Developing Digital Government In Vietnam

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Abstract

Digital government is a developing trend in every country, characterized by its operation in a digital environment, based on digital technology and data. This necessitates digital competence for both civil servants and citizens to form digital civil servants and digital citizens – the subjects of digital government processes, directly influencing and determining the goals of digital government development. This study builds a theoretical framework for digital government and analyzes the impact of digital civil servants and digital citizens on digital government in the context of Vietnam's digital society. The author surveyed a sample size of N = 200 local civil servants at the commune level and N = 200 local citizens from 20 rural communes in three provinces: Hung Yen (Northern), Quang Tri (Central), and An Giang (Southern). The research results confirm that civil servants possess sufficient digital competence to meet job requirements, but further improvement is still needed. The fact that the digital capabilities of the population are assessed at a lower level, requiring the provision and updating of basic digital knowledge and skills, has highlighted the necessity of current digital workforce solutions to achieve the goal of digital government in Vietnam.

Keywords: Digital government; Digital civil servant; Digital citizens; Vietnam.

1. Introduction

Since 2020, Vietnam has undergone significant reforms, building and operating a digital government to better serve its citizens. Accordingly, the National Digital Transformation Program, with the goal of applying digital technology and developing a digital government to build a clean, modern, professional, effective, and efficient administration (PM, 2020), serves as an important legal basis for central and local agencies to implement the digital government objectives.

In 2025, Vietnam will implement strong administrative reforms, streamlining the state apparatus, especially at the local level, and establishing a two-tiered local government model (provincial and commune levels) to replace the previous three-tiered model (provincial, district, and commune levels) (CPV, 2025). As a result, a two-tiered local government system will be established, comprising 34 provincial-level localities (a reduction of approximately 47%) and 3321 commune-level localities (a reduction of approximately 68%) (GN, 2025). Many tasks previously handled by district-level governments will be transferred to commune-level governments, creating greater pressure on communes in managing local economic and social development.

This practice reflects a general trend in the context of the 4.0 revolution with the rapid development of digital technology. Therefore, research on the topics of digital government, digital civil servants, and digital citizens is necessary; contributing to providing timely solutions to innovate state governance methods and build a digital government to better serve the people.

2. Literature review

Digital government is a relatively new phenomenon, but it is becoming a growing trend in state governance in every country. MIC (2021) defines digital government as a government operating model designed and operated based on digital data and technology, with all operations conducted securely in a digital environment. This model enables government agencies to make more timely policy decisions, provide higher-quality services, and utilize resources more optimally. Sharing this view, Tuyen, H.T.M. (2023) affirms the role of digital government, stating that when digital government and digital society are formed and operated synchronously, the governance and development of society in each country will be facilitated by digitized big data, saving resources while ensuring effectiveness. Interaction between state agencies and citizens and businesses will be carried out more frequently

and easily through online platforms. Creating development and effectively solving major problems in socio-economic development and management.

According to the OECD (2024), digital government refers to the operating mechanism of state agencies in a digital environment; operation based on data and digital technology to make more timely and effective decisions and provide better services, thereby creating development for the nation and localities. Similarly, Cuong, V.H. et al. (2025) summarized many studies and emphasized the content of digital government as a new tool for the government to provide diverse and accurate public services and goods by using next-generation technologies such as big data; its goal is to transform the structure and processes of government through the application of science and technology, creating an open, transparent, and efficient government, oriented towards service.

Thus, in the most general terms, the studies above affirm that digital government implies the operating mechanism of state/government agencies in a digital environment. Accordingly, state agencies are designed, organized, and operated based on digital technology and digital data to make timely and effective decisions, thereby providing better services. The scale "Developing digital government" (DDG) is interpreted focusing on several aspects: The government's operational model is designed to operate securely in the digital environment (DDG1); Digital technology is applied in state administration processes; data is fully digitized, accurate, and publicly available (DDG2); Public officials and citizens can easily access digital data; transactions and interactions are convenient in the digital environment (DDG3).

