

Enhancing Public Service Effectiveness through Work Discipline and Information Technology Utilization in Archipelagic Local Government Contexts

Andini Aulia¹, Edi Jusriadi² And Sri Andayaningsih³

Management Study Program, Faculty of Economics and Business, Muhammadiyah University of Makassar

Email: ndiniaulia712@gmail.com

Abstract: This study examines the influence of work discipline and the utilization of information technology on the effectiveness of public services at the East Pasimasunggu Subdistrict Office, Selayar Islands Regency. Public service delivery in archipelagic regions faces structural challenges, including geographical dispersion, limited infrastructure, and uneven human resource capacity. A quantitative approach was employed using census sampling, involving all 38 administrative staff as respondents. Data were collected through structured questionnaires, observation, and documentation, and analyzed using multiple linear regression. The results indicate that both work discipline and information technology utilization have a positive and significant effect on public service effectiveness, both partially and simultaneously. Work discipline emerges as the dominant factor, reflecting the importance of punctuality, rule compliance, and responsibility in ensuring consistent service delivery. Meanwhile, the utilization of information technology contributes to improved efficiency, accuracy, and service speed, although its implementation remains constrained by technical and competency limitations. The coefficient of determination (R^2) of 0.713 suggests that 71.3% of the variation in public service effectiveness is explained by the two independent variables, while the remaining 28.7% is influenced by other factors. These findings highlight the need for strengthening employee discipline and enhancing digital capabilities to optimize public service performance, particularly in geographically challenging regions.

Keywords : Work Discipline, Information Technology, Public Service Effectiveness

1. Introduction

Public service delivery is a fundamental function of government that reflects the quality of governance and the state's ability to meet the needs of its citizens. In developing countries, particularly in Indonesia, improving public service effectiveness remains a strategic priority due to persistent challenges in administrative efficiency, human resource capacity, and uneven technological adoption across regions. The effectiveness of public services is not only measured by speed and accuracy but also by transparency, accountability, and responsiveness to community needs. In this context, local government institutions play a crucial role in ensuring that public services are delivered optimally, especially in geographically challenging areas such as archipelagic regions. The East Pasimasunggu Subdistrict Office in Selayar Islands Regency represents one such area where public service delivery faces unique constraints. As a district consisting of several islands with dispersed populations, administrative processes are often hindered by limited infrastructure, transportation barriers, and uneven access to digital technology. According to the Indonesian Central Bureau of Statistics (BPS), the population in the region is spread across multiple small islands, making service accessibility a critical issue. These geographical conditions require government apparatus to demonstrate higher levels of efficiency, discipline, and adaptability in order to ensure that public services remain effective and equitable for all citizens.

One of the key determinants of public service effectiveness is work discipline among civil servants. Work discipline refers to the willingness and ability of employees to comply with organizational rules, procedures, and standards in performing their duties consistently and responsibly. High levels of discipline are associated with punctuality, adherence to work schedules, task completion accuracy, and accountability in service delivery. In contrast, low discipline often results in delays, inefficiencies, and decreased public satisfaction. Prior studies have consistently shown that work discipline has a significant influence on employee performance and service quality in public sector organizations. For instance, disciplined employees are more likely to complete administrative tasks on time and maintain

service consistency, which directly improves public trust in government institutions. In the context of local government offices, especially in rural and remote areas, maintaining discipline can be more challenging due to limited supervision, cultural work habits, and logistical constraints. Nevertheless, discipline remains a critical internal factor that determines how effectively public services are delivered. In archipelagic regions like the Selayar Islands, where physical access to services is already constrained, poor work discipline can further exacerbate service delays and inefficiencies. Therefore, strengthening work discipline is essential to ensuring that public institutions operate effectively despite geographical limitations.

