outside the individual, which enhances work morale, directs behavior, and maintains business sustainability in achieving work goals. According to Self-Determination Theory, fulfilling the needs for autonomy, competence, and social connectedness increases motivation and ultimately enhances individual performance. Recent empirical findings in the public and service sectors also show that intrinsic motivation has a more substantial influence on performance than extrinsic motivation, as it can foster long-term commitment, creativity, and perseverance (Gagné & Deci, 2005; Hanaysha, 2022; Memon et al., 2023). In addition to motivation, teamwork effectiveness also plays an important role, especially in construction work that demands cross-functional coordination. At the PUTR Office, there are still problems with communication, task distribution, and information synchronization between supervisors and technical implementers, which indicates that the dynamics of teamwork are not optimal.

Job satisfaction is also an important aspect. Complaints related to work facilities, equal distribution of workloads, and opportunities for competency development can reduce employee motivation and commitment. Job satisfaction reflects an individual's assessment of his or her work experience, including role suitability, the quality of social relationships, and the reward system received. According to, job satisfaction is an essential psychological determinant that affects commitment and sustainability of work relationships, especially in the public sector. Previous research has also shown that job satisfaction often serves as a mediating variable, linking the influence of motivation and the work environment on employee performance (Judge & Kammeyer-Mueller, 2022; Memon, 2023). Therefore, increasing job satisfaction is expected to strengthen commitment and encourage more optimal performance.

Based on this description, there are indications of employee performance problems at the Asahan Regency PUTR Office, allegedly influenced by levels of work motivation and teamwork effectiveness, with job satisfaction as a mediating variable. A more comprehensive study is needed to explain the mechanism of this relationship in the context of human resource management in the construction sector at the regional level.

Work motivation refers to the psychological forces that encourage individuals to invest effort, energy, and commitment in achieving organizational goals and in self-development. According to the development of Click or tap here to enter text.the Self-Determination (SDT) theory, work motivation is divided into two main dimensions: intrinsic (internal stimulus, such as a desire to contribute, autonomy, or self-actualization) and extrinsic (external stimuli such as financial incentives,

promotions, or formal recognition) (Ryan & Deci, 2020). The findings confirm that work motivation in the contemporary era does not rely solely on the conventional reward system but is also influenced by meaningful job design (job crafting), the availability of lifelong learning opportunities, and a work atmosphere that promotes work-life harmony.

Teamwork is a process of coordination and interaction between members to achieve a common goal. The "Big Five" framework of teamwork includes team leadership, monitoring each other's performance, helpful behavior, adaptability, and team orientation. Meta-analytical evidence shows the teamwork process is positively correlated with team performance and member satisfaction (Salas et al., 2005; LePine et al., 2008).

Job satisfaction is an individual's holistic evaluation of his or her work experience, encompassing cognitive, emotional, and contextual aspects. According to, satisfaction reflects not only the alignment between job expectations and personal values (such as autonomy and self-development), but also affective responses to the dynamics of the work environment, including teammate support and role clarity (Judge & Kammeyer-Mueller, 2022).

Employee performance refers to the results of work related to the organization's goals and how the work is carried out effectively. According to, performance does not only include work output, but also activities and behaviors that support the achievement of organizational goals. This confirms that performance involves both quantitative and qualitative aspects, including procedural compliance, timely task completion, and contributions to the work process (Campbell, 2020; Motowidlo & Kell, 2021).

