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The Influence of Digital Competence and Transformational Leadership on State Civil Apparatus Performance through Adaptability in the Local Government of North Luwu Regency

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Abstract

E-government or digital government is a strategic step to address the increasingly complex demands of society and the ever-changing dynamics of the global environment. Therefore, the State Civil Apparatus (ASN) is required to strengthen its digital competency. The main objective of this study is to determine and analyze the influence of Digital Competence and Transformational Leadership on ASN Performance with Adaptability as an intervening variable in the Local Government of North Luwu Regency. This study uses a quantitative approach with a causal explanatory design. The population in this study are ASN who are actively serving in the Government of North Luwu Regency. The sampling technique used is Proportional Stratified Random Sampling. The main instrument used in this study to collect data is a structured questionnaire that has been tested for validity and reliability of the instrument. The collected data will be analyzed descriptively and verifiably. The data analysis technique in this study uses Structural Equation Modeling (SEM) with the help of SmartPLS software. The results of the study showed a significant positive influence between digital competence and transformational leadership on ASN adaptability, a significant positive influence was also shown between transformational leadership on ASN performance, and a positive and significant relationship between adaptability and ASN performance. Different findings were shown between digital competence and ASN performance where the value of the variable relationship was positive but not significant.

Keywords: Digital_Competence; Transformational_Leadership; Adaptability; Civil_Servant_Performance; North_Luwu

1. Introduction

Digital transformation has become the dominant paradigm that is reshaping public sector operations globally, encouraging governments in various countries to adopt information and communication technologies to improve efficiency, transparency, and the quality of public services [1]. This phenomenon, often referred to as e-government or digital government, is no longer merely an option, but rather a strategic necessity to address the increasingly complex demands of society and the ever-changing dynamics of the global environment [2].

In Indonesia, the push for bureaucratic modernization is legally affirmed through Law Number 20 of 2023 concerning the State Civil Apparatus (ASN), which mandates the development of a professional ASN that is adaptive to changes in the strategic environment. This policy is reinforced by a Circular Letter from the Minister of Administrative and Bureaucratic Reform, which emphasizes the urgency of strengthening ASN digital competencies as a foundation for a world-class bureaucracy.

However, the success of implementing this digital transformation agenda is highly dependent on the readiness of human resources within it, where individual competence to manage and utilize technology is the main determining factor [3]. Therefore, strengthening the capacity of government officials, particularly at the local government level, such as in North Luwu Regency, is crucial to ensuring that technology investments positively impact overall organizational performance.

The research gap lies in understanding how digital competencies and specific leadership styles interact and translate into improved performance through intermediary variables such as individual adaptability. Improved digital competencies do not automatically guarantee improved performance if they are not accompanied by appropriate leadership skills. ASN to adapt to new work processes, evolving technologies, and dynamic task demands [4].

Similarly, transformational leadership that seeks to inspire and motivate subordinates may not be effective ifASNdoes not have the adaptive capability to respond to changes initiated by leadership [5]. Consequently, studies that integrate these factors into a comprehensive mediation model, particularly in the context of local government in Indonesia, are still very limited, leaving important questions about how these factors correlate to produce optimal performance.

Previous research has found that digital competence, which includes the ability to use digital technology for work tasks, is positively related to job performance. ASN indirectly through adaptability as a mediating variable, where adaptability refers to the dynamic ability to adjust to changes in the work environment [6]. Research also shows that the inspirational motivation dimension in transformational leadership increases interpersonal adaptability, enablingASNto collaborate effectively amidst uncertainty, which directly contributes to improved contextual performance such as team initiative and support [7].