Digital government is fundamentally characterized by its operation in a digital environment, based on digital technology and digital data. Therefore, to build and develop a digital government, the necessary conditions are the digital capacity of civil servants (digital civil servants) and the digital capacity of citizens (digital citizens) - the subjects participating in the processes of digital government; in which, civil servants are the subjects implementing policies and public services, and citizens are the subjects benefiting from policies and public services.

- Firstly, digital civil servants are subjects who perform public duties and directly participate in digital government processes. According to Tu, D.D. (2025), the digital capacity of civil servants becomes a decisive factor in the effectiveness of state administration and the quality of public services. Therefore, developing digital civil servants requires them to have basic digital knowledge and skills necessary to perform public duties in the digital environment safely and accurately; at the same time, each civil servant needs to proactively and regularly update their digital knowledge and skills to always adapt to the development of digital technology and successfully complete assigned tasks in the digital environment. Khanh, T.T.B. (2025) shares this view and further emphasizes the criteria for evaluating the quality of civil servants in terms of digital capacity, which is the capacity to advise, organize and implement assigned tasks in the digital environment; the capacity to direct, manage, inspect, supervise, and report on the results of assigned tasks in the digital environment; The ability to interact and provide guidance on handling citizens' administrative documents in the digital environment. Based on this, this study develops the scale "Digital civil servant" (DCS) that implies the following contents: Civil servants are equipped with and updated with the basic digital knowledge and skills necessary to perform their official duties in the digital environment safely and accurately (DCS1); Civil servants have the capacity to advise, organize, implement, inspect, and monitor the implementation of assigned tasks in the digital environment, ensuring progress and quality (DCS2); Civil servants interact with citizens, guide them in resolving administrative documents in the digital environment effectively, creating satisfaction and trust among citizens (DCS3).

- Secondly, digital citizens are subjects participating in digital government processes through requesting the resolution of administrative documents; proposing policies, providing feedback, and critically reviewing policies according to the powers stipulated by law and at the request of localities when necessary. MIC (2021) affirms that the goal of building a digital government is to serve the people, so digital transformation will only be successful when each citizen becomes a digital citizen. Sharing this view, Huong, D.T.T. (2025) further emphasizes that building and operating a digital government requires not only a team of information technology engineers, but also a general workforce (citizens) with basic digital skills to use digital tools in production, services, and daily life; therefore, developing digital citizens is a necessary requirement to achieve the goal of digital government.

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Building upon the views of MIC (2021) and Huong, D.T.T. (2025, this study develops and refines the scale "Digital citizens" (DCZ), implying the following contents): Citizens are equipped with and updated digital knowledge and skills, and actively participate in digital government processes (DCZ1); Citizens effectively interact with the government in the digital environment when requesting the resolution of administrative documents (DCZ2); Citizens effectively interact with the government in the digital environment to provide feedback and critique local policies (DCZ3).

Through a comprehensive review, a theoretical framework was developed consisting of two independent scales/variables: "Digital civil servant" (DCS) and "Digital citizens" (DCZ), and one dependent scale/variable: "Developing digital government" (DDG). These scales comprise nine observed variables, designed by the author as nine questions in a survey questionnaire and measured using a 5-point Likert scale: 1 - Strongly disagree; 2 - Disagree; 3 - Neutral; 4 - Agree; 5 - Strongly agree (Table 1). The author conducted the survey to collect data for analysis, evaluation, and to draw conclusions from this empirical study in Vietnam, with the hypothesis that: Digital civil servant (H1) and Digital citizens (H2) are fundamental requirements that directly influence Developing digital government (Figure 1).