Table 1. Summary of Concepts, Dimensions, and Key Indicators

Variable	Brief definition	Compact dimensions/indicators	Key References
Work Motivation (X1)	Psychological forces that encourage individuals to exert effort, energy, and commitment in work	Intrinsic motivation (autonomy, self-actualization); extrinsic motivation (incentives, promotions, recognition); job crafting; continuous learning; Work-Life Balance	Deci & Ryan (2020); Aguinis (2022)
Teamwork (X2)	The process of coordination and interaction between members to achieve common goals	Team leadership; performance monitoring; backup behavior; adaptability; Team Orientation	Salas et al. (2005); LePine et al. (2008)
Job Satisfaction (Z)	A holistic evaluation of the individual, of their work experience	Cognitive aspects; emotional; contextual; conformity of work values; peer support; Role clarity	Judge & Kammeyer-Mueller (2022)
Employee Performance (Y)	Levels of achievement of results and work behaviors that support organizational goals	Work output; the effectiveness of the implementation of duties; punctuality; procedural compliance; Contribution of work behavior	Campbell (2020); Motowidlo & Kell (2021)

Theoretically, work motivation and teamwork play essential roles in shaping a positive work experience, thereby increasing job satisfaction and employee

performance. Work motivation encourages individuals to exert effort and commitment through intrinsic and extrinsic motivation. Effective teamwork through leadership, coordination, and mutually helpful behaviors creates a conducive work environment. Job satisfaction as a holistic evaluation of work experience contributes to the improvement of employee behavior and work outcomes. Employee performance is reflected in the achievement of work outcomes and behaviors that support organizational goals (Ryan & Deci, 2020; Judge & Kammeyer-Mueller, 2012; Sandall et al., 2022).

Table 2. Formulation of Research Hypotheses

Code	Hypothesis
H1	Work motivation positively affects job satisfaction.
H2	Teamwork positively affects job satisfaction.
H3	Job satisfaction positively affects employee performance.
H4	Work motivation positively affects employee performance.
H5	Teamwork positively affects employee performance.
H6	Job satisfaction mediates the relationship between work motivation and employee performance.
H7	Job satisfaction mediates the influence of teamwork on employee performance.

The study positions Work Motivation (X1) and Teamwork (X2) as independent variables that affect Employee Performance (Y), either directly or indirectly through Job Satisfaction (Z) as a mediator. Contact directions: $X1 \rightarrow Z$, $X2 \rightarrow Z$, $Z \rightarrow Y$, $X1 \rightarrow Y$, and $X2 \rightarrow Y$.

The following table summarizes the key references most relevant to explaining the relationships among variables in this study.

No.	Researcher (Year)	Focus	Key findings (very brief)
1	M.A.I. Gazi et al. (2024) – Heliyon (Scopus)	Quantitative surveys; Return	Job satisfaction has a significant positive effect on performance; Work factors trigger performance variations.
2	A.H. Memon et al. (2023) – Sustainability	Quantitative; Return	Significant positive relationship of satisfaction→performance; recommendations to improve welfare & work environment.
3	J. Hanaysha (2016) – Procedia Social and Behavioral Sciences	Survey; SEM	Teamwork and empowerment significantly increase satisfaction—the foundation for improved performance.
4	S. Musyaju et al. (2025) – Journal of Engineering and Technological Sciences	Survey; Descriptive & Correlation Analysis	Compensation, incentives, and job stability determine satisfaction and are closely related to performance indicators (teamwork, problem-solving).
5	J. Jupir et al. (th.) – International Journal of Technology	Survey; PLS-SEM	Significant organizational coordination and culture, emphasizing the importance of teamwork in project outcomes.

RESEARCH METHODS

1. Design and Research Approach

The study uses a quantitative approach with a survey design (cross-sectional). Data was collected once through a questionnaire to measure Work Motivation (X1), Teamwork (X2), Job Satisfaction (Z), and Employee Performance (Y). The measurement scale uses a Likert scale from 1 (strongly disagree) to 5 (strongly agree).

2. Research Location and Time

The research is conducted at the Public Works and Spatial Planning Office (PUTR) of Asahan Regency (Kisaran, North Sumatra). The implementation time follows the research schedule in the thesis document.

3. Population and Sample

The research population consists of all employees of the Asahan Regency PUTR Office, totaling 138 people. The sample size was determined using the Slovin formula, with an error rate (e) of 5%, yielding a minimum sample size of 103 respondents.

