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The Influence of Transformational and Democratic Leadership Styles on The Quality of Administrative Services Mediated by Technology Utilization

Susanti¹, Yana Fajriah², Rezki Arianty Akob³

^{1,2,3} Master of Management, Postgraduate Program, STIEM Bongaya, Makassar, Indonesia.

Email: edy.jumady@stiem-bongaya.ac.id

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ABSTRACT

This study aims to analyze the influence of transformational and democratic leadership styles on the quality of administrative services with technology utilization as a mediating variable at the Faculty of Engineering, Hasanuddin University. Primary data were collected through questionnaires distributed to respondents. The population of this study consists of all students of the Faculty of Engineering, Hasanuddin University. To determine a representative sample size, the Slovin formula was applied, resulting in 384 respondents. This research employed a quantitative approach with a survey method, and the data were analyzed using Structural Equation Modeling (SEM) with AMOS software. The findings reveal that transformational leadership does not have a significant direct effect on the quality of administrative services, whereas democratic leadership has a positive and significant effect. Both transformational and democratic leadership styles significantly influence technology utilization, which in turn positively affects the quality of administrative services. Furthermore, technology utilization serves as a significant mediator in the relationship between both leadership styles and the quality of administrative services. These findings underscore the importance of integrating participative and transformational leadership with technology utilization to enhance the quality of administrative services in higher education institutions.

Keywords: Transformational Leadership Style, Democratic Leadership Style, Technology Utilization, Quality of Administrative Services.

I. Introduction

In the era of digital transformation, higher education institutions are increasingly challenged to adapt to rapid changes in their internal and external environments. Universities are no longer viewed solely as centers for knowledge production but are expected to function as modern organizations capable of delivering efficient, responsive, and user-oriented administrative services (Mun & Kwak, 2023). Administrative services have become a critical indicator of institutional governance quality, as they support the smooth operation of academic and non-academic processes. In this context, administrative service is conceptualized as a system that is fast, accurate, adaptive, and responsive to the needs of the academic community through the utilization



of advanced information technologies (Çavuş et al., 2022; Osman et al., 2006). The increasing number of students in state universities in Indonesia, reaching 3.88 million in 2024 (Goodstats, 2024), further intensifies the pressure on the effectiveness and efficiency of administrative services. These challenges are amplified in large faculties with substantial student populations, such as the Faculty of Engineering at Hasanuddin University—one of the largest engineering faculties in Eastern Indonesia. With 34 academic programs and a total of 8,511 active students in the 2024/2025 academic year, the faculty encounters significant administrative workloads, particularly at the undergraduate level, which accounts for 6,583 students. Additionally, the presence of 285 lecturers and 161 administrative staff increases the complexity of coordination across units in service delivery.

Although the student satisfaction survey reports relatively high satisfaction levels—85.75% at the undergraduate level, 83.57% at the master's level, and 85.12% at the doctoral level—the reality on the ground still reveals recurring issues, including slow service response, inconsistent administrative procedures, and suboptimal coordination among service units (Faculty of Engineering UNHAS Data, 2025). Digital innovations such as academic information systems, e-office applications, and online service platforms have indeed been implemented, yet they have not fully addressed the structural and operational administrative issues. One of the critical issues often highlighted is the delay in document approval processes due to the tight schedules of faculty leaders, including meetings, teaching duties, official travel, and assessor roles. This dynamic suggests that administrative challenges require not only technological enhancement but also effective leadership practices.

Within the complex and dynamic environment of higher education, leadership plays a strategic role in shaping employee behavior, setting service policies, and fostering a work culture that supports innovation. Transformational leadership is widely recognized for its ability to enhance organizational performance through inspirational vision, idealized influence, motivational engagement, intellectual stimulation, and individualized consideration (Bass et al., 2003; Change et al., 2019). Numerous studies have shown that transformational leadership promotes job satisfaction, organizational commitment, and service effectiveness (Edirisooriya, 2020; Kariuki et al., 2022; Teoh et al., 2022). Meanwhile, democratic leadership emphasizes participatory decision-making, open communication, and the inclusion of individual contributions in organizational processes (Lewin, 1939; Gunnulfson, 2023). In higher education settings, democratic leadership has been found to strengthen collaboration, foster a sense of ownership, and improve service delivery through inclusive deliberation (Raupu et al., 2021; Alshehhi et al., 2023).

Both leadership styles have strong relevance for administrative services, particularly in digital transformation contexts. Transformational leadership fosters innovative service delivery through creative thinking and a digitally oriented vision, whereas democratic leadership facilitates collaborative environments that support the acceptance of technological innovations (Orabi, 2016; Nedelko & Potočan, 2021). During critical periods such as the COVID-19 pandemic, democratic leadership was even found to enhance administrative resilience and adaptability (Riski et al., 2022). These findings indicate that service quality is shaped not merely by technological tools but by leadership characteristics capable of driving change and addressing resistance to innovation.

The adoption of technology in administrative services has become increasingly essential as Indonesia's internet penetration reached 79.5% in 2024 (APJII, 2024). Digital systems such as NEOSIA, SIMPEG, SIMKEU, and e-Office offer significant support by accelerating service processes, improving data accuracy, and enhancing transparency. However, challenges remain, particularly regarding human resource readiness, organizational culture barriers, and resistance to technological change (Hassan, 2023; Koivunen & Saranto, 2017). From the perspective of contemporary management theory, technology is understood not only as a technical instrument but also as a mediating variable that connects leadership with organizational outcomes, including service quality (Cortellazzo et al., 2019; Chabibie et al., 2021). Transformational leadership enhances technology adoption through intellectual stimulation and inspirational motivation, while democratic leadership accelerates technological acceptance through participatory communication (Nedelko & Potočan, 2021; Fan et al., 2022).

Despite the growing body of literature on leadership and public service performance, empirical studies investigating the simultaneous influence of transformational and democratic leadership styles on administrative service quality—mediated by technology utilization—remain limited, particularly within the context of higher education in Indonesia. Many previous studies examine only a single leadership style or focus on direct relationships without considering mediating mechanisms involving technology (Orabi, 2016; Teoh et al., 2022). Furthermore, research specifically targeting administrative services at the faculty level is still scarce, even though faculties serve as autonomous work units with unique organizational characteristics, bureaucratic structures, and service complexities distinct from central university administration. In the Faculty of Engineering at Hasanuddin University, this research focus is particularly relevant. Although the faculty has implemented several digital administrative systems, challenges persist regarding service effectiveness, inter-unit coordination, and user satisfaction. Thus, it is essential to develop a comprehensive understanding of how transformational and democratic leadership influence service quality, both directly and through the mediating role of technology utilization. Strengthening leadership styles that are adaptive to digital transformation is expected to accelerate improvements in administrative services and enhance stakeholder satisfaction.

