The Relationship between Organizational Repository Usage (ORU) And Innovative Work Behaviour (IWB)

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ABSTRACT

This study reports the relationship between Digital Document Management System (DDMS) usage and IWB of MAMPU employees involving a total of 180 employees in MAMPU using online survey. The MAMPU employees' IWB and OMIS were verified and conceptualized. The results indicate the all dimensions of ORU are applicable in the context of Government to Employees (G2E) and e- records management system. The results of the correlation analyses suggest all formulated hypotheses were supported despite moderate relationship between them. The conceptualized determinants and impacts of IWB were validated and substantiated. There is relationship found between system quality, information quality, service quality and perceived ease of use with IWB indicating the constructs directly determine IWB. Theoretical contribution of the research includes development of a theoretical model of Usage, Perceived Ease of Use, Perceived Usefulness, Service Quality, Information Quality and System Quality of organizational repository usage and an IWB framework of MAMPU. Practically, the research reveals the organizational repository usage factors which are imperative to contribute the IWB. Methodologically, the research illustrates the effective use of the quantitative approach within the positivism research paradigm. The study has also filled in the knowledge gap related to antecedents and impact of organizational repository usage on IWB, improves OMS design and implementation approach. The study also has contributed a significant empirical evidence of beneficial for DDMS implementation to Malaysian Government.
Keyword: Organizational Memory Systems, Corporate Memory, Knowledge Management, Institutional Memory, Digital Document Management System

1. INTRODUCTION

The concept of organizational memory (OM) has been mooted by Duncan and Weis (1979) who described OM as corporate, organizational and enterprise wide knowledge base. OM main function is to define information or knowledge type to be managed and the processes of capture, retain, access and usage of knowledge in the organization (Guerrero & Pino, 2001). One main drawback about OM is how it is applied in the organizations and how to measure the improvement of organizational effectiveness. The role of the organizational memory system (OMS) is visible when it comes to retaining organizational knowledge. This organizational knowledge includes manual, process, standard operating procedures, codified tacit knowledge

and lesson learn. An organization may suffer from "corporate amnesia" which is a term to describe the loss of memories on how to do things in the organization.

Despite the extensive research (Jennex, Olfman, Panthawi & Park, 1998) to measure the effectiveness of an Organizational Memory Information System (OMIS), there is a lack of research conducted to determine the antecedents and impact of organizational repository usage and their relationship at the individual level with innovative work behaviour. The outcome of the study will improve organizational memory system design and implementation approach. Realizing this, Malaysian Administrative Modernization and Planning Unit (MAMPU) rolled out Digital Document Management System (DDMS) in 2012 to create an institutional memory to manage electronic records, shifting from a manual paper-based documentation and reduce paper usage by stages (MAMPU, 2014). However, DDMS is not fully utilized to improve organizational performance in the government sector. To investigate the root cause of the issue, the study is proposed to identify MAMPU employees' perception of the effectiveness of DDMS and to examine the relationship between organizational repository usage and innovative work behaviour.

2. LITERATURE REVIEW

2.1 The Original Information Systems Success Model
DeLone and McLean (1992) proposed the Original Information Systems Success Model (OISSM) to recognize research diversity for an overview of what it takes for the successful of Information Systems (IS). The model is widely used for measuring different elements in IS success. According to DeLone and McLean (1992), user satisfaction is influenced by system use. However, there is no empirical evidence proposed by them. They even agreed that the model needs further research to prove its validity.

2.2 The Updated Information Systems Success Model
DeLone and McLean (2003) argued that to experience the net benefits, it is important to measure user experience, usage and their satisfaction. Although UISSM is without empirical validity, the model has been adopted by various researchers to determine IS success due to its multi-dimensional characteristics. Seddon et al. (1999) proposed a context matrix for success measurement based on organizational stakeholder and level of analysis. The application of UISSM is heavily depended on the organizational context. The model will be very useful for study on specific systems success measurement.

2.4 Technology Acceptance Model
The Technology Acceptance Model (TAM) was proposed by Davis (1989). He suggested that user acceptance or rejection of IS depends on two factors which are perceived usefulness and perceived ease of use. Together, they will formulate the outcome of user's attitude in using IS. A revised model was proposed by Davis (1993) to address the issue of behavioural intention to accept and use IS which is based on the original TAM.

2.5 Innovative Work Behaviour

Scott and Bruce (1994) argued innovation is a structured approach process, with various activities and unique individual behaviour in every stage. Scott and Bruce (1994) described that individuals in organization adapt to their environments by stages and their need awareness deteriorates and only a crisis can recharge back their action. They proposed in their innovative work behaviour (IWB) model where innovative behaviour is the outcome of three constructs which are attributes, leadership and climate for innovation.