Table 3. Sample Size Calculation (Slovin Formula)

Components	Value
Population (N)	138
Error rate (e)	0,05
Sample (n) = $N / (1 + N \cdot e^2)$	≈ 103

4. Research and Operationalization Variables

The independent variables are Work Motivation (X1) and Teamwork (X2). The mediation variable is Job Satisfaction (Z). The dependent variable is Employee Performance (Y). Each variable is measured using 5 Likert-scale items (statements) ranging from 1 to 5.

Table 4. Summary of Variables, Indicators, and Number of Items

Variable	Code	Key indicators (brief)	Number of items
Work Motivation	X1	Incentives; Self-development; Job challenges; Recognition of achievements; Work environment support	5
Teamwork	X2	Collaboration; Internal communication; Task coordination; Conflict resolution; Support between members	5
Job Satisfaction	Z	Comfortable working environment; Awards and appreciation; Workload is suitable; Relationship with superiors	4
Employee Performance	Y	Productivity; Quality of work; Contribution to the team; Initiatives	4

5. Data Collection Techniques

Primary data was obtained through the distribution of questionnaires to respondents. Secondary data is obtained from agency documents and other relevant supporting sources.

6. Test Research Instruments

The quality of the instrument was tested through (a) an item validity test using item-total correlation and (b) a reliability test using Cronbach's alpha. The instrument is declared reliable if the alpha value ≥ 0.70.

Table 5. Summary of Instrument Reliability (Cronbach's Alpha)

Variable	Alpha	Interpretation
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Work Motivation (X1)	0,793	Reliable
Teamwork (X2)	0,849	Reliable
Job Satisfaction (Z)	0,823	Reliable
Employee Performance (Y)	0,892	Reliable

7. Data Analysis Techniques

The analysis was carried out using SPSS (version 27). The stages of analysis include: (1) descriptive statistics; (2) classical assumption test (normality, multicollinearity, heteroscedasticity); (3) regression analysis and path analysis to test the direct influence; and (4) indirect influence testing (mediation) using the Sobel test. As a complement to the journal article, mediation testing can also be reported using bootstrap confidence intervals when available.

8. Pathway and Hypothesis Analysis Models

The path model consists of two equations: (a) Z is regressed on X1 and X2; (b) Y is regressed on X1, X2, and Z. Hypotheses test the influence of X1→Z, X2→Z, X1→Y, X2→Y, Z→Y, as well as the mediating role of Z on the influence of X1→Y and X2→Y.

Table 6. Model Summary and Hypothesis Testing

Submodel	Equations	Hypotheses tested
I	$Z = \beta_0 + \beta_1X_1 + \beta_2X_2 + \epsilon$	H1: X1→Z; H2: X2→Z
II	$Y = \beta_0 + \beta_3X_1 + \beta_4X_2 + \beta_5Z + \epsilon$	H3: X1→Y; H4: X2→Y; H5: Z→Y; H6-H7: Z mediation

RESULTS

The research was conducted among employees of the Public Works and Spatial Planning Office (PUTR) of Asahan Regency, comprising 103 respondents. Data collection was carried out using a questionnaire, and the data were analyzed using SPSS (version 27) with classical assumption tests, t-tests, F-tests, determination coefficients, and path analysis to test the role of job satisfaction as a mediating variable.

a. Characteristics of Respondents

The characteristics of the respondents were presented to describe the general profile of the employees who served as the research sample. The distribution of respondents by gender, age, level of education, and working period.

