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Assessment of Factors Affecting Employees' Adaptions When Using E-Office in Public Sector by AHP Method: An Empirical Study in Vietnam

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Abstract

The aim of the study is to identify the most prominent factors affecting the adaptation of employees when using electronic offices in state agencies, and public administration. The paper first identifies the various factors that influence employees in using the e-office by prioritizing them using the analytical hierarchical process method (AHP). AHP is a multi-criteria decision-making tool (MCDM), which combines all factors into a hierarchical model and quantitatively measures the importance of factors through pairwise comparisons. In this study, there are eleven factors that influence employees when using an e-office were identified, which are classified according to four main factors, namely employee personal characteristics, technical factor, organizational factor, and organizational factor. The findings show that organizational factors and technical factors are the two most important factors affecting employees in using electronic office systems. Furthermore, the sub-factors such as training, technical infrastructure, technical support, access speed, and computer and internet skills are the top factors that are considered important for employees in getting the job done. using electronic offices in state agencies and public administration. The research results can help organizations and state agencies to evaluate important factors in the use of electronic offices by employees more effectively.

Keywords: E-government, E-office, AHP method, employee's adaption, multi-criteria decision-making tool MCDM, digital transformation.

JEL Codes Classification: D73, D83, H83, O30, O33,

1. Introduction

In recent years, the application of information technology (IT) in the activities of state agencies has been implemented by the Government of Vietnam in order to improve the quality and efficiency in internal operations of state agencies at a high pace. In transactions of state agencies, IT supports organizations and individuals and the promotion of administrative reform and ensuring publicity and transparency. Although, the construction and deployment of national databases and information technology infrastructure as a foundation for e-Government development is deployed. However, data management systems are still too local, there is lack of connection and data sharing between information systems; the quality of data and information has not been updated in a timely and accurate manner. Many deployed information systems have not yet ensured information safety and security, and the national level of trust in electronic transactions are still low. The provision of online public services is still running in numbers while the percentage of online public service implementation is still low. The handling of administrative procedures and handling of work records is still heavy on manual work, with

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many papers. There are still barriers in the investment mechanism of information technology application, making it difficult for businesses to implement investment projects.

The main cause of the above problem is that many levels and sectors have not yet determined specific roadmaps and tasks for implementation. Furthermore, there is a lack of connection between information technology application and administrative procedure reform. renewing ways and methods of working, especially in relations with people and businesses which has not fully promoted the role of the leader in directing the implementation. The platform for data integration and sharing between State administrative agencies as well as regulations on data integration and sharing mechanisms is missing. In particular, Vietnam still lacks a synchronous framework on building e-Government, lacks specific regulations on authentication of individuals and organizations in electronic transactions as well as legal regulations on documents. electronic storage, legal value of electronic documents in administrative and payment transactions.

Public employees have various challenges in using e-Government, e-office systems including administrative issues, technological challenges, infrastructure issues, lack of trust in computer applications, security concerns, and number division (Gupta et al., 2017). The adoption and dissemination of the electric office depends a lot on the integrated vision of the state employees in Information & Communication Technology (IT & ICT) and the willingness to accept the electronic office system. Once Government officials and employees accept the requirements of the electronic office system, it will be of great help for the comprehensive dissemination of the electronic office system (Gupta et al., 2017). Public employees need to understand the usefulness of IT and are required to be fully convinced of the need for an e-office (Alshibly et al., 2016). The application of electronic office in state agencies may not be effective if it is not appreciated and accepted by state employees to use the system in their work activities. ICT has brought about revolutionary changes. However, the application of IT in administrative work in Vietnam is relatively new. The lack of awareness of the importance of computerization among the staffs and civil servants in state administrative agencies.

