

DOI: <https://doi.org/10.38035/dijemss.v6i4><https://creativecommons.org/licenses/by/4.0/>

The Mediating Effects of Government Innovation Capabilities and ICT Development: E-Government Implementation and Organizational Value Creation in Indonesia

Lili Khamiliyah¹, Agus Rahayu², Maya Sari³, Puspo Dewi Dirgantari⁴

¹Universitas Pendidikan Indonesia, Bandung, Indonesia, lili_khamiliyah@upi.edu

²Universitas Pendidikan Indonesia, Bandung, Indonesia, Agusrahayu@upi.edu

³Universitas Pendidikan Indonesia, Bandung, Indonesia, mayasari@upi.edu

⁴Universitas Pendidikan Indonesia, Bandung, Indonesia, puspodewi@upi.edu

Corresponding Author: lili_khamiliyah@upi.edu¹

Abstract: Various studies provide evidence that E-Government Implementation contributes to Organizational Value Creation, but more research is still needed to analyze the mediation effect of Government Innovation Capabilities and ICT Development in the influence of E-Government on Organizational Value Creation in Indonesia. Using primary research data sourced from primary data, questionnaires were distributed to respondents with a total sample of 268, answering the formulation of hypotheses and research models using a parallel mediation effect approach, namely using SEM-PLS and SPSS V.3.4. The results of the study indicate that there is a direct effect of E-Government on Organizational Value Creation, as well as an indirect effect of E-Government on Organizational Value Creation through Government Innovation Capabilities and ICT Development; the influence is more apparent if, through ICT Development, this is possible because of the uneven development and implementation of ICT due to the level of accessibility, use, and skills. In addition, efforts that can be made to improve organizational innovation capabilities must involve essential elements, namely, Top Management, Adequate resources and Absorptive capacity, Organizational slack, Cross-functional collaboration, and Organizational challenges. Researchers suggest that local governments in Indonesia strengthen institutions, technology-based services, and governments that could innovate in providing services to the community to increase good, reliable, effective, efficient, and adaptive organizational governance to changes and community needs.

Keyword: E-Government; Government Innovation Capabilities; ICT Development; Organizational Value Creation; Mediating role.

INTRODUCTION

Organizational superiority is determined by the availability of valuable, unique, inimitable, and organized resources that are in line with the Resources-Based View Theory (Barney, 1991); the use of technology can create organizational excellence, developments related to the perception of acceptance of the use of new technology are helpful for leaders in intervening proactively in making strategic organizational policies, which are in line with the

theory of acceptance and use of integrated technology (Theory of Acceptance and Use of Integrated Technology) (Venkatesh et al., 2003), E-Government implementation is needed in the education sector, public, and private organizations to be able to increase the competitiveness of the organization and enhancing the national economic performance (Zeleti & Mustonen-ollila, 2011; Srivastava & Teo, 2010).

Community involvement in utilizing technology-based services is significant, and E-Government Services will have an impact on citizen satisfaction and behavior (Uyen Nguyen et al., 2024), trust in the government (Taufiqurokhman et al., 2024), the quality of organizational institutions (Adam & Dzang Alhassan, 2020), which are practical and efficient (Srivastava & Teo, 2010), and the dynamic capabilities of the organization which can ultimately create organizational value in the public sector (Barrutia et al., 2022).

Previous research related to innovation and development of technology utilization models in public services as an effort to create value for the organization, namely by developing the Unified Model of E-Government Adoption (UMEGA) model (Avazov & Lee, 2022), E-government adoption UTAUT model (Al Sayegh et al., 2023) that performance expectations and facility conditions play a role in the implementation of E-government. The success of E-government implementation can affect changing citizenship behavior and is effective if there is high participation or direct involvement of the community (Uyen Nguyen et al., 2024). It should also be noted that the critical factors for the success of e-government implementation, namely the financial condition of a country, the level of infrastructure readiness, knowledge, and technological innovation, and no less critical are political, legal, organizational, and institutional policies, and socio-cultural characteristics (Glyptis et al., 2020).

Various studies analyze the indirect effects or mediation effects of E-Government Services, namely, the effect of E-Government development on corruption behavior mediated by the development of information and communication technologies (ICT) and Institutional Quality (Adam & Dzang Alhassan, 2020), E-Government on Organizational Performance mediated by Organizational Governance (Jauhari et al., 2020), is also in line with the mediation effect of Adoption to E-tax system in the influence of Attitude towards E-tax system on Tax compliance (Night & Bananuka, 2018).

However, there is a different opinion that digital-based government services in tax avoidance are more effective in moderation by applying ICT (Uyar et al., 2021). It shows that the study's results show differences in research results, namely whether ICT is a mediating or moderating variable, so this study is to re-examine the role of ICT in creating organizational value.

In addition to developing and adopting ICT, the involvement of the government that can innovate needs special attention from researchers. The implementation of E-government can improve the quality of institutions or organizations (Adam & Dzang Alhassan, 2020), and the organization's operational capabilities in the form of technology and marketing can improve organizational performance (Mikalef et al., 2020). The implementation of e-government, which is accompanied by the ability of dynamic innovation capabilities, can increase public confidence and trust (Twizeyimana & Andersson, 2019) and ultimately will create organizational value (Mikalef et al., 2020).

Specifically, the research model that we propose is a parallel multiple mediator effect, namely the effect of Government Innovation Capabilities and ICT development on the influence of e-government on Organizational Value Creation, in line with the model constructed by (Rungtusanatham et al., 2014; Igartua & Hayes, 2021; Hayes, 2022) which aims to fill the gaps in various studies, so that it can produce a model that explains that the effect of E-Government Services on organizational Value is transmitted through the process of Government Innovation Capabilities and ICT development.

In order for this paper to be well-structured, section 2 explains the theoretical framework and development of research hypotheses; section 3 explains the operational variables, samples,

data sources, and data analysis techniques; section 4 presents the results of data analysis and discusses the research findings; section 5 offers conclusions and implications for the research.