Table 7. Characteristics of respondents (n = 103)

Characteristics	Categories	Frequency	Presses	Valid Percent	Cumulative
Gender	Male	45	43,7	43,7	43,7
	Women	58	56,3	56,3	100,0
Age	< 25 years old	16	15,5	15,5	15,5
	26-35 years old	14	13,6	13,6	29,1
	36-45 years old	30	29,1	29,1	58,3
	46-55 years old	23	22,3	22,3	80,6
	> 55 years old	20	19,4	19,4	100,0
Final education	High School/K	14	13,6	13,6	13,6

	D3	16	15,5	15,5	29,1
	S1	46	44,7	44,7	73,8
	S2/S3	27	26,2	26,2	100,0
Working period	< 5 years	19	18,4	18,4	18,4
	5-10 years	21	20,4	20,4	38,8
	11-15 years	20	19,4	19,4	58,3
	> 15 years old	43	41,7	41,7	100,0

b. Classical Assumption Test

Classical assumption tests are performed to ensure the regression model meets the basic assumptions. Normality was tested using the Kolmogorov-Smirnov (K-S) test and supported by graphical checks (Histogram and Normal P-P Plot). The heteroscedasticity test was carried out using the Glejser (ABS_RES) approach, and supported by a scatterplot.

b.1. Normality Test

Based on the Kolmogorov-Smirnov test, residual submodel I (dependent variable: job satisfaction) produces Asymp. Sig. (2-tailed) = 0.034. Residual submodel II (dependent variable: employee performance) generates Asymp. Sig. (2-tailed) = 0.009. In practice, the normality evaluation is also supported by P-P Plot graphs and residual histograms, which show the distribution of residuals following a pattern of diagonal lines and near-normal shapes.

Table 8. Summary of residual Kolmogorov-Smirnov normality test

Submodel	N	Test Statistic	Asymp. Sig.	Monte Carlo Sig.	Mean Residual	Std. Dev.
I	103	0,091	0,034	0.340	0,000	1,630
II	103	0,103	0,009	0.208	0,000	1,707

b.2. Heteroscedasticity Test (Glejser/ABS_RES)

The results of the Glejser test showed that in submodel I, the variables of work motivation (Sig. = 0.566) and teamwork (Sig. = 0.235) were not significant for ABS_RES1, indicating no heteroscedasticity. In submodel II, the variables of work motivation (Sig. = 0.900), teamwork (Sig. = 0.190), and job satisfaction (Sig. = 0.878) were not significant to ABS_RES2, so the model was declared free of heteroscedasticity.

Table 9. Summary of heteroscedasticity test (Glejser)

Submodel	Variable	B	t	Sig.	Verdict
I (ABS_RES1)	Work Motivation (X1)	-0,029	-0,575	0,566	Not heteroscedastic
	Teamwork (X2)	0,123	2,300	0,235	Not heteroscedastic
II (ABS_RES2)	Work Motivation (X1)	-0,007	-0,126	0,900	Not heteroscedastic
	Teamwork (X2)	0,074	1,319	0,190	Not heteroscedastic
	Job Satisfaction (X3)	-0,010	-0,154	0,878	Not heteroscedastic

b.3. Hypothesis Testing and Path Analysis

Hypothesis testing was conducted using two submodels. Submodel I examines the influence of work motivation (X1) and teamwork (X2) on job satisfaction (Z). Submodel II tests the impact of X1, X2, and Z on employee performance (Y).

b.3.1. Submodels I: X1 and X2 against Z

The partial test results indicated that work motivation and teamwork had a positive, significant effect on job satisfaction. The work motivation regression coefficient was $B = 1.019$ ($t = 11.489$; $Sig. = 0.000$), while the teamwork coefficient was $B = 0.229$ ($t = 2.747$; $Sig. = 0.007$). Simultaneous tests showed $F = 272.061$ ($Sig. = 0.000$). The values of $R\text{ Square} = 0.845$ and $\text{Adjusted } R\text{ Square} = 0.842$ indicate that the model explains 84.2% of the variation in job satisfaction.