The urgency of this study also aligns with national policy frameworks. The Ministerial Regulation of Education, Culture, Research, and Technology No. 30/2021 on Key Performance Indicators for Higher Education emphasizes the importance of digitally based transformation of academic and administrative services as part of public sector reform. Consequently, this research addresses not only institutional needs at the faculty level but also national strategic priorities aimed at establishing efficient, modern, and accountable campuses. Based on theoretical, empirical, and contextual gaps, this study offers novelty by integrating two leadership styles—transformational and democratic—examined simultaneously with technology utilization as a mediating variable in explaining administrative service quality at the faculty level. The findings are expected to contribute significantly to leadership and public administration literature and provide practical implications for improving governance and service quality in higher education institutions.

II. Literature Review and Hypothesis Development

2.1. Leadership Style

Leadership style refers to the behavioral patterns leaders use to influence, motivate, and direct subordinates toward organizational goals (Robbins & Judge, 2019; Yukl, 2013). It reflects the leader's approach in balancing task structure and interpersonal relations (Gibson et al., 2012), and is shaped by how leaders communicate, make decisions, and manage conflict. Leadership styles are dynamic and vary across contexts (Northouse, 2016). Across literature, leadership style is broadly understood as the consistent behavioral pattern through which a leader influences others (Purnomo & Cholil, 2010; Clark, 2015; My, 2025).

2.2. Autocratic Leadership Style

Autocratic leadership centralizes authority and decision-making in the leader, with minimal subordinate participation and one-way communication (Lewin et al., 1939; Robbins & Judge, 2018). Leaders maintain tight control, emphasize obedience and discipline, and rarely delegate authority. This style is effective during crises requiring rapid decisions (Al-Malki & Juan, 2018), but can hinder morale, creativity, and long-term employee development.

2.3. Laissez-Faire Leadership Style

Laissez-faire leadership represents the opposite extreme, where leaders provide substantial autonomy and limited supervision (Northouse, 2016; Avolio & Bass, 2002). Leaders intervene only when

necessary and mainly act as resource providers. While effective for highly skilled and self-motivated teams, it often results in ambiguity, low accountability, and poor performance when applied to less mature teams (Lewin et al., 1939).

2.4. Transactional Leadership Style

Transactional leadership emphasizes exchanges between leaders and subordinates through rewards and sanctions based on performance (Bass & Riggio, 2006; Burns, 1978). It relies on goal clarity, adherence to procedure, and management-by-exception (Judge & Piccolo, 2004). While effective for maintaining stability and achieving short-term results, it tends to limit innovation and long-term development.

2.5. Charismatic Leadership Style

Charismatic leadership involves strong personal charisma, persuasive communication, and the ability to articulate an inspiring vision (House, 1977; Conger & Kanungo, 1998). Charismatic leaders build emotional attachment, optimism, and follower commitment (Al-Malki & Juan, 2018). While effective in mobilizing change, overdependence on the leader's persona may pose risks in sustaining organizational performance.

2.6. Servant Leadership Style

Servant leadership emphasizes service to followers, empathy, ethical conduct, community building, and personal development (Greenleaf, 1970; Spears, 1995). Empirical studies show positive effects on job satisfaction, commitment, and teamwork (Liden et al., 2008; Eva et al., 2019). This approach fosters a supportive organizational climate but requires leaders to balance follower needs with institutional objectives.

2.7. Authentic Leadership Style

Authentic leadership is rooted in self-awareness, transparency, integrity, and relational trust (Avolio & Gardner, 2005). Authentic leaders act consistently with their values and emphasize personal growth and long-term purpose. This style enhances follower engagement and organizational trust but requires continuous self-reflection and ethical consistency.

2.8. Transformational Leadership Style

Transformational leadership—one of the most influential modern theories—focuses on inspiring followers to exceed expectations and embrace change (Burns, 1978; Bass, 1985). Its core dimensions include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Avolio & Bass, 2002). Transformational leadership enhances innovation, commitment, adaptability, satisfaction, and performance (Judge & Piccolo, 2004). In higher education and digital transformation contexts, such leaders act as change agents who empower staff, promote technological adoption, and cultivate a culture of continuous improvement.

2.9. Democratic Leadership Style

Democratic or participative leadership involves shared decision-making, open two-way communication, and empowerment (Lewin et al., 1939; Robbins & Judge, 2018). Leaders facilitate discussion, integrate diverse perspectives, and encourage consensus (Yukl, 2013). This style enhances morale, creativity, decision quality, and commitment to implementation. However, it may slow decision-making and require

competent, engaged staff. In administrative settings, democratic leadership improves service innovation and accelerates acceptance of new technologies.

2.10. Administrative Service Quality

Service quality refers to the extent to which services meet or exceed user expectations (Parasuraman et al., 1988). In higher education administration, service quality affects institutional credibility, student satisfaction, and operational efficiency (Peter et al., 2023; Al-Kilani & Twaissi, 2017). SERVQUAL identifies five dimensions of service quality—reliability, responsiveness, assurance, empathy, and tangibles—widely applied in administrative evaluation (Parasuraman et al., 1988; Bai & Yoon, 2022; Mun & Kwak, 2023). High-quality administration requires accurate and timely processes, responsive staff, competent service providers, empathetic communication, and adequate physical and technological facilities (Esseh et al., 2024; İçli & Anıl, 2014). According to Yidana et al. (2023), service quality in universities is shaped by human resource competence, organizational culture, technology utilization, and stakeholder involvement. Systems Theory (Katz & Kahn, 1978) reinforces that service quality results from systemic interactions across organizational subsystems.

2.11. Technology Utilization

Technology utilization refers to the effective integration of digital systems to support operational and strategic goals (DeLone & McLean, 2003). In administrative services, technology enhances efficiency, accuracy, accessibility of information, communication, and innovation. Adoption of systems such as NeoSIA, e-Office, and other digital platforms reduces bureaucracy, improves data integrity, and accelerates workflows. The Diffusion of Innovation Theory (Rogers, 1995) explains that technology adoption depends on individual and organizational readiness, while the Resource-Based View identifies technology as a strategic asset that strengthens organizational competitiveness (Barney, 1991). Recent studies show that smart campus technologies significantly improve academic and administrative services (Ma, 2023). Institutional Theory (DiMaggio & Powell, 1983) further highlights that universities adopt digital systems not only for efficiency but also to align with external norms, standards, and regulatory pressures.