There are very few studies examining the factors affecting the adoption of e-Government, e-office by state administrative staff (Barua, 2012). These studies have mainly used many regression methods or structural equation models to examine the important factors affecting the adoption of e-Government, e-office. The beta coefficients obtained in multiple regression analysis can be expressed as relative weights of the factors, their values being obtained indirectly through testing (Gupta, KP, Bhaskar, P., & Singh, S, 2017). In addition, the measurement error of the independent and dependent variables, the prediction error can occur between the true and predicted values of the dependent variable (Shieh et al., 2014). On the other hand, there can be problems of collinearity between the independent variables. Therefore, these research methods cannot provide accurate information about these factors and their weights (Shied et at., 2014). Instead of these statistical techniques, a multi-criteria decision-making tool (MCDM) can be used to analyze the various factors and determine their rank according to their importance to the decision. apply e-office, because factor selection is an MCDM issue (Gupta, KP, Bhaskar, P., & Singh, S, 2017).

Currently, there is lack of research evaluating the factors affecting the adaptation of officials and employees in state administrative agencies when using electronic office in Vietnam. Therefore, this study by using multi-criteria decision-making (AHP) research method, tries to discover and determine the importance of factors affecting the adaptation of employees in the state administrative agencies in the use of electronic office systems.

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The main objectives of this research are as follows:

- Determining factors affecting employees when using electronic office systems.
- Evaluate and rank the importance of factors affecting employees, officials and employees when using electronic offices through the AHP research model.
- Proposing recommendations to improve the adaptability of employees, officials and employees when using the electronic office system at State administrative agencies.

To the best of our knowledge, this research is first to determine the different factors affecting the adaptation of employees in Vietnam when using the electronic office on the basis of document review and then find importance factors using the AHP method. The AHP is a multi-criteria decision support tool (MCDM) that provides a framework for evaluation in a variety of criteria-based situations involving visual, rational, quantitative, and qualitative problems. The main uniqueness of AHP is its intrinsic ability to consider several conflicting factors (qualitative or quantitative) to make a decision, thereby providing a formal basis for solutions. Saaty, 1994; Chen and Hwang, 1992).

This study identifies the factors and their impact on the adaptation of employees, state officials and employees when using the electronic office system. Hence, it helps state administrative agencies to have appropriate initiatives or improvements to improve the application of the electronic office system in the most effective way.

2. Literature review

According to the definition of the World Bank: E-Government is the systematic use of Information and Communication Technology (ICT) by government agencies to with citizens, businesses and social organizations, thereby improving the transactions of government agencies with citizens and organizations to enhance publicity, convenience, contribute to growth and reduce costs. Z Fang (2002) defines e-Government as a way for Government to make the most innovative use of information and communication technology, especially Internet-based web applications, to provide citizens and businesses have more convenient access to government information and services, to improve service quality and to create greater opportunities to participate in democratic institutions and processes.

According to Sawalha et al ((2019), governments have actively implemented e-services (e-offices) to better serve their citizens and communicate better with public administration. Therefore, administrative agencies actively use new digital technologies to increase work efficiency in the digital age.Al-Jamal and Abu-Shanab (2016) have defined the electronic office. is to use IT tools in the delivery of public sector services to citizens, businesses and other e-government agencies, to enhance government operations and service levels, and to achieve Engagement and connectivity governance will be a source of positive change in a country.

E-office is considered as a part of the application system of e-government, put into application at state administrative agencies, used by state employees for the purpose of helping the operation of the government. State administrative agencies perform work quickly, conveniently, with high efficiency, minimizing the traditional work steps before.

The Importance of the Electronic Office: E-office brings a centralized management system. When agencies and units apply the electronic office, all users in the same participating unit can decentralize and clearly assign each job or specific task. However, with the use of electronic office, leaders can remotely operate and manage work anytime, anywhere, capture

 ISSN 1927-033X

and manage assigned work in a clear and transparent way. Besides, leaders also capture timely information and make accurate decisions. If the old traditional office is to manage people and documents through the system of records and books, in the electronic office all of these things have been digitized by the unlimited interaction of about 1 hour. way, time. With the electronic office system, issues such as jobs, records, tasks ... will be manipulated through just one login to the system. Here, everyone can easily exchange ideas, confidently discuss and share information in a full, fast and timely manner without having to go through any stressful meetings.