Thus, theoretical framework allows for a richer analysis of how technology, leadership, and individual factors synergistically shape performance outcomes in bureaucratic environments. The theoretical framework of this study can be clearly described as follows:

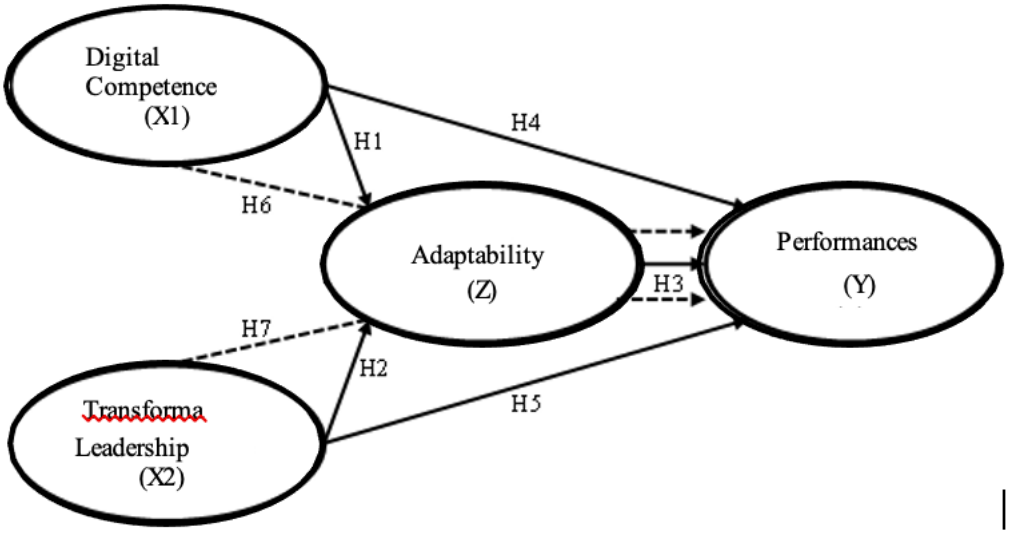

Figure 1. Conceptual Framework

H1. It is suspected that digital competence has a positive and significant effect on adaptability.

This relationship is supported by the finding that digital competence not only improves technical skills, but also strengthens the emotional adaptability dimension, where ASN can better manage uncertainty through broader access to information and digital network support [6].

H2. It is suspected that transformational leadership has a positive and significant influence on adaptability.

Transformational leadership is a leadership style that focuses on inspiration, motivation, and intellectual stimulation to encourage change and innovation, and has consistently been shown to be a strong antecedent for ASN adaptability [8].

H3. It is suspected that adaptability has a positive and significant effect on ASN performance.

Adaptability or an individual's ability to adjust flexibly to changes in the work environment, task demands, and interpersonal pressures, has a positive and significant relationship with ASN performance, where performance refers to work results that include task dimensions and contextual behavior [9].

H4. It is suspected that digital competence has a positive and significant effect on ASN performance.

Digital competence has a positive and significant relationship with ASN performance, where performance is measured through dimensions such as productivity, work quality, and innovation [10]. When ASN are skilled in digital technology, they can access information resources in real-time, which improves decision-making and creativity, thus having a positive impact on task and contextual performance.

H5. It is suspected that transformational leadership has a positive and significant influence on ASN performance.

Research shows that transformational leaders improve performance through increased commitment and intrinsic motivation, where dimensions such as inspirational motivation and intellectual stimulation encourage ASN to exceed basic task expectations [11].

H6. It is suspected that digital competence has a positive and significant effect on ASN performance through adaptability.

Previous research found that digital competence, which includes the ability to use digital technology for work tasks, is positively related to ASN performance indirectly through adaptability as a mediating variable, where adaptability refers to the dynamic ability to adjust to changes in the work environment [12].

H7. It is suspected that transformational leadership has a positive and significant influence on ASN performance through adaptability.

Research shows that the inspirational motivation dimension in transformational leadership increases interpersonal adaptability, enabling ASN to collaborate effectively amidst uncertainty, which directly contributes to improved contextual performance such as initiative and team support [13].