Based on the theoretical review, previous empirical studies, and the conceptual framework, the hypotheses developed in this study are as follows:

H1: Transformational leadership has a positive and significant effect on administrative service quality

H2: Democratic leadership has a positive and significant effect on administrative service quality.

H3: Technology utilization has a positive and significant effect on administrative service quality.

H4: Transformational leadership has a positive and significant effect on technology utilization.

H5: Democratic leadership has a positive and significant effect on technology utilization.

H6: Technology utilization mediates the effect of transformational leadership on administrative service quality.

H7: Technology utilization mediates the effect of democratic leadership on administrative service quality.

III. Research Method

This study employed a quantitative approach with an explanatory or causal research design. A quantitative method was chosen due to its relevance in hypothesis testing, measuring causal relationships between variables, and generalizing findings through statistical analysis. The explanatory design allowed the investigation of how the independent variables—transformational leadership and democratic leadership—influence the dependent variable, namely administrative service quality, both directly and indirectly through the mediating variable of technology utilization. This approach enabled the identification of relational

patterns and the strength of influence among variables, which is essential for formulating evidence-based policy recommendations. Data collection was conducted through a survey using a structured questionnaire developed based on the operational definitions of the study variables. Respondents provided their perceptions using a five-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.”

The study was conducted at the Faculty of Engineering, Hasanuddin University, located on Poros Malino Km. 6, Bontomarannu, Gowa Regency, South Sulawesi. The research took place over one month in August 2025, covering the preparation of instruments, data collection, data processing, and final reporting. The population consisted of all 8,511 active students enrolled in the 2024/2025 academic year. Students were selected as the population because they represent the primary users of administrative services and provide essential insights into service quality and the influence of leadership and digital systems. Sampling was conducted using Simple Random Sampling, as the population was considered homogeneous and each member had an equal chance of selection. The sample size was determined using the Slovin formula with a 5% margin of error, resulting in a final sample size of 382 respondents.

Three main types of variables were examined in this study: exogenous variables (transformational leadership and democratic leadership), the intervening variable (technology utilization), and the endogenous variable (administrative service quality). Operational definitions were formulated to ensure measurable indicators for each construct. Transformational leadership was assessed through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, adopted from Burns (1978) and Bass (1985). Democratic leadership included indicators of participative decision-making, open two-way communication, empowerment, consensus building, and team skill development. Administrative service quality followed the SERVQUAL dimensions—reliability, responsiveness, assurance, empathy, and tangibles—based on Parasuraman et al. (1988). Technology utilization was measured through operational efficiency, data accuracy, information accessibility, collaboration and communication effectiveness, and service innovation, derived from DeLone and McLean (2003), Rogers (1995), and Barney (1991).

The research instrument was a questionnaire designed specifically based on the indicators of each variable. The instrument development process included drafting questionnaire items, conducting expert validation to ensure content relevance and clarity, and performing a pilot test on a small group of respondents with similar characteristics to the study population. The pilot test enabled the assessment of empirical validity using confirmatory factor analysis and item-total correlations, and reliability through Cronbach’s Alpha or Composite Reliability, with acceptable values above 0.70. The refined and validated questionnaire was then finalized for distribution. Data collection incorporated a combination of literature review, field observation, and questionnaire administration. The literature review helped establish theoretical grounding, while field observation provided contextual understanding. The primary data were collected through an online questionnaire distributed via Google Forms, ensuring accessibility for all students. Secondary data such as the number of active students, satisfaction survey results, and administrative records were obtained from the Faculty of Engineering.

Data analysis was conducted using Structural Equation Modeling (SEM) with SPSS and AMOS 26. SEM was chosen because it allows simultaneous testing of complex causal relationships among latent and observed variables. The analysis included several stages, beginning with initial assumption testing, including validity and reliability checks to ensure data quality. The design of the structural model followed the conceptual framework, incorporating measurement models for each latent variable and the overall structural model. Structural model evaluation involved assessing the significance of path coefficients and testing the formulated hypotheses. Model fit was examined using a range of Goodness-of-Fit indices, such as Chi-Square, probability values, CMIN/DF, GFI, CFI, TLI, and RMSEA. A model was deemed acceptable if it met most recommended fit criteria. Finally, hypothesis testing was conducted to determine whether the proposed causal relationships were empirically supported.

IV. Result and Discussion

4.1. Research Result

At this stage, the data is tested to ensure its validity before further analysis. Testing includes validity and reliability tests. Only data that meets these basic assumptions can be used in the SEM analysis process:

a. Validity Test

Validity testing is a test conducted to determine the extent to which a research instrument can measure the variables it will use. A questionnaire indicator is considered valid if the calculated R value is greater than the R table value, using a significance level of 0.05. Validity tests were conducted on research instruments with 384 respondents using 19 indicator variables in SPSS software, the results of the validity test can be seen in the following table.

Table 1. Validity Test Results

Variables	Indicator	Rhitung	Rtable	Information
Transformational Leadership Style	X1.1	0.855	0.1001	Valid
	X1.2	0.859	0.1001	Valid
	X1.3	0.851	0.1001	Valid
	X1.4	0.874	0.1001	Valid
Democratic Leadership Style	X2.1	0.839	0.1001	Valid
	X2.2	0.885	0.1001	Valid
	X2.3	0.877	0.1001	Valid
	X2.4	0.896	0.1001	Valid
	X2.5	0.870	0.1001	Valid
Utilization of Technology	M1	0.853	0.1001	Valid
	M2	0.853	0.1001	Valid
	M3	0.851	0.1001	Valid
	M4	0.861	0.1001	Valid
	M5	0.880	0.1001	Valid
Quality of Administrative Services	Y1	0.820	0.1001	Valid
	Y2	0.813	0.1001	Valid
	Y3	0.869	0.1001	Valid
	Y4	0.864	0.1001	Valid
	Y5	0.834	0.1001	Valid

In the table above, it shows that the validity test results for 19 indicators show that the calculated R value is greater than the R table value so that it can be It was concluded that all indicators used in this study were valid and could be continued to the next test, namely the reliability test.

b. Reliability Test

After conducting the validity testing stage, the next stage is the reliability testing stage using the Cronbach's alpha value as a parameter, declared reliable when the Cronbach's alpha value is more than 0.6. The reliability test was conducted on the research instrument with 384 respondents using 19 indicator variables in SPSS software, the results of the validity test can be seen in the following table.