Some models that have been widely used by researchers to study e-government use are based on diffusion models of innovation and technology acceptance (Carter and Belanger, 2005). The researchers used a variety of models such as:

Technology Acceptance Model (TAM) has been used by many researchers especially information systems to gain a better understanding of IT adoption and its success in organizations (Carter and Belanger, 2005). TAM has proven to be a powerful framework for capturing user attention. The theoretical foundation for TAM is based on the Theory of Reasonable Action (TRA) of (Fishbein and Ajzen, 1975). As shown in Figure 2.1, TAM proposes that two specific beliefs are the main drivers for technology adoption: perceived usefulness (PU) ("the degree to which a person believes to use a particular system") may enhance their work connectivity") and perceived ease of use (PEU) (Davis, FD, Bagozzi, RP, & Warshaw, P. R, 1989).

Behavioral Intent (BI) is a measure of the strength of intention that connects a specified behavior. According to intent-based theories, user behavior and usage are influenced by intention to use IT (O. K. Lean, S. Zailani, T. Ramayah, and Y. Fernando, 2009). Two independent factors of TAM (PU and PEU) can explain users' initial attitudes towards technology adoption, but both of these factors also have limitations (Edward D. Conrad, 2009). These limitations lead to other studies that extend the TAM model and create a more comprehensive model. The Unified Model of Technology Acceptance and Use (UTAUT) has been (Venkatesh, Morris, Davis, & Davis, 2003), introduced as a model based on earlier models such as the Public Acceptance Model. Technology (TAM), Theory of Rational Action (TRA), Motivation Model, Theory of Behavioral Plans (TPB), Combined TAM-TPB, PC Usage Model, Innovation Diffusion Theory and Social Cognitive Theory (M Masrom, R Hussein, 2008). The most important elements of the models mentioned above have been selected to present a model that can be viewed as a new version of TAM (Louho, R., Kallioja, M., & Oittinen, P, 2006). AlAwadhi, S., & Morris, A. (2008) used the UTUAT model to identify the potential determinants of users' use of e-government services in a developing country. The factors Performance Expectations, Effort Expectations, Social Influence and Facilitation are significant in the adoption of e-government services in Kuwait. A regression analysis was performed to examine the influence of adaptive factors from the UTAUT model on the use of e-government services. The findings suggest that effort expectations and social influence determine behavioral intentions towards e-government. In addition, favorable conditions and behavioral intentions were found to determine use of e-government services in Qatar (Al-Shafi and Weerakkod, 2010). Performance, effort expectations, trust and social influence as factors affecting intention to use e-government services in Greece were studied (Voutinioti, 2013) using research methodology. quantitative research through the UTAUT model. Diffusion of innovation (DOI) theory was proposed and developed by a sociologist to describe how an innovation pervades a society (E. M. Rogers, 2003). This theory is very popular and it has been

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widely used to explain the use of IT innovations in an organization or society. Theory of planned behavior (TPB) is one of the influential theories used in the study of human behavior (Hung et at. 2010). This theory was developed by Ajzen (1991) from the theory of reasoned action (TRA), which holds that people's actual actions are influenced by their intention to perform that behavior (Fishbein & Ajzen). , 1975) when adding the Behavior Control moderator. Vathanopha et at., (2006) applied the TAM model in their study on the application of e-government to naval officers in the Ministry of Naval Finance, Thailand. Sahu & Gupta (2007) applied the TAM model to study the intentions of the employees of the Indian Special Consumption Department, the results have identified variables that are prioritized on the basis of their impact on intention. intend to use e-government. Sang (2010) also studied the impact of factors through the TAM and Trust model on the application of e-government by information officers in Cambodia. Regarding e-government, Singh & Punia (2011) also used the TAM model to study the intention to use e-procurement in the public sector of Uttarakhand, India. Gupta et al. (2008) applied the UTAUT model to study the use of e-government in a government organization under the Ministry of Environment and Forests of the Government of India. The study clearly shows that all constructs of the UTAUT model, i.e. performance expectations, effort expectations, social influence and favorable conditions have a positive effect on government employee behavior. for the adoption of e-government application systems. Since Covid-19 pandemic has critical impacts on business activities in recent years, there are several studies investigating the related factors and consequences. Solmaz (2020) reported the possible impact of coronavirus pandemic crisis in the short and long term in many social and technical science fields such as political science, economics, business, management and technology management. James Robinson and Navaneethakrishnan Kengatharan (2020) investigated the effect of Covid-19 on small and medium enterprises in Sri Landka which concluded that the resilience of the SMEs is greatly dependent on the concerted efforts of the government, SMEs operators and other policymakers. İbrahim and Yunus (2020) figured out the stock market response to Coronavirus (COVID-19) Pandemic and revealed that reveal that it causes decrease in prices in financial markets. Based on the literature reviews, the factors that may affect employees' use of the e-office are summarized. There are five main factors: employee information, technical factor, organizational factor, trust factor. For each main factor, there are sub-factors are described as follows:

Employee personal characteristics

• Age: Different ages of employees

• Gender: Social characteristics of women and men

• Education level: Different levels of education of employees

• Computer skills, internet: Knowledge about computers and internet of employees

Technical factors

• Access speed of electronic system: Speed of electronic office application system in the process of doing work

• Website layout of the system: Form, design, layout, presentation of the electronic office system

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• Technical infrastructure: Availability of computers, modems, power stabilizers, LAN...for smooth operation of the electronic office system.

Organizational factors

• Training: Training for employees on the use of electronic offices is organized by state centers.

• Technical support: Technical support for employees in case of technical problems during the performance of tasks.

Trust factors

• Trust in data management and storage: Trust in the management and data storage of the electronic office system.

• Trust in technical infrastructure: Trust in the facilities and equipment applied in the electronic office system such as computers, networks

3. Data and methods

3.1 Data description

The collected dataset has pairs-wise comparisons of factors and dependencies collected from experts, leaders, managers in institutions of state administration agencies. The nine-point scale (Saaty, 1980) was used to provide similarity scores for comparison pairs between different criteria. In this study, there are 12 interviewees who are leaders, senior employees working in different state agencies in Vietnam were contacted to give their opinions on the importance of all factors affecting the adaptation of employees when using the electronic office system. All of the experts have more than 10 years of working experience in state administrative agencies and at least 3 years have used the electronic office system. death. The questionnaire includes all factors and sub-factors was designed to collect paired comparative judgment from all experts on the nine-point Saaty scale. While interviewing the experts, explanations of all factors and sub-factors were shared with respondents.

3.2 AHP Method

AHP is an MCDM technique commonly used to make decisions in situations with multiple criteria and factors (Saaty, 1980). Based on pairwise comparison, AHP can be described with 3 main principles: analysis, evaluation and synthesis.

A hierarchical structure diagram starts with the goal, which is analyzed through the major criteria and the component criteria, the final level usually includes possible alternatives. The evaluation process uses a pairwise comparison matrix with a 9-point scale, determines the weights based on the eigenvectors corresponding to the largest eigenvalues, and then checks the consistency coefficient. Finally, all the weights will be summed up to make the best decision. The process of analyzing and determining weights according to the AHP model is described in detail in the references (Saaty, 1980; 1994; 1995; Saaty and Vargas, 1994).

The proper hierarchy of the AHP model includes goals, elements, sub-elements, and alternatives. The study prioritized factors affecting e-office usage, so there were no decision alternatives within the AHP hierarchy. As shown in Figure 3.1, Objectives are placed at the first

 ISSN 1927-033X

level (level 1) of the hierarchy model, then Level 2 is composed of the main elements and Level 3 is the sub-elements, These factors may affect the adaptation of government employees when using the electronic office system. In this study, the author inherits the AHP criteria model of Gupta et al (2017).

