The Influences of Government Support in Accepting the Information Technology in Public Organization Culture

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Abstract

Purpose: *This study aims to test the success of the technology acceptance model in Yemen culture. This study aims to test the factors influencing the acceptance of technology in Yemen public sector. In addition, the study added two important factors of organization culture and government support to the key factors in the theory of technology acceptance in order to provide better understanding for the factors influencing the acceptance of information technology among the individual perceptions.* ***Methodology:*** *survey questionnaire was distributed to 53 government utilities and 357 cases were used in the analysis. Structural Equition Modeling AMOS 18 was used for the analysis of the proposed model.* ***Findings*** *the study confirmed the theory of TAM and showed its potential capability in the Middle East, particularly in Yemen. the study has provided empirical evidence for the positive effect of subjective norm on the intention behaviour to use towards the actual usage for the technology and positive effect government support on the intention behaviour throughout the positive effect on preceived usefulness and ease of use. the study has provided empirical evidence for the negative effect of organization culture on the intention behaviour to use. Empirical evidence has shown that the employees and managers have the capability to use the technology.* ***Significance****: This study has provided empirical evidence for the effects of new technology determinants in the government sector. In particular, it has successfully revealed that organization culture, government support, subjective norm are important determinants in influencing the adoption of technologies.*

Keywords: Technology Acceptance Model, computer self-efficacy, Structural Equition Modeling, Yemen.

Institutional characteristic

Institutional factors refer to the aspects within the organization related to work and the instrument to facilitate in the accomplishment of the work. For example, organizational support and rewards influence workers' beliefs in using technology to accomplish the work (Lewis & Agarwal & Sambamurthy, 2003). These Institutional characteristic such as Top Management support and government support were explained in details in the nest sections.

2.7.4.1 Top Management Support

Top management support refers to the degree to which the top management understands the importance of IS function and the content to which it is involved in the activities (Nathan, Apigian, Nathan, & Tu, 2004).

Organizational facilitation or facilitating conditions are defined as the degree to which an employee perceives that an organizational and technical infrastructure exists to support use of the technology (Seymour, Makanya, & Berrange, 2007; Venkatesh et al., 2003).

Top management support in the organization has either positive or negative effects on technology acceptance. Several studies have found that when top management fails to manage and support the usage of the technology at work, technology acceptance would not materialize (Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004). Furthermore, lack of government support, organization support and computer training facilities could prevent end-users from using a particular system, as revealed by Wang, Chen (2006) in his study to examine the quality recognition of medical information systems in Tzu-chi hospital in Taiwan and to explore the factors that make the physicians refuse to use the medical information system.

Vonk , Geertman and Schot (2007) explored ways to improve the effectiveness of strategies for the diffusion of geo-IT in public planning organization. The study revealed that the adoption of the system is caused by various failure categories, such as the negative attitudes of the managers, social disorganization of the users, and unawareness of the potential and the implementation support by the organization.

Conversely, if management support exists in the organization, technology acceptance would materialize. In a study by Wu, Shen, Lin, Greenes, and Bates (2008) that integrated variables upsetting trust and management support into the model to investigate what determines acceptance of adverse event reporting systems by healthcare professional users, they found that management support had a direct effect on perceived ease of use, perceived usefulness, and subjective norm.

Other studies also found that top management support has positive effects on the acceptance or adoption of IT, and the support could be in the form of direct or indirect support. Indirect support is when vendors and consultant are hired in efforts of adopting the system in the organization, while direct support is reflected in the positioning of the IS staff in the planning and developing stages (Hamdy & Al-Enezi, 2009; Nathan, Apigian, Nathan, & Tu, 2004). These studies further provide evidence for the positive effect of top management support on IS function and IS performance.

Management support also comes in the form of designing appropriate strategy to learn the technology and to make the information easier to find and easier to understand so that the adoption of IT system is successful. Brown (2002) confirmed in their study that management support to increase the abilities of the users to use the system and reduce their anxiety from using the system help in the acceptance of technology. Similar finding was reported by Shih and Huang (2009) who found that top management support has a positive direct effect on self-efficacy and perceived usefulness and perceived ease of use, using TAM.