2. Methodology

This research uses a quantitative approach with a causal-explanatory design. This quantitative approach was chosen because it allows researchers to measure variables numerically, analyze relationships between variables through statistical procedures, and test previously formulated hypotheses.

The population in this study was all State Civil Apparatus (ASN) actively serving within the North Luwu Regency Government, with a total population of 6,509 people spread across

various Regional Apparatus Organizations (OPD). To determine a representative sample size, the Slovin formula was used with a precision level or margin of error of 5% (0.05). The sampling technique used was Proportional Stratified Random Sampling. This technique was chosen to ensure representation of each stratum.

The main instrument used in this study to collect data was a structured questionnaire. Each item in the questionnaire was structured based on indicators measured using a 5-point Likert scale.

The questionnaire will be statistically analyzed to test the validity and reliability of the instrument. A statement item is considered valid if it has a statistically significant correlation coefficient ($p < 0.05$) and exceeds a certain threshold ($r > 0.30$) [14]. Invalid statement items will be considered for revision or removal from the final questionnaire.

Data analysis used descriptive inferential techniques, namely research that is able to describe the relationship between variables through statistical tools with certain stages and conditions to test hypotheses and link one variable to another. The statistics used are inferential statistics, namely statistical techniques using Structural Equation Modeling (SEM) analysis through the Smart PLS 3 application.

3. Results and Discussion

3.1. Result

3.1.1. Model Validity Test

The validity test used to assess the validity level of the VB-SEM model in this study is Convergent validity. There are two ways to determine the validity of the SEM model using convergent validity techniques: looking at the outer loading value (factor loading) and the average variance extracted (AVE) value.

Outer Loading

This test is conducted to measure the level of suitability of each indicator to describe the variables used in the instrument by looking at the loading factor analysis data. A value of 0.7 is the expected value, while the one often used as a minimum limit is ≥ 0.6. While loading factor values < 0.6 must be removed from the model because they have a low level of validity or are considered unable to explain the variable construct, the following figure and tabulation of loading factors:

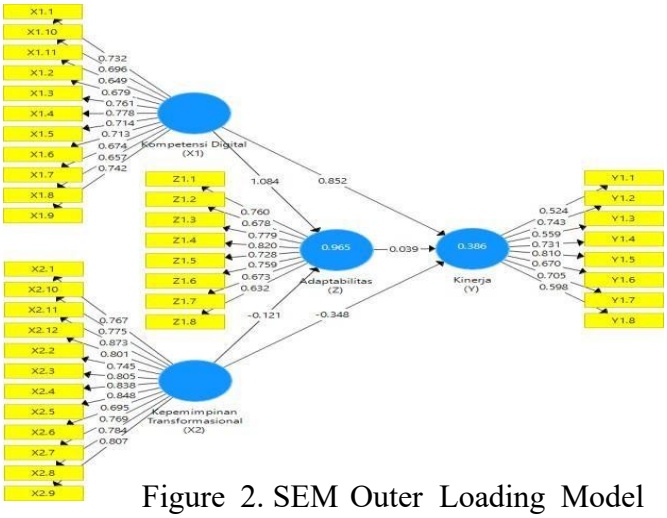

Figure 2. SEM Outer Loading Model

The outer loading test revealed three indicators with values < 0.6 : Y1.1, Y1.3, and Y1.8. Therefore, these indicators were removed from the model, and a reanalysis was conducted to determine the outer loading values for all variable indicators. The results of the analysis after removing the invalid indicators are as follows:

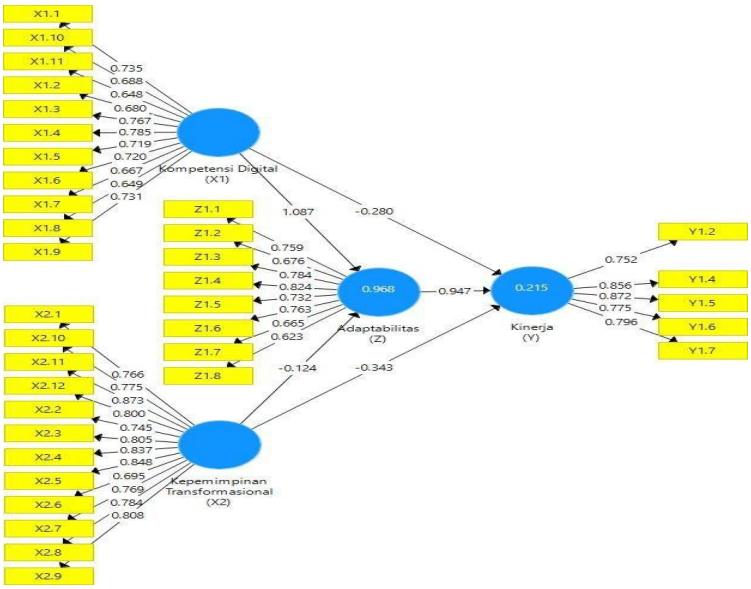

Figure 3. SEM Outer Loading Normalization Model

After calculating the loading factor, it can be seen that the values for all indicators are as expected > 0.6, so it can be said that all indicators are able to describe the variables and meet the requirements for further analysis.

Average Variance Extracted (AVE)

The measured value is the Average Variance Extracted (AVE), with an expected value of >0.5. The results of the validity test to determine the AVE value are shown in the table below:

Table 1. Average Variance Extracted (AVE)

	Average Variance Extracted (AVE)
Adaptability_(Z)	0.534
Transformational Leadership_(X2)	0.630
Performance_(Y)	0.658
Digital Competence_(X1)	0.503

Source: Data processed 2025

Based on the table above, it is known that the AVE value of all variables observed in this study is > 0.5 so it can be said that all variables are valid and can be used to test the SEM model.

3.1.2. Model Reliability Test

Reliability is a measure of an indicator's consistency in measuring its variables. The values used to determine the reliability level of an SEM model are Composite Reliability and Cronbach's Alpha. This type of reliability is used to determine the internal reliability of a variable indicator.

Table 2. Composite Reliability and Cronbach Alpha Values

	Cronbach's Alpha	Composite Reliability
Adaptability_(Z)	0.874	0.901
Transformational Leadership_(X2)	0.946	0.953
Performance_(Y)	0.869	0.906
Digital Competence_(X1)	0.901	0.917

Source: Data processed 2025

The standard Cronbach's Alpha value for a variable to be declared reliable is > 0.6, while the standard value for Composite Reliability is > 0.7. Therefore, based on the table above, it is known that all variables have a Cronbach's Alpha value > 0.6 and a Composite Reliability value > 0.7, so it can be stated that the analyzed SEM model is reliable.

3.1.3. Bootstrapping Test

SEM analysis aims to test the extent of the influence of independent variables on dependent variables. The SEM model resulting from the analysis of the influence between variables is shown in the figure below:

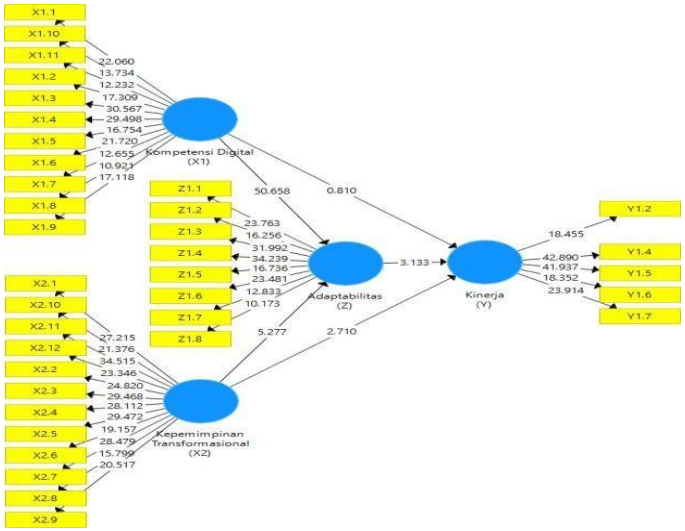

Figure 4. Bootstrapping/Variable Influence Test

The variables analyzed in this study were digital competence (X1), transformational leadership (X2), and adaptability (Z) on civil servant performance (Y). This analysis was also used to test the research hypotheses. The magnitude of the variables' influence is shown in the table below:

Table 4. Direct Influence of Research Variables

	T Statistics (|O/STDEV|)	P Values	Decision
Adaptability_(Z) -> Performance_(Y)	3,133	0.002	Significant
Transformational Leadership_(X2) -> Adaptability_(Z)	5,277	0,000	Significant
Transformational Leadership_(X2) -> Performance_(Y)	2,710	0.007	Significant
Digital Competence_(X1) -> Adaptability_(Z)	50,658	0,000	Significant
Digital Competence_(X1) -> Performance_(Y)	0.810	0.418	Not Significant

Source: Data processed 2025

Table 5. Indirect Effects of Research

	T Statistics (|O/STDEV|)	P Values	Decision
Transformational Leadership_(X2) -> Adaptability_(Z) -> Performance_(Y)	2,703	0.007	Significant
Digital Competence_(X1) -> Adaptability_(Z) -> Performance_(Y)	3,123	0.002	Significant

Source: Data processed 2025

3.1.4. Hypothesis Testing

Based on the table above, the following hypothesis test can be carried out:

1. **First Hypothesis**: It is suspected that digital competence has a positive and significant effect on adaptability. The results of the T-statistic analysis obtained a calculated t value = 50.658 > t table = 1.969 with a P Value of 0.000 or smaller than the Cut-off Value of 0.05. This means that the digital competence variable has a positive and significant effect on adaptability. So it can be stated that the first hypothesis is **accepted**.
2. **Second Hypothesis**: It is suspected that transformational leadership has a positive and significant effect on adaptability. The results of the T-statistic analysis obtained a calculated t value = 5.277 > t table = 1.969 with a P Value of 0.000 or smaller than the Cut-off Value of 0.05. This means that the transformational leadership variable has a positive and significant effect on adaptability. So it can be stated that the second hypothesis is **accepted**.
3. **Third Hypothesis**: It is suspected that adaptability has a positive and significant effect on ASN performance. The results of the T-statistic analysis obtained a calculated t value = 3.133 > t table = 1.969 with a P value of 0.002 or smaller than the Cut-off Value of 0.05. This means that the adaptability variable has a positive and significant effect on ASN performance. So it can be stated that the third hypothesis is **accepted**.
4. **Fourth Hypothesis**: It is suspected that digital competence has a positive and significant effect on ASN performance. The results of the T-statistic analysis obtained a calculated t value of 0.810 < t table = 1.969 with a P value of 0.418 or greater than the Cut-off Value of 0.05. This means that digital competence has a positive but not significant effect on ASN performance. Therefore, it can be stated that the fourth hypothesis is **rejected**.

5. **Fifth Hypothesis:**It is suspected that transformational leadership has a positive and significant effect on ASN performance. The results of the T-statistic analysis obtained a calculated t value of 2.710 > t table = 1.969 with a P value of 0.007 or smaller than the Cut-off Value of 0.05. This means that the transformational leadership variable has a positive and significant effect on ASN performance. Therefore, it can be stated that the fifth hypothesis is **accepted**.
6. **Sixth Hypothesis:**It is suspected that digital competence has a positive and significant effect on ASN performance through adaptability. The results of the T-statistic analysis obtained a calculated t value of 3.123 > t table = 1.969 with a P value of 0.002 or smaller than the Cut-off Value of 0.05. This means that the digital competence variable has a positive and significant effect on ASN performance through adaptability. Therefore, it can be stated that the sixth hypothesis is **accepted**.
7. **Seventh Hypothesis:**It is suspected that transformational leadership has a positive and significant effect on ASN performance through adaptability. The results of the T-statistic analysis obtained a calculated t value of 2.703 > t table = 1.969 with a P value of 0.007 or smaller than the Cut-off Value of 0.05. This means that the transformational leadership variable has a positive and significant effect on ASN performance through adaptability. Therefore, it can be stated that the seventh hypothesis is **accepted**.