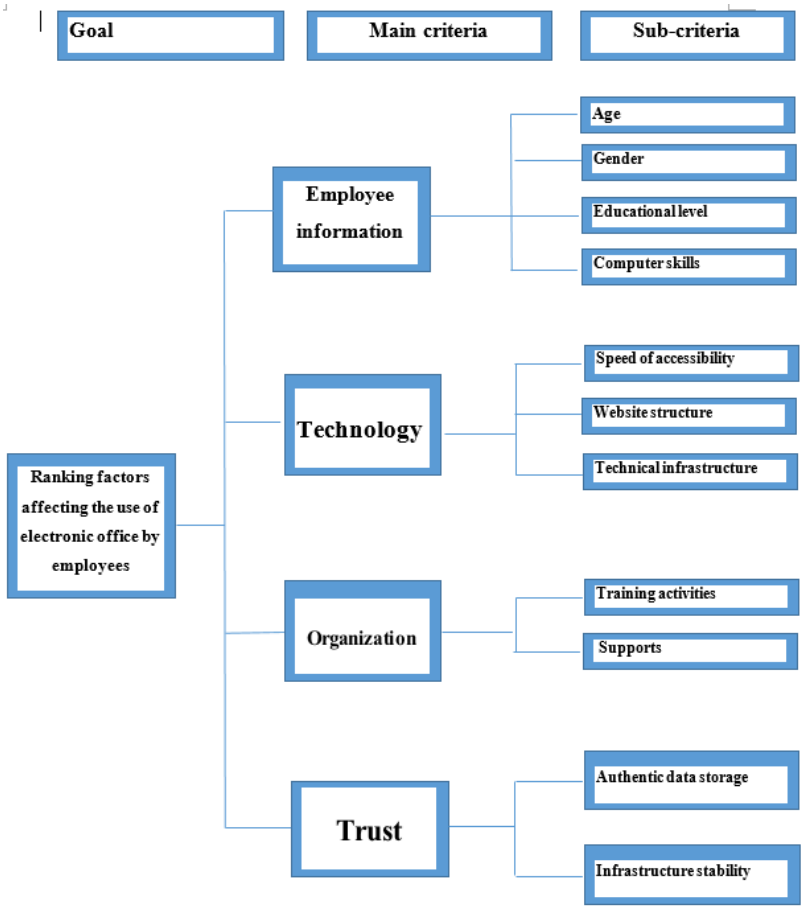

Figure 1. AHP framework with main criteria and sub-criteria

3.2.1 Determine the normalized weight according to the following steps

Firstly, a pairwise comparison matrix for the main and sub-criteria are constructed. The pairwise comparisons are made according to linguistic assessments which show how dominant one element is over another. These judgments are then expressed as integer numbers. If the i_{th} element governs the j_{th} element, then the integer is entered in the i_{th} row and the j_{th} column of the comparison and reciprocal matrix is entered in the j_{th} row and i_{th} column of the matrix. If the elements to be compared are equal, then 1 is assigned to both positions. Therefore, each comparison matrix C □□□cij□ is a square matrix of order n (n = number of elements compared), with inverse components

$$c_{ij} = \frac{1}{c_{ji}};\ i, j = 1,2,...n) \quad (1)$$

3.2.2. Build integrated comparison matrices

Responses collected from all experts on paired comparisons of different factors and sub-factors were aggregated using the mean multiplied to obtain a composite judgment for each item. of the comparison matrix (Saaty, 1989; Forman and Peniwati, 1998). The aggregate

 ISSN 1927-033X

comparison matrix A for a particular attribute is constructed as A = [aij] with aij is the medium value value of the learning of the N decision makers.

$$a_{ij} = \left(\prod_{i=1}^{N} c_{ij} \right)^{1/N} \tag{2}$$

3.2.3. Calculate the priority weights of each major and minor factor

To calculate priority weights, a normalized N matrix is built for each factor and sub-factor. Corresponding to the comparison matrix A, the normalized matrix N is built as follows:

$$N = [n_i], \text{ where } n_{ij} = \frac{a_{ij}}{\sum_{i=1}^{n} a_{ij}} \tag{3}$$

The priority weights corresponding to all factors are calculated by averaging the elements of each row of N. The preference vector W = [wi] is a column matrix.

$$w_i = \frac{\sum_{j=1}^{n} n_{ij}}{n} \tag{4}$$

Check the consistency of each comparison matrix to validate the results:

Some people are often inconsistent in their answers to questions, and therefore it is important to calculate the consistency of comparison matrices to check the validity of preference vectors. counted. Consistency ratio (CR) is used to measure consistency in pairwise comparison.