Table 1. Theoretical framework

No	Scales	Encode	Rating levels				
			1	2	3	4	5
I	**Digital civil servant**	**DCS**					
1	Civil servants are equipped with and updated with the basic digital knowledge and skills necessary to perform their official duties in the digital environment safely and accurately	DCS1					
2	Civil servants have the capacity to advise, organize, implement, inspect, and monitor the implementation of assigned tasks in the digital environment, ensuring progress and quality	DCS2					
3	Civil servants interact with citizens, guide them in resolving administrative documents in the digital environment effectively, creating satisfaction and trust among citizens	DCS3					
II	**Digital citizens**	**DCZ**					
4	Citizens are equipped with and updated digital knowledge and skills, and actively participate in digital government processes	DCZ1					
5	Citizens effectively interact with the government in the digital environment when requesting the resolution of administrative documents	DCZ2					
6	Citizens effectively interact with the government in the digital environment to provide feedback and critique local policies	DCZ3					
III	**Developing digital government**	**DDG**					
7	The government's operational model is designed to operate securely in the digital environment	DDG1					
8	Digital technology is applied in state administration processes; data is fully digitized, accurate, and publicly available	DDG2					

No	Scales	Encode	Rating levels				
			1	2	3	4	5
9	Public officials and citizens can easily access digital data; transactions and interactions are convenient in the digital environment	DDG3					

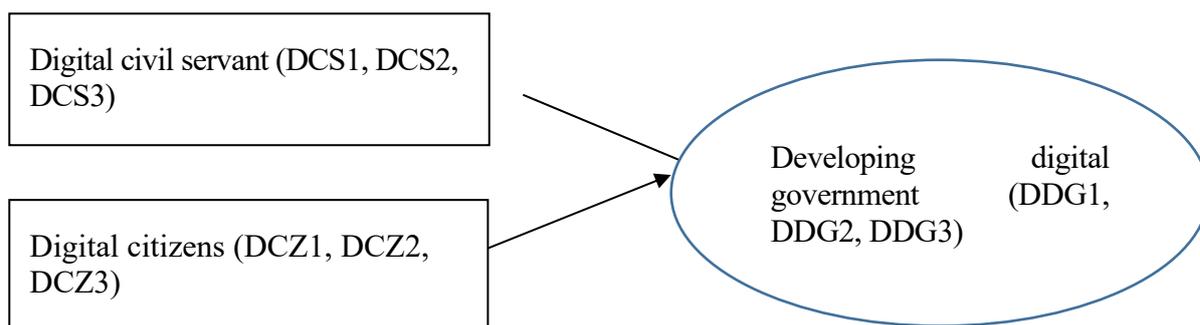*Source: Compiled by the author through the review*

Research model

Figure 1. Research model

3. Research methods

The author uses a combination of qualitative and quantitative research to achieve the stated objectives. Qualitative research is conducted through the collection and analysis of secondary documents and the construction of a theoretical framework. Quantitative research is conducted through the collection and analysis of primary data using survey tools to test the theoretical model and research hypotheses.

The theoretical model of this study consists of 3 scales and 9 observed variables. According to Hair, J.F. et al. (2009), the minimum sample size required for exploratory factor analysis and regression analysis is: N = 9*5 = 45. In practice, the author surveyed with a sample size of N = 200 local officials at the commune level and N = 200 local residents of 20 rural communes in 3 provinces, including Hung Yen province (Northern Vietnam), Quang Tri province (Central Vietnam), and An Giang province (Southern Vietnam), ensuring scientific validity in the selection of the survey sample size.

The survey was conducted selectively, including civil servants under 45 years old and citizens under 45 years old who had conducted online transactions with local authorities in the past two years. The author distributed survey questionnaires based on preliminary interviews and the consent of the selected civil servants and citizens. The results showed 200/200 valid responses from each survey group, achieving a 100% response rate.

4. Research results and discussion

Data collected through a survey with a sample size of N = 200 local commune-level officials and N = 200 local residents were used by the author to test the reliability of the scales and observed variables as a basis for conducting exploratory factor analysis and regression analysis. In quantitative research, according to Hair, J.F. et al. (2009), scales have reliability when meeting the Cronbach's alpha criterion > 0.6; observed variables have reliability when meeting the Corrected Item-Total Correlation criterion > 0.3. The test results show that all 3 scales and 9 observed variables in the theoretical model have reliability, including: Model 1 - survey of officials; and Model 2 - survey of residents (Table 2).