Literature Review

Based on various literature and previous studies, Figure 1 explains the relationship between research variables and developing research hypotheses. Formulating research hypotheses using a transmittal approach without articulating each predictor variable's effects on the outcome variable (Rungtusanatham et al., 2014; Memon et al., 2018).

E-Government Services pada Organizational Value Creation

E-Government is increasingly becoming an indicator of effective and efficient governance and becoming one of the most important means to measure the digital transformation of public services. E-government is also used to improve public administration's transparency and credibility and overcome corruption (Zhang & Zhang, 2009). Developing e-government will directly reduce the cost of time, procedural relationships, and expenditures in accessing government services (Chen & Li, 2024).

Organizations in the government sector need technology-based service transformation to provide effective and efficient services. The implementation of e-government can improve the quality of service and public satisfaction, improve transparency and credibility of public administration, and overcome all types of corruption (Zhang & Zhang, 2009), which, in the end, can improve organizational performance. Based on various studies, implementing information technology-based governance is essential to involve various elements of the organization; the decision to accept use is more visible if it involves gender, age, experience, and Voluntariness of use (Venkatesh et al., 2003).

The implementation of e-government services will provide more benefits to the community, play a role in forming a relationship of mutual trust between the community and the government (Taufiqurokhman et al., 2024), have an impact on improving the quality of institutions (Adam & Dzang Alhassan, 2020), which ultimately has an impact on organizational performance (Jauhari et al., 2020). Various studies that use constructs in building technology-based service models or behavioral intentions to use e-government are represented by Performance expectancy, Effort expectancy, Social Influence, Facilitating conditions (Venkatesh et al., 2003; Dwivedi et al., 2017), as well as the addition of new constructs Website quality, and Trust of the government (Almaiah & Nasereddin, 2020), the constructs we propose are developments from various previous studies, which are the integration of electronic-based services.

H1. E-Government Services Influence Organizational Value Creation

The Mediating Effect of ICT Development on the Influence of E-Government Services on Organizational Value Creation

Providing reliable, transparent, and efficient services to meet citizen expectations and increase satisfaction, e-government adoption is essential for the government; it will be more effective if there is a strong relationship between citizens and the government; this shows that the role of citizen involvement is enormous in the success of e-government adoption (Uyen Nguyen et al., 2024), in addition to organizational and institutional aspects, socio-cultural characteristics need to be considered because these factors are significant barriers to the implementation of e-Government (Glyptis et al., 2020).

Venkatesh et al., (2003) in his research stated that the direct determinants of behavior using information technology are (1) performance expectancy and its effects are more robust in male groups and especially at a young age; (2) Effort expectancy and its effects are more pronounced in older female workers, and those with limited experience, (3) social influence

Influences more strongly for older female workers, in mandatory use conditions, and with limited experience, (4) and facilitating conditions are more visible in their effects on ICT use behavior in older workers and in line with increasing experience. The effect of E-Government on tax avoidance is more effective involving ICT adoption and development of ICT as part of mitigation in tax avoidance (Uyar et al., 2021); it is also in line with the fact that the use of E-Government Services on Organizational Value Creation is more effective in organizations that develop ICT (Adam & Dzang Alhassan, 2020).

H2. E-Government Services on Organizational Value Creation through ICT Development

The Mediating Effect of Government Innovation Capabilities on the Influence of E-Government Services on Organizational Value Creation

ICT development is a severe concern for organizations, and implementing technology-based services or effective e-government through transparent information and reliable service delivery is essential to building long-term trust (Uyen Nguyen et al., 2024). Empirical results in Africa show that e-government development influences institutional quality so that it can reduce corrupt behavior; this is effective if the organization carries out ICT development (Adam & Dzang Alhassan, 2020), so that it can increase community tax compliance, which has an impact on organizational performance (Night & Bananuka, 2018).

Dynamic capabilities are a series of specific and identifiable processes such as product development, strategic decision-making, and alliances (Eisenhardt & Martin, 2000), becoming an advantage for organizations with dynamic capabilities to compete and adapt to every change. The implementation of e-government can improve public services, increase administrative efficiency and increasingly dynamic organizational capabilities, improve ethical behavior and professionalism, increase trust and confidence in the government, and increase social value and community welfare (Twizeyimana & Andersson, 2019), increasing organizational innovation capabilities (Luna-Reyes et al., 2020), to improve the quality, value, and performance of the organization (Adam, 2020; Jauhari et al., 2020; Uyen Nguyen et al., 2024).

It appears that the implementation of e-government in the public sector does not necessarily have a direct effect on increasing the value or performance of the organization but is more effective if it has dynamic organizational capabilities represented by Top Management, Adequate resources and Absorptive capacity, Organizational slack, Cross-functional collaboration (Barrutia et al., 2022), and organizational challenges due to limited resources (Elgohary & Abdelazyz, 2020; Madaki et al., 2024).

H3. E-Government Services influence Organizational Value Creation through Government Innovation Capabilities

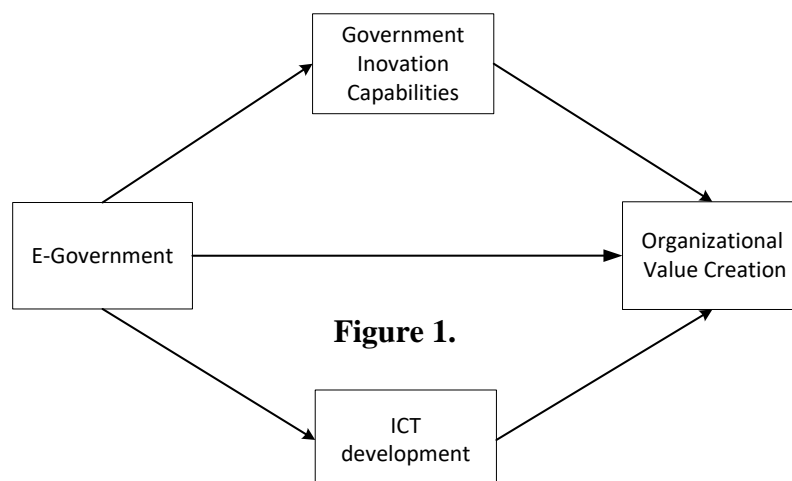


Figure 1.