In addition to work discipline, the utilization of information technology (IT) has become an increasingly important factor in improving public service effectiveness. The advancement of digital technology has transformed the way governments operate, enabling more efficient, transparent, and accessible service delivery systems. The implementation of e-government systems allows public institutions to process administrative data more quickly, reduce human error, and improve communication between government offices and citizens. Information technology also supports data integration and real-time information sharing, which are essential for improving decision-making and service coordination. However, the effectiveness of information technology utilization depends largely on the readiness of human resources, infrastructure availability, and organizational support systems. In many local government offices, including those in remote areas, the adoption of digital systems is still limited by inadequate training, unstable internet connectivity, and insufficient technological infrastructure. As a result, some administrative processes continue to be conducted manually, reducing the potential efficiency gains offered by digital transformation. This situation highlights the importance of not only providing technological tools but also ensuring that employees have the necessary competencies to use them effectively.

The integration of work discipline and information technology utilization is particularly relevant in the context of public service reform. These two variables are complementary: discipline ensures that employees consistently follow procedures and complete tasks on time, while information technology enhances the speed, accuracy, and accessibility of service delivery. When combined effectively, they can significantly improve organizational performance and public satisfaction. Conversely, weaknesses in either factor can undermine service effectiveness, even if the other is well-developed. Previous empirical studies have examined the relationship between work discipline, information technology, and public service effectiveness in various contexts. However, there remains a research gap in understanding how these variables interact in geographically isolated and archipelagic regions such as the Selayar Islands. Most existing studies are conducted in urban or semi-urban settings where infrastructure and access to technology are relatively better. Therefore, there is a need for further investigation into how these factors influence public service effectiveness in remote district offices with unique operational challenges.

The East Pasimasunggu Subdistrict Office was selected as the research location due to its strategic and contextual relevance. As a government service center serving a dispersed island population, the office faces daily challenges in ensuring timely and effective administrative services. Observations indicate that issues such as employee punctuality, limited mastery of digital systems, and inconsistent use of information technology still occur in service processes. These conditions may potentially affect the overall effectiveness of public services and highlight the need for systematic evaluation of contributing factors. This study aims to analyze the influence of work discipline and the utilization of information technology on the effectiveness of public services at the East Pasimasunggu Subdistrict Office, Selayar Islands Regency. By focusing on these two variables, the study seeks to provide empirical evidence on how internal behavioral factors and technological adoption contribute to improving service delivery in a challenging geographical context. The findings are expected to contribute both theoretically

and practically. Theoretically, this research enriches the literature on public administration and service management, particularly in relation to human resource behavior and digital transformation in government institutions. Practically, the results are expected to provide insights for policymakers and local government administrators in designing strategies to improve service effectiveness through discipline enhancement and optimal use of technology.

Furthermore, this study contributes to the broader discourse on public sector modernization in Indonesia, especially in remote and island regions. As the government continues to promote digital transformation through e-government initiatives, understanding the real challenges faced at the operational level becomes increasingly important. Strengthening work discipline and improving technological competence among civil servants are essential steps toward achieving more efficient, transparent, and citizen-centered public services. In conclusion, public service effectiveness in remote areas is influenced by multiple interrelated factors, among which work discipline and information technology utilization play significant roles. Given the unique geographical and operational conditions of the East Pasimasunggu Subdistrict Office, examining these variables provides valuable insights into improving governance performance in archipelagic regions. This study therefore seeks to bridge the gap between theoretical expectations of public service reform and the practical realities faced by local government institutions in delivering effective services to the community.

2. Research Methodology

2.1. Research Design

This study employs a quantitative research approach designed to examine the causal relationship between work discipline, information technology utilization, and public service effectiveness. The quantitative method is used to measure variables numerically and to test hypotheses through statistical analysis. This approach is appropriate because the study aims to determine the magnitude and significance of the influence of independent variables on the dependent variable. The research design used is explanatory research, which seeks to explain the relationship between variables through hypothesis testing. Multiple linear regression analysis is applied to determine both partial and simultaneous effects of work discipline and information technology utilization on public service effectiveness.

2.2. Research Location and Time

The research was conducted at the East Pasimasunggu Subdistrict Office, Selayar Islands Regency, South Sulawesi, Indonesia. This location was selected due to its unique geographical characteristics as an archipelagic area, which presents challenges in public service delivery. The study was carried out over a period of two months, from December 2025 to February 2026.