Management support may also be in the form of overcoming obstacles in learning to use the technology through the availability of assistance, as revealed in a study conducted by Lewis, Agarwal, and Sambamurthy (2003). In their study to examine the factors that influence key individual beliefs about technology use, they demonstrated that individual factor of personal innovativeness and institutional factor of top management commitment and support have significant relationships with perceived usefulness and ease of use. Moreover, the institutional factor of top management commitment has positive influence on usefulness beliefs and a significant relationship between top management commitment and ease of use exists, which is attributed to the individual's assessment of the resource allocation implications of top management commitment and support.

Therefore, the current study supports the notion that top management support has positive effects on technology acceptance and without its support the organization will face problems in developing, planning and usage of IT. Therefore, the study tests the effects of top management support on technology acceptance through its effects on the individual beliefs toward the actual usage of technology.

2.7.4.2 Government support

According to the study conducted by Park and his colleagues (2006), there are many factors that influence acceptance of computer technology which are beyond the organization. Some of these factors are external to the organization such as sector government (public vs. private), volatility (uncertainty), growth rates, and concentration of markets, all of which have been shown to affect acceptance of technology.

The role of the government in developing countries varies, and IT is one of the areas that are receiving increased government resources through improvised information programs, increased training opportunities and technology support grants and awards Besley, Burgess, (2002). Many small businesses are taking advantage because of the government support. However, these small businesses to be able to take advantage of government programs, two events have to occur: First, small businesses have to know about them. This means governments have to be proactive in informing small businesses of the programs in the communities within which small businesses operate. Secondly, small businesses must be convinced that their investment of resources into the programs will provide identifiable benefits to their business Besley, Burgess, (2002). Wang , Chen (2006) provided evidence that end-users should perceive that government support exists to use a particular system.

Because government support plays an important role in the acceptance of IT, as shown above, this study examines the effect of this variable on the acceptance of new technology in the public sector in the Republic of Yemen.

Methodology

Response Rate

The response rate and descriptive statistics were run as the first stage of analysis. As mentioned earlier, all in all 760 questionnaires were distributed. Of these, 585 were returned, yielding a response rate of 77%, which is considered very good (Cable & Derue, 2002) in comparison to other studies found in the relevant literature. Also, 160 cases with missing value and 68 cases outlires were deleted from 585 questionnaires were returned. Therefore, the data were ready for the analysis are 357 cases.

Institutional characteristics of Top management support

Management support refers to the degree of understanding top management has on the importance of IS function and of its involvement in the activities (Masrek, Karim, & Hussein, 2007; Nathan, Apigian, Nathan, & Tu, 2004). Another definition is the degree to which an individual believes that an organization and technical infrastructure exists to support use of the system (Venkatesh, Morns, Davis, & Davis, 2003). This study adopts both definitions. Hence, top management support comprises the degree to which the top management understands the importance of the technology and the degree of organizational and technical support for the use of the system.

A study by Venkatesh and Davis (2000) found that system availability is considered a determinant of technology acceptance. If the users believe that enough resources and computers are available when they need them, the end users are likely to use that particular technology. Hu et al. (2002) found significant relationship between intention to use and availability. They examined the effect of facility of the system on the intention behaviour to use of the government managers and employees. Nathan, Apigian, Nathan, and Tu (2004) studied the relationship between top management support (TMS) and information system. The study found that information system as the organization's strategy for development and for its competitive advantage can be achieved by top management support. They also found that most of the problems in developing, planning, and use of the technology is because of the failure of the top management to manage and support the usage of the technology. Indirect support by top management is given in the form of hiring vendors and consultants to undertake efforts of developing the system in the organization while the direct support is by positioning the IS in the organization for planning and developing.

Wang , Chen (2006) examined the quality recognition of medical information systems in Tzu-chi hospital in Taiwan and explored the factors that discourage physicians from using medical information system. The study found that computer training, government support, and organization support factors could prevent the end-user from using a particular system. So, the following hypotheses are presented:

H11: Top management support for a particular system has a positive effect on perceived ease of use of that system.
H12: Top management support for a particular system has a positive effect on perceived usefulness of that system.

3.2.8 Institutional characteristics of Government support

Since the government and its utilities are considered the management in the country, the definition of management support is used to reflect government support. Management support refers to the degree to which the top management understands the importance of information system function and the content to which it is involved in the activities (Masrek, Karim, & Hussein, 2007; Nathan, Apigian, Nathan, & Tu, 2004).

So, in this study, government support refers to the degree to which the government understands the importance of IS function and the content to which it is involved in the activities.

