Digital Competence and Its Effect on Self-Efficacy: A Study at the Communication and Informatics Office of Langkat Regency

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Abstract

This study investigates the influence of digital competence on self-efficacy among employees at the Communication and Informatics Office of Langkat Regency. Using a quantitative approach with a sample of 30 employees, the research instrument's validity and reliability were confirmed through Pearson's correlation and Cronbach's Alpha tests, respectively. The reliability analysis yielded high Cronbach's Alpha values (0.781 for Digital Competence and 0.806 for Self-Efficacy), indicating strong internal consistency. Descriptive analysis revealed a highly positive perception for both variables, with a mean score of 4.38 for Digital Competence and 4.35 for Self-Efficacy, supported by low standard deviations (0.44 and 0.38). The core finding from the inferential analysis confirms a positive and statistically significant influence of digital competence on self-efficacy (p-value = 0.000). A simple linear regression analysis showed that digital competence explains 41.0% of the variance in self-efficacy (R^2 = 0.410), while the t-test results (t_calculated = 4.145 > t_table = 1.7011) provided conclusive evidence to reject the null hypothesis. The study concludes that digital competence is a significant determinant of self-efficacy in this institutional context, suggesting that enhancing employees' digital skills is a crucial strategy for boosting their confidence and capability in a digitally transformed public sector.

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Introduction

The rapid advancement of digital technology has brought significant changes in the workplace, including within the public sector. Digital transformation has become a key driver for improving organizational effectiveness, requiring both private and government institutions to strengthen digital-based services and management systems [1]. One of the most crucial aspects in ensuring the success of this transformation is the digital competence of employees. Digital competence not only involves the technical ability to operate digital tools, but also includes knowledge, adaptability, and confidence in facing the continuous changes brought by digitalization [2].

In government institutions, particularly at the Communication and Informatics Office of Langkat Regency, digital competence has become increasingly important due to the office's strategic role in managing public information, communication systems, and digital services. Employees with strong digital competence are expected to optimize the use of information systems, service applications, and digital communication platforms to support organizational goals. However, the effectiveness of digital competence does not merely rely on technical mastery; it also depends on psychological factors such as self-efficacy [3].

Self-efficacy refers to an individual's belief in their own ability to successfully perform tasks and overcome challenges. Employees with high self-efficacy tend to feel more confident when utilizing digital technologies, are more willing to take initiative, and are better able to adapt to the demands of digital transformation [4]. Conversely, employees with low self-efficacy may struggle with feelings of uncertainty, lack of confidence, and resistance to digital systems, which in turn may hinder their overall performance. Thus, digital competence and self-efficacy are closely interconnected, where digital skills can foster stronger confidence in handling tasks, while self-efficacy reinforces the effective application of those skills [5].

Despite ongoing efforts to promote digital transformation, challenges remain within government agencies. Some employees still face difficulties in mastering new applications, experience anxiety when working with digital platforms, or continue to rely on conventional methods [6]. These conditions suggest that self-efficacy plays a central role in determining whether digital competence can be translated into meaningful outcomes. Therefore, it becomes essential to investigate the extent to which digital competence influences self-efficacy among employees at the Communication and Informatics Office of Langkat Regency.

This study is expected to provide empirical insights into the relationship between digital competence and self-efficacy within the context of public sector organizations. Understanding this linkage is not only relevant in the era of digital transformation but also critical for supporting employee development strategies and strengthening organizational capacity in delivering effective public services.

Literature Review
2.1 Digital Competence

Digital competence is a set of skills, knowledge, and attitudes required by individuals to effectively utilize digital technologies in daily life as well as in the workplace [7]. It involves the ability to access, understand, evaluate, and produce information through digital devices and applications [8]. This means that digital competence is not only limited to technical proficiency in operating devices but also includes critical understanding and the capacity to employ technology for various needs. Moreover, it is considered a 21st-century skill that every individual must possess in order to adapt to the digital transformation era. Digital competence goes beyond computer literacy by encompassing the ability to communicate, collaborate, and innovate through digital platforms [9]. Thus, it highlights the importance of balancing technical, cognitive, and social aspects to ensure more meaningful use of technology. Within organizational and professional settings, digital competence serves as an essential asset to

enhance performance and productivity. According to Sarjito and Pantja Djati (2025), digital competence can be categorized into five core dimensions: information literacy, communication and collaboration, digital content creation, digital security, and problem-solving [10]. These dimensions complement each other, enabling employees with high levels of digital competence to work more efficiently, responsively, and adaptively in the face of changes. In conclusion, digital competence can be understood as the integration of technical skills, critical thinking, and adaptive attitudes in the use of digital technologies. It is not only relevant for improving individual effectiveness but is also crucial for organizations aiming to survive and grow in the era of the Fourth Industrial Revolution. Consequently, the development of digital competence has become one of the key focuses in enhancing human resource capacity, particularly in the public sector and governmental institutions.