2.3. Population and Sample

The population in this study consists of all employees working at the East Pasimasunggu Subdistrict Office, totaling 38 civil servants and administrative staff. Given the relatively small population size, this study applies a census (saturated sampling) technique, where all members of the population are used as research respondents. Therefore, the sample size is 38 respondents. This approach ensures comprehensive coverage of the population and increases the accuracy of the data, as no elements of the population are excluded from the analysis.

2.4. Data Types and Sources

This study uses two types of data:

a. Primary Data

Primary data were collected directly from respondents using structured questionnaires distributed to all employees of the subdistrict office. The questionnaire measures respondents' perceptions regarding work discipline, information technology utilization, and public service effectiveness.

b. Secondary Data

Secondary data were obtained from official documents, institutional reports, relevant literature, previous studies, and statistical publications. These data are used to support theoretical foundations and strengthen the interpretation of findings.

2.5. Data Collection Techniques

Data collection in this study was carried out using three main techniques:

a. Questionnaire

The questionnaire was designed using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The indicators used include:

- Work Discipline: punctuality, compliance with rules, responsibility, and work behavior
- Information Technology Utilization: ease of use, accessibility, system availability, and processing speed
- Public Service Effectiveness: service speed, service quality, procedural ease, responsiveness, and public satisfaction

b. Observation

Direct observation was conducted at the research location to examine employee behavior, service processes, and the implementation of information systems in daily administrative activities.

c. Documentation

Documentation was used to collect supporting data such as organizational structure, administrative records, service reports, and other relevant institutional documents.

2.6. Operational Definition of Variables

The variables in this study are defined operationally as follows:

- Work Discipline (X1): The level of employee compliance with organizational rules, punctuality, and responsibility in performing duties consistently.
- Information Technology Utilization (X2): The extent to which employees use digital systems and technological tools to support administrative processes and public services.
- Public Service Effectiveness (Y): The degree to which public services are delivered efficiently, accurately, timely, and in accordance with community expectations.

All variables were measured using a Likert scale (1–5).

2.7. Data Analysis Techniques

Data analysis was conducted using Statistical Package for Social Sciences (SPSS) version 27. The analytical methods used include:

a. Instrument Test

- **Validity Test:** Using Pearson Product Moment correlation to measure the validity of each questionnaire item.
- **Reliability Test:** Using Cronbach's Alpha to determine internal consistency, where a value ≥ 0.70 indicates reliable instruments.

b. Classical Assumption Tests

- **Normality Test:** Using Kolmogorov–Smirnov test and P-P Plot to ensure normal distribution of residuals.
- **Multicollinearity Test:** Based on Tolerance (>0.10) and Variance Inflation Factor (VIF < 10).
- **Heteroscedasticity Test:** Using scatterplot and Glejser test to ensure homoscedasticity.
- **Autocorrelation Test:** Using Durbin–Watson statistics to detect correlation between residuals.

c. Multiple Linear Regression Analysis

This study applies the following regression model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where:

Y = Public Service Effectiveness

X₁ = Work Discipline

X₂ = Information Technology Utilization

α = Constant

β₁, β₂ = Regression coefficients

ε = Error term

d. Hypothesis Testing

- **t-test (Partial Test):** To examine the individual effect of each independent variable on the dependent variable.
- **F-test (Simultaneous Test):** To examine the joint effect of independent variables.
- **Coefficient of Determination (R²):** To measure the percentage contribution of independent variables in explaining the dependent variable.

2.8. Ethical Considerations

This study ensures confidentiality of respondents' identities and uses data solely for academic purposes. Participation was voluntary, and respondents were informed about the objectives of the research before data collection.