Table 10. Regression coefficient of submodel I (X1, X2 -> Z)

Dependent variable	Predictors	B	Std. Error	t	Sig.
Job Satisfaction (Z)	Work Motivation (X1)	1,019	0,089	11,489	0,000
	Teamwork (X2)	0,229	0,083	2,747	0,007

Table 11. Summary of submodel models I

R	R Square	Adjusted R Square	Std. Error of Estimate
0,919	0,845	0,842	1,08315

b.3.2. Submodel II: X1, X2, and Z against Y

The partial test results showed that work motivation, teamwork, and job satisfaction had a positive and significant effect on employee performance. The regression coefficient of work motivation was $B = 0.854$ ($t = 10.633$; $Sig. = 0.000$), teamwork was $B = 1.043$ ($t = 20.313$; $Sig. = 0.000$), and job satisfaction was $B = 0.786$ ($t = 13.218$; $Sig. = 0.000$). Simultaneous tests showed $F = 665.887$ ($Sig. = 0.000$). The values of $R\text{ Square} = 0.953$ and $\text{Adjusted } R\text{ Square} = 0.951$ indicate that the model explains 95.1%–95.3% of the variation in performance.

Table 12. Submodel regression coefficient II (X1, X2, Z -> Y)

Dependent variable	Predictors	B	Std. Error	t	Sig.
Employee Performance (Y)	Work Motivation (X1)	0,854	0,080	10,633	0,000
	Teamwork (X2)	1,043	0,051	20,313	0,000
	Job Satisfaction (Z)	0,786	0,059	13,218	0,000

Table 13. Summary of submodel II models

R	R Square	Adjusted R Square	Std. Error of Estimate
0,976	0,953	0,951	0,64405

c. Mediation Test (Job Satisfaction as a Mediator)

A mediation test was conducted to determine whether job satisfaction (Z) explains the influence of work motivation (X1) and teamwork (X2) on employee performance (Y). In summary, indirect influence is obtained from the X-> Z-> Y path, while total influence is the sum of direct and indirect influences.

Table 14. Summary of direct, indirect, and total influences (path analysis)

Relationships	Direct Influence	Indirect Influence (via Z)	Total Impact
Work Motivation (X1) - Performance > (Y)	0,915	1,298	2,213
Teamwork (X2) -> Performance (Y)	1,190	0,205	1,395

In addition to the summary of the main path, the mediation path is shown through a supporting regression (the mediation step). For the work motivation pathway, the total coefficient X1->Y is $B = 0.795$ (Sig. = 0.000). After inserting the mediator Z, the coefficient X1 becomes $B = 0.425$ (Sig. = 0.000) and the Z->Y coefficient of $B = 0.466$ (Sig. = 0.001), which indicates the presence of a mediation role. For the teamwork path, the total coefficient X2->Y is $B = 0.817$ (Sig. = 0.000). After inserting the Z mediator, the X2 coefficient becomes $B = 0.615$ (Sig. = 0.000), and the Z->Y coefficient becomes $B = 0.309$ (Sig. = 0.000), both indicating a mediating role.

Table 15. Regression of the mediating test supporters (brief)

Mediation Model	Equations	Key coefficient (B)	t	Sig.	Interpretation
X1 total	$Y \sim X1$	$B(X1)=0.795$	16,296	0,000	Significant total influence
X1 + mediator	$Y \sim X1 + Z$	$B(X1)=0.425$; $B(Z)=0.466$	3,761; 3,594	0,000; 0,001	Mediation (partial)
Total X2	$Y \sim X2$	$B(X2)=0.817$	25,880	0,000	Significant total influence
X2 + mediator	$Y \sim X2 + Z$	$B(X2)=0.615$; $B(Z)=0.309$	13,243; 5,436	0,000; 0,000	Mediation (partial)