Elisnawati (2022) outlines several indicators of digital competence, which can be integrated into practical organizational contexts [7]. The first indicator is access, which reflects the ability of employees to search and retrieve specific or similar information across different digital platforms. The second is use, referring to employees' capacity to record and store data in multiple formats using a variety of digital devices and tools. Another important indicator is application creation, which shows the ability of employees to develop digital applications as an implementation of their ICT knowledge to support organizational activities. Furthermore, digital competence is reflected in the ability to create, such as producing summaries or reports from various formats with the help of digital tools. Finally, communication is a key indicator, encompassing employees' ability to share, exchange, and interact effectively through digital channels. These indicators collectively provide a comprehensive picture of how digital competence can be applied to enhance organizational performance and service delivery.

2.2 Self-Efficacy

Self-efficacy is defined as an individual's belief in their ability to organize and execute the actions required to achieve goals or complete specific tasks [11]. It refers to a person's confidence in their capacity to regulate cognitive functions, motivation, affective responses, and behavior when facing different situations [12]. In other words, self-efficacy is closely related to an individual's confidence in their own capabilities. Unlike general self-confidence, self-efficacy specifically emphasizes the belief that one is capable of accomplishing particular tasks or overcoming certain challenges [13]. Individuals with high self-efficacy tend to be more optimistic, persistent, and resilient when encountering difficulties, whereas those with low self-efficacy are more likely to give up easily, experience anxiety, and doubt their abilities [14].
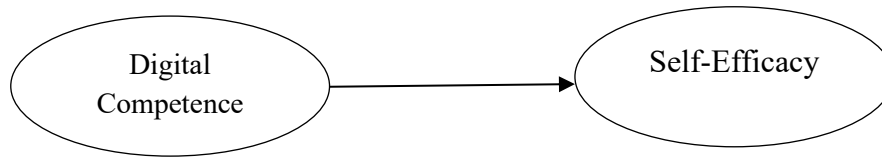
In the workplace context, self-efficacy plays a significant role in shaping employees' behavior, motivation, and performance outcomes. Employees with high self-efficacy are generally more enthusiastic about trying new things, adapt quickly to changes, and maintain strong confidence in their ability to complete tasks effectively [15]. This has a positive impact on productivity, innovation, and employee engagement with the organization. Moreover, self-efficacy can be viewed as a psychological factor that strongly influences both individual and organizational success. When employees possess strong self-efficacy, they are not only capable of overcoming work-related obstacles but also more likely to build commitment and attachment to their professional responsibilities [16]. Therefore, self-efficacy is considered a crucial variable in studies related to performance, motivation, and employee engagement.

According to Hafidzoh (2020), self-efficacy can be identified through several indicators that reflect confidence and perseverance in facing challengesv. These include an individual's belief in their ability to overcome difficulties, their confidence when dealing with challenges in accessing resources or information, their persistence in completing tasks, their capability to handle obstacles in achieving goals, and their ability to use life experiences as a foundation for achieving success. These indicators demonstrate that self-efficacy is not merely about self-

belief but also about applying resilience, persistence, and experiential learning to enhance performance and achieve meaningful outcomes.

Conceptual Framework and Hypothesis

This study conceptualized Digital Competence as the independent variable (X) and Self-Efficacy as the dependent variable (Y) as shown on the following fiqure.

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   ┌─────────────┐                    ┌─────────────┐
   │   Digital   │───────────────────▶│ Self-Efficacy│
   │ Competence  │                    │             │
   └─────────────┘                    └─────────────┘
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The hypothesis is:

Ha : Digital competence has a positive and significant effect on self-efficacy among employees at the Department of Communication and Informatics, Langkat Regency.

Ho : Digital competence does not have a positive and significant effect on self-efficacy among employees at the Department of Communication and Informatics, Langkat Regency..

Research Methodology

This study employs a quantitative research approach to examine the effect of organizational behavior on job satisfaction at the Camat Office of Sidikalang, Dairi Regency. The population in this study consists of 30 employees working at the Camat Office of Sidikalang, Dairi Regency. Considering the relatively small population size, the study applies a saturated sampling technique (census), in which the entire population is used as the research sample. Thus, all 30 employees will serve as respondents to ensure comprehensive and representative findings.