Table 2. Reliability Test Results

Variables	Cronbach's Alpha Value	Information
Transformational Leadership Style	0.980	Reliable
Democratic Leadership Style	0.980	Reliable
Utilization of Technology	0.980	Reliable
Quality of Administrative Services	0.980	Reliable

Table 2 shows that the Cronbach's alpha value for each variable is above the minimum Cronbach's alpha coefficient of 0.6, indicating that all variables are reliable. Next, a questionnaire was distributed, which had undergone validity and reliability testing, to obtain data from 384 respondents.

c. Model Design

Model design is the initial stage in this research. The model design consists of a measurement model and a structural model formed based on the research conceptual model, which consists of latent variables and indicator variables. This research consists of four latent variables and 19 indicator variables.

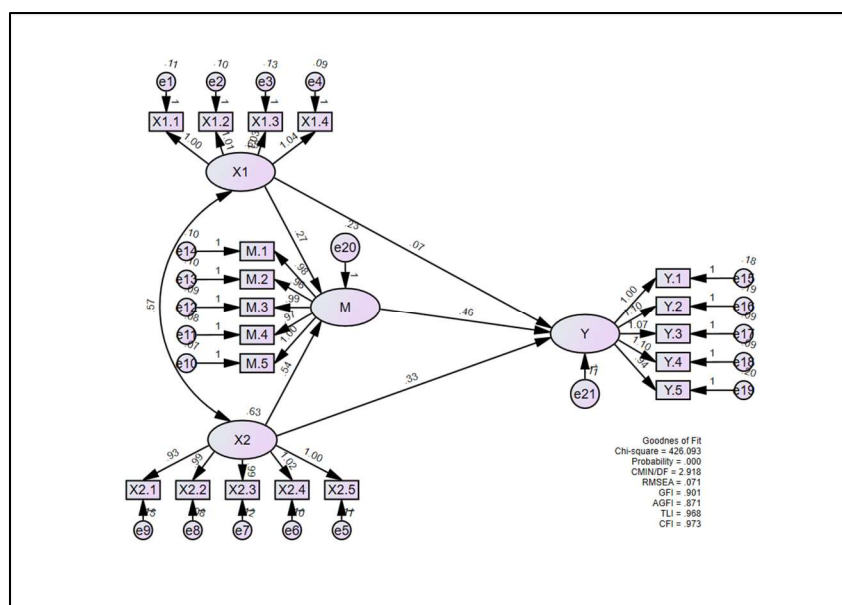


Figure 1. Model Specifications

1) Measurement Model Specifications

Based on Figure 1, the model consists of 4 variables, namely Transformational Leadership Style (X1), democratic leadership style (X2), utilization of technology (M), and also the quality of administrative services (Y). While the indicator variables consist of X1.1, X1.2, X1.3, X1.4, X2.1, X2.2, X2.3, X2.4, X2.5, M.1, M.2, M.3, M.4, M.5, Y.1, Y.2, Y.3, Y.4, and Y.5.

2) Structural Model Specifications

Based on Figure 1, it is known that there is a relationship between the variables, namely M is influenced by X1 and X2, and Y is influenced by X1, X2, and M.

d. Measurement Model Testing

Measurement model is part of the Structural Equation Modeling (SEM) model that describes the relationship between latent variables and their indicators. The main objective of this measurement model is to ensure that the indicators used are reliable and accurate in representing the latent variables being measured.

1) Construct Reliability

Construct reliability testing is a test that aims to determine whether the constructed construct is reliable. A construct reliability test is considered reliable if the Construct Reliability (CR) value is above 0.7. The Construct Reliability (CR) value can be determined using the following formula:

$$Construct\ Reliability = \frac{(\sum\ std\ loading)^2}{(\sum\ std\ loading)^2 + \sum\ error}$$

Information:

$$\begin{aligned} \sum std \text{ loading} &= \text{Standard amount/loading} \\ \sum error &= \text{Number of error variants} \end{aligned}$$

The following are the Construct Reliability (CR) values from the results of testing this research data.

Table 3. Mark Construct Reliability (CR)

Variables	Construct Reliability Value	Critical Value	Information
Transformational Leadership Style	0.891	0.7	Reliable
Democratic Leadership Style	0.905	0.7	Reliable
Utilization of Technology	0.867	0.7	Reliable
Quality of Administrative Services	0.924	0.7	Reliable

In table 3it can be seen based on the value of Construct *Reliability*(CR) for each variable is above 0.7, this shows that the model built in this study is reliable.

2) Average Variance Extracted (AVE)

Average Variance Extracted (AVE) is used to evaluate the validity of each constructed construct, where the expected value is above 0.5. The Average Variant Extracted (AVE) value can be determined using the following formula:

$$\text{Average Variance Extracted} = \frac{\sum std \text{ loading}^2}{\sum std \text{ loading}^2 + \sum error}$$

Information:

$$\begin{aligned} \sum std \text{ loading}^2 &= \text{Standard sum of squares loading} \\ \sum error &= \text{Number of error variants} \end{aligned}$$

Here are the values Average *Variant Extracted*(AVE) on the results of testing the research data.

Table 4. Mark Average Variant Extracted (AVE)

Variables	AVE value	Critical Value	Information
Transformational Leadership Style	0.672	0.5	Valid
Democratic Leadership Style	0.657	0.5	Valid
Utilization of Technology	0.566	0.5	Valid
Quality of Administrative Services	0.711	0.5	Valid

Table 4 shows that the AVE value for each variable is above 0.5, so the variables in this study have good validity and can be relied upon to describe the quality dimensions of each variable.

3) Structural Model Testing

After testing the measurement model, the next step is to test the structural model, which explains the influence of exogenous latent variables on endogenous latent variables (Pering, 2020). Structural model testing involves several steps, including model fit testing, path coefficient testing, and hypothesis testing. In this study, the evaluation values for the structural model using AMOS 26 software are as follows:

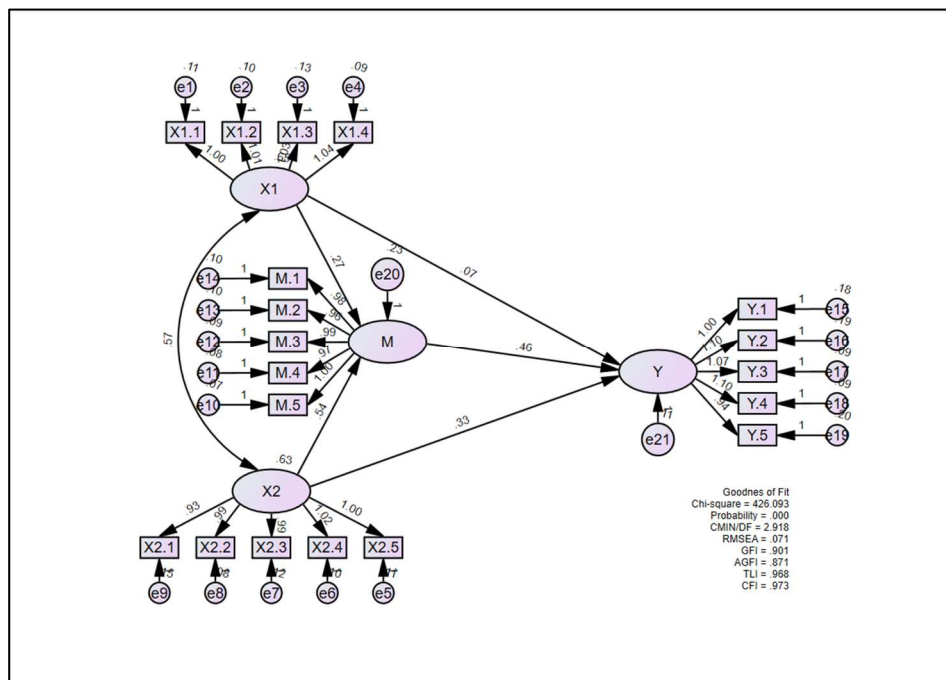


Figure 2. Structural Model Specifications

After conducting structural model testing, model fit testing is carried out to prove that the model has been categorized as fit based on the goodness of fit index before further analysis is carried out. In empirical research, a researcher is not required to meet all goodness of fit criteria. Essentially, using 3 to 4 fit indices can provide adequate evidence of model fit (Ghozali, 2016). The following table shows the fit indices based on the goodness of fit values obtained from the estimated model.

Table 5. Parameter Goodness of Fit

Goodness of Fit Index	Cut-Off Value	Results	Model Evaluation
Chi-Square	As Small As Possible	426,093	Not Fit
Probability	> 0.05	0.000	Not Fit
CMIN/DF	< 2.00	2,918	Not Fit
RMSEA	< 0.08	0.071	Fit
GFI	> 0.90	0.901	Marginal Fit
AGFI	> 0.90	0.871	Not Fit
TLI	> 0.95	0.968	Marginal Fit
CFI	> 0.95	0.973	Fit

Based on Table 5.2, it can be concluded that the model developed in this study is still categorized as not fitting, due to the model's predominantly poor goodness of fit. Therefore, to prevent biased estimation results, a model respecification stage, commonly referred to as re-modifying the model, is necessary to ensure the model fits better.

4) Structural Model Respecification

Model respecification was performed based on the suggested modification indices by adding specific paths between error variances in the model. The following are the suggested modification indices for the research model to achieve goodness of fit and ensure unbiased estimation results. The results of the model modifications are shown in the following figure:

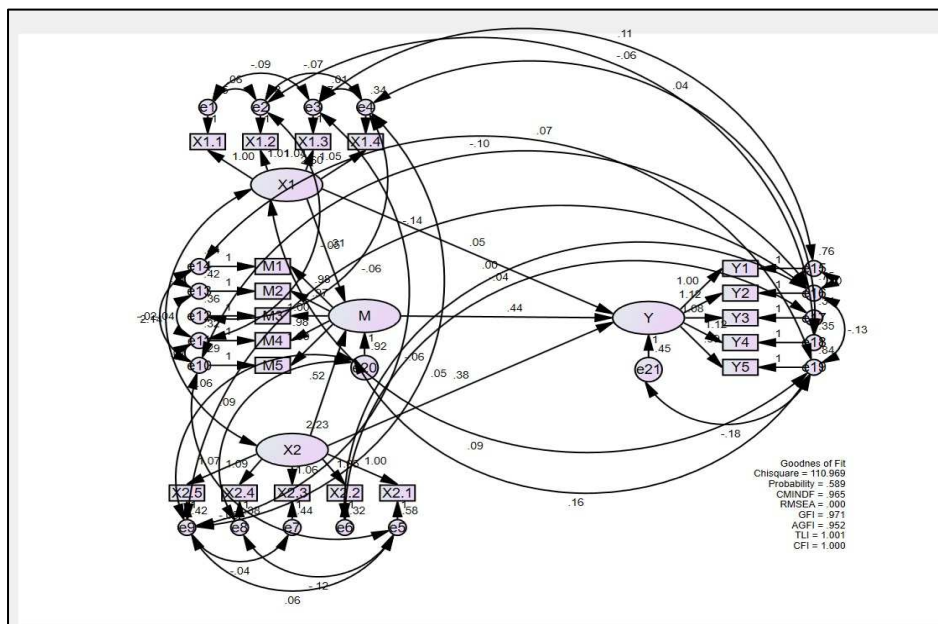


Figure 3. Structural Model Respecification Drawing

Based on the results of the model respecification that has been carried out, the following is a table of index suitability based on the goodness of fit values obtained from the results of the model respecification.

Table 6. Goodness of Fit Parameters of Modified Model Results

Goodness of Fit Index	Cut-Off Value	Results	Model Evaluation
Chi-Square	As Small As Possible	110,969	Fit
Probability	> 0.05	0.589	Fit
CMIN/DF	< 2.00	0.965	Fit
RMSEA	< 0.08	0.000	Fit
GFI	> 0.90	0.971	Fit
AGFI	> 0.90	0.952	Fit
TLI	> 0.95	1,001	Fit
CFI	> 0.95	1,000	Fit

Based on table 6, it can be concluded that the results of the model modifications that have been carried out produce a fit category so that it can be concluded that the model that has been built can be said to be fit and further analysis can be carried out.

5) Hypothesis Testing

Based on the results of the previous analysis, the previously formulated research hypothesis can be analyzed. The criteria for accepting or rejecting the hypothesis will depend on the estimated value and the p-value. A hypothesis is accepted if the p-value is <0.05.

