

THE IMPACT OF E-GOVERNMENT SYSTEM IMPLEMENTATION ON EMPLOYEE PRODUCTIVITY IN THE DEPARTMENT OF POPULATION AND CIVIL REGISTRATION OF BANDUNG CITY

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Abstract

This research focuses on the influence of e-government implementation on employee performance in the Department of Population and Civil Registration of Bandung City. Using a quantitative associative method, the study involved 71 respondents as the sample. The results show a very strong influence of e-government on employee performance, with a correlation coefficient of 0.994. Supporting factors include adequate infrastructure and an efficient work culture. The researchers recommend recruiting IT-background human resources and conducting more intensive training to improve employees' understanding and performance related to e-government.

Keywords: E-government, Employees, Performance

A. INTRODUCTION

The development of E-government in Indonesia reflects the needs of modern society for a more open, effective, and efficient government. Officially introduced in 2001 through Presidential Instruction Number 6, and reinforced by Presidential Instruction Number 3 of 2003, E-government aims to utilize information technology in supporting good governance (Juliarso, 2019).

Law Number 23 of 2014 on Regional Autonomy further encourages local governments to improve the quality of governance and public services through E-government. This legal foundation also refers to Article 28F of the 1945 Constitution, which aims to enhance the relationship between the government and society (Kurniawan, 2017).

The implementation of E-government in various central and local government agencies has changed the way public services are provided. However, E-government is not intended to completely replace conventional methods, but rather to complement and improve the efficiency of existing services. (Walker, Andrews, George, & Tu, 2023)

The Department of Population and Civil Registration of Bandung City is an agency that has implemented E-government. They provide various technology-based services, including services at the main office, services at the sub-district level, Special Service Outlets (Geulis), mobile services (Mepeling), the Salaman application, as well as proactive services namely Bi Eha (Bisa Euy Hebat) and Mang Udin (Mangga Urus Dokumen Identitasna) for people with special needs.

This research is based on several relevant previous studies. (Rahmawati & Dwinur Febriana, 2021) examined the influence of E-Government on employee performance in the Department of Women Empowerment and Child Protection of South Sumatra Province. (Monica & Sara, 2021) conducted a similar study at the Class 1 Non TPI Immigration Office in Bogor. (Cristy Kurnia & Johnny Posumah, 2023) studied the same topic at the Secretariat of the Regional

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People's Representative Council of North Sulawesi Province. Meanwhile, (Dewi Purnami, 2021) researched the impact of E-Government on employee performance in the Education Office of Bandung City.

These four studies share a similar focus with this research, which is analyzing the impact of E-Government implementation on employee performance. The main difference lies in the research locus, where this study focuses on the Department of Population and Civil Registration of Bandung City.

This research is motivated by the rapid advancement of information technology and the application of e-government in public services. Its purpose is to measure the extent of e-government's influence on employee performance in the Department of Population and Civil Registration of Bandung City, with the hope of providing insights into improving government service performance to the public through e-government implementation.

Table 1. Scope of Population Administration Services

<i>Population Document Services</i>		<i>Achievements</i>	<i>Weight 25%</i>
Q1	Coverage of Family Card Issuance	100%	25,00
Q2	Coverage of Identity Card Recording	99,78%	24,95
Q3	Coverage of Birth Certificate Issuance	98,09%	24,52
Q4	Coverage of Death Certificate Issuance	93,10%	23,28
	Coverage of Population Administration Services	Q1 +Q2+Q3+Q4	97,74%

Source: Administrative Information Management Sector of Bandung City Population and Civil Registration Service 2023

Although the implementation of E-government has modernized work processes and increased efficiency, there are still some challenges in its implementation. These include issues related to work quality, output quantity, inter-departmental cooperation, innovation, and target achievement (Kasmir, 2017).

Factors that influence the effectiveness of E-government include the legal framework, infrastructure, human resources, inter-departmental coordination, data privacy and security, as well as the quality of service. Competent human resources in information technology are key to the successful implementation of E-government (Kusnadi & Ma'ruf, 2019).

The implementation of E-government correlates with the performance of government employees. The concept of "Government to Employees" emphasizes that E-government also aims to improve the performance and welfare of government employees. Therefore, the success of E-government largely depends on the performance of employees as the main subjects in the process of governance (Kusnadi & Ma'ruf, 2019).

B. LITERATURE REVIEW

Administration and Public Administration

In a narrow sense, administration is administration is the office management related to clerical activities, including controlling information such as writing, duplicating, storing, and other clerical work activities. Administration plays a critical role in ensuring organizational efficiency, particularly in the public sector, where structured management processes directly influence service delivery and governance (Borysenko, 2023). Effective administrative

strategies can improve institutional productivity and accountability, supporting overall policy implementation (Gebczynska & Brajer-Marczak, 2020).