3.2. Discussion

Based on the results of the data analysis carried out, the explanation regarding the magnitude of the relationship between research variables can be explained as follows:

Digital Competence and Adaptability of Civil Servants

Data analysis to test the first hypothesis shows a positive and significant influence between digital competence and ASN adaptability. These results indicate that increasing digital competence will substantially improve ASN adaptability. In this study, digital competence influences ASN adaptability through ASN's ability to use various platforms and technologies. Proficiency in various digital systems can improve ASN's adaptability to technological changes more easily, which indirectly trains the ability to adapt to changes in the work environment and technology. Experience overcoming various technical obstacles in using digital technology improves ASN's ability to face and solve new problems with a flexible approach.

This result is in line with research [7] which found adaptability to be a very important competency in the digital age, referring to an individual's ability to adjust to technological changes and job market demands [8] also concluded that digitalization has a significant influence on increasing the adaptability of the workforce, where the success of adaptation is largely determined by digital literacy, organizational support, and a work culture that is open to innovation.

2. Transformational Leadership and Adaptability of Civil Servants

Data analysis testing the second hypothesis showed a positive and significant influence between transformational leadership and ASN adaptability. These results suggest that organizations can improve ASN adaptability by training leaders in transformational

competencies, such as the ability to build an inspiring vision, encourage innovation, and create an environment that supports experimentation and continuous learning. This is crucial in facing increasingly rapid and complex work environments. Transformational leadership also encourages ASN to think creatively and innovatively and enhances their ability to adapt to new and complex situations. Through delegation of authority and trust, transformational leaders can increase employee self-confidence and autonomy, which are important factors in developing adaptability.

This result is in line with research [9] which found that transformational leadership has an influence on adaptive performance. This study also found that psychological empowerment mediates the effect of transformational leadership on adaptive performance. Other researchers have also found that transformational leadership can increase employee motivation, creativity, and commitment through an inspiring vision, emotional support, and individual empowerment. In the digital era, transformational leadership is highly relevant for creating an adaptive, innovative, and productive work environment [15].

ASN Adaptability and ASN Performance

Data analysis testing the third hypothesis shows a significant positive relationship between adaptability and ASN performance. Increasing adaptability will directly improve ASN performance within the organization. These results confirm that ASN with high adaptability are able to adjust their work strategies quickly when faced with changes in tasks, technology, or new procedures, thereby increasing ASN productivity. Adaptability can also encourage ASN to develop new skills and can contribute to improving work quality and efficiency. Furthermore, adaptability encourages ASN to anticipate change and seek innovative solutions that can improve performance for the sake of organizational achievement.

This result is in line with several research findings which also found that the adaptability of the work environment directly influences employee performance [10]. Other studies have also found that the adaptability of the work environment directly influences employee performance, and when mediated through job satisfaction, adaptability still has a significant effect on performance [11].

4. Digital Competence and Civil Servant Performance

The results of the fourth hypothesis testing analysis showed no significant effect between digital competence and ASN performance, this result indicates that increasing digital competence does not directly improve ASN performance. In this study, the insignificant effect between digital competence and ASN performance can be explained by the fact that digital competence requires intermediary variables such as motivation, work discipline, or organizational culture to produce significant performance improvements. In addition, ASN performance is influenced by several other interacting factors, including interpersonal aspects, intrinsic motivation, work environment, and reward systems. Digital competence is only one small component in a complex organizational environment and performance.