Table 7. Hypothesis Testing and Research

Hypothesis	Estimate	SE	CR	P Values	Evaluation
H1: Transformational leadership style has a positive and significant influence on the quality of administrative services.	0.047	0.061	0.760	0.447	Rejected
H2: Democratic leadership style has a positive and significant influence on the quality of administrative services.	0.383	0.070	5,456	0.000	Accepted
H3: The use of technology has a positive and significant effect on the quality of administrative services.	0.436	0.046	9,457	0.000	Accepted

Hypothesis	Estimate	SE	CR	P Values	Evaluation
H4: Transformational leadership style has a positive and significant influence on the use of technology.	0.313	0.081	3,877	0.000	Accepted
H5: Democratic leadership style has a positive and significant influence on the use of technology.	0.522	0.089	5,863	0.000	Accepted

6) Sobel test

The Sobel test aims to determine the influence of a mediating variable, which in this study is technology utilization. A variable is considered a mediator if it influences the relationship between the independent and dependent variables. The Sobel test can be performed using the following formula.

$$Z = \frac{ab}{\sqrt{(b^2SE_a^2) + (a^2SE_b^2)}}$$

Information:

- Z = value of intervening variable
- SEa = Standard error of coefficient a
- SEb = Standard error of coefficient b
- b = Mediating variable coefficient
- a = Coefficient of independent variable

Sobel's calculation in this study is as follows:

- $X1 = \frac{ab}{\sqrt{(b^2SE_a^2) + (a^2SE_b^2)}}$
X1 = 3.578
- $X2 = \frac{ab}{\sqrt{(b^2SE_a^2) + (a^2SE_b^2)}}$
X2 = 4.987

From the results of the Sobel calculation above, the Z value for Transformational Leadership Style is 3.578 > 1.94 with a p-value of 0.000 with a significance value of 5% indicating that the value is <0.05, which means there is a significant relationship between Transformational Leadership Style and the Quality of Administrative Services through the Utilization of Technology. Meanwhile, in the results of the Sobel test, the Z value for Democratic Leadership Style is 4.987 > 1.94 with a p-value of 0.000 with a significance level of 5% indicating that the value is <0.05. so it can be concluded that there is a significant relationship between Democratic Leadership Style and the Quality of Administrative Services through the Utilization of Technology.

e. Hypothesis Testing Analysis

The hypothesis analysis based on the tests that have been carried out previously is as follows:

- 1) H1: Transformational leadership style has a positive and significant influence on the quality of administrative services.

The first hypothesis in this study stated that transformational leadership style has a positive and significant effect on the quality of administrative services. Based on the results of the tests conducted, it was found that the first hypothesis was rejected. This indicates that transformational leadership style does not significantly influence the quality of administrative services at the Faculty of Engineering, Hasanuddin University. These test results are consistent with research conducted by Fenwick et al. (2019), which showed that although transformational leadership can shape the organizational context, its influence on healthcare practitioners' attitudes towards feedback did not show a significant increase in service quality.

- 2) H2:Democratic leadership style has a positive and significant influence on the quality of administrative services.

The second hypothesis in this study states that a democratic leadership style has a positive and significant effect on the quality of administrative services. Based on the test results, the second hypothesis was accepted. This indicates that a democratic leadership style has a significant effect on the quality of administrative services at the Faculty of Engineering, Hasanuddin University. These test results align with previous research. Research by Ganuga and Muhammed (2022) shows that a democratic leadership style has a positive effect on the quality of health services.

- 3) H3:The use of technology has a positive and significant impact on the quality of administrative services.

The third hypothesis in this study states that technology utilization has a positive and significant impact on the quality of administrative services. Based on the test results, the third hypothesis was accepted. This indicates that technology utilization significantly influences the quality of administrative services at the Faculty of Engineering, Hasanuddin University. These test results align with research conducted by Syahrudin & Jumady (2025), which states that transformational leadership style and the use of technology have a positive and significant influence on the quality of public services.

- 4) H4:Transformational leadership style has a positive and significant influence on the use of technology

The fourth hypothesis in this study states that transformational leadership style has a positive and significant effect on technology utilization. Based on the test results, the fourth hypothesis was accepted. This indicates that transformational leadership style has a significant effect on technology utilization in the Faculty of Engineering, Hasanuddin University. These test results align with research conducted by Trang (2024) revealed that transformational leadership not only influences the perception of ease of use and usefulness of digital technology, but also increases employees' intention to adopt new technology.

- 5) H5:Democratic leadership style has a positive and significant influence on the use of technology

The fifth hypothesis in this study states that democratic leadership style has a positive and significant effect on technology utilization. Based on the test results, the fifth hypothesis was accepted. This indicates that democratic leadership style has a significant effect on technology utilization in the Faculty of Engineering, Hasanuddin University. These test results align with research by Indah et al. (2024) revealed that a democratic leadership style allows team members to share ideas and contribute to finding solutions, including in terms of utilizing information technology.

- 6) H6:The use of technology can mediate the influence of transformational leadership style on the quality of administrative services.

The sixth hypothesis in this study states that the use of technology can mediate the influence of transformational leadership style on the quality of administrative services. Based on the results of the tests that have been conducted, it was obtained that the sixth hypothesis was accepted. This indicates that the use of technology can mediate the influence of transformational leadership style on the quality of administrative services at the Faculty of Engineering, Hasanuddin University. These test results are in line with research conducted by Armiyanti et al. (2023) which shows that transformational leadership can have a positive impact on the performance of educational services supported by the use of technology in the administrative process.

- 7) H7:The use of technology can mediate the influence of democratic leadership style on the quality of administrative services.

The seventh hypothesis in this study states that the use of technology can mediate the influence of democratic leadership style on the quality of administrative services. Based on the results of the tests conducted, the seventh hypothesis was accepted. This indicates that the use of technology can mediate the influence of democratic leadership style on the quality of administrative services at the Faculty of Engineering, Hasanuddin University. These test results align with previous research. Ponorogo and Azizah (2021) also noted that leaders who are able to interact effectively with their teams and encourage participation in the use of technology have the potential to produce better service.

4.2 Discussion

This study aims to analyze the influence of transformational and democratic leadership styles on the quality of administrative services, with the use of technology as a mediating variable at the Faculty of Engineering, Hasanuddin University. The results provide important insights into the dynamics of leadership, technology, and service quality in the context of higher education, which is highly relevant to the field of Human Resource Management (HRM).

a. Interpretation of the Influence of Transformational Leadership Style (X1) on the Quality of Administrative Services (Y)

Transformational leadership style does not have a direct and statistically significant effect on the quality of administrative services at the Faculty of Engineering, Hasanuddin University, with an estimated value of 0.047 and a p-value of 0.000 (> 0.05). This means that although leaders with a transformational style are able to build vision, provide inspiration, and encourage creativity, this is not enough to directly improve the quality of administrative services. From the perspective of Human Resource Management Science, transformational leadership is often considered crucial for motivating employees, increasing commitment, and encouraging innovation (Bass & Riggio, 2006). Transformational leaders inspire subordinates to transcend personal interests for the good of the organization, which should have a positive impact on service quality. However, this finding indicates the complexity in the implementation and perception of transformational leadership style in the academic environment. This finding shows that in the digital era, the vision and motivation of leaders do not automatically transform into service improvements if not accompanied by supporting instruments, especially the use of technology.