Siagian, as quoted by Syafri (2017), stated that public Administration is the entirety of activities carried out by all government apparatus of a country in an effort to achieve the state's goals. Public administration has evolved to integrate modern governance principles, emphasizing transparency and efficiency in service delivery (Lyalikov, 2023). The performance of public administration is often assessed using performance management models, which help governments optimize their decision-making processes (Furculita, 2023). In addition, administrative data is increasingly used for policy evaluation, allowing better measurement of governmental effectiveness and responsiveness. (Deng, Karunasena, dan Xu, 2017)

E-Government and Digital Administration

According to Irawan (2018), E-government is also a way for the government to use new technology to provide the public with convenient access to information and government services, to improve the quality of services, and to provide greater opportunities for participation in democratic processes and institutions. E-government initiatives have been widely adopted to modernize public sector administration, offering improved accessibility and efficiency in governance (Irawan (2018). However, the effectiveness of e-government programs in developing countries depends on factors such as infrastructure, digital literacy, and policy alignment (Bhuiyan, 2011). Evaluations of e-government implementation reveal that successful cases result in higher transparency, reduced corruption, and better citizen engagement (Tzavella, 2023).

Performance and Organizational Effectiveness

According to Afandi (2018), performance is the work result that can be achieved by an individual or a group of people within an institution in accordance with their respective authority and responsibility in an effort to achieve organizational goals legally, without breaking the law, and not conflicting with morals and ethics. Public sector performance is increasingly linked to systematic management approaches that incorporate behavioral and institutional factors (Asif & Rathore, 2021). Effective leadership in public administration has been shown to directly influence organizational outcomes, as strategic leadership styles enhance overall efficiency and employee motivation. Furthermore, research highlights the need for continuous performance evaluation and training to maintain high service quality within government institutions (Munzhedzi, 2017).

C. RESEARCH METHODOLOGY

The focus of this research is the impact of E-government implementation on employee performance at the Department of Population and Civil Registration of Bandung City. This research is conducted at the office of the Department of Population and Civil Registration in Bandung City. The duration of this research is approximately six months.

Measurement tools or indicators in this research are used to identify the variables involved in the influence of E-government implementation on employee performance at the Department of Population and Civil Registration in Bandung City. The measurement tools in this research, which have been validated by experts, are presented in Table 2 below:

Table 2. Research Variables

<i>Variable</i>	<i>Indicator</i>	<i>Sub Indicator</i>	<i>Item No</i>
Implementation of E-Government (According to Indrajit in	<i>Legal Framework</i>	• Legal Products	1
	<i>Infrastructure</i>	• Means	2
		• Infrastructure	3

ARTICLE

Kusnadi and Ma'ruf 2019)	<i>The Strength of human capital</i>	<ul style="list-style-type: none"> • HR procurement • Employee Training 	4
	<i>Coordination</i>	<ul style="list-style-type: none"> • Coordination 	6
	<i>Privacy</i>	<ul style="list-style-type: none"> • Data protection/confidentiality 	7
	<i>Security</i>	<ul style="list-style-type: none"> • Security 	8
	<i>Civil Service</i>	<ul style="list-style-type: none"> • Service to the community • Service Quality 	10
Employee Performance (Kasmir:2017 208-210)	Quality	<ul style="list-style-type: none"> • Productivity • Quality of work results 	11
	Quantity	<ul style="list-style-type: none"> • Ability • Time used in carrying out work • Work Process 	13
	Teamwork (Work Group)	<ul style="list-style-type: none"> • Compactness • Good cooperation 	16
	Innovation	<ul style="list-style-type: none"> • Ideas with support from the environment itself 	17
	Freedom	<ul style="list-style-type: none"> • Target achievement • Achieving Satisfaction 	19

Source : Processed by Researchers, 2024

This research applies quantitative methods with an associative approach, aiming to analyze the relationship between variables using statistical calculations. This study focuses on the Bandung City Population and Civil Registration Service, with a population including all 71 employees of this service. Using a saturated sampling technique, all members of the population were involved as respondents.

Data collection was carried out through several methods, including distributing questionnaires, unstructured interviews, non-participatory observation, and literature study. The data processing process involves editing stages to check completeness, coding to change qualitative data to quantitative, processing by entering the data into the SPSS program, and cleaning to ensure the accuracy of the input data.