2.6 Theoretical Framework

Based on the literatures reviewed and adopted, the theoretical framework is proposed which extends Information Systems (IS) Success Model by DeLone and McLean (1992,2003) and Technology Acceptance Model (TAM) by Davis (1989) to be tested in innovative work behaviour context.
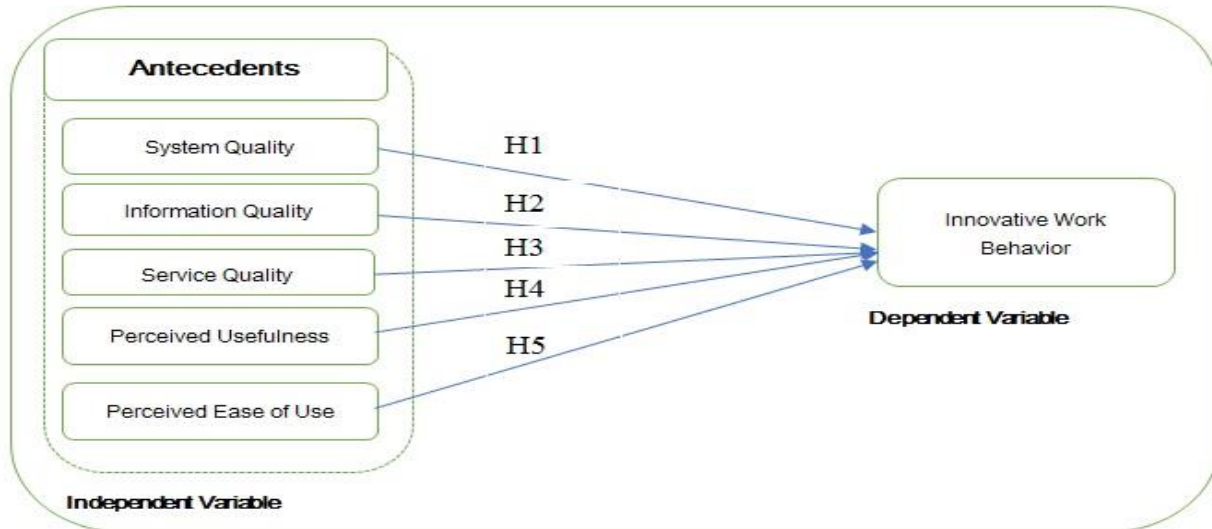

Fig. 1. The Antecedents and Impact of Organizational Repository Usage on Innovative Work Behaviours

2.7 Research Hypotheses

H1:   Systems quality has a relationship with innovative work behaviour.
H2:   Information quality has a relationship with innovative work behaviour.
H3:   Service quality has a relationship with innovative work behaviour.
H4:   Perceived usefulness has a relationship with innovative work behaviour.
H5:   Perceived ease of use has a relationship with innovative work behaviour.

3. RESEARCH METHODOLOGY

This survey design used probability methods (simple random) for the purpose of generalization to the entire population. The respondents comprised of Grade M1-JUSA professional staffs in

MAMPU, Putrajaya. A total of 220 questionnaires were distributed to all staffs in departments in MAMPU. A total of 180 questionnaires were returned. A set of questionnaire containing 36 items five Likert scale was used to measure the responses of the respondents. The instrument used was the modified Technology Acceptance Model and other instruments of Innovative Work Behaviour (Janssen, O. (2005). Quantitative analysis using the SPSS (Statistical Package for Social Sciences) software SPSS version 21.0 was conducted. Data were analyzed using descriptive statistics such as frequency, percentage, mean, standard deviation and inferential analysis methods such as correlation analysis. The overall staffs at MAMPU innovative work behaviour recorded an Alpha value of 0.949 while the Cronbach' alpha for organizational repository usage is 0.9248. These results show all the questions posed to the respondents are valid and reliable.