Table 2. Statistical results and testing results of the scale

Scales	Observed variables	N	Min	Max	Mean	Std. Deviation	Cronbach' Alpha	Corrected Item-Total Correlation
Model 1: Commune-level civil servant survey								
1. Digital civil servant (DCS)	DCS1	200	1	5	4.14	.612	.710	DCS1 = .534
	DCS2	200	1	5	4.07	.604		DCS2 = .494
	DCS3	200	1	5	4.11	.609		DCS3 = .517
2. Digital citizens (DCZ)	DCZ1	200	1	5	4.06	.613	.682	DCZ1 = .495
	DCZ2	200	1	5	3.92	.609		DCZ2 = .398
	DCZ3	200	1	5	3.95	.611		DCZ3 = .411
3. Developing digital government (DDG)	DDG1	200	1	5	4.12	.616	.691	DDG1 = .538
	DDG2	200	1	5	4.10	.602		DDG2 = .605
	DDG3	200	1	5	4.07	.612		DDG3 = .597
Model 2: Local citizens survey								
1. Digital civil servant (DCS)	DCS1	200	1	5	4.19	.535	.693	DCS1 = .596
	DCS2	200	1	5	4.10	.591		DCS2 = .610
	DCS3	200	1	5	4.06	.621		DCS3 = .511
2. Digital citizens (DCZ)	DCZ1	200	1	5	3.97	.561	.663	DCZ1 = .525
	DCZ2	200	1	5	3.88	.477		DCZ2 = .548
	DCZ3	200	1	5	3.84	.489		DCZ3 = .477
3. Developing digital government (DDG)	DDG1	200	1	5	4.12	.623	.653	DDG1 = .617
	DDG2	200	1	5	3.96	.591		DDG2 = .591
	DDG3	200	1	5	3.92	.599		DDG3 = .482

Source: Author's survey results

Statistical data in Table 2 shows that observations of the "Digital civil servant" (DCS), "Digital citizens" (DCZ), and "Developing digital government" (DDG) scales are rated at a mean of ≥ 3.92 (Model 1) and ≥ 3.84 (Model 2), all of which are statistically significant according to Likert (1-5) measures. This indicates that the current operational model of Vietnamese local governments is designed to operate safely in the digital environment; digital technology is applied in state administration processes; data is fully digitized, accurate, and publicly available; civil servants and citizens have basic digital knowledge and skills and can easily access digital data; and transactions and interactions are convenient in the digital environment.

Specifically, there are discrepancies in the observed values of the scales, reflecting a certain difference in the digital competence of civil servants and citizens:

- Firstly, for citizens, the observed values of the "Digital citizens" (DCZ) scale were rated lower in both models: Mean (DCZ1) = 4.06, Mean (DCZ2) = 3.92, Mean (DCZ3) = 3.95 (Model 1) and Mean (DCZ1) = 3.97, Mean (DCZ2) = 3.88, Mean (DCZ3) = 3.84 (Model 2). This indicates that, although citizens are equipped with and updated digital knowledge and skills and actively participate in digital government processes, many citizens still do not effectively interact with the government in the digital environment when requesting the resolution of administrative documents or providing feedback and criticism on local policies. This reality also needs attention,

and appropriate solutions for developing digital human resources are needed to enhance citizens' digital capabilities. Because the development of digital government serves the people, this goal will only be successful when each citizen becomes a digital citizen. However, in addition to solutions from the government, the proactive learning and development of digital knowledge and skills by each citizen is the key factor in ensuring the success of the digital government development goal.

- Secondly, for civil servants, although the observed values of the "Digital Civil Servant" (DCS) scale were rated higher in both models: Mean (DCS1) = 4.14, Mean (DCS2) = 4.07, Mean (DCS3) = 4.11 (Model 1) and Mean (DCS1) = 4.19, Mean (DCS2) = 4.10, Mean (DCS3) = 4.06 (Model 2), indicating that digital civil servants possess basic digital knowledge and skills to work in a digital environment, these still need improvement. Because the development of digital government is a new issue, it will undergo many changes. Furthermore, the majority of local civil servants were recruited before the implementation of the digital government development program and primarily received temporary training in digital knowledge and skills to implement the goals of digital government development.

