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A Conceptual Model for Impact of Employee Readiness for E-Business on Technology Acceptance

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Abstract. This paper is part of an ongoing doctoral research and proposes a conceptual model to investigate the impact of employee readiness for E-business (EREB) on technology acceptance with respect to use of any new technology at workplace. The proposed model is based on employee readiness for E-business (EREB) by Jung-Yu & Chorng-Shyong and Davis' technology acceptance model (TAM). It is derived from the existing perspectives of organizational change management theories while focusing on the employee side by treating adoption of new technology as the change process. The model proposes that EREB has an influence on perceived ease of use and perceived usefulness, leading to actual use of technology.

Keywords: Employee Readiness for E-business, E-Commerce, Technology Acceptance, Management

1. Introduction

Organizations repetitively come across situations that create a need for change in the structure, one or all of their processes as well as technologies. This change can face resistance; to alleviate such resistance literature proposes creating readiness amongst the affected individuals [1].

Organizations are thus implementing electronic business (e-business) at an accelerating pace; even the firms which have already embraced electronic mode of business, have to upgrade existing technology or introduce new technology time and again with continuous research and development in the field of electronic gadgets, technologies, software and applications. This fuels the speculation about employee readiness to embrace this new type and state of businesses where the technology is always upgrading every few years rapidly.

2. Theoretical Background and Significance

2.1. Significance of this study

The extant literature discusses social psychology-based as well as attitude-based models that predict acceptance and actual use or intention to use. In this regard, PU and PEU are both significant in prediction of usage; however, they do not elaborate the reasoning behind an individual's attitude or behavior. Previous studies indicate a want for improved understanding of major determining factors and have extended suggestions for furthering TAM by integrating it to an extended wider model with additional variables that concern human as well as organizational aspect [2].

Research is lacking and nothing much substantive is available on the relationship between employee readiness for e-business and technology acceptance. Drawing on insights from literature, this paper proposes use of the independent variable EREB developed by Jung-Yu & Chorng-Shyong [3] and technology acceptance model [4]. Moreover, this study will add to the knowledge-base on the subject of e-business and technology acceptance model from the employees' perspective in addition to the organizational change perspective. It will be useful to researchers and practitioners interested in designing, implementing, and managing e-business technologies, with the change management theories in hindsight.

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2.2. E-Business technologies and readiness of employees for change

As argued by [5], although adoption of new technologies and training users for their usage is a challenging task for pursuit of improved systems; a further and much more overwhelming job is to introduce such new systems to users for acceptance. The reason being that it could result in changes in job design and could restructure the workers duties and work environment in a multitude of ways.

It is imperative that all factors complement each other such as the infrastructure, E-commerce platforms, user innovativeness and ease of use. Though [20] conducted a study showing that cost, technology acceptance and satisfaction of employee, all play an integrated role towards building the effective E-CRM. However it was another one of those studies from the customer's perspective and ignored readiness of employee at the beginning of introducing such a technology.

Technology drives a push and switch in existing business models that range from mere concept of mass production to customization [7]. Incremental technological innovations tend to be manipulative and assemble upon current organizational knowledge. It is often mandatory for process innovators to ensure that they bring their partners onboard in advance to develop new technologies [8]. [9] opines that technology orientation is about refinement, choice, production, efficiency, selection, implementation and execution in information systems development. It focuses on the use and refinement of extant knowledge and technologies to strengthen the excellence of the present operation.

[22] argued that technology adoption at the group level did not receive much attention from information systems (IS) scholars and conducted a study to prove how it is different from individual level acceptance.

For most companies, adapting to the e-business phenomenon is an evolutionary journey from initial to final stages [10]. This kind of transformation may involve adopting new technologies, redesigning business processes, and restructuring management [10][11]. Change must be supported by a critical mass of stakeholders, including customers, partners, and especially, employees [11]. Support of employee shows his/her readiness.