3. Results and Discussion

3.1 Result

3.1.1 Data Collection Results

Data collection in this study was conducted using a structured questionnaire distributed to all employees at the East Pasimasunggu Subdistrict Office, Selayar Islands Regency. The distribution process ensured complete response coverage, as all questionnaires were returned and properly filled by respondents. The results of the data collection process are presented in Table 4.1 below:

Table 4.1 Descriptive Results of Questionnaire Distribution

Description	Value
Number of respondents	38
Questionnaires distributed	38
Questionnaires returned	38
Response rate	100%
Response accuracy	100%

Source: Primary Data Processed, 2026

The data in Table 4.1 indicate a perfect response rate (100%), which confirms that all respondents participated fully in the study. This condition strengthens the validity of the dataset because there is no non-response bias.

4.1.2 Respondent Characteristics Analysis

The demographic profile of respondents provides important contextual information regarding the composition of employees involved in public service activities. The characteristics analyzed include gender, age, education level, length of employment, and employment status.

a. Gender Distribution

The gender distribution of respondents is presented in Table 4.2.

Table 4.2 Respondent Characteristics by Gender

Gender	Number of Respondents	Percentage
Male	22	57.89%
Female	16	42.11%
Total	38	100%

Source: Primary Data Processed, 2026

The data show that male respondents dominate the sample with 57.89%. This reflects the general composition of administrative personnel in the subdistrict office, where operational and field-based responsibilities are more frequently assigned to male employees.

b. Age Distribution

Respondent age distribution is presented in Table 4.3.

Table 4.3 Respondent Characteristics by Age

Age Group	Number	Percentage
26–35 years	9	23.68%
36–45 years	16	42.11%
46–55 years	9	23.68%
>56 years	4	10.53%
Total	38	100%

Source: Primary Data Processed, 2026

Most respondents are in the productive age group of 36–45 years (42.11%), indicating that the majority of employees are in a mature working phase with relatively stable work performance capacity.

c. Education Level

Education level distribution is presented in Table 4.4.

Table 4.4 Respondent Characteristics by Education Level

Education	Number	Percentage
High School (SMA/SMK)	21	55.26%
Diploma	4	10.53%
Bachelor Degree	13	34.21%
Total	38	100%

Source: Primary Data Processed, 2026

The majority of respondents have a high school education background (55.26%), indicating that administrative capacity development and digital literacy training are highly relevant for improving service quality.

d. Length of Employment

Table 4.5 presents the employment duration of respondents.

Table 4.5 Respondent Characteristics by Length of Employment

Length of Work	Number	Percentage
1–3 years	7	18.42%
4–6 years	16	42.11%
>7 years	15	39.47%
Total	38	100%

Source: Primary Data Processed, 2026

Most employees have worked between 4–6 years, indicating moderate work experience, which is important for understanding institutional routines and service procedures.

e. Employment Status

Employment status distribution is presented in Table 4.6.

Table 4.6 Respondent Characteristics by Employment Status

Status	Number	Percentage
Civil Servant (PNS)	13	34.21%
Contract Employee	22	57.89%
Honorary Staff	1	2.63%
Civil Service Police (Pol PP)	2	5.26%
Total	38	100%

Source: Primary Data Processed, 2026

The dominance of contract employees (57.89%) reflects the reliance on non-permanent staff in supporting public service operations at the subdistrict level.

4.1.3 Instrument Testing Results

a. Validity Test

The validity test confirms that all questionnaire items accurately measure the intended constructs. All variables (work discipline, information technology utilization, and public service effectiveness) show corrected item-total correlation values greater than r-table (0.320), indicating strong construct validity. The detailed results are presented in Tables 4.7, 4.8, and 4.9. Across all items, correlation values range from 0.645 to 0.900, confirming that all indicators are valid and suitable for further analysis.

b. Reliability Test

The reliability test results are presented in Table 4.10.

Table 4.10 Reliability Test Results

Variable	Cronbach's Alpha	Number of Items
X1, X2, Y	0.957 – 0.972	9–12 items

Source: SPSS Output 27, Appendix 3

The Cronbach's Alpha values exceed 0.70, indicating that the research instrument is highly reliable and consistent.

4.1.4 Classical Assumption Tests

a. Normality Test

The Kolmogorov–Smirnov test shows a significance value of 0.200 (>0.05), indicating that residuals are normally distributed.