4. RESULTS AND ANALYSIS

4.1 Frequency Analysis

Table 1: Academic Distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
SPM	27	15.0	15.0	15.0
Diploma	24	13.3	13.3	28.3
Degree	79	43.9	43.9	72.2
Master	47	26.1	26.1	98.3
PhD	3	1.7	1.7	100.0
Total	**180**	**100.0**	**100.0**	

Majority of the respondents came from degree level employees with 43.89% respondents. Employees with degree in MAMPU were from management and professional group that handle information analysis, policy making and rely on latest technological advancement for decision making and smooth implementation. The second largest were 26.11% from employees with Master degree. These groups of employees were very much involved in high level decision making and indicate that DDMS is heavily utilized by these groups. Respondents with diploma qualification were 13.33% and 15.0% were with SPM qualification. The lowest percentage came from employees with PhD qualification were 1.67%. The low percentage is due to low number of employee with PhD qualification in MAMPU. Low number of respondents from the support group was expected as their DDMS usage is related to document filing and storage only. Out of 180 responses, 71.67% came from management of professional group and the rest 28.33% came from support group. Overall, it indicates normal distribution of DDMS usage in MAMPU to improve work flow process and improve efficiency.

Table 2: Grade Distribution

	Frequency	Percent %	Valid Percent	Cumulative Percent
Between 1 and 17	3	1.7	1.7	1.7
Between 18 and 40	62	34.4	34.4	36.1
Between 41 and 54	112	62.2	62.2	98.3
JUSA and above	3	1.7	1.7	100
Total	**180**	**100.0**	**100.0**	

The table above shows the grade distribution of the respondents. Majority of the respondents were from between grade 41 and 54 with 62.22%. This indicates that majority of DDMS users came from management and professional group (Grade 41-54). Only 1.67% came from JUSA officers, which indicate that they were not a heavy user of DDMS. Their DDMS usage was particularly only related to act on online letter in DDMS. Most of the time, their role in DDMS usage were performed by their officers. Same goes to the grade between 1 and 17 with 1.67%, which indicates that this group was not a heavy DDMS user. Support group between grade 18 and 40 had a percentage of 34.44%. This indicates this group was heavily involved in using DDMS to complete their daily task.

4.2   Reliability Analysis (Cronbach Alpha)

The Cronbach Alpha (actual test) for all constructs are above 0.6, suggesting that the instrument (questionnaire) used in the study is highly reliable. However, PEUS4 was dropped after factor analysis because of low loading factor (less than 0.5).

Table 3: Cronbach Alpha

Variable	No of items after factor analysis	Item used to measure variable	Cronbach Alpha
Systems Quality	5	SYSQ1, SYSQ2, SYSQ3, SYSQ4, SYSQ5	0.942
Information Quality	7	INFQ1, INFQ2, INFQ3, INFQ4, INFQ5, INFQ6, INFQ7	0.945
Service Quality	6	SERVQ1, SERVQ2, SERVQ3, SERVQ4, SERVQ5, SERVQ6	0.941
Perceived Usefulness	4	PEUS1, PEUS2, PEUS3, PEUS5	0.841 (0.913 after drop PEUS4)
Perceived Ease of Use	5	PEEU1, PEEU2, PEEU3, PEEU4, PEEU5	0.949
Innovative Work Behaviour	7	IWB1, IWB2, IWB3, IWB4, IWB5, IWB6, IWB7	0.949

4.3 Pearson Correlation

The Pearson product-moment correlation coefficient (or Pearson correlation coefficient, for short) is a **measure of the strength of the association** between two variables. According to Cohen (1988), coefficient value $0.1 < r < 0.3$ is considered as small correlation, $0.3 < r < 0.5$ is a medium/moderate correlation and $r > 0.5$ is a strong correlation.

Table 4: Pearson Correlation

	ALL_SYSQ	ALL_INFQ	ALL_SERVQ	ALL_PEUS	ALL_PEUU	ALL_USQ	ALL_IWB
ALL_SYSQ	1	.577**	.632**	.412**	.733**	.492**	.399**
ALL_INFQ	.577**	1	.616**	.595**	.697**	.488**	.542**
ALL_SERVQ	.632**	.616**	1	.348**	.641**	.491**	.437**
ALL_PEUS	.412**	.595**	.348**	1	.551**	.353**	.518**
ALL_PEUU	.733**	.697**	.641**	.551**	1	.625**	.507**
	1	.399**	.542**	.437**	.518**	.507**	.466**	1

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson product-moment correlation coefficient was computed to assess the relationship between the antecedents for organizational repository usage and innovative work behaviour (IWB) for 180 respondents. The results suggested 20 out of 20 correlations were statistically significant and were greater or equal to r(178) = +.34, p <0.01, two-tailed. Overall, there was a moderate, positive correlation between three constructs (system quality, service quality and usage) with IWB where the value is between 0.3<r<0.5. There was a strong, positive correlation between three constructs (information quality, perceived usefulness and perceived ease of use) with IWB where the value is r>0.5.