Logically, the insignificant influence of transformational leadership may be due to the characteristics of administrative services, which place greater demands on procedural accuracy, speed of service, and certainty of results. Meanwhile, transformational leadership tends to be oriented toward establishing a long-term vision, inspiring motivation, and developing human resources. In other words, administrative staff may feel moral support from their leaders, but when SOPs are unclear or digital systems are suboptimal, service quality remains suboptimal. The results of this study align with the findings of Fenwick et al. (2019), who showed that although transformational leadership can shape the organizational context and influence work dynamics, its influence on healthcare practitioners' attitudes toward feedback does not result in significant improvements in service quality. This means that transformational leadership does not always directly impact service quality but often requires other factors as reinforcement. Therefore, the results of this study broaden the understanding that in the context of higher education administrative services, transformational leadership does not have a significant impact on service quality, as service quality is more determined by technical, system, and procedural factors than solely visionary leadership style.

From a theoretical perspective, the results of this study partially refute the views of Bass & Avolio (2002), who assumed that transformational leadership consistently improves organizational performance and service quality. Other studies, such as those by Kariuki et al. (2022) and Sunaengsih et al. (2023), actually show that transformational leadership has a positive influence on service quality in universities and elementary schools. This difference may be due to differences in methodology, respondent characteristics, or organizational context. At the Faculty of Engineering, Hasanuddin University, administrative staff may already have strong operational standards, so transformational encouragement does not directly change students' perceptions of standardized service quality.

b. Interpretation of the Influence of Democratic Leadership Style (X2) on the Quality of Administrative Services (Y)

Democratic leadership style has a positive and statistically significant effect on the quality of administrative services at the Faculty of Engineering, Hasanuddin University with an estimated value of 0.383 and a p-value of 0.000 (< 0.05). Leaders who adopt a participatory approach, open up dialogue, and allow subordinates to participate in decision-making are able to create a healthier and more collaborative work climate. This climate has direct implications for improving service quality, as evidenced by greater responsiveness, increased accuracy, and a more empathetic attitude toward students. From an HR perspective, democratic leadership is characterized by active employee participation in decision-making,

open communication, and delegation of authority (Lewin et al., 1939). This approach empowers employees, increases ownership, and encourages collaboration, which in turn can improve motivation and performance (Gibson et al., 2012). When administrative staff feel involved in policy formulation and have autonomy in carrying out their duties, they tend to be more committed to providing excellent service.

Logically, this is understandable, as administrative services require cross-unit coordination, clear communication, and active employee participation. Leaders who adopt a democratic style create a space for discussion and participation that makes employees feel valued, thus encouraging them to provide better service. This finding is in line with Ganuga and Muhammed (2022) showed that democratic leadership style has a positive effect on the quality of health services. Thus, the results of this study reinforce previous findings that democratic leadership consistently contributes positively to service performance, including in higher education settings. Similarly, Risqi et al. (2022) found that democratic leadership plays a significant role in public service delivery at universities. This consistency suggests that democratic leadership principles, such as participation and collaboration, are universally effective in improving service quality across various sectors, including higher education. Employee participation theory in modern HRM asserts that involvement in decision-making processes can increase job satisfaction, reduce resistance to change, and encourage innovation at the operational level (Robbins & Judge, 2018). In administrative services, this means staff better understand student needs and can proactively adapt services, contributing to improved perceived quality for service users. These findings confirm that in faculties with high administrative complexity, a democratic approach is particularly relevant because it strengthens employee ownership of the service process.

c. Interpretation of the Influence of Technology Utilization (M) on the Quality of Administrative Services (Y)

The use of technology has a positive and statistically significant effect on the quality of administrative services at the Faculty of Engineering, Hasanuddin University with an estimated value of 0.436 and a p-value of 0.000 (<0.05). These findings underscore the crucial role of technology utilization in improving the quality of administrative services. In the context of HR, the use of information technology (such as the digital systems NeoSia, MBerkas, and e-Office) can improve operational efficiency, data accuracy, and information accessibility (Chabibie et al., 2021). This directly contributes to service quality dimensions such as reliability, responsiveness, and assurance. Logically, the use of technology enables greater efficiency in administrative processes, such as accelerating document validation, reducing recording errors, and improving communication flows. This directly impacts service quality dimensions such as reliability, responsiveness, and assurance. In other words, technology is a tool that enables administrative services to be not only faster, but also more accurate and reliable.

These findings are strongly supported by research by Syahrudin and Jumady (2025), which found that technology utilization has a positive and significant impact on the quality of public services. Bai and Yoon (2022) also found similar evidence regarding the impact of digital transformation on service quality in higher education. This suggests that technology adoption and optimization are effective strategies for improving the quality of administrative services in educational institutions. From a theoretical perspective, the results of this study reinforce information systems theory, such as the DeLone and McLean (2003) model, which asserts that good system and information quality will result in higher user satisfaction. Effective use of technology not only reduces administrative workload but also allows staff to focus on more personal and complex interactions with students, thereby increasing empathy and responsiveness of service.

d. Interpretation of the Influence of Transformational Leadership Style (X1) on Technology Utilization (M)

Transformational leadership style has a positive and statistically significant effect on the use of technology at the Faculty of Engineering, Hasanuddin University with an estimated value of 0.313 and a p-value of 0.000 (<0.05). In HR, transformational leaders have the ability to inspire and motivate employees to embrace change and innovation, including the adoption of new technologies (Edirisooriya, 2020). They create a clear vision of how technology can improve performance and encourage employees to develop the necessary digital skills. Logically, transformational leaders have the ability to inspire and motivate subordinates to be open to change, including technology-based innovation. They are able to create a clear vision of the benefits of technology in improving performance and motivate employees to develop the

necessary digital skills. Through intellectual stimulation and individual attention, transformational leaders can reduce employee resistance to change, thus optimizing technology utilization.

These results are consistent with Trang's (2024) research, which revealed that transformational leadership not only influences perceived ease of use and usefulness of digital technology but also increases employees' intention to adopt new technologies. Nedelko and Potočan (2021) also found a positive relationship between leadership style and digital transformation. This suggests that transformational leaders are key agents in driving technological innovation in organizations. The diffusion of innovation theory (Rogers, 2003) in the context of HRM explains that the role of leaders is crucial in facilitating technology adoption. Transformational leaders can reduce resistance to change, build trust, and provide the resources necessary for successful technology implementation. By encouraging intellectual stimulation and individual attention, they can ensure that staff feel supported in the process of learning and adapting to new systems.

e. Interpretation of the Influence of Democratic Leadership Style (X2) on Technology Utilization (M)

Democratic leadership style has a positive and statistically significant effect on the use of technology at the Faculty of Engineering, Hasanuddin University with an estimated value of 0.522 and a p-value of 0.000 (<0.05). In HR, democratic leadership encourages participation and collaboration, which is highly conducive to technology adoption and utilization. When employees are involved in technology-related decision-making processes, they tend to be more accepting and proactive in using it (Gunnulfsen, 2023). A participatory environment allows staff to share ideas, identify problems, and collaboratively seek the best solutions for utilizing technology. Logically, democratic leadership encourages employee participation, collaboration, and involvement in the decision-making process. In the context of technology adoption, this involvement gives employees a sense of ownership of the system, thereby reducing resistance and increasing their proactivity in using it. An inclusive environment also provides a space for staff to share ideas and collaboratively find solutions to challenges in technology utilization.