Primary data will be collected through a structured questionnaire distributed to the respondents [17]. The questionnaire items are developed based on theoretical indicators of organizational behavior and job satisfaction. Respondents will provide their answers on a Likert scale ranging from strongly disagree to strongly agree. Secondary data will also be gathered from institutional reports and relevant documentation to support the analysis.

The data will be analyzed using quantitative statistical methods with SPSS version 25.0. Several steps will be performed. First, validity testing will be conducted to ensure that the questionnaire items accurately measure the intended variables. An item will be considered valid if the correlation coefficient (r-count) exceeds the critical value (r-table). Reliability testing will use Cronbach's alpha, where a value greater than 0.70 indicates acceptable reliability of the instrument. Second, the regression model used in this study is expressed as: $Y = a + b\,X$
Where: Y = Job Satisfaction, X = Organizational Behavior, a = Constant, b = Regression Coefficient.

Third, the t-test will be applied to determine whether organizational behavior significantly affects job satisfaction. The hypothesis, following Hair (2022), will be accepted if the t-count is greater than the t-table value or if the significance level is below 0.05. Finally, the coefficient of determination (R^2) will measure how much variance in job satisfaction can be explained by organizational behavior. Values range from 0 to 1, with values closer to 1 indicating a stronger influence of the independent variable.

This methodological approach enables the study to empirically test the hypothesized relationship between organizational behavior and job satisfaction, providing both statistical and practical insights for public sector organizations.

Results

4.1 Descriptive Analysis

The initial step in the descriptive analysis is to examine the key summary statistics for the two primary composite variables. This provides a high-level overview of the data and its general characteristics.

Table 1. Descriptive Analysis

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Digital Competence (DC)	30	3.50	5.00	4.38	0.44
Self-Efficacy (SE)	30	3.60	5.00	4.35	0.38

Source: Analysis of provided data, N=30

Based on the descriptive analysis of the data, both the Digital Competence and Self-Efficacy variables show highly positive results. The composite Digital Competence variable, with a mean score of 4.38, indicates that respondents hold a very favorable perception of their digital skills and abilities. Similarly, the composite Self-Efficacy variable, with a mean of 4.35, suggests that employees' belief in their own capabilities is generally rated as very good. These high average scores for both variables underscore a strong positive sentiment among the respondents.

Furthermore, the low standard deviation values for both variables (0.44 for Digital Competence and 0.38 for Self-Efficacy) are significant. These small values indicate that the data points are closely clustered around the mean, demonstrating a high degree of consistency in the responses. In other words, there is very little variability in how the respondents perceive both their digital competence and their self-efficacy. The results suggest that these two factors are perceived consistently and positively across the sample.

To provide a more nuanced understanding, the analysis was extended to the individual items that constitute each composite variable. This granular examination allows for the identification of specific strengths and potential areas for improvement.

4.2 Validity and Reliability Tests

Validity was assessed using Pearson's correlation coefficient (r_value) by comparing the score of each individual item to the total score of its respective variable. The critical r_table value for a sample size of N=30 at a 5% significance level (two-tailed) is 0.349. An item is considered valid if its r_value is greater than r_table.

The analysis confirmed that all 9 questionnaire items (DC1-DC4 and SE1-SE5) were valid. The correlation coefficients for each item with their respective composite variable scores were found to be well above the critical r_table value, indicating that each item effectively measures the variable it is intended to measure.

Reliability was assessed using Cronbach's Alpha, a measure of internal consistency. An instrument is considered reliable if its Cronbach's Alpha value is generally greater than 0.60, a benchmark supported by sources such as Ghozali (2016).

Table 2. Reliability Results

Variable	Cronbach's Alpha	Benchmark	Result
Digital Competence (DC)	0.781	> 0.60	Reliable
Self-Efficacy (SE)	0.806	> 0.60	Reliable

Both the Digital Competence and Self-Efficacy scales yielded Cronbach's Alpha values well above the 0.60 benchmark. The Digital Competence scale achieved a Cronbach's Alpha of 0.781, while the Self-Efficacy scale achieved a value of 0.806. These values indicate that the scales are highly reliable and consistent in measuring their respective variables. The analysis confirms that the research instrument is both valid and reliable. All questionnaire items effectively measure their respective variables, and the scales demonstrate a high degree of internal consistency. The data is therefore suitable for further statistical analysis, such as regression testing.

4.3   Regression Analysis
4.3.1   Simple Linear Regression
A regression analysis was conducted to evaluate the effect of Digital Competence on Self-Efficacy at the Communication and Informatics Office of Langkat Regency. The analysis used the composite scores for both variables derived from the provided data.