Research model: The mediating effects of Government Inovation Capabilities and ICT development on Organizational Value Creation

METHOD

Data, Variables, and Measures

This research is in the public sector in West Java Province, Indonesia; the number of research samples is 268 respondents, and the primary data source of this study uses a questionnaire. The Outcome variable or dependent variable is Organizational Value Creation adopted by (Barrutia et al., 2022), with proxies of Efficiency, Effectiveness, and Societal challenges.

Predictor variables or independent variables of E-Government Services, with indicators developed by (Alshehri et al., 2012; Almaiah & Nasereddin, 2020), namely Performance expectancy, Effort expectancy, social influence, Facilitating conditions, Website quality, and Government Trust.

The first mediator variable, Government Capabilities Innovation, is a development of research (Barrutia et al., 2022; Madaki et al., 2024), which is represented by the indicators 1) Top Management, 2) Adequate resources and Absorptive capacity, 3) Cross-functional collaboration, 4) Organizational slack for exploration, 5) Change management, 6) Organizational challenge. The mediator variable ICT Development was adopted (Adam & Dzung Alhassan, 2020) with ICT Access, ICT Use, and ICT Skill indicators.

The research questionnaire instrument was measured using a Likert scale, a value of 1 = strongly disagree and a value of 5 = strongly agree, which was distributed to the Regional Finance Agency in West Java, Indonesia, from a target of 280 respondents (an average of 10 respondents, each Regional Government) who were willing to fill out and return the research questionnaire, totaling 268 respondents.

Data analysis techniques and hypothesis testing

The parallel multiple mediation model approach to test the direct and indirect effects of E-Government (EG) on Organizational Value Creation (OVC) through Government Capabilities Innovation (GCI) and ICT Development (ICTDev), such as the Research model in Figure 1, can be formulated as a statistical model or mathematical equation as follows;

Direct effects

Equation (1):

$$Y = i_Y + c'X + e_Y$$

$$\text{Organizational Value Creation (OVC)} = \alpha + \beta_1 EG + \varepsilon_{it}$$

Indirect Effects

Equation (2):

$$M_1 = i_M + aX + e_M$$

$$\text{Government Inovation Capabilities (GIC)} = \alpha + \beta_1 EG + \varepsilon_{it}$$

Persamaan (3):

$$M_2 = i_M + aX + e_M$$

$$\text{ICT Development (ICTDev)} = \alpha + \beta_1 EG + \varepsilon_{it}$$

Total Effect

Equation (4):

$$Y = i_Y + c'X + bM_1 + bM_2 + e_Y$$

$$\text{Government Innovation Capabilities (GIC)} = \alpha + \beta_1 EG + \beta_2 GIC + \beta_3 ICTDev + \varepsilon_{it}$$

In answering and estimating the research model, the researcher used the Structural Equation Modeling (SEM) Partial Least Square (PLS) approach for the following reasons: SEM-PLS aims to predict and confirm theories based on total variance (J. Hair et al., 2017), analysis that is not based on assumptions so that it does not need to carry out the data normalization process and can be applied well to a small number of samples (J. F. Hair et al., 2019), and SEM can analyze all paths in one analysis (Chin, 1998; Ramayah et al., 2018; J. F. Hair et al., 2019).

RESULTS AND DISCUSSION

Sample characteristics

Table 1: Respondent Characteristics

The table explains the demographic structure of the respondents: 60.07% are men, and 39.93% are women. The age of the respondents varies considerably; the data shows that 8.58% are aged <25 years, 23.88% are aged 25-34 years, 49.25% are aged 35-44 years, and the remaining 18.28% are aged >44 years. The respondents' education shows that 11.94% have a high school education or equivalent, 17.16% have a Diploma, 61.19% have a Bachelor's degree, and the remaining 9.70% have postgraduate education.

Table 1. Summary of Respondent Demographic Structure

Variable	Classification	Total	Percentage %
Gender	Male	161	60,07
	Female	107	39,93
	Total	268	100
Age	< 25	23	8,58
	25 – 34	64	23,88
	35 – 44	132	49,25
	> 44	49	18,28
	Total	268	100
Education	High school and equivalent	32	11,94
	Diploma	46	17,16
	Bachelor	164	61,19
	Postgraduate	26	9,70
	Total	268	100

Source: Author's data processing, 2024

Validity and Reliability Test

Table 2 shows the results of the reliability test of the research instrument; the summary of the results of the outer measurement model shows the value of the outer loading item, Cronbach's alpha, Composite reliability, and Convergent Validity (AVE), the criteria for the instrument are said to be reliable if the Cronbach alpha value is ≥ 0.70 , but ≥ 0.50 is also acceptable (J. F. Hair et al., 2011; Kwong-Kay, 2013), the test results show a range of 0.713 - 0.896, so it can be said that all instruments are in the reliable category, however there are ICTDev.2 with a score of 0.453 and ICTDev.6 with a score of 0.399 which are excluded from the analysis of the research model.

Measuring the consistency of the reliability of the research instrument also uses the composite reliability value, and the test results in Table 2 show a score of ≥ 0.70 and an acceptable range. In addition, Table 2 presents the Average Variable Extracted (AVE) value used to check convergent validity. The test results can be accepted if the value is ≥ 0.50 , and the test results show data for all values ≥ 0.50 , which can be categorized as good validity, as Table 3 shows an excellent cross-loading discriminant test if the value charged exceeds the cross-loading value of the variable (Farrell, 2010).

A new approach can also use the Heterotrait-Monotrait Ratio (HTMT) Test, namely using a better discriminant validity indicator assessment, suggesting a value at the threshold of 0.80 - 0.90 is a pretty good value validity (Henseler et al., 2015; Sarstedt et al., 2021; Ringle et al., 2023), the results of the analysis show an acceptable level of validity.