With the validation results meeting the standards, the 3 scales and 9 observed variables of the theoretical model can be used to perform further analytical techniques. The author conducted exploratory factor analysis with Varimax rotation to preliminarily assess the unidimensionality, convergent validity, and discriminant validity of the scales, providing further basis for drawing research conclusions about the suitability of the theoretical model.

Results of exploratory factor analysis for Model 1 - Commune-level civil servant survey

Table 3. Total Variance Explained

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.744
Bartlett's Test of Sphericity	Approx. Chi-Square	2716.438
	df	36
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.456	38.396	38.396	3.456	38.396	38.396	2.999	33.325	33.325
2	2.972	33.024	71.420	2.972	33.024	71.420	2.819	31.324	64.649
3	1.087	12.078	83.497	1.087	12.078	83.497	1.696	18.849	83.497
4	.508	5.641	89.139						
5	.489	5.432	94.570						
6	.180	1.997	96.567						
7	.154	1.709	98.276						
8	.110	1.219	99.495						
9	.045	.505	100.000						

Extraction Method: Principal Component Analysis.

Source: Author's survey results

Table 4. Rotated Component Matrix

Rotated Component Matrix^a

Scales	Observed variables	Component		
		1	2	3
1. Digital civil servant (DCS)	DCS1	.862		
	DCS2	.866		
	DCS3	.889		
2. Digital citizens (DCZ)	DCZ1		.833	
	DCZ2		.853	
	DCZ3		.831	
3. Developing digital government (DDG)	DDG1			.846
	DDG2			.881
	DDG3			.872

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Source: Author's survey results

Theoretically, exploratory factor analysis is performed appropriately with the dataset as shown by the values: $0.5 \leq$ KMO ≤ 1; Bartlett's test has an observed significance level Sig. < 0.05; Eigenvalue ≥ 1; Total Variance Explained $\geq 50\%$; Factor Loading ≥ 0.5 (Hair, J.F. et al., 2009). Data from Table 3 and Table 4 show that:

- The KMO coefficient $= 0.744 > 0.5$ confirms that exploratory factor analysis is appropriate for the dataset; the Bartlett test has an observed significance level Sig. $= 0.000 < 0.05$, indicating that the observed variables are linearly correlated with the representative factor. The total variance extracted with Cumulative % $= 83.497\% > 50\%$ (Table 3) shows that 83.497% of the variation in the representative factors is explained by the observed variables; all observed variables have Factor Loading > 0.5 (Table 4), indicating that the observed variables are statistically significant. The initial theoretical research model is consistent with the survey research.

- The observed variables were extracted into 3 factors corresponding to the 3 original factors with Eigenvalues > 1 (Table 3), further confirming the suitability of the original research model. The original research model was retained, consisting of: 2 independent variables "Digital civil servant" (DCS), "Digital citizens" (DCZ) and 1 dependent variable "Developing digital government" (DDG), with a total of 9 observed variables of good statistical significance. Multiple linear regression analysis can be performed to examine the relationships between the variables in the model.

Results of exploratory factor analysis for Model 2 - Local citizens survey

Similarly, performing exploratory factor analysis with Varimax rotation on Model 2, the results show that: Model 2 (survey of citizens) has KMO $= 0.739$ (KMO > 0.5); Cumulative % $= 81.654\%$ (Cumulative % $> 50\%$); the loading coefficients of the observed variables with Factor Loading > 0.5; the observed variables were extracted

into 3 factors corresponding to the 3 original factors with Eigenvalues > 1, further confirming the suitability of the original research model. Thus, the original research model was retained, consisting of: 2 independent variables "Digital civil servant" (DCS), "Digital citizens" (DCZ) and 1 dependent variable "Developing digital government" (DDG) with a total of 9 observed variables that are statistically significant, allowing for multiple linear regression analysis to examine the relationships between the variables in the model (Table 5).

