IMPACT OF TECHNOLOGY AND HUMAN RESOURCE MANAGEMENT FACTORS ON GOVERNMENT PERFORMANCE REGARDING USING DECISION SUPPORT SYSTEM

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2015

ABSTRACT

This qualitative paper attempts to highlight the main technology and human resource management (HRM) factors towards better government performance in term of using decision support system (DSS). In this regard, extant research have been reviewed. From the literature review, the linkage between technology components and HRM factors with government performance are supported by various theories. Those theories are concentrated on technology acceptance model (TAM), resource-based view (RBV), information system (IS) success model, and transformational leadership.

Keywords: TAM, DSS, Transformational leadership, technology, HRM, and Government performance.

INTRODUCTION

There are so many researches regarding the role of support system (DSS) on improving decision making. It is important to the extent that governments use it in order to improve the level of their total performance. Decision support DSS, can be considered as an information system which is computer based which can support activities related to organizational decision making or business. DSS can serve the operations, management and also organizational planning levels (usually high or middle management) and contribute for decision making that might be changed very fast and also cannot be

specified easily (Semi Structured and Unstructured decision making problems). The system of decision support can be totally human, computerized or a join of both of them (Dulcic et al., 2012)

Through considering the fact that DSS have a critical role on organizational performance, there should dome preparations for adapt the employees with this system. This can be resulted from those investigations about technology acceptance model (TAM) or information system success (IS) model. For example in IS success model, it was highly emphasized on role of quality (service, information and system) (Delon and Mclean, 2004; Peter and Mclean, 2009) and the fact that how it can improve organizational performance or employee performance. Moreover, in TAM it was emphasized on influential factors on using technology (Venkatesh and Davis, 2000; Holeden and Karsh, 2010).

However, the role of human factors was not highly considered. On the other hand, there is gap of understanding role of human resource management on improving the employee behavior aligned with using new and modern technologies.

Studying different researches about human resource management demonstrated that human resource management (HRM)

practices can improve employee performance as well as organizational performance (Huselid, 1995, Wright et al., 2001, Cho et al., 2006). This is consistent with theory of resource based (RBV) (Barney, 1996). According to RBV, human resource can be utilized in order to achieve sustainable competitive advantage. Among famous HRM practices in previous studies we can refer to staffing, training, reward system and performance appraisal.

Another important topic in HRM is leadership style. Specifically, transformational leadership style is one of those methods that can impact the employee's performance in a different way (Krishnan, 2004; Erkutlu, 2008).

By the way, HRM practices and leadership style can be considered as those influential factors on employee behavior related to using new technologies. These two factors along with quality factors (IS success model), have the potential to contribute increasing the level of using new technologies. As it was mentioned before, this topic was not focused efficiently in past studies and it can be assumed as the gap of those studies.

On the other side, using DSS certainly improves decision making. The fact that how DSS can impact different dimensions of performance will raise the question that what

other factors can influence the performance as well. Innovation and knowledge sharing are some of those critical factors that have been discussed in previous studies repeatedly. Knowledge sharing can be considered as one of the critical dimensions of employee performance and innovation can be assumed as the organizational outcome. Moreover, decision making can be considered as a mutual dimension of employee performance and organizational outcome. The relationship between innovation, knowledge sharing and decision making can be considered as the existed relationship in government performance which was not highly emphasized in past studies.

It is clear that developing countries government similar to other government attempt to use influential factors in order to improve and increase the level of its performance through utilizing DSS.

Because of the importance of government performance related to using DSS, human resource factors and technology factors can have a key role. On the other hand, there is an ambiguity about the role of these factors on increasing performance from three dimensions including innovation, knowledge sharing and decision making. Hence, this research aims to examine how technology

and human resource factors affect use and government performance DSS.

1. Literature Review

IS Success Model

The (IS) or information system concept is highly accepted in case of evaluating information systems generally (Lin and Lee, 2006). In (MIS) or management information system scholarship, a lot of researches proposed different IS success models (Delone and Mclean, 2003, 1992; Kiew and Seddon 1994, 1997; Pitt et al. 1995). The mentioned models have their own unique definitions about the IS success and factors which impact defined IS success; all of the models have been tested empirically and grounded theoretically as well.

Thus, different studies have been done by which model's success factors are used for evaluating performance or IS success.