Table 2. Summary of Outer Measurement Model Results

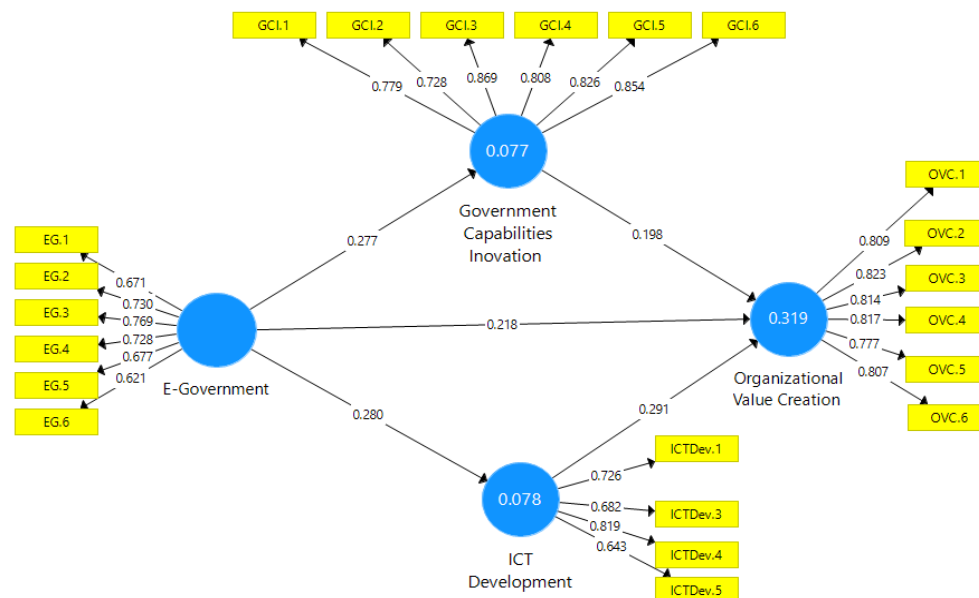
Variable	Indicator	VIF	Loadings	Cronbach alpha	Composite reliability	Convergent Validity=AVE
Organizational Value Creation (OVC)	OVC.1	2.74	0.823	0.894	0.900	0.653
	OVC.2	2.96	0.814			
	OVC.3	2.74	0.817			
	OVC.4	2.54	0.777			
	OVC.5	2.50	0.807			
	OVC.6	2.82	0.829			
E-Government (EG)	EG.1	1.39	0.671	0.793	0.852	0.591
	EG.2	1.90	0.730			
	EG.3	1.75	0.769			
	EG.4	1.65	0.728			
	EG.5	1.57	0.677			
	EG.6	1.51	0.621			
Government Capabilities Innovation (GCI)	GCI.1	1.93	0.779	0.896	0.900	0.659
	GCI.2	1.64	0.728			
	GCI.3	2.76	0.869			
	GCI.4	2.33	0.808			
	GCI.5	2.33	0.826			
	GCI.6	2.80	0.854			
ICT Development (ICTDev)	ICTDev.	1.33	0.726	0.713	0.811	0.519
	ICTDev.	1.78	0.453			
	ICTDev.	2.43	0.682			
	ICTDev.	1.36	0.819			
	ICTDev.	2.42	0.643			
	ICTDev.	1.80	0.399			

Source: Author's data processing, 2024

Table 3: Discriminant Validity Test Results

Discriminant Validity	E-Governance	Governance Capabilities Innovation	ICT Development	Organizational Value Creation
E-Governance	0.701			

Governance	Capabilities			
Innovation		0.277	0.812	
ICT Development		0.280	0.760	0.720
Organizational	Value			
Creation		0.354	0.480	0.503
				0.808



The next stage in partial least square (PLS) analysis is to conduct an inner model, namely a structural model that tests the effect of each path coefficient of the exogenous variable on the endogenous variable; the Variance Inflation Factor (VIF) analysis is the initial part of the analysis used to measure and ensure that there is no multicollinearity, the results of the analysis are presented in table 1 which shows a VIF value > 0.01 and < 10 , which means that there is no multicollinearity.

Table 4.a. Structural model hypothesis testing for direct effects.

Description	Path Coefficient	t-test	p-value	Criteria
E-Government → Organizational Value Creation	0.277	5.464	0.000	Accepted
E-Government → Government Capabilities Innovation	0.280	4.758	0.000	Accepted
E-Government → ICT Development	0.218	4.373	0.000	Accepted
ICT Development → Organizational Value Creation	0.198	3.470	0.001	Accepted
Government Capabilities Innovation → Organizational Value Creation	0.291	2.084	0.038	Accepted

Source: Author's data processing, 2024

The results of testing the hypothesis of the direct effect structural model are shown in 4.a and Figure 2 which show that; E-Government has a positive and significant influence on

Organizational Value Creation, the coefficient value is 0.277, with a t-test value of 5.464, and a p-value of $0.000 \leq 0.05$, E-Government has a positive and significant influence on Government Capabilities Innovation, the coefficient value is 0.280, with a t-test value of 4.758, and a p-value of $0.000 \leq 0.05$, E-Government has a positive and significant influence on ICT Development, the coefficient value is 0.218, with a t-test value of 4.373, and a p-value of $0.000 \leq 0.05$, ICT Development has a positive and significant influence on Organizational Value Creation, the coefficient value is 0.198, with a t-test value of 3.470, and a p-value of $0.001 \leq 0.05$, Government Capabilities Innovation has a positive and significant influence on Organizational Value Creation, the coefficient value is 0.291, with a t-test value of 2.084, and a p-value of $0.038 \leq 0.05$.

The mediation effect or indirect effect is part of how E-Government has a positive and significant influence on Organizational Value Creation through Government Capabilities Innovation and ICT Development. Table 4. b presents the mediation or indirect effect, which shows that;

The effect of E-Government on Organizational Value Creation through Government Capabilities Innovation obtained coefficient values of 0.055, t-test value of 1.987, and p-value of $0.048 \leq 0.05$; the test results are significant; it shows that there is a mediation effect of Government Capabilities Innovation on the influence of E-Government on Organizational Value Creation.