In AHP approach, a matrix A is said to be consistent if:

$$AW = nW \tag{5}$$

Formula (4) is the expression of the eigen values of matrix A. It is assumed that the maximum eigenvalue λmax is greater than or equal to n (Saaty, 1980). The closer λmax is to n, the more consistent the matrix A will be. The following steps are taken to calculate the CR (consistency ratio) value corresponding to the comparison matrix A to check its consistency.

Calculate max by solving the following equation:

$$AW = \lambda_{\max} W \tag{6}$$

Calculate the consistency ratio (CR) using the following formula:

$$CR = \frac{CI}{RI} \tag{7}$$

Where CI is the consistency index given by the following formula:

 ISSN 1927-033X

$$CI = \frac{\lambda_{\max} - n}{n-1} \tag{8}$$

RI is a random index which is proposed by Saaty. The number of different criteria (n) corresponds to different values of RI (table 1).

Table 1: Random Index Table (Saaty, 1980)

n	1	2	3	4	5	6	7	8	9	10	11	12	13
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.58	1.56

4. Results

The data were collected from the respondents base on wise pairwise comparisons of different primary and secondary factors that were aggregated using the average method according to formula (3). Table 4.1to 4.5 shows the comparison matrices, weights, and consistency checks for all major and minor factors of the hierarchical model. It can be seen from tables 4.1 to 4.5 that all CR values are less than the threshold value 0.10, which indicates that the comparison matrices are consistent, so the weights (priority) have may be accepted.

It can be seen from Table 2 that among the four main factors, organizational factors (W = 0.45503) which occupy the highest rank, followed by technical factors (W = 0.35534), personal characteristics (W = 0.35534). 0.11195) and belief (W = 0.07767). These findings imply that organizational factors are the strongest influencing factors for employees when using electronic office systems in government agencies. The local public administration needs to provide more training and technical assistance to employees to improve the adoption of the e-office by employees. An employee with basic training will feel more comfortable and confident when working with online applications, then will feel the ease and convenience of using the electronic office system. Similarly, if an employee always receives technical support in case of any technical problems, the fear of work-related risks during the use of electronic systems will be reduced and replaced. in which is the peace of mind to operate and use the system in an electronic office environment.

Technical factors are considered the second most important factor affecting the use of electronic office systems by employees. The techniques of the electronic office system application play an important role in affecting the employee's work efficiency when using the electronic office system. If an employee, when working through the electronic office system application, encounters technical difficulties, they may be worried and frustrated then they will not feel secure when using the electronic office system. leading to the result of the work will also not be highly effective.

Personal characteristics were found to be the third most important factor that can influence employee use of electronic office systems. Compared with organizational factors and technical factors, personal characteristics have shown a relatively lower importance in the employee's job performance when using the electronic office system. Different employees exhibit different behaviors when they use the electronic office system, and the individual characteristics of the employees are not significantly affected when they use the electronic office system.

 ISSN 1927-033X

Trust is considered the least important factor affecting employees when they use the electronic office system. The lower influence of trust compared to the rest of the factors in the present study can be attributed to the fact that management system data and non-work-related personal information during using the electronic office system; they do not perceive any risk associated with the work they do. Therefore, employees do not worry much about the reliability of the applications in the electronic office systems because their personal risk is not related to the use of such systems.

The findings in the present study also have some points of agreement with the study of Gupta, K. P., Bhaskar, P., & Singh, S. (2017). That study done in India also showed that organizational factor is the strongest influence on e-government adoption, followed by technical factor. However, there are also differences in studies, research in India shows that beliefs have a greater influence on individual characteristics, it is the opposite of this current study that individual characteristics have a greater influence on individual characteristics. stronger influence than belief.