This is supported by the P-P Plot (Figure 4.1), where data points follow the diagonal line pattern:

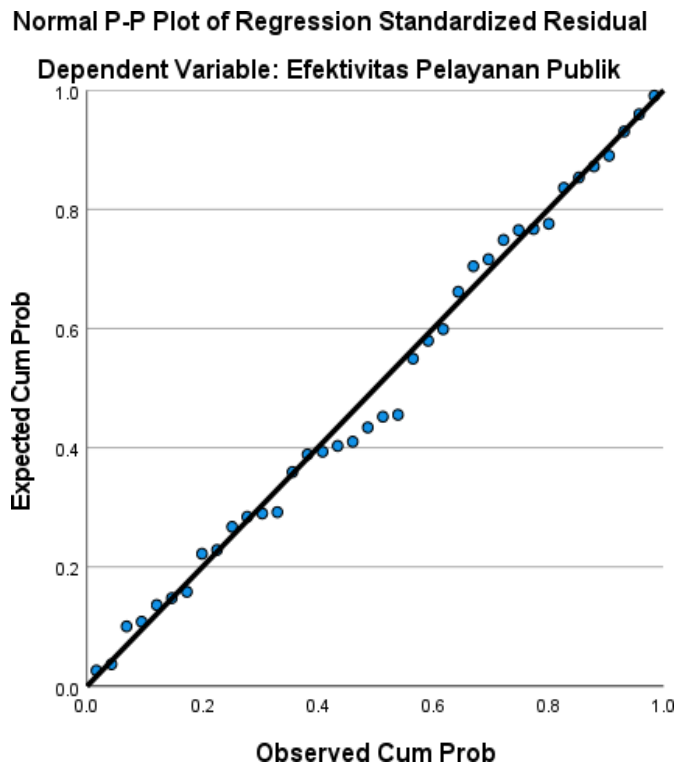


Figure 4.1 Normal P-P Plot Result

Sumber : Output SPSS 27, Lampiran 3

The distribution pattern confirms normality assumptions are met.

b. Multicollinearity Test

Table 4.13 shows Tolerance = 0.969 and VIF = 1.032 for both variables, indicating no multicollinearity issues.

Table: Collinearity Statistics

Model	Tolerance	VIF
(Constant)	—	—
Work Discipline	0.969	1.032
Utilization of Information Technology	0.969	1.032

a. Dependent Variable: Public Service Effectiveness

c. Heteroscedasticity Test

As shown in Table 4.14, significance values for all variables are above 0.05. Scatterplot results (Figure 4.2) also show random distribution of points.

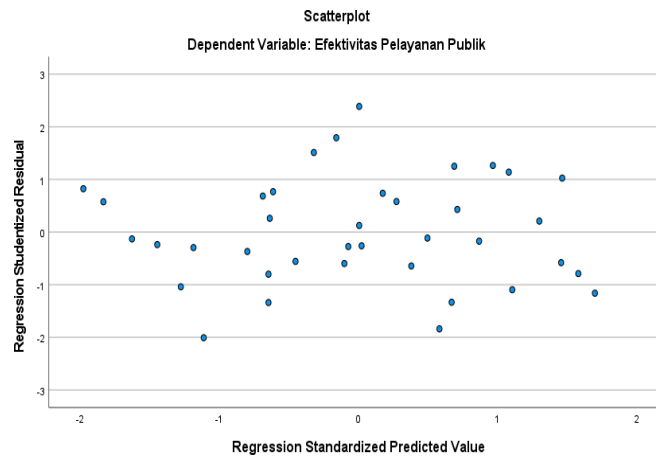


Figure 4.2 Heteroscedasticity Test Result

Sumber : Output SPSS 27, Lampiran 3

This confirms homoscedasticity.

d. Autocorrelation Test

Durbin-Watson value is 1.535, indicating no autocorrelation problem in the regression model (Table 4.15).

4.1.5 Regression Analysis

Multiple linear regression results are presented in Table 4.16.