This finding is supported by research by Indah et al. (2024), which revealed that a democratic leadership style allows team members to share ideas and contribute to finding solutions, including regarding the use of information technology. This consistency suggests that both transformational and democratic leadership styles play a significant role in encouraging technology adoption and utilization, albeit through different mechanisms. These findings reinforce the participatory leadership theory introduced by Lewin et al. (1939), which demonstrated that a democratic leadership style can increase group member engagement, motivation, and satisfaction. In the context of technology utilization, this principle proves relevant because employee involvement in the decision-making process makes them more receptive and proactive in using digital systems. Thus, participatory leadership theory applies not only to social group dynamics, as in Lewin's initial study, but also has increasingly universal relevance in explaining the successful adoption of technology in modern organizations.

f. Interpretation of the Role of Technology Utilization as a Mediating Variable on the Influence of Transformational Leadership Style (X1) on the Quality of Administrative Services (Y)

The use of technology can positively and significantly mediate the influence of transformational leadership style on the quality of administrative services with a T-Statistics value of 3.578 (> 1.96) and a p-value of 0.000 (< 0.05). This means that although transformational leadership style does not have a direct impact on service quality, its influence becomes significant when through the use of technology. Transformational leaders encourage the adoption of technology, and this technology ultimately improves the quality of administrative services. Logically, transformational leaders are able to foster a spirit of innovation, the courage to try new things, and a willingness to adapt to change. This spirit encourages employees to use digital systems in their work. When technology is utilized, the positive impact of transformational leadership can be realized in the form of faster, more accurate, and more transparent services. In HR, information technology plays a crucial role in improving operational efficiency, data accuracy, and information accessibility, all of which contribute to improved service quality (Chabibie et al., 2021). Digital systems such as NEOSIA, MBerkas, and e-Office used at the Faculty of Engineering, Hasanuddin University, are examples of how technology can automate processes, reduce bureaucracy, and accelerate service delivery.

This finding is consistent with research Syahrudin & Jumady (2025) stated that transformational leadership style and the use of technology have a positive and significant influence on the quality of public

services. Thus, this study strengthens the empirical evidence that the influence of transformational leadership styles must be facilitated by technology. This underscores the global trend where higher education institutions are increasingly relying on technology to improve the efficiency and effectiveness of their administrative services. From a theoretical perspective, these results reinforce Cortellazzo et al.'s (2019) view that technology is an important mediating variable in the relationship between leadership and organizational outcomes. While transformational leadership theory remains relevant, this study broadens its application by emphasizing that its impact on administrative service quality will only be optimal when supported by digitalized work processes. This explains the importance of technology's role as a bridge connecting transformational vision with more effective services.

g. Interpretation of the Role of Technology Utilization as a Mediating Variable on the Influence of Democratic Leadership Style (X₂) on the Quality of Administrative Services (Y)

The use of technology mediates the influence of democratic leadership style on the quality of administrative services at the Faculty of Engineering, Hasanuddin University through the use of technology with a T-Statistics value of 4.987 (> 1.96) and a p-value of 0.000 (< 0.05). Democratic leaders create a participatory atmosphere that makes employees more receptive to digital change. This better adoption of technology ultimately contributes to improved service quality. This shows that democratic influence can occur both directly and indirectly through the role of technology. Logically, democratic leadership creates a space for employee participation in the implementation of new technology. This involvement gives employees a sense of ownership over the system, making them more enthusiastic about using it. The use of technology then drives faster, more responsive, and more transparent service delivery, making the democratic style's impact on service quality even more evident.

This finding is in line with research Ponorogo and Azizah (2021) also noted that leaders who are able to interact effectively with their teams and encourage participation in the use of technology have the potential to produce better service. Thus, this study strengthens previous results while expanding their application to the higher education administration environment in Indonesia. From a theoretical perspective, these results reinforce participatory theory (Lewin, 1939), which asserts that participation and collaboration are key to organizational success. This research expands the application of this theory by emphasizing that a democratic style is more effective when combined with technological support, resulting in improved quality of complex administrative services.

V. Conclusion

This study examined the effects of transformational and democratic leadership styles on administrative service quality, with technology utilization as a mediating variable at the Faculty of Engineering, Hasanuddin University. The findings demonstrate that transformational leadership does not directly improve service quality, yet it significantly enhances technology utilization, which in turn positively influences service outcomes—indicating a full mediation effect. Democratic leadership, however, shows both direct and indirect positive effects on service quality, suggesting that participatory practices strengthen administrative performance by fostering employee engagement and facilitating smoother digital adoption. Additionally, technology utilization emerges as a key determinant of service quality, confirming the pivotal role of digital systems in improving speed, accuracy, and transparency of administrative processes in higher education.

Theoretically, this study reinforces the importance of integrating leadership theory with technology adoption models, demonstrating that leadership influences service outcomes not only through direct behavioral mechanisms but also through digital mediation pathways. These findings extend leadership literature by highlighting the distinct dynamics between transformational and democratic leadership in digitally mediated environments. Managerially, the results emphasize that leaders must strategically align their leadership behaviors with institutional digital transformation agendas. Transformational leaders should channel their visionary inspiration toward active technological advocacy, while democratic leaders should leverage participatory practices to reduce resistance and enhance staff ownership of digital systems.

Institutions should invest in continuous digital skill development, integrate feedback-based decision-making, and ensure system interoperability to strengthen the overall quality of administrative services.

Several limitations provide opportunities for future research. First, the study focused solely on students as respondents; including lecturers and administrative staff in future studies may yield a more comprehensive understanding of service dynamics. Second, the cross-sectional design limits the ability to observe changes over time, suggesting the need for longitudinal studies to assess evolving leadership–technology–service relationships. Third, the study was conducted within a single public faculty context; expanding to multiple institutions or regions would enhance generalizability. Future research may also explore additional mediators or moderators such as organizational culture, digital competence, employee motivation, or specific SERVQUAL dimensions. Qualitative approaches such as interviews may provide deeper insights into why transformational leadership does not directly influence service quality and how digital culture shapes administrative behaviors in higher education.

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