Table 2. Analysis of main factors

	Employee information	Technology	Organization	Trust	Weights (W)	Checking consistency
Employee information	1.00	0.22	0.20	2.22	0.11195	λmax = 4.11818 CI = 0.03939 RI = 0.9 CR = 0.04377<0.10
Technology	4.46	1.00	0.65	4.41	0.35534	
Organization	5.00	1.55	1.00	4.37	0.45503	
Trust	0.45	0.23	0.23	1.00	0.07767	

In the sub-factors of organizational factors (see Table 3), weighted training (W = 0.73823) was considered more important than technical support (W = 0.26177). This indicates that initial training can provide the necessary technical skills for employees to use applications in the e-office system and to deal with issues related to the use of electronic office systems. system use. Therefore, if they receive technical support in the process of using the electronic office system, it may not be too important for them because they can feel that they are basically equipped. knowledge to be able to handle technical problems on their own.

Table 3. Analysis of sub-factor of organization

	Training	Technical support	Weight (W)	Consistency
Training	1.00	2.82	0.73823	λmax = 2.000 CI = 0.000 RI = 0.0 CR = 0.00< 0.10
Technical support	0.35	1.00	0.26177	

Among the sub-factors of technical factors (see table 4), the technical infrastructure factor has a weight (W = 0.54604) is considered the most important sub-factor, followed by the speed of access. access (W = 0.34010) and finally the layout element of the web page (W = 0.11386). Availability of necessary infrastructure such as UPS (charged), power stabilizer, computer, printer, network, etc., is very important for employees working on office system application electronics room. If the necessary infrastructure is not available, it can cause discomfort for employees while working, which is affected when there is a problem with technical infrastructure. For example, in the event of a power outage while working, if the UPS is

 ISSN 1927-033X

unavailable or not working properly, it may cause data loss. Such cases can cause discomfort for employees, affecting the work performance of employees in particular and state agencies in general. Similarly, the slow access speed of applications and websites in the electronic office's system can delay transactions, slow processing of work, leading to a waste of time in the implementation process. work duties.

Table 4. Analysis of sub-factors of technical factor

	Access speed	Website structure	Technical infrastructure	Weight (W)	Consistency
Access speed	1.00	4.12	0.45	0.34010	λmax = 3.0924 CI = 0.0462 RI = 0.58 CR = 0.0797< 0.10
Website structure	0.24	1.00	0.27	0.11386	
Technical infrastructure	2.21	3.68	1.00	0.54604	

Table 5 shows the weighted analysis of the sub-factors of the employee's personal characteristics. Findings calculations indicate that employees' computer/Internet skills are weighted (W = 0.55053) as the most important secondary factor, followed by education level (W = 0.28634), age (W = 0.11156) and gender (W = 0.05157). Computer and Internet proficient employees are more comfortable working with electronic office system applications than those who lack computer and Internet knowledge. Education level is the next important factor, when highly qualified employees use the electronic office system more convenient and faster than unqualified employees, but this effect is not large because the application Using the electronic office system is not too difficult a system and requires a highly qualified staff to use.

Age also plays an important role in employees' use of electronic office systems. However, the degree of influence is lower than that of computer skills and qualifications. When using an electronic office system, older employees often have slower processing of system applications than younger employees, but it does not affect work efficiency when using an electronic office. Employee gender carries much lower weight than other factors. This implies that employees regardless of male or female, if they have the necessary technical skills to use computers and the Internet, then they will be more likely to make good use of the electronic office system.

Table 5. Analysis of sub-factors of employee personal characteristics

	Age	Gender	Educational level	Computer skill	Weight(W)	Consistency
Age	1.00	3.47	0.25	0.17	0.11156	λmax = 4.20328 CI = 0.06776 RI = 0.9 CR = 0.07529<0.10
Gender	0.29	1.00	0.17	0.14	0.05157	
Educational level	4.06	6.01	1.00	0.35	0.28634	
Computer skill	5.89	7.10	2.88	1.00	0.55053	

Of the two sub-factors of trust (see table 6), it can be found that trust in technical infrastructure (W = 0.54347) is more important than trust in data storage and management (W = 0.45653).). This may be because the employees perceive that the operating conditions

of the technical infrastructure including computers, printers, UPS, network, etc. are important in the process of using the office system. electronic. Meanwhile, the level of trust in data storage and management is not important to them, because data management and storage has no problem or data loss. to individuals as well as their adaptation in using electronic office systems.