The results of other studies also found the same results as this study, such as research [12] found that when digital competence is combined with motivation and work discipline, the impact on employee performance becomes more significant. This research confirms that digital

competence alone is not enough but requires other supporting factors such as high motivation and good work discipline to optimally improve performance. Other research also emphasizes that digital competence has a significant influence on employee performance, but its effectiveness is highly dependent on the organizational context and other supporting factors [13].

Transformational Leadership and Civil Servant Performance

The results of the analysis of the fifth hypothesis testing show a significant positive relationship between transformational leadership and ASN performance, this indicates that the effective implementation of a transformational leadership style will improve ASN performance. This transformational leadership style encourages ASN to think creatively and innovatively in completing their tasks and responsibilities. Transformational leaders give subordinates the freedom to explore new ideas and different approaches, which ultimately improves ASN performance. Furthermore, transformational leadership is able to create an open organizational culture, the ability to work together and increase ASN commitment and performance.

The results of this study are in line with several previous studies which also found that transformational leadership has a significant influence on employee performance [14] Other research also found that transformational leadership influences employee competency, which in turn improves performance. The study recommends that leaders review policies to improve the implementation of training programs and employee competency to enable them to contribute more productively [16].

Digital Competence and ASN Performance through ASN Adaptability

The results of the analysis show a significant positive relationship between digital competence and ASN performance through adaptability, these results indicate that digital competence affects ASN performance indirectly through increasing adaptability as an intervening variable. Digital competence affects ASN performance through adaptability in this study explains that ASN who have good digital competence tend to be more efficient and productive in carrying out their duties, this directly increases their adaptive capacity to technological changes and digital work environments. Increased adaptability makes ASN to adjust quickly to technological changes and organizational demands, thus helping employees access online resources, obtain relevant information, and complete tasks more quickly and efficiently.

These results align with previous research that also found similar results, including one that found that organizations implementing integrated digital training, such as blended learning, microlearning, and project-based learning, experienced increased productivity and decreased turnover rates within 12 months. These results indicate that developing digital competencies not only improves individual performance but also strengthens talent retention and the organization's sustainable competitive advantage [17].

Transformational Leadership and ASN Performance through ASN Adaptability

The results of the analysis show a significant positive relationship between transformational leadership and ASN performance through adaptability, this can be interpreted

that transformational leadership affects ASN performance indirectly through increasing adaptability as an intervening variable. Transformational leaders proactively identify necessary changes in the organization and create a conducive work environment that allows ASN to be fully involved in various aspects of their work, so that ASN can adapt to situations that can trigger adaptability resources thereby improving ASN performance.

Research published in Frontiers in Psychology shows results consistent with this research, where employee career adaptability can be activated by transformational and self-regulatory leaders. The study found that transformational leadership significantly influences career adaptability, which in turn positively impacts task performance and organizational citizenship behavior. This research proves that transformational leaders will lead a flexible workforce that has the ability to handle ever-changing work and exceed organizational expectations [18].

4. Conclusion

Based on the data analysis and interpretation presented, it can be concluded that the adaptability variable is a key factor that has a positive and significant influence on ASN performance. These findings indicate that although digital competence does not directly influence ASN performance, when mediated by adaptability, its influence becomes significant. The same is true for the transformational leadership variable, which not only directly influences ASN performance but also significantly influences ASN adaptability indirectly. These findings indicate that adaptability functions as an intermediary variable that can convert various inputs to the organization into factors that can improve ASN performance.

The implications of this research are that organizations, particularly the North Luwu Regency Government, need to adopt a holistic approach to human resource development by prioritizing adaptability as a core sustainable competency. Digital competency and transformational leadership are also crucial factors in delivering optimal results when combined with a civil servant adaptability development program. Therefore, the North Luwu Regency Government is advised to design an integrated strategy that focuses not only on developing technical skills or leadership styles but also on creating a work environment that encourages flexibility, continuous learning, and adaptability to change to achieve maximum performance.

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