After more than 180 papers have been reviewed about factors of IT investment assessment in 1970s and 1980s then an IS Success Model has been proposed by DeLone and McLean (1992) which had six factors relevant to information systems success, information quality, system quality, user satisfaction, individual impact, system use and also organizational impact.

At the time that this model is integrating the dependent and comprehensive used variables

by IS experts, there are many critism about that. Firstly, the used IS in model of DeLone and McLean offers so many different interpretations for being examined approperiately. Also using IS can have a controversial and problematic role in case of modeling for system success. Secindly, since User Satisfaction shows individual effects of the IS in organizational context, so studying about cause path of the user satisfaction on the individual effects would be useless. At last, the most critical point is that this model will not fully and clearly explain the existed relationship between organizational/individual impact and user satisfaction (Lee and Yu, 2012). The construct's definitions are as below.

1. System quality: measuring the system of information processing itself
2. Information quality: measuring the output of information system
3. (Information) use: recipient consumption of the information system output
4. User satisfaction: recipient response to the using of aninformation system output
5. Individual impact: the impact of information on the recipient's behavior
6. Organizational impact: the impact of information on organizationalperformance(Fig.1)
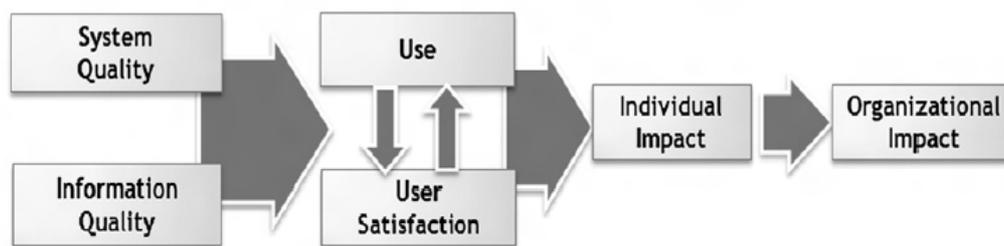

Figure 1: Delon and Mclean IS success model (1992)

Seddon and Kiew (1994) have examined a altered version of model proposed by DeLone and McLean (1992), with below three main differences:

(a) use has been replaced by the usefulness, (b) a system importance, new factor has been added to contribute to disscuss theexisted variations in perception of users about user satisfaction and usefulness and also (c) existed simultaneous causality among user satisfaction and user has been replaced by the one way casuality, i.e. usefulness leads to

user satisfaction and not the vice versa. Their empirical outcomes brought approperiate support for upstream two thirds of model by and McLean (1992). In addition, Seddon (1997) proposed a model of IS success in which the society influence as the information system's net benefit has been added as well (Fig.2).
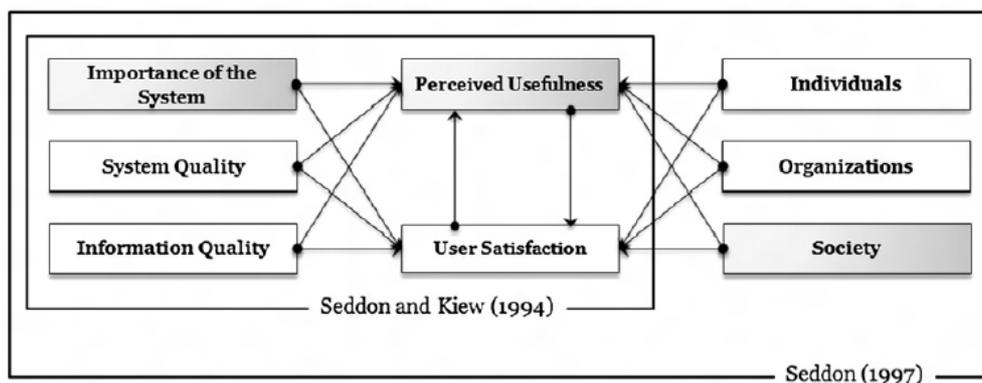

Figure 2: Seddon and Kiew success model (1994) and Seddon Suucess model (1997)