4.7   Discussions
4.7.1   RQ1: MAMPU employees' perception of the effectiveness of DDMS
From seven components in the theoretical framework, a considerable number of respondents agreed with questions asked in all seven constructs with little variations, except for item PEUS4 under Perceived Usefulness (see Table 33). Question for item PEUS4 is "My performance on the job is enhanced by DDMS". Item PEUS4 was dropped after factor analysis. The reason why respondents did not agree with the use of the construct is that they feel DDMS usage is more towards document management only rather than for data analysis purpose such as big data analytics or processed data for information analysis to create new ideas.

4.7.2   RQ2: Relationship between organizational repository usage and innovative work behaviour
Empirical results of the study almost matched the author's expectation as the theoretical framework was based on established models for the relationship between all the constructs. For five constructs of the Updated Information Systems Success Model (UISSM) by DeLone & McLean (2003), all relationships between each construct were accepted. On the other hand all factors ORU can affect IWB among staffs in MAMPU. Thus, the study supported the findings by Noorman Masrek, Shahriza Abdul Karim & Hussein (2007) while contradict with findings from Seddon et al. (1999) who argued the successful implementation of ORU is heavily depended on the organizational context and not solely based on the specifications of the organizational repository alone.

4.8   Theoretical Implications
The most important implication of this study is the proposed success model of a government e-application management system in the context of OMS. The second implication of the study is by proving information system (IS) success model, technology acceptance model, e-commerce and innovative behaviour are applicable in the government to employees (G2E) context. The study adopted base model from the Original Information System Success Model (OISSM; DeLone & McLean, 1992) and the Updated Information System Success Model (UISSM, DeLone & McLean, 2003). To investigate the relationship further, additional models such as Technology Acceptance Model (TAM; Davis, 1993). and Innovative Behaviour Model (Scott &

Bruce, 1994) were incorporated in the theoretical framework to develop a success model in the context of organizational memory system (OMS). Thus, the study has quantified OMS impact in driving innovative work behaviour in the context of government.

4.9 Managerial Implications

The study has identified the most important factors for DDMS to be successful which are information quality, perceived usefulness and usage. It is highly important for Malaysian Administrative Unit and Management Modernization (MAMPU) as the DDMS owner to focus in improving DDMS quality by focusing on the three identified constructs to generate innovative work behaviour. The result of the study also will help MAMPU to understand the key issues that influence user needs and satisfaction with DDMS as an organizational repository. As a result, MAMPU can improve DDMS service delivery by retaining strategic knowledge assets in the Government sector. The result of the study also will help to retain DDMS current users, and an opportunity to influence new users' adoption and transforming DDMS towards an agile knowledge management initiative in the public sector.

To attract new users, DDMS should be integrated with other e-application such as myGov or 1GovUc to promote single sign-on policy rather than to remember various password for each system. MAMPU has outlined the future trend of integration and collaborative model in the development of its e-application (MAMPU ICT Blueprint, 2014). Unified intelligence has been identified as the future competitive advantage where all contents are unified within one single hub and centralized topic by interconnecting Application Programming Interface (API) from multi sources into a single source (Gregg, 2015).

4.10 Limitations of the Study

The research encountered some limitations in conducting the study and would like to share it to place the study findings in perspective. The first limitation of the study is that the researcher had limited access to the respondents. It was not possible to meet each respondent or visit each department in Malaysian Administrative Unit and Management Modernization (MAMPU) personally due to strict security compliance. MAMPU office is located in Prime Minister Department Complex which has strict rules for visitor access. The researcher has decided to adopt an online based questionnaire to overcome the limitation. The second limitation is the researcher would like to conduct the study for DDMS usage maturity comparison between two organizations. However, the idea was considered as too ambitious for the study as more time was needed to complete the study. The research project is required to be completed within 6 months to be conferred with a Master's degree. To ensure the timely end of the study, the researcher decided to be realistic and focused on one single organization only.

4.11 Future Research Directions

From the literature review during research, it was decided to exclude cultural context from the theoretical framework due to limited time to conduct the study. Culture is more

difficult to be studied and quantified due to complex nature of culture in the selected population. Including cultural factors in the future research is suggested to understand better the influence of cultural in the context of OMS success model and whether it will influence the findings of the study. Based on empirical result of the study, perceived usefulness is now a more significant antecedent than perceived ease of use for innovative work behaviour in the context of OMS. However, the finding needs to be tested, possibly in a bigger population or comparison between two sets of populations. Only then, a more accurate finding will be obtained.

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808