Table 4.16 Regression Analysis Results

Variable	B	Beta
Constant	-19.214	-
Work Discipline (X1)	0.993	0.715
IT Utilization (X2)	0.699	0.593

Source: SPSS Output 27

The results indicate that both variables positively influence public service effectiveness. Work discipline has a stronger effect compared to information technology utilization.

4.1.6 Hypothesis Testing

a. t-Test Results

Table 4.17 Results of Partial t-Test (Coefficients^a)

Model	t	Sig.
(Constant)	-3.129	0.004
Work Discipline (X1)	7.771	0.000
Utilization of Information Technology (X2)	6.448	0.000

a. Dependent Variable: Public Service Effectiveness (Y)

Source: SPSS Output 27, Appendix 3

- Work Discipline: $t = 7.771, p = 0.000$
- IT Utilization: $t = 6.448, p = 0.000$

Both variables significantly affect public service effectiveness.

b. Coefficient of Determination

Table 4.18 Results of the Coefficient of Determination Test (R^2) – Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.844 ^a	0.713	0.697	5.826

a. Predictors: (Constant), Utilization of Information Technology, Work Discipline

b. Dependent Variable: Public Service Effectiveness

Source: SPSS Output 27, Appendix 3

This means 71.3% of service effectiveness is explained by work discipline and IT utilization, while 28.7% is influenced by other factors.

3.2 Discussion

3.2 .1. The Effect of Work Discipline (X1) on Public Service Effectiveness (Y)

The results of the statistical analysis indicate that Work Discipline has a positive and significant effect on Public Service Effectiveness, as evidenced by a t-value of 7.771 with a significance level of 0.000 (< 0.05). This finding confirms that the proposed hypothesis is accepted, meaning that work discipline plays a crucial role in improving the effectiveness of public service delivery at the Pasimasunggu Timur District Office. Empirically, the findings reveal that the overall level of employee discipline is relatively high. This is reflected in employees' compliance with organizational rules, adherence to standard operating procedures (SOPs), and a strong sense of responsibility in completing tasks and providing services to the community. Most employees demonstrate punctuality in attendance and task execution according to assigned responsibilities, indicating a generally positive disciplinary culture within the institution.

However, the field findings also reveal that certain aspects of work discipline are not yet fully optimal. Some employees still exhibit inconsistencies in punctuality, both in attendance and in completing assigned tasks. In addition, internal supervision mechanisms are not yet fully effective, suggesting the need for stronger monitoring systems to ensure that all employees consistently comply with established standards. These conditions indicate that although work discipline is relatively well implemented, continuous improvement is still required to achieve optimal public service effectiveness. This finding is consistent with human resource management theory, which emphasizes that work discipline is a fundamental determinant of organizational performance, particularly in public sector institutions. Discipline reflects employees' willingness to comply with rules and organizational norms, which ultimately influences service quality and institutional effectiveness.

Empirically, this result aligns with the study conducted by Nur Hasanah, Hardiyansyah, and Nisma Aprini (2024), which found that work discipline significantly affects public service effectiveness in government institutions. Their study highlights that higher levels of employee discipline lead to improved service performance and organizational outcomes. Similarly, Edi Jusriadi (2020) also found that work discipline has a significant positive effect on employee performance in public sector organizations. Therefore, it can be concluded that work discipline plays a critical role in enhancing public service effectiveness. Strengthening disciplinary mechanisms through improved supervision, consistent enforcement of regulations, and the implementation of reward and punishment systems is essential for improving service quality in public institutions.

3.2 .2. The Effect of Information Technology Utilization (X2) on Public Service Effectiveness (Y)

The results of the partial test (t-test) show that Information Technology Utilization has a positive and significant effect on Public Service Effectiveness, with a t-value of 6.448 and a significance level of

0.000 (< 0.05). This indicates that the second hypothesis is also accepted, confirming that information technology is an important determinant in improving public service effectiveness at the Pasimasunggu Timur District Office. Conceptually, the utilization of information technology in public administration plays a vital role in improving efficiency, effectiveness, and transparency in service delivery. Information technology enables faster, more accurate, and integrated administrative processes, thereby reducing bureaucratic barriers that often hinder public service performance. Based on field observations, information technology has been implemented in various administrative activities, including data processing, digital record management, and information dissemination to the public. The use of these technologies has significantly improved administrative efficiency and facilitated communication between government officers and the community.