The same thing was done in the analysis of the Effect of E-Government on Organizational Value Creation through ICT Development; the coefficient values were obtained at 0.082, the t-test value was 2.658, and the p-value was $0.008 \leq 0.05$, the test results were significant, this indicates that there is a mediation effect of ICT Development on the influence of E-Government on Organizational Value Creation.

Table 4.b. Structural model hypothesis testing for indirect effects.

Description	Path Coefficient	t-test	p-value	Criteria
E-Government → Government Capabilities Innovation → Organizational Value Creation	0.055	1.987	0.048	Accepted / full mediation
-Government Development → ICT Development → Organizational Value Creation	0.082	2.658	0.008	Accepted / Full mediation

Source: Author's data processing, 2024

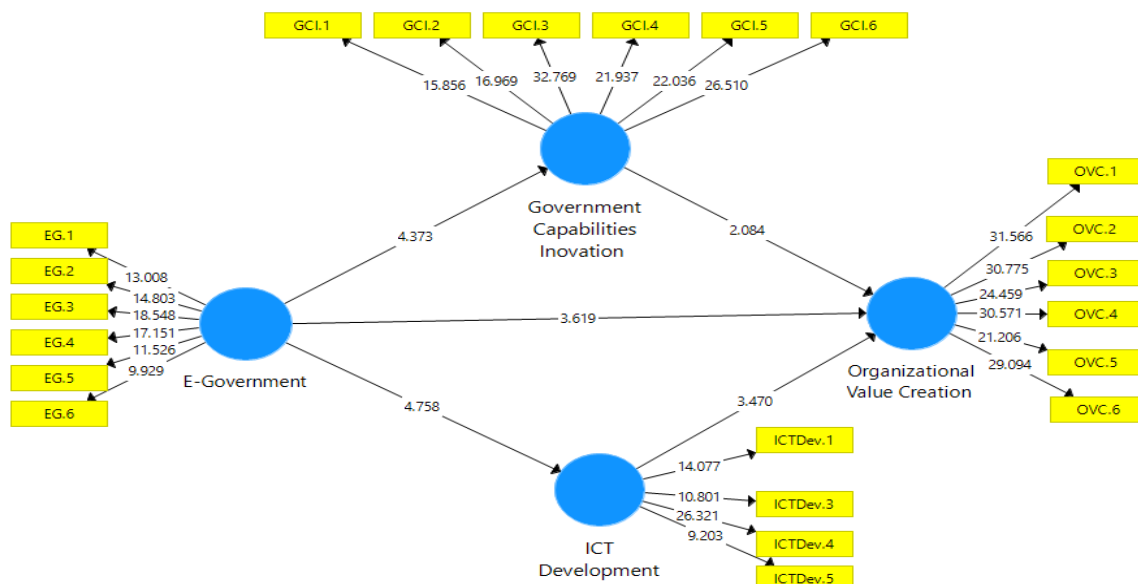


Figure 3 Output Model Struktural Penelitian

Discussion of Finding

The direct effect of E-Government (EG) on Organizational Value Creation (OVC) The test results show that E-Government (EG) influences Organizational Value Creation (OVC), the implementation of information technology-based services in the public sector is expected to be able to increase organizational value, in line with various studies conducted that the implementation of information technology can increase service effectiveness and transparency which can reduce fraudulent practices (Zhang & Zhang, 2009; Adam & Dzang Alhassan, 2020; Zou et al., 2023), reduce costs and time (Chen & Li, 2024), public trust and confidence in the government (West, 2004), can improve the quality of increasingly credible institutions which can ultimately create organizational value (Jauhari et al., 2020; Adam & Dzang Alhassan, 2020; Kanaan et al., 2023).

No less critical, the implementation of e-government can improve public services, increase administrative efficiency, ethical behavior and professionalism, trust and confidence in the government; and social values and community welfare (Twizeyimana & Andersson, 2019), increase organizational innovation capabilities (Luna-Reyes et al., 2020), to improve the quality, value, and performance of the organization (Malodia et al., 2021; Karmakar & Dutta, 2022; Jauhari et al., 2020; Adam & Dzang Alhassan, 2020; Okurebia & Akpan, 2023; Uyen Nguyen et al., 2024).

For developing countries such as Indonesia, the fundamental problems that the government must consider in efforts to realize efficient and effective e-government in supporting citizen demands such as; (1) universal access, (2) privacy and confidentiality; and (3) citizen focus in government management (Layne & Lee, 2001), besides the challenges that often arise are related to technology and organizations that must be resolved gradually, the challenges that often arise, as stated by (Ndou, 2004), namely; (1) ICT infrastructure, (2) Policy issues, (3) Human capital development and lifelong learning, (4) Change management, (5) Partnership and collaboration, (6) Strategy, (7) Leadership role.

Therefore, efforts that can be made to overcome various problems and challenges are to involve all stakeholders, especially the community as the party that feels the direct impact of the implementation of e-government, so it is necessary to increase community involvement as the primary stakeholder in building e-government (Flak & Rose, 2005), but implementation challenges such as limited resources, resistance to change and the ability to interact between application programs also often occur (Madaki et al., 2024).

Exciting research findings: First, Government Capabilities Innovation fully mediates the effect of E-Government on Organizational Value Creation; this proves that Government Capabilities Innovation is an important process in creating Organizational Value. It seems more accurate and effective if the government involves dynamic capabilities in building organizations (Mekalef, 2020), making organizations that are quality, reliable, and competitive (Mikalef et al., 2020; Barrutia et al., 2022).

Organizational innovation capability is essential and needed as an effort to strengthen and increase the effectiveness of organizational operations; it can build and develop information technology to create products and services (technological capability) and can meet consumer needs (marketing capability), which are essential pillars in creating organizational performance (Mikalef et al., 2020). In addition, creating dynamic organizational capabilities requires the support of leaders and policies that can optimize the capacity and capabilities of the organization and can collaborate various elements of organizational strength (Elgohary &

Abdelazyz, 2020; Barrutia et al., 2022; Madaki et al., 2024). Innovation involves sharing stakeholders, collaborating, and creating to overcome various problems (Palumbo et al., 2023).