The suggested IS success model by Pitt et al. (1995) has been added the service quality as the quality variable to model of DeLone and McLean (1992). The items of measurement for evaluating the service quality include SERVQUAL which was modified and presented by A. Parasuraman et al. (1998); after that the validity has been examined (Fig.3).
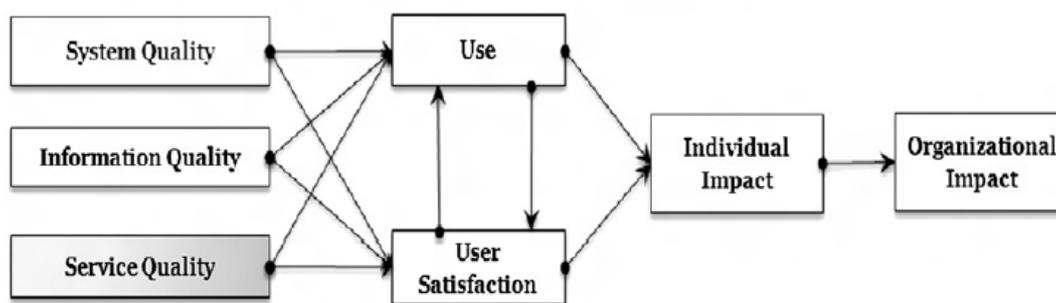

Figure 3: Pitt, Watson, And Kawan success model (1995)

Myers et al. (1997) introduces a success model through extending the DeLone and McLean model (1992) and Pitt et al. model (1995). This model was totally different from sugested model by DeLone and McLean and Pitt et al. as belows: (a) adding service quality and (b) adding a workgroup to assume external environment and organization in terms of approach calledcontingency theory (Fig. 4).
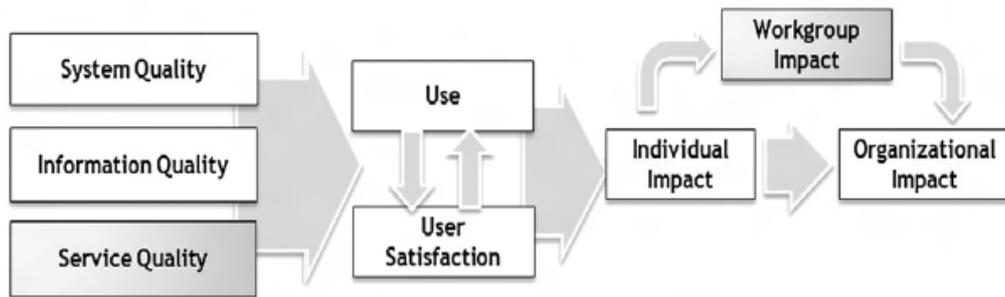
Figure 4: Myers, Kuppleman, and Prybuton (1997)

After ten years, DeLone and McLean (2003) introduced a model which was updated showing those criticisms by the other situations and experts at that time. Since the concept of service has been added to IT through using internet, they decided to increase the number of success factors for information system to seven overall such as service quality and examined the correlation and interdependence of these six mentioned elements (Fig.5).
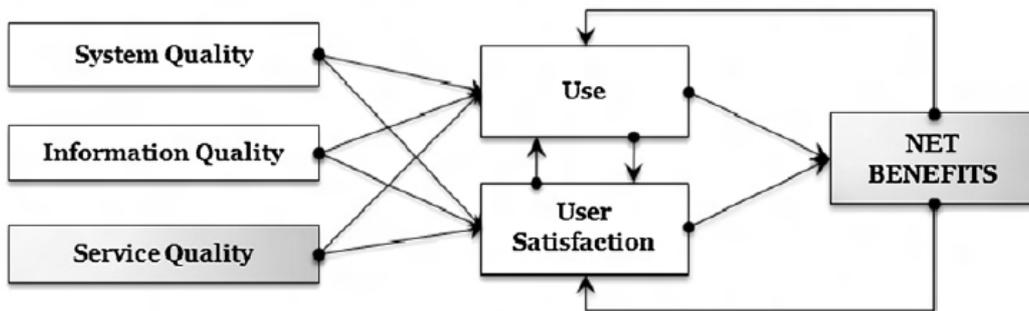

Figure 5: Delone and Mclean IS success model (2003)

HRM practice

The researches revealed that there exist a positive relationship between organizational performance and HRM practices. During the past years the scholars have concentrated on the effects of HRM practices on organizational performance (Becker &Gerhart, 1996; Delery& Doty, 1996; Huselid, 1995; Cho et al., 2006). They explained all of the innovative HRM practices and also made comparison between them for understanding the best of them. Based on statements of Delery& Doty (1996) all of the companies have been encouraged to employ these modern practices in that time and while they have been adopted they tried to minimize the expenses, increase total revenue and also provision for more effective HRM practices ("Best Practices in the U.S. Lodging Industry", 2000).