DISCUSSION

The Effect of Work Motivation on Job Satisfaction

The study found that work motivation had a positive and significant effect on employees' job satisfaction at the Asahan Regency PUTR Office, as evidenced by a regression coefficient of 1.171. These findings indicate that increased work motivation will be followed by higher job satisfaction among employees. Descriptively, work motivation is in the good category, with an average score of 4.09, mainly driven by the perception that work is beneficial to the community and by the suitability of the workload to employees' abilities. These results confirm that strong work motivation can increase employee job satisfaction in carrying out tasks. The findings of this study align with research indicating that work motivation significantly affects job satisfaction. (Da et al., 2020; Putri et al., 2023; Rulianti, 2023)

2. The Influence of Teamwork on Job Satisfaction

The study found that teamwork had a positive and significant effect on employees' job satisfaction at the Asahan Regency PUTR Office, as evidenced by a regression coefficient of 0.280. These findings indicate that the better the teamwork, the higher the level of employee job satisfaction. Descriptively, teamwork is in the

good category, with an average score of 4.08, mainly supported by shared responsibility for team outcomes and effective communication. In addition, aligning the workload with the employee's abilities enhances comfort and satisfaction at work. The results of this study align with research indicating that teamwork significantly affects job satisfaction (Dash et al., 2014; Handayani & Astuti, 2023; Putri et al., 2023)

3. The Influence of Work Motivation on Employee Performance

The study found that work motivation had a positive and significant effect on the performance of employees at the Asahan Regency PUTR Office, with a regression coefficient of 0.915. These findings indicate that increased work motivation will be followed by improved employee performance. Descriptively, work motivation was in the good category, with an average score of 4.09, driven primarily by the perception that work benefits society. At the same time, employee performance is reflected in compliance with work procedures and regulations. This evidence shows that highly motivated employees tend to carry out their duties and responsibilities optimally. The findings of this study align with the research and indicate that work motivation has a significant effect on employee performance (Perry et al., 2010; Gagné et al., 2015; Widyawati et al., 2025).

4. The Influence of Teamwork on Employee Performance

The study found that teamwork had a positive and significant effect on the performance of employees at the Asahan Regency PUTR Office, with a regression coefficient of 1,190. These findings indicate that increased teamwork effectiveness will be followed by improved employee performance. Descriptively, teamwork is in the good category, with an average score of 4.08, as evidenced by shared responsibility for the team's results and effective communication. Employee performance is also reflected in compliance with applicable procedures and regulations when carrying out duties. The results of this study are consistent with the finding that teamwork has a significant effect on employee performance. (Al-Aziz et al., 2025; Wulansari & Musslifah, 2024; Putrie et al., 2024).

5. The Effect of Job Satisfaction on Employee Performance

The study found that job satisfaction had a positive and significant effect on the performance of employees at the Asahan Regency PUTR Office, with a regression coefficient of 0.733. These findings indicate that increased job satisfaction will be followed by improved employee performance. Descriptively, job satisfaction is in the good category, with an average score of 4.13, mainly driven by the suitability of the workload to employees' abilities. Employee performance is reflected in compliance with applicable procedures and regulations when carrying out duties. The results of this study are consistent with the finding that job satisfaction has a significant effect on employee performance (Hidayah et al., 2025; Sabrina & Ikhsan, n.d.; Xing et al., 2021).

6. The Influence of Work Motivation on Employee Performance Through Job Satisfaction

The results of the Sobel test showed a t-value of 3.761, which was greater than the t-table value of 1.660, indicating that job satisfaction plays a significant mediating role in the relationship between work motivation and employee performance at the Asahan Regency PUTR Office. Path analysis showed that the total influence of work motivation on employee performance was 2.213, which consisted of a direct influence of 0.915 and an indirect influence through job satisfaction of 1.298. These findings indicate that indirect influences are more dominant than

direct ones, suggesting that job satisfaction plays a strategic role in mediating the effect of work motivation on employee performance. This shows that work motivation not only improves performance directly but also increases employee job satisfaction. These findings align with research indicating that job satisfaction plays an essential psychological mechanism in improving employee performance (Judge et al., 2017; Masliah et al., 2001; Prasetya, 2017).