Table 6: Analysis of the sub-factors of trust

	Trust in data storage and management	Trust in technical infrastructure	Weight (W)	Consistency
Trust in data storage and management	1.00	0.84	0.45653	λmax = 2.000 CI = 0.000 RI = 0.0 CR = 0.00< 0.10
Trust in technical infrastructure	1.19	1.00	0.54347	

Table 7 shows the weight and rank of 11 sub-factors affecting the use of electronic office system by employees in state administrative agencies.

Table 7: Weights and rankings

Criteria	**Global weights**	**Rankings**
Training	**0.3359**	**1**
Technical infrastructure	0.1940	2
Access speed	0.1209	3
Technical support	0.1191	4
Computer skill	0.0616	5
Trust in technical infrastructure	0.0422	6
Website structure	0.0405	7
Trust in data management	0.0355	8
Educational level	0.0321	9
Age	0.0125	10
Gender	0.0058	11

It can be observed from Table 4.6 that the factors of training, technical infrastructure, technical support, access speed and computer/Internet skills are the top 5 sub-factors that are considered important for the use of the electronic office system by employees in state administrative agencies. Therefore, state administrative agencies should focus on these factors to enhance the adaptation of employees to the use of the electronic office system.

 ISSN 1927-033X

5. Discussion

5.1 Theoretical implications

This study represents a worthwhile approach by examining the factors that leaders and experts consider important to the use of electronic office systems. The analysis of the relative priorities of these factors by AHP shows the emphasis weights on each factor. This approach is different from previous studies on the adoption of e-government by researchers, who used multiple regression methods or structural equation models to examine the importance of e-government. Although the beta coefficients obtained in multiple regression analysis can be expressed as relative weights of the factors, their values are obtained indirectly through testing. In addition, due to the measurement error of the independent and dependent variables, the prediction error may occur between the actual and predicted values of the dependent variables. Furthermore, there can be problems of collinearity between the independent variables. Therefore, these methods cannot provide accurate information about these factors and their weights (Shieh, 2014).

Although previous studies by many scholars have addressed the application of e-government using various theoretical models, the effectiveness of this study lies on including factors that are more relevant to staffs.

5.2 Practical implications

In summary, the findings in this study suggest that the state administrative agencies in Vietnam should take initiatives to enhance the adaptation of their staff in the use of electronic office system. Agencies should implement adequate training for their employees to strengthen their technical skills so that they can use the electronic office system with confidence and comfort. Technical infrastructure related to electronic office systems such as computers, UPS, power stabilizers, networks, etc., should be fully equipped to ensure the best conditions for using the office system. electronic. It is necessary to pay attention to the fast access speed of the system to ensure the speed and timeliness while performing the work. In addition, regularly train a team including technical staff who are always on duty in departments of agencies to be able to provide technical support to employees in time when there is a problem in using electronic office.

6. Conclusions

The use of information technology applications has become an integral part of governance in many countries. Vietnam have used the electronic office system as an application to develop information technology in administrative management in state administrative agencies. However, the state administrative agencies have not studied and evaluated the factors affecting the use of the electronic office system by employees. The present study tried to evaluate the different factors affecting employees when using the e-office and tried to prioritize them through the AHP. Priority is very important in determining the relative importance of factors affecting employee adaptation to be able to successfully use the electronic office system of employees in the administrative agency. state itself. Organizational factors have emerged and are considered the most important factor to improve the use of electronic office system by employees in state administrative agencies in Vietnam. Next are technical factors, employee personal characteristics, and trust. The results of this paper can support by giving implications to the policymakers in deploying e-office services. In the future, it is possible to build a more

 ISSN 1927-033X

complete element hierarchy for research because of the application of information technology, using the electronic office system is still developing in Vietnam. In addition, the factors affecting employees when using the electronic office system can change continuously.

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