Bartel in 1994 (cited by Bartel, 2000) noted that those companies which used formal training program from 1981 to 1986 achieved at least 20 percent improvement in case of productivity. Also Terpstra&Rozell (1993) tested the data about five different practices of staffing from 201 companies. These five practices were s (1) measurement system availability for recruitment of ROI and sources, (2) validity measurement of pre employment test, (3) structured and standardized interviews, (4) intelligent test and finally (5) the forms of biographical information or forms of weighted application. They realized that those companies which used these mentioned practices often will earn more profit. The sales growth from gathered samples of industrial categories, also were studied. They identified a significant and positive relationship between level of implementation of five practices for staffing and financial performance that had profit growth while compared to the other annual profits and industries. The strength of this relationship also was defined as being different in each single industry.

Based on the mentioned studies, we can say that the effectiveness level for implementing HRM practices differs in various industries. The outcomes of the study about hospitality companies are highly employed in academic researches and also industry while providing more specified information about an industry.

Transformational Leadership Style

The transformational leaders will contact with the followers and colleagues more while it is compared to the transactional ones (Avolio et al. 1991). Rather than having simple exchange and agreement the transformational leaders provide a sense of vision and mission, the achievement of respect, inspiring the pride as well as trusting to charisma (Bass et al. 1990).

Various types of behavior are demonstrated by transformational leaders:

-Idealized impact (behavior/attributed): Leader is a trusted and respected person. He / She have high moral standard levels and the followers attempt to emulate him / her. The best effect can be attributed as well which comes by the followers and also it could be the result of leaders behavior.

-The inspirational motivation: Leader both expressly and characteristically concentrates to subordinate the need for best functionality and helps to reach the organizational objectives. According to Bass and Avolio (1994) those leaders who have this behavior can strength those individuals who are

followers and also their response and explain the critical ideas simply.

-Intellectual stimulation: Leader here will develop the subordinates knowledge about issues and also knowledge of their unique beliefs and standards.

- Individualized consideration: Followers will be treated by a leader as being individuals but they all get the same treatment. They requirements will be explained and after that the assignments will be developed for all of the followers to provide learning opportunities.

In addition, the transformational leaders are known as changes agents and visionaries who can deal with complexity, doubt and ambiguity (Tichy & Devanna 1996).

Knowledge sharing, decision making and innovation

As it has been mentioned in past chapters, the sharing of knowledge can increase skill and capability in staffs. It is obvious that this can be simply generalized in high organizational levels. Enhancing knowledge sharing in these organizational levels also can affect decision making process. For influencing the decision making via knowledge sharing in lower levels of the firm there should be HRM practices called as "participation". Chen and Huang (2009) assumed participation as of the effective practices regarding knowledge

management (knowledge storage and knowledge sharing) and the innovation. The participation is about necessity of employee's cooperation for making decision. The experience of the employees in various organizational levels needs to be used in process of decision making. (Manafi and Subramaniam, 2015)

There are many studies related to knowledge sharing and innovation which we can assume this relationship in various companies which are knowledge based as the core principle. By the way this current section will concentrate on recent studies relevant to this topic.

Hu et al. (2009) studied on 621 staffs within global tourist hotels. In their investigation they studied the existed relationship between innovation and knowledge sharing and the culture of the team was the moderator of the relationship. The outcomes of this study supported the team's culture role for maintaining and moderating the existed relationship between knowledge sharing and service innovation performance. Additionally, the gathered responses revealed that the relationship among knowledge sharing, culture and service innovation performance is significant and positive. Besides, the relationship between knowledge sharing and technical innovation has been

emphasized by Manafi and Subramaniam (2015).