Table 5. Multivariate regression results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1. Commune-level civil servant R^2 = .684 Durbin-Watson = 2.004	(Constant)	1.104	.548		1.373	.000		
	DCS	.588	.051	.554	11.238	.000	.523	1.821
	DCZ	.337	.053	.221	6.848	.000	.398	1.805
2. Local citizens R^2 = .701 Durbin-Watson = 2.102	(Constant)	.956	.342		1.485	.000		
	DCS	.645	.055	.636	10.786	.000	.636	1.758
	DCZ	.322	.063	.271	7.514	.000	.442	1.793
a. Dependent Variable: Developing digital government (DDG)								

Source: Author's survey results

Table 5 data shows that both models have sufficient test validity to draw conclusions about the correlation between the two independent variables "Digital civil servant" (DCS), "Digital citizens" (DCZ) and the one dependent variable "Developing digital government" (DDG). Specifically:

Model 1 - Commune-level civil servant survey

+ R^2 = 0.684, confirming that the "Digital civil servant" (DCS) and "Digital citizens" (DCZ) scales explain 68.4% of the variation in the "Developing digital government" (DDG) scale; VIF = 1.821 and VIF = 1.805 (1 < VIF < 2), indicating that the regression model does not exhibit multicollinearity; Durbin-Watson = 2.004 (1 < d < 3), indicating that the regression model does not exhibit autocorrelation, confirming that the "Digital civil servant" (DCS) and "Digital citizens" (DCZ) scales are independent and have a common impact on the "Developing digital government" (DDG) scale, thus confirming the suitability of the theoretical research model to the survey dataset.

+ The regression coefficients of the two independent variables "Digital civil servant" (DCS) and "Digital citizens" (DCZ) are both statistically significant (Sig. < 0.05) and positive: B(DCS) = 0.588 and B(DCZ) = 0.337, confirming a positive correlation between the two independent variables "Digital civil servant" (DCS), "Digital citizens" (DCZ) and the dependent variable "Developing digital government" (DDG); hypotheses H1 and H2 are accepted; and the initial research model's suitability is further confirmed.

+ The regression model is defined as: DDG = 1.104 + 0.588*DCS + 0.337*DCZ. The correlation levels of the independent and dependent variables in decreasing order are: "Digital civil servant" (DCS), "Digital citizens" (DCZ).

Model 2 - Local citizens survey

The regression analysis results in Model 2 also show similar significant values to the conclusions in Model 1: R2 = .701; VIF = 1.758 and VIF = 1.793 (1 < VIF < 2); Durbin-Watson = 2.102 (1 < d < 3). The regression model is defined as: DDG = 0.956 + 0.645*DCS + 0.322*DCZ. The correlation levels of the independent and dependent variables in decreasing order are: "Digital civil servant" (DCS), "Digital citizens" (DCZ).

Statistical results (Table 2) and regression analysis results (Table 5) show similarities with the assessment levels of digital government, digital civil servants, and digital citizens, further confirming the empirical research results in Vietnam, that:

- Firstly, the current operational model of Vietnamese local governments is designed to operate securely in the digital environment; digital technology is applied in state administration processes; data is fully digitized, accurate, and publicly available; civil servants and citizens have basic digital knowledge and skills and can easily access digital data; and transactions and interactions are facilitated in the digital environment.

- Secondly, although citizens are equipped with and updated digital knowledge and skills and actively participate in digital government processes, many citizens still do not effectively interact with the government in the digital environment when requesting the resolution of administrative documents or providing feedback and criticism on local policies.

- Thirdly, while civil servants possess basic digital knowledge and skills to work in a digital environment, these still need improvement. Because the development of digital government is a new issue, it will undergo many changes. Furthermore, the majority of local civil servants were recruited before the implementation of the digital government development program and primarily received temporary training in digital knowledge and skills to implement the goals of digital government development.

From the above research conclusions, the author implies several policy contents aimed at developing digital civil servants and digital citizens to maintain and develop digital human resources for the digital transformation strategy and building a digital government in Vietnam: (1) Implement research on a program to popularize digital knowledge and skills for students, making it an official educational and training program content for each level of education to prepare digital human resources for the national strategic goals; (2) Implement a comprehensive solution for training, fostering and encouraging training and fostering to develop the digital capacity of civil servants; and build standards on digital knowledge and skills for recruitment and evaluation of civil servant quality.

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