2.3. Employee readiness for e-business (EREB)

The multiple-item scale developed by Jung-Yu & Chorng-Shyong [3] used for measuring EREB breaks-up the construct into four dimensions.

Benefits (B): this dimension states that an employee believes that benefits of e-Business would include improved productivity, enhanced efficiency, that it would be helpful for him/her in the job; that the employees always utilize functions provided by e-business and that it enables them to be more competitive at their jobs.

Security (S) refers to the state of mind of employees regarding the job security, whether they worry about losing the job, changing the job, losing their influence or losing their power in the work environment

Collaboration (C) refers to the willingness of employees to interact with each other through email or digital technologies, share knowledge, gladly work with co-workers on a team from anywhere and provide advice and help to fellow employees on how to use e-business.

Certainty (T) Employees have a Clear understanding of the purposes and functions of e-business, cooperates with activities regarding e-business, believes in his company's ability to successfully implement e-business and believes that e-Business is honorable.

2.4. Technology acceptance model (TAM)

[12] observed that TAM is repeatedly indicated in literature as one of the most powerful, robust and parsimonious models in order to predict user acceptance, particularly in context of information systems. In order to predict and elaborate the user's adoption behavior and acceptance for any give technology, there has been ample research conducted in past to ascertain the determinants of acceptance and use of information technology and systems [13]. Generic Theory of Reasoned Action (TRA) [14] holds as the primary stimulant for further research as it explained a user's attitude towards technology. TRA has successfully argued that an individual's behavior can be predicted by his or her behavioral intention. Working on the same lines, researchers developed a similar model, namely Technology Acceptance Model (TAM), which has been used as an even more prevalent model. TAM has been adapted from TRA. TAM was developed by [4] to explain intention to use, and acceptance of new technology in organizational settings. There are three main variables in TAM: Perceived usefulness (PU), perceived ease of use (PEU) and behavioral intention to use (BIU). This study proposes a model which uses PEU AND PU leading to Actual Use, instead of behavioral intention to use l

[21] Opined that if employees have previous exposure to technology, it will be an influential factor leading towards technology acceptance. Further, [22] states An examination of technology adoption is theoretically important because the nature of the group-driven technology usage can be different from the individual usage

Existing research contains several studies used to measure the technology readiness and technology acceptance among users [15] but there is not many studies showing Employee readiness. Moreover, no studies of such nature are found for the proposed relationship between EREB and TAM.

3. Conceptual Model and Propositions

3.1. Perceived ease of use and perceived usefulness

TAM holds that's inner beliefs concerning the usefulness and ease of use of a given technology are the primary determinants of an individual's use of the technology [16]. The proposed model shows the relation between employee readiness and acceptance of any new technology or an upgradation of existing technology or system which is intrinsic to the task for the employees. Therefore, it is imperative that the said change in technology is an integral means to achieve task objectives for employees in their daily routine business matters. Thus, we propose a significant path from PEOU to PU, but no relationship from PEOU to use. Actual use of a New technology is modeled as strictly a resultant variable influenced only by PU. The following research propositions are made to be tested for the core TAM:

Proposition1: Perceived ease of use (PEOU) of New technology will be positively associated with perceived usefulness (PU) of the software.

Proposition2: Perceived usefulness (PU) of New technology will be positively associated with actual use.

3.2. Security

Security refers to the state of mind of an employee regarding the job security, whether he/she worries about losing the job, changing the job, losing influence or power in the work environment [3], including such emotional states as frustration, apprehension, and fear. Technology acceptance scholars have found that computer anxiety has a significant negative effect on PEOU [17]. Negative affective reaction toward the use of such modern integrated Management Information systems is likely to exert negative influences on the perception of the system, and further on the use of the system. Thus, it is expected:

Proposition 3a: Security Concerns of using a new technology will be negatively associated with perceived ease of use (PEOU) of the software.