Building organizational innovation capabilities must integrate various important elements, such as; (1) Top Management, top management leadership that is able to orchestrate resources for the creation of public value (Barrutia et al., 2022), (2) Adequate resources and Absorptive capacity which is the ability to make investments to improve infrastructure (Barrutia et al., 2022; Madaki et al., 2024), (3) Organizational slack is interpreted as the organization's flexibility in dealing with the complexity of problems and uncertainty (Barrutia et al., 2022), (4) Cross-functional collaboration which is interpreted as the organization's ability to collaborate across functions (Barrutia et al., 2022), involving people and organizations related to the technology ecosystem, and aligning stakeholder goals (Madaki et al., 2024), and (5) Organizational challenges caused by limited resources, resistance to change, and issues of interaction capabilities between application programs (Elgohary & Abdelazyz, 2020), the integration of sharing these essential elements is expected to increase productivity and service delivery, thereby increasing the value of the organization (Osborne et al., 2022; Elgohary & Abdelazyz, 2020; Barrutia et al., 2022; Madaki et al., 2024).

The findings of these two studies are as follows: The indirect effect of ICT Development that fully mediates the effect of E-Government on Organizational Value Creation, proving that ICT Development also transmits and becomes a process in creating organizational value. Supporting the transformation of organizational operations requires the ability to develop ICT and adapt to the needs of the organization and the demands of the community, who want to be served quickly and efficiently; the implementation of ICT can be used to support the transformation and simplification of the bureaucratic system, reduce functional work, improve the quality of government services (Cordella & Tempini, 2015), so that it has an impact on increasing public satisfaction, more than that it can build trust between the community and the government (Taufiqurokhman et al., 2024).

Building and developing sustainable ICT-based services is expected to increase community participation and more effective and efficient organizational operations, so it is expected to be able to create an organization that is more credible and competitive (Ebrahim & Irani, 2005; Mikalef et al., 2020), in line with the fact that IT integration can increase efficiency, data security, and service delivery to the community (Qekaj-Thaçi & Thaçi, 2023; Madaki et al., 2024).

Success in carrying out digital transformation in the public sector is not easy; organizational leaders must be able to collaborate on the resources they have; many things determine the success in building a system, such as accessibility, ability, skills, and ICT literacy, organizational leadership in using the system (Adam & Dzung Alhassan, 2020; Sudirman & Saidin, 2022; Qekaj-Thaçi & Thaçi, 2023; Sabani et al., 2023; Al Sayegh et al., 2023). However, organizations sometimes need more support or support in carrying out transformation (Tangi et al., 2021), other barriers include lack of financial, technical and personnel capacity, and legal regulations to the progress of city e-Government (Moon, 2002), so they must involve stakeholders, especially the community, as an essential pillar in developing and implementing e-government (Flak & Rose, 2005).

CONCLUSION

The research results and arguments from various studies and findings can enrich our understanding of the importance of E-Government Implementation, Government Capabilities Innovation, ICT Development, and Organizational Value Creation.

The results of the study indicate that E-Government has a positive and significant effect on Organizational Value Creation; there is a mediation effect of Government Innovation Capabilities and ICT Development on E-Government Organizational Value Creation; this shows that there is an increasing effect of E-Government on Organizational Value Creation

through Government Innovation Capabilities and ICT Development. Realizing Government Innovation Capabilities by integrating important pillars, namely Top Management, Adequate resources and Absorptive capacity, Organizational slack, Cross-functional collaboration, and Organizational challenge; the important pillars in building and developing ICT focus on Access, Use, and Skill ICT.

The limitations of this study include The number of research samples, the mediation variables being limited to Government Innovation Capabilities and ICT Development so that further researchers can add mediation variables such as institutional quality, public participation, and institutional policy development, in addition to being able to combine mediation and moderation or conditional process models, so that it can be known when, where, and in what groups that E-Government effectively influences and can increase Organizational Value Creation.

REFERENCES

- Adam, I. O. (2020). Examining E-Government development effects on corruption in Africa: The mediating effects of ICT development and institutional quality. *Technology in Society*, 61(February), 101245. <https://doi.org/10.1016/j.techsoc.2020.101245>
- Adam, I. O., & Dzang Alhassan, M. (2020). Bridging the global digital divide through digital inclusion: the role of ICT access and ICT use. *Transforming Government: People, Process and Policy*, 15(4), 580–596. <https://doi.org/10.1108/TG-06-2020-0114>
- Al Sayegh, A. J., Ahmad, S. Z., AlFaqeeh, K. M., & Singh, S. K. (2023). Factors affecting e-government adoption in the UAE public sector organisations: the knowledge management perspective. *Journal of Knowledge Management*, 27(3), 717–737. <https://doi.org/10.1108/JKM-09-2021-0681>
- Almaiah, M. A., & Nasereddin, Y. (2020). Factors influencing the adoption of e-government services among Jordanian citizens. *Electronic Government*, 16(3), 236–259. <https://doi.org/10.1504/EG.2020.108453>
- Alshehri, M., Drew, S., Alhussain, T., & Alghamdi, R. (2012). The effects of website quality on adoption of E-Government service: An empirical study applying UTAUT model using SEM. *ACIS 2012: Proceedings of the 23rd Australasian Conference on Information Systems, 2011*, 1–13.
- Avazov, S., & Lee, S. (2022). E-Government Services Adoption in Uzbekistan: An Empirical Validation of Extended Version of the Unified Model of Electronic Government Acceptance (UMEGA). *Journal of Policy Studies*, 37(3), 17–39. <https://doi.org/10.52372/jps37302>
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120.
- Barrutia, J. M., Echebarria, C., Aguado-Moralejo, I., Apaolaza-Ibáñez, V., & Hartmann, P. (2022). Leading smart city projects: Government dynamic capabilities and public value creation. *Technological Forecasting and Social Change*, 179(April). <https://doi.org/10.1016/j.techfore.2022.121679>
- Chen, Y., & Li, Q. (2024). The Impact of E-Government on the New Generation Productive Capacities: Evidence from Cross-Country Data. *Sustainability (Switzerland)*, 16(8). <https://doi.org/10.3390/su16083233>
- Chin. (1998). Commentary: Issues and opinion on structural equation modeling. In *MIS Quarterly* (Vol. 22, Issue 1, pp. vii–xvi).
- Cordella, A., & Tempini, N. (2015). E-government and organizational change: Reappraising the role of ICT and bureaucracy in public service delivery. *Government Information Quarterly*, 32(3), 279–286. <https://doi.org/10.1016/j.giq.2015.03.005>
- Dwivedi, Y. K., Rana, N. P., Janssen, M., Lal, B., Williams, M. D., & Clement, M. (2017). An empirical validation of a unified model of electronic government adoption (UMEGA).