A study conducted by Hu et al. (2005) found a significant relationship between the facility of the system and the intention to use among government managers. Wang and Chen (2006) examined the quality recognition of medical information systems in Tzu-chi hospital in Taiwan and explored the factors that discourage physicians from using medical information system. The study found that computer training, government support, and organization support factors could prevent the end-user from using a particular system. So, when computers are available, managers and employees will use them to facilitate their work. Therefore, the following is hypothesized:

H13: Government support for a particular system has a positive effect on perceived ease of use of the government managers and employees toward using the information technology.

H14: Government support for a particular system has a positive effect on perceived usefulness of the government managers and employees toward using the information technology.

Data Collection Instrument – Questionnaire

Institutional Characteristic - Top Management Support Instrument

The instrument to measure top management support was adopted from Nathan, Apigian, Nathan, and Tu (2004). Despite that, these instruments did not specifically check for correlation, this study used these instruments because it focuses in the usage of the information system inside the organization and for its clarity to be understood. It has seven items measured on a five-point scale with '1' "Strongly Disagree," '2' "Disagree," '3' "Neither Agree or Disagree," '4' "Agree," and '5' "Strongly Agree." The items are as follows:

1. Top management involvement with IS function is strong.
2. Top management is interested in IS function.
3. Top management understands the importance of IS.
4. Top management supports the IS function.
5. Top management considers IS as a strategic resource.
6. Top management understands IS opportunities.
7. Top management keeps the pressure on operating units to work with IS.

3.12 Government Support Instrument

Since there exists similarity between top management support and government support, therefore, government support instrument was adopted from Nathan, Apigian, Nathan, and Tu (2004). The instrument consists of seven items items measured on a five-point scale with '1' "Strongly Disagree," '2' "Disagree," '3' "Neither Agree or Disagree," '4' "Agree," and '5' "Strongly Agree." The items are as follows:

1. Government involvement with IS function is strong.
2. Government is interested in IS function.
3. Government understands the importance of IS.
4. Government supports the IS function.
5. Government considers IS as a strategic resource.
6. Government understands IS opportunities.
7. Government keeps the pressure on operating units to work with IS.

Findings

H11: Top management support for particular system has a positive effect on perceived ease of use among government employees and managers toward using information technology.

The hypothesis was supported as top management support was found to have a significant positive effect on perceived ease of use ($Y = .191$, T-value = 2.081, $p < .002$). For every increase in top management support by one, perceived ease of use increases by .191 standard points. It seems that the top management supports the adoption for any new technology as it could enhance the productivity and work accomplishment.

Hence, this result is consistent with that in previous studies (e.g. Hamdy & Al-Enezi, 2009; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Wu et al., 2008) which found that top management support has a positive direct effect on perceived usefulness and perceived ease of use.

H12: Top management support for a particular system has a positive effect on perceived usefulness of government managers and employees toward using the information technology.

As expected, the result supports the hypothesis. Top management supports has a significant positive effect on perceived usefulness ($Y = .181$, T-value = 2.044, $p < .002$). For every increase in top management support by one, perceived usefulness increases by .181standard point. This result is consistent with that in previous studies (e.g. Hamdy & Al-Enezi, 2009; Shih & Huang, 2009; Wu et al., 2008).

H13: Government support for a particular system has a positive effect on perceived ease of use of the government managers and employees toward using the information technology.

H14: Government support for a particular system has a positive effect on perceived usefulness of the government managers and employees toward using the information technology.

Unexpectedly, both the hypotheses were rejected as the government support has a negative significant effect on perceived ease of use (Y = - .208, T-value = -2.427, p < .002) and perceived usefulness (Y = -.236, T-value = -2.852, p < .002), which means that for every increase in government support by one, perceived ease of use decreases by -.208 standard points, and for every increase in government support by one, perceived usefulness decreases by -.236 standard points.

However, this study found that there is positive significant direct effect of government support on behaviour intention to use (Y = .202, T-value = 3.249, p < .002). This means that for every increase in government support by one, behaviour intention to use increases by .202 standard points. This result is consistent with that found in previous studies (e.g. Besley, Burgess, 2002; Wang , Chen, 2006; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Park et al., 2006).