7. The Influence of Teamwork on Employee Performance Through Job Satisfaction

The results of the Sobel test showed a t value of 13.243, which was greater than the t value in Table 1.660, so that statistically job satisfaction met the criteria as a mediating variable in the relationship between teamwork and employee performance. These findings align with research showing that teamwork can improve employee performance through job satisfaction as an intervening variable. However, the results of the path analysis showed that the direct influence of teamwork on employee performance was 1.190 times greater than the indirect influence through job satisfaction (0.205), so job satisfaction did not mediate the relationship. These findings align with research showing that teamwork has a substantial direct impact on performance through coordination, role clarity, and performance monitoring, without always relying on affective factors such as job satisfaction. These findings indicate that increased teamwork has a more direct impact on employee performance than on increased job satisfaction. This condition reflects the characteristics of work in the PUTR Office, which emphasize achieving targets, clear task division, and compliance with work procedures. In the context of a technical and project-based organization, as explained by, performance is more influenced by task performance and the effectiveness of work coordination than by affective factors alone. Thus, although teamwork has a significant effect on employee performance, job satisfaction has not been shown to reinforce this influence indirectly (Al-Aziz et al., 2025; Salas et al., 2018; Motowidlo, 2003).

8. Limitations and Suggestions

This study uses a cross-sectional survey design, so causal conclusions must be drawn carefully. This design limitation has also been recognized in various previous studies. For example, it emphasizes that most teamwork and performance studies use cross-sectional designs, making it difficult to determine the direction of causal relationships between variables. Similarly, it states that the relationship between job satisfaction and employee performance can be reciprocal (reciprocal relationship), so a longitudinal design is needed to ensure the direction of influence (LePine et al., 2008; Judge et al., 2017). In addition, it emphasized that teamwork dynamics evolve, so a longitudinal approach is more appropriate for capturing changes in team behavior and their impact on performance. Therefore, further research is recommended using a longitudinal design to more accurately test causal relationships. In addition, the research was conducted at only one agency, namely the Asahan Regency PUTR Office, so the results could not be widely generalized to other government agencies with different work characteristics. Measuring variables using questionnaires based on respondent perceptions also has the potential to cause subjectivity bias. In addition, the variables studied are still limited to work motivation, teamwork, job satisfaction, and employee performance, so other factors that may affect performance, such as leadership, organizational culture, or reward systems, have not been studied in depth. Research shows that leadership factors and organizational culture play a role in shaping job satisfaction and performance. In

addition, contextual factors, such as organizational support and work climate, can moderate the relationship between teamwork and performance. Therefore, further research is recommended to expand the research object, add objective performance indicators, and develop a research model that incorporates additional variables and a more comprehensive analytical approach (Salas et al., 2018; Judge & Kammeyer-Mueller, 2012; LePine et al., 2008).

CONCLUSION

Work motivation has been proven to have a positive and significant effect on employee job satisfaction at the PUTR Office of Asahan Regency; the higher the employees' work motivation, the higher their job satisfaction. Meanwhile, teamwork shows a positive but insignificant effect on job satisfaction, suggesting that its implementation is not strong enough to increase job satisfaction in practice. Job satisfaction has a significant impact on employee performance, suggesting that higher job satisfaction is associated with improved performance. In addition, work motivation has a positive and significant effect on performance, and solid, coordinated teamwork has a positive and significant impact on improving employee performance.

Indirect influence analysis shows that the impact of work motivation on performance is greater when it operates through job satisfaction; the indirect effect through job satisfaction is greater than the direct effect. These findings indicate that job satisfaction mediates the relationship between work motivation and employee performance. However, job satisfaction does not mediate the impact of teamwork on performance, as the direct effect of teamwork on performance is greater than its indirect effect through job satisfaction.

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