Data analysis was carried out by grouping and tabulating information based on variables and type of respondent. Data is then presented for each variable studied, followed by calculations to answer the problem formulation and test the hypothesis that has been proposed. The Likert scale is used as a measuring tool to analyze respondents' attitudes, opinions and perceptions regarding the social phenomena being studied.

Table 4. Likert scale

Answer	Score	Information
A	5	Strongly Agree/Always/Very Positive
B	4	Agree/Frequently/Positive
C	3	Undecided/Sometimes/Less Positive
D	2	Disagree/almost never/negative
E	1	Strongly Disagree/never/very negative

Source: Sugiyono, 2019

This methodology is designed to provide a comprehensive understanding of the relationships between variables in the context of employee performance at the Bandung City Population and Civil Registration Service, with a systematic approach in collecting, processing and analyzing quantitative data.

D. RESULT AND DISCUSSION

E-government analysis

After analyzing 10 instruments related to e-Government given to respondents at the Bandung City Population and Civil Registration Service, the following results were obtained:

- If each item gets the highest score, namely: $5 \times 10 \times 71 = 3550$
- If each item gets the lowest score, namely: $1 \times 10 \times 71 = 710$

Information:

5 = Highest Value

1 = Lowest Score Value

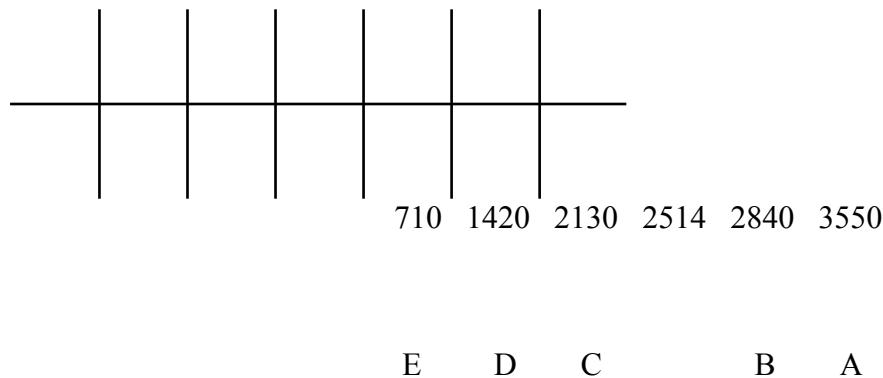
71 = Number of Respondents

2514 = Number of Data Collection Scores

According to 71 respondents regarding E-government analysis, namely:

$$\frac{\sum Kusioner}{\sum Responden} \times 100\% \\ \frac{2514}{3550} \times 100\% = 70,81\%$$

From the results of 70.81% of the criteria set, this can be continuously categorized as follows:



Information:

A = Very Good

B = Good

C = Fairly Good

D = Not Good

E = Very Bad

From these calculations, the implementation of E-government in the Bandung City Population and Civil Registration Service looks quite good, this can be seen from the total percentage of 70.81% and the value of 2514 is in the Good category.

Performance Analysis

After analyzing 10 instruments related to employee performance given to respondents at the Bandung City Population and Civil Registration Service, the following results were obtained:

- If each item gets the highest score, namely: $5 \times 10 \times 71 = 3550$
- If each item gets the lowest score, namely: $1 \times 10 \times 71 = 710$

Information:

5 = Highest Value

1 = Lowest Score Value

71 = Number of Respondents

2826 = Number of Data Collection Scores

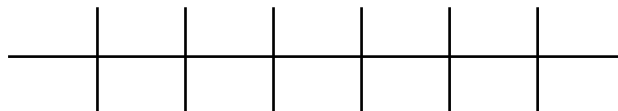
According to 71 respondents regarding employee performance analysis, namely:

$$\frac{\sum Kusioner}{\sum Responden} \times 100\%$$

$$\frac{2826}{3550} \times 100\% = 79,60\%$$

From the results of 79.60% of the criteria set, this can be continuously categorized as follows:

710 1420 2130 2826 2840 3550



E D C B A

Information:

A = Very Good

B = Good

C = Fairly Good

D = Not Good

E = Very Bad

From these calculations, the performance of employees at the Bandung City Population and Civil Registration Service looks quite good, this can be seen from the total percentage of 79.60% and the score of 2826 is in the Good category.

Hypothesis Testing

Based on the results of the research analysis, the results of this research can be drawn as follows:

"There is a very strong and significant influence between the E-government on the performance of employees at the Bandung City Population and Civil Registration Service."