However, despite its implementation, several challenges remain. These include unstable internet connectivity, damaged computer equipment, and limited digital literacy among some employees. These constraints indicate that although technological infrastructure is available, its optimal utilization has not yet been fully achieved. These limitations affect the overall effectiveness of public service delivery, particularly in terms of speed and consistency of services. Therefore, there is a strong need for capacity-building programs, particularly training in information technology skills, as well as improvements in digital infrastructure to ensure more effective implementation. The findings of this study are consistent with the research conducted by Nur Hasanah et al. (2024), which found that information technology significantly contributes to improving public service effectiveness. Similarly, Widiyanto (2023) also demonstrated that the use of information technology enhances administrative efficiency and accelerates service delivery processes in government institutions. Thus, it can be concluded that information technology utilization is a strategic factor in improving public service effectiveness. The more optimal the use of information technology, the higher the level of efficiency and quality of services provided to the public.

4. Conclusions

4.1. Conclusion

This study aimed to examine the effect of Work Discipline and Information Technology Utilization on Public Service Effectiveness at the Pasimasunggu Timur District Office. Based on the results of multiple linear regression analysis, it is concluded that both independent variables have a positive and significant effect on public service effectiveness. First, Work Discipline has been proven to significantly influence public service effectiveness. Employees who demonstrate higher levels of discipline—reflected in punctuality, adherence to procedures, and responsibility in task execution—contribute directly to more effective and efficient public services. This indicates that human resource discipline remains a fundamental determinant in improving the performance of public sector institutions. Second, Information Technology Utilization also has a significant positive effect on public service effectiveness. The use of digital systems in administrative processes, data management, and public communication enhances service speed, accuracy, and accessibility. However, the effectiveness of technology implementation is still influenced by infrastructure limitations and varying levels of employee digital literacy. Overall, the study confirms that both behavioral factors (work discipline) and technological factors (information systems utilization) jointly play a crucial role in improving the effectiveness of public services in local government institutions.

4.2. Theoretical Implications

This study contributes to public administration and human resource management literature by reinforcing the importance of integrating human behavioral factors and technological adoption in improving service effectiveness. The findings support the theory that organizational performance in the

public sector is not only determined by structural and procedural compliance but also by employee discipline and technological readiness. Furthermore, the study strengthens existing empirical evidence that work discipline remains a core predictor of performance in public organizations, while information technology acts as an enabling factor that accelerates service transformation toward digital governance.

4.3. Practical Implications

From a practical perspective, the findings of this study provide important insights for local government administrators. First, strengthening work discipline through consistent supervision, performance evaluation, and reward–punishment mechanisms is essential to ensure high-quality public service delivery. Second, improving the effectiveness of information technology utilization requires investment in infrastructure, system maintenance, and continuous training programs for employees. Enhancing digital literacy among staff is critical to maximizing the benefits of technological systems in public administration. By integrating both strategies, government institutions can achieve more responsive, efficient, and transparent public services.

4.4. Limitations of the Study

This study has several limitations. First, the research was conducted only at one government office, which may limit the generalizability of the findings to other regions or institutions. Second, the study focuses only on two independent variables, while other potential factors such as leadership style, organizational culture, and motivation were not included. Third, the data were collected using a questionnaire, which may be subject to respondent bias.

5. Recommendations for Future Research

Future studies are recommended to expand the scope of research by including multiple government institutions to improve generalizability. Additionally, further research should consider incorporating additional variables such as leadership effectiveness, employee motivation, organizational culture, and digital governance maturity to provide a more comprehensive model of public service effectiveness. Moreover, qualitative or mixed-method approaches could be applied to gain deeper insights into the behavioral and structural challenges affecting public service performance.

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