- Government Information Quarterly*, 34(2), 211–230. <https://doi.org/10.1016/j.giq.2017.03.001>
- Ebrahim, Z., & Irani, Z. (2005). E-government adoption: Architecture and barriers. *Business Process Management Journal*, 11(5), 589–611. <https://doi.org/10.1108/14637150510619902>
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10–11), 1105–1121. [https://doi.org/10.1002/1097-0266\(200010/11\)21:10/11<1105::AID-SMJ133>3.0.CO;2-E](https://doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E)
- Elgohary, E., & Abdelazyz, R. (2020). The impact of employees' resistance to change on implementing e-government systems: An empirical study in Egypt. *Electronic Journal of Information Systems in Developing Countries*, 86(6), 1–14. <https://doi.org/10.1002/isd2.12139>
- Farrell, A. M. (2010). Insufficient discriminant validity: A comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of Business Research*, 63(3), 324–327. <https://doi.org/10.1016/j.jbusres.2009.05.003>
- Flak, L. S., & Rose, J. (2005). Stakeholder Governance: Adapting Stakeholder Theory to E-Government. *Communications of the Association for Information Systems*, 16. <https://doi.org/10.17705/1cais.01631>
- Glyptis, L., Christofi, M., Vrontis, D., Giudice, M. Del, Dimitriou, S., & Michael, P. (2020). E-Government implementation challenges in small countries: The project manager's perspective. *Technological Forecasting and Social Change*, 152(December 2019). <https://doi.org/10.1016/j.techfore.2019.119880>
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management and Data Systems*, 117(3), 442–458. <https://doi.org/10.1108/IMDS-04-2016-0130>
- Hayes, A. (2022). *Introduction to Mediation, Moderation, and Conditional Process Analysis. A Regression-Based Approach* (David A. Kenny (ed.); Third Edit). THE GUILFORD PRESS. A Division of Guilford Publications, Inc.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Igartua, J. J., & Hayes, A. F. (2021). Mediation, Moderation, and Conditional Process Analysis: Concepts, Computations, and Some Common Confusions. *Spanish Journal of Psychology*, 24(6), 1–23. <https://doi.org/10.1017/SJP.2021.46>
- Jauhari, A., Majid, M. S. A., Basri, H., & Djalil, M. A. (2020). Are E-government and bureaucratic reform promoting good governance towards a better performance of public organization? *Quality - Access to Success*, 21(175), 25–30.
- Kanaan, A., Al-Hawamleh, A., Abulfaraj, A., Al-Kaseasbeh, H. M., & Alorfi, A. H. (2023). The effect of quality, security and privacy factors on trust and intention to use e-government services. *International Journal of Data and Network Science*, 7(1), 185–198. <https://doi.org/10.5267/j.ijdns.2022.11.004>
- Karmakar, R., & Dutta, U. K. (2022). A Study of the Relationship Between Corporate Governance and Organizational Performance. *Journal of Corporate Governance Research*, 6(1), 1. <https://doi.org/10.5296/jcgr.v6i1.20119>

- Kwong-Kay, K. (2013). Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS. *Marketing Bulletin*, 24(1), 1–32. https://d1wqtxts1xzle7.cloudfront.net/39627062/2013_journal_10_PLS_MB-libre.pdf?1446527592=&response-content-disposition=inline%3B+filename%3DPartial_Least_Squares_Structural_Equatio.pdf&Expires=1702011101&Signature=J7LCkmCyQWVT70I~n01JnGhxu2Pn1AZluQyulM
- Layne, K., & Lee, J. (2001). Developing fully functional E-government: A four stage model. *Government Information Quarterly*, 18(2), 122–136. [https://doi.org/10.1016/S0740-624X\(01\)00066-1](https://doi.org/10.1016/S0740-624X(01)00066-1)
- Luna-Reyes, L., Juiz, C., Gutierrez-Martinez, I., & Duhamel, F. B. (2020). Exploring the relationships between dynamic capabilities and IT governance: Implications for local governments. *Transforming Government: People, Process and Policy*, 14(2), 149–169. <https://doi.org/10.1108/TG-09-2019-0092>
- Madaki, A. S. ad, Ahmad, K., & Singh, D. (2024). IT integration implementation in e-government public sector in developing countries: a systematic literature review and model development. *Transforming Government: People, Process and Policy*, May. <https://doi.org/10.1108/TG-02-2024-0043>
- Malodia, S., Dhir, A., Mishra, M., & Bhatti, Z. A. (2021). Future of e-Government: An integrated conceptual framework. *Technological Forecasting and Social Change*, 173(December 2020), 121102. <https://doi.org/10.1016/j.techfore.2021.121102>
- Memon, M. A., Cheah, J. H., Ramayah, T., Ting, H., & Chuah, F. (2018). Mediation analysis issues and recommendations. *Journal of Applied Structural Equation Modeling*, 2(1), I–IX. [https://doi.org/10.47263/JASEM.2\(1\)01](https://doi.org/10.47263/JASEM.2(1)01)
- Mikalef, P., Krogstie, J., Pappas, I. O., & Pavlou, P. (2020). Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities. *Information and Management*, 57(2), 103169. <https://doi.org/10.1016/j.im.2019.05.004>
- Moon, M. J. (2002). The evolution of E-government among municipalities: Rhetoric or reality? *Public Administration Review*, 62(4), 424–433. <https://doi.org/10.1111/0033-3352.00196>
- Ndou, V. (2004). E-government for developing countries: Opportunities and challenges. *Electron. J. Inf. Syst. Dev. Ctries*, 18(1), 1–24.
- Night, S., & Bananuka, J. (2018). The mediating role of adoption of an electronic tax system in the relationship between attitude towards electronic tax system and tax compliance. *Journal of Economics, Finance and Administrative Science*, 25(49), 73–88. <https://doi.org/10.1108/JEFAS-07-2018-0066>
- Okurebia, L. E., & Akpan, S. (2023). Corporate Governance and Organization Performance in Akwa Ibom State Polytechnic. *International Journal of Advanced Academic Research* /, 9(6), 150–176. www.ijaar.org
- Osborne, S. P., Powell, M., Cui, T., & Strokosch, K. (2022). Value Creation in the Public Service Ecosystem: An Integrative Framework. *Public Administration Review*, 82(4), 634–645. <https://doi.org/10.1111/puar.13474>
- Palumbo, R., Casprini, E., & Fakhra Manesh, M. (2023). Unleashing open innovation in the public sector: a bibliometric and interpretive literature review. *Management Decision*, 61(13), 103–171. <https://doi.org/10.1108/MD-12-2022-1745>
- Qekaj-Thaçi, A., & Thaçi, L. (2023). The Quality of E-Government Management, Information Security and Quality. *Emerging Science Journal*, 7(1), 228–244. <https://doi.org/10.28991/ESJ-2023-07-01-016>
- Ramayah, T., Chuah, F., Ting, H., & Memon, M. A. (2018). Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0. An updated guide and practical