Table 3. Regression Results

Model	B	Std. Error	Beta	t	Sig. (p)
(Constant)	1.639	0.655	–	2.502	0.019
Digital Competence	0.619	0.149	0.640	4.145	0.000

Dependent Variable: Self-Efficacy

Based on the analysis, the regression equation can be expressed as: $Y = 1.639 + 0.619X$. The regression coefficient (B) for the Digital Competence variable is 0.619. This indicates that for every one-point increase in the digital competence score, Self-Efficacy is expected to increase by 0.619 points, assuming other factors remain constant. The significance value (p-value) of 0.000, which is less than the 0.05 significance level, confirms a significant and positive relationship between the two variables.

The regression analysis reveals a significant and strong positive relationship between Digital Competence and Self-Efficacy. The regression coefficient (B=0.619, t=4.145, p=0.000) suggests that higher digital competence leads to substantially improved self-efficacy. Furthermore, the standardized beta coefficient (Beta=0.640) indicates that the effect of the digital competence variable on self-efficacy is strong. This finding supports the idea that developing digital skills positively impacts employees' belief in their ability to perform their jobs effectively within the organization.

4.3.2   Coefficient of Determination (R^2)
The coefficient of determination (R^2) was calculated to measure the proportion of variance in Self-Efficacy that can be explained by Digital Competence.

Table 4. Coefficient of Determination

Model	R	R^2	Adjusted R^2
1	0.640	0.410	0.389

The analysis results show that the R^2 value is 0.410, which means 41.0% of the variance in Self-Efficacy can be explained by Digital Competence. The remaining 59.0% of the variance is influenced by other factors not included in this research model, such as leadership, motivation, or other aspects of the work environment.

The correlation coefficient (R=0.640) indicates a strong positive relationship between the two variables, which is consistent with the statistically significant regression results. This finding confirms that Digital Competence has a substantial positive contribution to self-efficacy within the context of this study.

4.3.3 Hypothesis Testing (t-Test)

The hypothesis testing was performed using a t-test to determine whether the independent variable (Digital Competence) has a positive and significant influence on the dependent variable (Self-Efficacy).

Table 5. t-Test Result

Model	B	Std. Error	Beta	t
(Constant)	1.639	0.655	–	2.502
Digital Competence	0.619	0.149	0.640	4.145

Dependent Variable: Self-Efficacy

The calculated t-value (t_calculated) for the Digital Competence variable is 4.145. This value is compared to the critical t-value (t_table) for the degrees of freedom (df), calculated as N - k - 1, where N=30 and k=1. Therefore, df = 30 - 1 - 1 = 28. For a one-tailed test with a significance level of α=0.05, the critical t-value is 1.7011. Since the calculated t-value (4.145) > the critical t-value (1.7011), the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted.

Furthermore, the significance value (p-value) for the Digital Competence variable is 0.000. Since the p-value (0.000) < the significance level α (0.05), the null hypothesis (H_0) is rejected.

Based on the t-test results, it can be concluded that digital competence has a positive and significant influence on self-efficacy at the Communication and Informatics Office of Langkat Regency. This finding supports the idea that the adoption and mastery of digital tools are a strategy that translates into tangible, measurable gains in employee self-belief.

Conclusion

Based on a comprehensive analysis of the research data, this study successfully addresses its primary objective of investigating the effect of digital competence on self-efficacy among employees at the Communication and Informatics Office of Langkat Regency. The descriptive analysis revealed a prevailing positive sentiment among employees regarding both their digital competence and their self-efficacy, with high mean scores and low standard deviations signaling a strong and uniform perception. Furthermore, the validity and reliability tests confirmed that the research instrument was well-suited for measuring these constructs, ensuring the integrity and trustworthiness of the collected data. Most importantly, the inferential analysis provided conclusive empirical evidence that digital competence has a positive and statistically significant influence on self-efficacy. The regression analysis and hypothesis testing unequivocally demonstrate that a direct and strong relationship exists between these two variables. The regression coefficient indicates that improvements in digital competence are associated with substantial gains in self-efficacy. The coefficient of determination (R^2) suggests that digital competence explains 41.0% of the variance in self-efficacy, confirming its position as a key determinant among a wider array of factors. In conclusion, this study validates the premise that digital competence is not merely a technical skill but a strategic asset that directly contributes to enhanced employee self-efficacy. The findings support the notion that by prioritizing investments in digital skill development, government agencies can tangibly improve the confidence and capabilities of their human resources, which is critical for the success of digital transformation initiatives.

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