Wang and Wang (2012)investigated the quantitative relationship between knowledge sharing, innovation and performance. They developed a research model that explained knowledge sharing can directly have a positive relationship with performance and influence the innovation that leads to improvement of organizational performance. The mentioned model has been examined empirically through gathered data from total 89 high technology firms located in China, the Jiangsu Province. Moreover it was realized that both explicit and tacit knowledge sharing practices contribute to

better innovation and performance. More specifically the explicit knowledge sharing impacts innovation speed and financial performance and on the other hand tacit knowledge sharing will highly affects the quality of innovation and operational performance.

Proposed Framework

According to the mentioned points above, RBV Theory and IS success model support the relationship between technology and the HRM factors. Based on these statements the below framework will be proposed for improving performance of government (Fig.6).
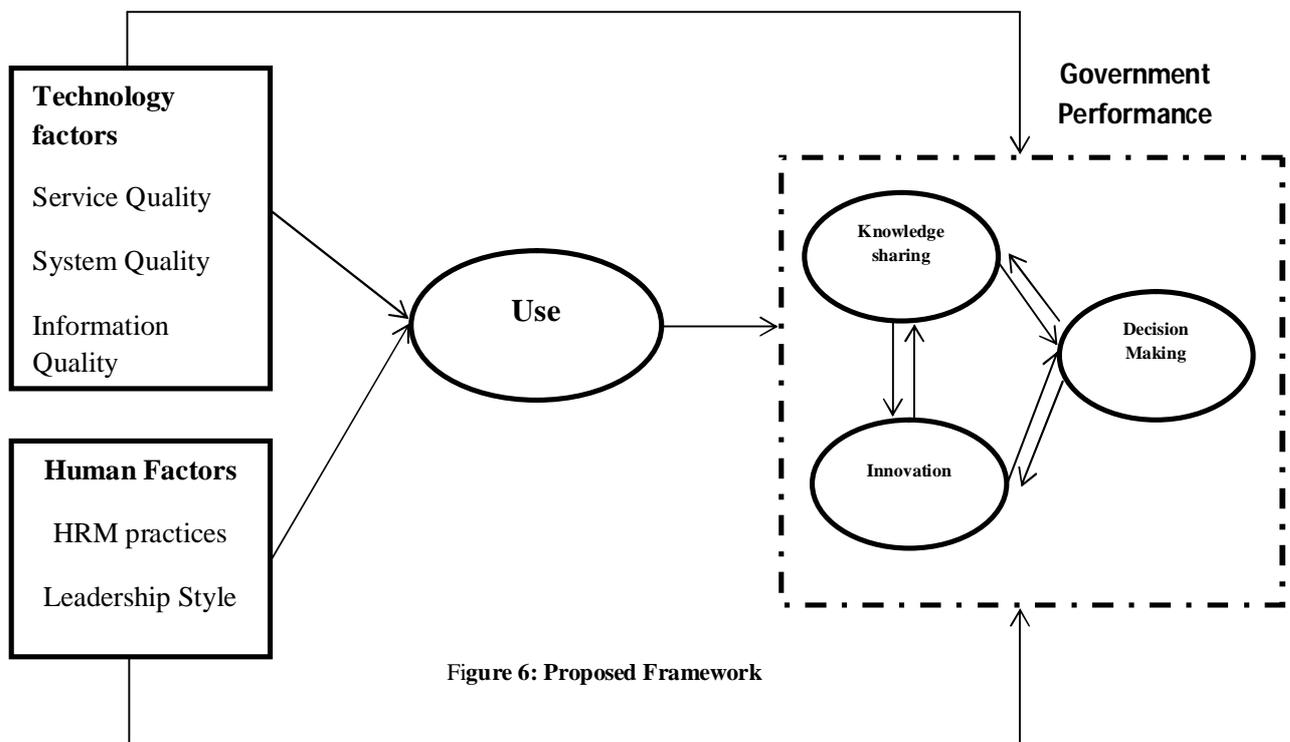

Figure 6: Proposed Framework

CONCLUSION

Referring to previous research by famous scholars, technology factors (service quality, system quality, and information quality) and HRM factors (HRM practices and leadership style) have high potential to affect on use and thereby government performance (knowledge sharing, innovation, and decision making). It should be mentioned that these factors are highlighted regarding use of DSS in the government.

In order to test the proposed framework of this research, future studies can apply the quantitative approach. But before doing this, through interview and qualitative approach the framework of this study should be confirmed by experts and academicians.

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