- guide to statistical analysis. *Handbook of Market Research*, July, 967–978. https://doi.org/10.1007/978-3-319-57413-4_15
- Ringle, C. M., Sarstedt, M., Sinkovics, N., & Sinkovics, R. R. (2023). A perspective on using partial least squares structural equation modelling in data articles. *Data in Brief*, 48(109074), 1–21.
- Rungtusanatham, M., Miller, J. W., & Boyer, K. K. (2014). Theorizing , testing , and concluding for mediation in SCM research: Tutorial and procedural recommendations. *Journal of Operations Management*, 32(3), 99–113. <https://doi.org/10.1016/j.jom.2014.01.002>
- Sabani, A., Thai, V., & Hossain, M. A. (2023). Factors Affecting Citizen Adoption of E-Government in Developing Countries: An Exploratory Case Study From Indonesia. *Journal of Global Information Management*, 31(1), 1–23. <https://doi.org/10.4018/JGIM.318131>
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In *Handbook of market research*. In *Handbook of Market Research* (Issue July). <https://doi.org/10.1007/978-3-319-05542-8>
- Srivastava, S. C., & Teo, T. S. H. (2010). E-government, e-business, and national economic performance. *Communications of the Association for Information Systems*, 26(1), 267–286. <https://doi.org/10.17705/1cais.02614>
- Sudirman, F. A., & Saidin, S. (2022). Pemerintahan Berbasis Elektronik (E-Government) dan Pembangunan Berkelanjutan: Reviu Literatur Sistematis. *Nakhoda: Jurnal Ilmu Pemerintahan*, 21(1), 44–58. <https://doi.org/10.35967/njip.v21i1.269>
- Tangi, L., Janssen, M., Benedetti, M., & Noci, G. (2021). Digital government transformation: A structural equation modelling analysis of driving and impeding factors. *International Journal of Information Management*, 60, 102356. <https://doi.org/10.1016/j.ijinfomgt.2021.102356>
- Taufiqurokhman, T., Satispi, E., Andriansyah, A., Murod, M., & Sulastri, E. (2024). The impact of e-service quality on public trust and public satisfaction in e-government public services. *International Journal of Data and Network Science*, 8(2), 765–772. <https://doi.org/10.5267/j.ijdns.2024.1.002>
- Twizeyimana, J. D., & Andersson, A. (2019). The public value of E-Government – A literature review. *Government Information Quarterly*, 36(2), 167–178. <https://doi.org/10.1016/j.giq.2019.01.001>
- Uyar, A., Nimer, K., Kuzey, C., Shahbaz, M., & Schneider, F. (2021). Can e-government initiatives alleviate tax evasion? The moderation effect of ICT. *Technological Forecasting and Social Change*, 166(May). <https://doi.org/10.1016/j.techfore.2021.120597>
- Uyen Nguyen, T. T., Van Nguyen, P., Truong, G. Q., Ngoc Huynh, H. T., & Hoang Le, T. P. M. (2024). Investigating the impact of citizen relationship quality and the moderating effects of citizen involvement on E-government adoption. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(3), 100372. <https://doi.org/10.1016/j.joitmc.2024.100372>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *IMIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- West, D. M. (2004). E-Government and the Transformation of Service Delivery and Citizen Attitudes. *Public Administration Review*, 64(1), 15–27. <https://doi.org/10.1111/j.1540-6210.2004.00343.x>
- Zeleti, F. A., & Mustonen-ollila, E. (2011). ICT Education and Wider Access of Citizens to ICTs as Means to Generate and Distribute E- Government Content. In *In 11th European Conference on E-government*.

- Zhang, J., & Zhang, Z. (2009). Applying E-government information system for anti-corruption strategy. *2009 International Conference on Management of E-Commerce and e-Government, ICMecG 2009*, 112–115. <https://doi.org/10.1109/ICMeCG.2009.40>
- Zou, Q., Mao, Z., Yan, R., Liu, S., & Duan, Z. (2023). Vision and reality of e-government for governance improvement: Evidence from global cross-country panel data. *Technological Forecasting and Social Change*, 194(February), 122667. <https://doi.org/10.1016/j.techfore.2023.122667>