As for the table and hypothesis testing through the product moment correlation formula which can be described in the results of questionnaires totaling 71 respondents, it can be explained as follows:

From the E-government value (X) and performance value (Y) after processing it will produce a value of $\sum x = 2514$ $\sum y = 2826$ $\sum x^2 = 89880$ $\sum y^2 = 112996$ $\sum xy = 100265$

$$r_{xy} = \frac{\sum xy}{\sqrt{(\sum x^2) (\sum y^2)}}$$

$$r_{xy} = \frac{100265}{\sqrt{(89880)(112996)}}$$

$$r_{xy} = \frac{100265}{\sqrt{(89880)(112996)}}$$

$$r_{xy} = \frac{100265}{\sqrt{(10156080480)}}$$

$$r_{xy} = \frac{100265}{100777,380795}$$

$$r_{xy} = 0,994$$

From the calculation results, it can be seen that there is a positive relationship of 0.994 between E-government and employee performance at the Bandung City Population and Civil Registration Service. To be able to provide an interpretation of the strength of the influence, the guidelines listed in the following table can be used:

Table 5. Correlation Coefficient Interpretation Guidelines

<i>Coefficient Interval</i>	<i>Relationship Level</i>
0.00-0.199	Very Low
0.20-0.399	Low
0.40-0.599	Currently
0.60-0.799	Strong
0.80-1,000	Very strong

Source: Sugiyono, 2019

Based on the results of these calculations, it can be seen that the correlation coefficient found was 0.994. The correlation coefficient of 0.994 is included in the very strong category. So, there is a very strong and significant relationship between Variable X (E-government) and Variable Y (Employee Performance). This study used a sample size (n) of 71 people with an error rate of 5% or $\alpha = 0,05$ then the table price is 0.233. This means that the calculated r_{xy} is greater than the table r_{xy} or H_0 ($0.994 > 0.223$), so H_0 is rejected and H_a is accepted.

Determination Coefficient Test

To calculate the magnitude of the influence between Variable X (E-government) on variable Y (employee performance), this can then be done by calculating the coefficients found. So the coefficient of determination is:

$$cd = r^2 \times 100\%$$

$$cd = (0,994)^2 \times 100\%$$

$$cd = 98,8\%$$

Information :

r = Product moment correlation coefficient

This means that the implementation of E-government influences the performance of employees at the Bandung City Population and Civil Registration Service by 98.8% and the remaining 1.2% is influenced by other factors not examined by researchers.

Significance Test

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To test the significance of the correlation, namely whether the relationship found applies to the entire population of 71 people, it is necessary to test its significance. The product moment correlation significance test formula is:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$
$$t = \frac{0,994\sqrt{71-2}}{\sqrt{1-0,994^2}}$$
$$t = \frac{0,994\sqrt{69}}{\sqrt{1-0,988}}$$
$$t = \frac{8,25}{0,109}$$
$$t = 75,688$$

Information:

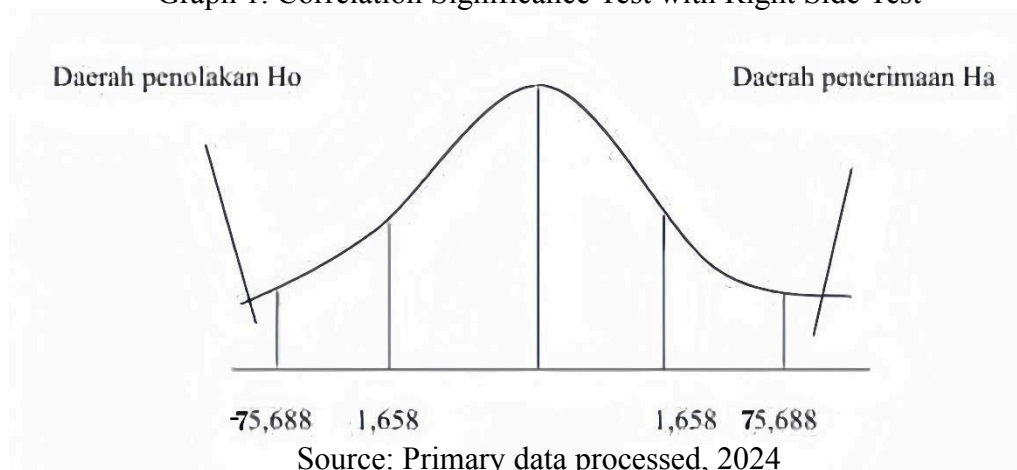
t = Calculated Value

r = Correlation coefficient value

n = Number of Observation Data

The calculated t value is then compared with the t table price with the determination coefficient (dk) = n-2 = 71-2 = 69 with an error level = 0.05 for a one-tailed test. Because the calculated t value is greater than the t table price or Ho (75.688>1.658), Ho is rejected and Ha is accepted. This can be described as follows:

Graph 1. Correlation Significance Test with Right Side Test



Based on this figure, it can be stated that the calculated t falls in the Ho rejection area, so the null hypothesis can be stated which states that there is no influence between E-government (variable X) and employee performance (variable Y) is rejected and the alternative hypothesis is accepted. So, in conclusion, the correlation coefficient between E-government and employee performance at the Population and Civil Registration Service of Bandung City, 0.994, is significant and can be generalized or can apply to a population where the sample is 71 people.

Simple Regression Analysis

To calculate how high the value of the dependent variable (Y) will be if the value of the independent variable (X) is manipulated (changed), use the linear regression formula. The formula for calculating the linear regression equation is as follows:

$$Y = a + bX$$

Y' = subjects/values in the predicted dependent variable

a = price of Y, if X=0 (constant price)

b = direction number or correlation coefficient which shows the number of increases or decreases in the dependent variable based on the independent variable. If b (+) then it increases, and if (-) then there is a decrease.

X = subject to the independent variable which has a certain value.

Based on the results of regression analysis data processing via SPSS version 29, the values (a) and (b) obtained are as follows:

Table 6. Value (b)

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.	
		B	Std. Error	Beta		
1	(Constant)	16,609	4,048		4.103	,000
	e government	,484	,144	,374	3,353	,001

a. Dependent Variable: performance

Source: Primary data processed, 2024

Table 7. Value (a)

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	106.183	1	106.183	11,243	,001a
	Residual	651.676	69	9,445		
	Total	757,859	70			

a. Predictors: (Constant), e government
b. Dependent Variable: performance

Source: Primary data processed, 2024

From the table it can be seen that a=16.609 and b=0.484~X are entered into the formula as follows:

$$Y = a + bX$$

$$Y = 16.609 + 0.484X$$

Information:

Y = employee performance

X = implementation of E-government

a = constant of 16.609, meaning that if the implementation of E-government (X) has a value of 0, then employee performance (Y) has a positive value of 16.609.

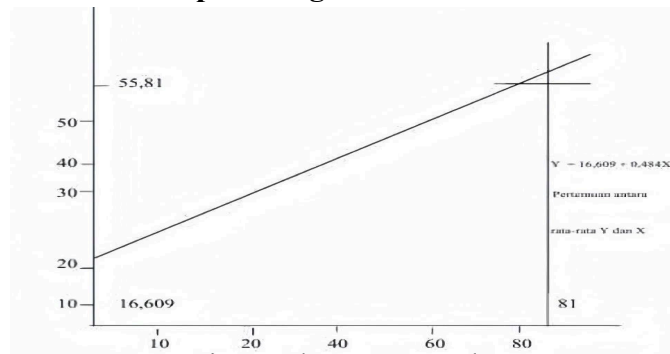
b = regression coefficient of 0.484, meaning that if the implementation of e-government (X) increases by 1, then employee performance (Y) increases by 0.484.

It is known that from the E-government calculation results of 81, the regression equation is:

$$Y=16.609+0.484X$$
$$Y=16.609+0.484(81)$$
$$Y=55.81$$

From this equation, a regression line can be drawn based on the equation that has been found, namely as follows:

Graph 2. Regression Line



Source: Primary data processed, 2024

This study examines the impact of e-government implementation on employee performance at the Bandung City Population and Civil Registration Office. The results show that e-government implementation achieved a 70.81% success rate, while employee performance reached 79.60% of the ideal target. A very strong correlation (0.994) was found between e-government adoption and improved employee performance, with e-government contributing 98.8% to performance variation. Factors such as adequate infrastructure, implementation of SIAK system and Salaman Application, and employee competence played crucial roles in this success. These findings underscore the importance of digital transformation in enhancing public service efficiency and government organizational performance.

E. CONCLUSION

His study on e-government implementation at the Bandung City Population and Civil Registration Service reveals significant findings. E-government implementation achieved a 70.81% success rate based on seven key factors, while employee performance reached 79.60%. A strong correlation (0.994) was found between e-government adoption and employee performance, with e-government contributing 98.8% to performance variation.

Recommendations include strengthening IT expertise through recruitment, conducting regular training for all employees, and improving infrastructure. These steps aim to optimize e-government benefits and further enhance employee performance, addressing the identified areas for improvement in human resources, training, and infrastructure.

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