Clearly, when the individuals in the government sector receive government support in adopting the information technology from the government program, the government information technology strategy and the e-government program, they develop the intention to use the technology. However, they perceived the technology as not being easy to use or useful probably due to two reasons:

1. The adoption of information technology infrastructure in the government utilities is still under way and there is currently no electronic integration among the government utilities that makes it possible to perform their work. The lack of integration signals lack of government support.
2. The civil war that is presently confronting Yemen for five years have made individuals dissatisfied with the government. Therefore, the negative perception developed in the technology might reflect such dissatisfaction toward the government efforts.

Discussion and Conclusion

As expected, top management support was found in this study as a critical factor affecting the acceptance and the adoption of the information technology. This finding is parallel with other findings reported earlier in the literature (e.g. Hamdy & Al-Enezi, 2009; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Wu et al., 2008; Shih & Huang, 2009). In another words, when top management provides the necessary support to facilitate the adoption and use of the new technology, other organizational members will embrace the technology in their work despite the difficulties and challenges they face at work. However, they considered the current government efforts in supporting the usage of the technology as not being useful because the government was perceived not to provide the necessary facilities (e.g. internet, hardware's and software's) to support the usage of the technology.

In addition to top management support, the result showed that employees and managers in the Yemeni government sectors perceived support of the government is important in the adoption of the information technology such as the e-government. The finding is consistent with previous studies that show similar result (e.g. Besley, Burgess, 2002; Wang , Chen, 2006; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Park et al., 2006).

Limitations of the Study

Some limitations of the present study are noteworthy to be highlighted, as follows:

1. The study planned to collect the data using both qualitative and quantitative methods so that the data gathered could have been more varied and rich Alsohybe, (2007) to enable the researcher to provide qualitative explanations for the information technology acceptance in the government sector. However, due to the current situation in Yemen, such approach was not feasible. In other words, the conflict that currently exists in Yemen prevented the researcher from conducting interviews with the target sample (top management and officials in the government). However, the study succeeded in obtaining the valid finding by using one method which is quantitative methods to achieve the study goals.

2. This research included all employees and managers in the government sector who are currently using the information technology and those who seldom use the technology. The studies confronted some difficulties in getting permission or distribute the questionnaire in some utilities due to the underestimator for the academic research. However, the study succeeded in distributing the questionnaire in these utilities by using personal communication and permissions from the top management in these utilities.

Practical Recommendations of Study

There are some recommendations for the practitioners and the officials in the Yemeni government who are in charge of decision making and formulating the information technology strategy. Since the information technology is developing rapidly, it is important for them to understand the drivers (variables) that influence the acceptance of any new technology. In particular, those in charge should make sure that the technology adopted, be it the hardware or software, is perceived to be useful and easy to use to encourage users to accept and finally use the technology. If the technology is perceived to be useless and difficult to use, any investment made by those in authority will not yield any return as expected and such investment is a waste of resources, time and effort. This means that before implementing and installing the new technology, some feasibility studies need to be carried out first Smith , Green, (2002).

5.6 Recommendations for Future Studies

With regards to future studies, the following recommendations are proposed:

- The scope of the study targets the individuals in the government sector. Therefore, future researchers can consider conducting studies in the private sector individuals or carry out comparative studies between the public sector and private sector in the republic of Yemen or any country.
- This study used quantitative method for collecting the data and could not conduct qualitative data due to the conflict between the political parties and the civil war, which prevented this study from conducting the necessary interviews with the relevant individuals. Thus, future studies could consider employing qualitative methodology to gather qualitative information on technology acceptance.
- This study has shown some important factors that could influence an individual's intention towards the usage of the new information technology. However, it is possible that other factors, such as training that was not considered in this study, may also be responsible in determining technology acceptance. By doing so, our knowledge on the factors that influence technology acceptance could be widened.

The relationship between institutional factors such as top management support and government support on the acceptance of new technology among employees in the public sector. The study has provided empirical evidence for the positive effect of top management support on the intention behaviour to use towards the actual usage for the technology throughout the positive effect on preceived usefulness and ease of use. Empirical evidence has shown that the organization top management could inhance the employees and managers usage or adoption for the technology when the management provides the necessary equipments and facilities for them to achieve the organization goals. In addition, The study has provided empirical evidence for the positive effect of government support on the intention behaviour to use towards the actual usage for the technology. However, The study could not provide empirical evidence for the effect of government support on the intention behaviour to use towards the actual usage for the technology throughout preceived usefulness and preceived ease of use.

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