Proposition 3b: Security Concerns of using a new technology will be negatively associated with perceived usefulness (PU) of the software.

Proposition 3c: Security Concerns of using a new technology will be negatively associated with actual use

3.3. Benefits

The term benefits involves an employee's beliefs that benefits of e-Business would include improved productivity, enhanced efficiency, that it would be helpful for him/her in the job; that the employees always utilize functions provided by e-business and that it enables them to be more competitive at their jobs [3,18]. For technology adoption research, previous studies have supported the positive relationship between self-efficacy and PEOU. It is expected that higher perceived benefits of New technology use facilitates employees' PEOU:

Proposition 4: Benefits of New technology will be positively associated with perceived ease of use (PEOU).

3.4. Certainty

TRA, TPB, and TAM are such models that work on basis of an assumption of user's choice of actual use or behavioral intention to use [14]. The management's support provided to individuals at workplace, such as guidance sessions and training, can enhance their usage of any technology depending upon the level and extent of such support. As narrated by [14], institutional support is one such construct that is a sign of help or obstacle to a user's behavior related to external conditions. Thus, situational factors, such as institutional support, group (working) norms, and organization culture, may be as critical as individuals' attitude toward to the systems. The more support employees believe they receive, the greater their PEOU and PU of the system:

Proposition 5a: Certainty for using a New technology will be positively associated with perceived ease of use (PEOU) of technology.

Proposition 5b: Certainty for using a New technology will be positively associated with perceived usefulness (PU) of technology.

3.5. Collaboration

Collaboration has been introduced to technology adoption models as a construct that captures the social influence aspect of technology usage. Collaboration is a relevant construct, especially in organizational settings where mandated use is more likely to occur compared to the technology use for personal purposes. New technology is used primarily for work-related tasks, thus, its adoption is more of a collective decision-making. A technology's use can be improved at the initial stage of introduction during a mandatory usage requirement by an organization, whereas external pressures stemming from managerial and social dimensions could adversely affect the user's intention to use a certain technology in the future [19]. Therefore, it is proposed:

Proposition 6a: Collaboration will be positively associated with perceived ease of use (PEOU) of technology.

Proposition 6b: Collaboration will be positively associated with perceived usefulness (PU) of technology.

In summary, integrating the literature and propositions made above, the conceptual model is shown in Fig. 1.

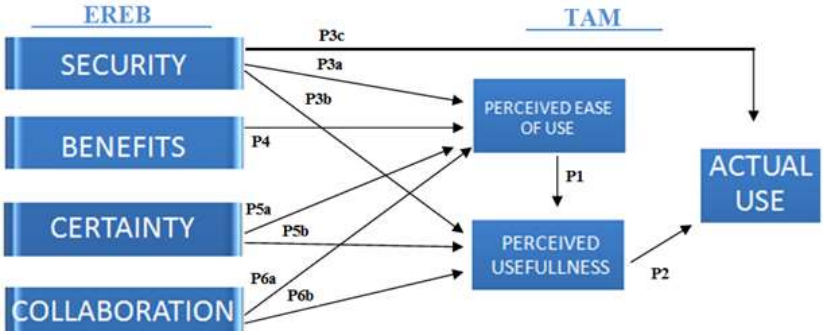

Fig. 1: Conceptual model

4. Conclusion

In conclusion, the present model shall help conduct studies which would be amongst the few studies that shall help investigate employees' acceptance and use of the modern technologies i.e. new technologies, softwares, internet or web-based applications with an extended TAM. The model generally estimates to confirm the key propositions of TAM. More importantly, the model promises a potential to lead towards studies whose findings are expected to show that both individual factors including Security and Benefits and institutional factors such as Certainty and Collaboration are significantly related to PEOU, PU, and to the actual use of a newly introduced technology. Examining the adoption and use of new technologies, the present model contributes to technology acceptance models showing that use of technology in work settings is subject more to institutional and social influences at workplace in an E-business environment.

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