

IJACT 19-3-19

Examining DeLone and McLean Model for Online Public Grievance Redressal System of Nepal

KC Pramod , Deuk J. Bae*

Department of Global Public Administration, Yonsei University
E-mail: kcpramod7@gmail.com, dbae@yonsei.ac.kr

Abstract

This paper is to explore the success factors of the online public grievance redressal system in the Nepal. It empirically tests the conceptual path model developed by DeLone and McLean which consists of six social perception variables with regard to citizen's intention to use the system. The estimates from 577 respondents support all the 13 hypotheses generated from D&L model. People's attitude and social norms are the two most important factors on the continuous usage of the system. It is suggested that the social factors are as much important as technological aspects when it comes to the e-government implementation. It is also suggested that the government should pay more attention to human factors in upgrading the design and development of e-grievance system in the foreseeable future.

Keywords: Online public grievance redressal system, Hello Sarkar, E-government adoption, DeLone and McLean model, Nepal

1. Introduction

Online public grievance redressal system is an e-government initiated program that addresses the grievances, complaints, or issues of the citizen's being challenged in daily life. Government of Nepal, launched the online redressal system under prime minister's office called 'Hello Sarkar' in 2011. It was designed to make the ministries and agencies more transparent and accountable for public service delivery, for slow bureaucratic process and prevalent corruption are the main sources of complaints. Hello Sarkar helps citizens online by leading them to the responsible organization that handles their particular concern.

The aim of this study is to analyze the success factors of Hello Sarkar from the viewpoint of the citizens who are using the system to lodge grievances online. Several literature [1] [2] have examined various e-government systems, nevertheless few research has not yet measured the success of e-grievance system in Nepal. This study employs DeLeon & McLean's model to empirically explore the success factors, for it's validity has been tested by many of previous studies [3].

They build the paths model about information system success, but theirs's is a conceptual one drawn from their experience and induction. This study is to empirically test it to find out what are the key factors of citizen's intention to use Hello Sarkar. The empirical findings of this study will serve the better design and operation of electronic grievance system in Nepal and around the world.

2. Literature Review

DeLone and McLean developed the Information System (IS) success model in 1992 and extended it later. The two models have led researchers to establish the significant factors that have influenced the acceptance and use of e-government services [4]. The D&M model of 1992 was associated with six factors such as system quality, information quality, use, user's satisfaction, individual impact, and organizational impact. In 2003, the model was further updated with added variables of intention to use, usage and net benefits, while dropping variables like individual impact and organizational impact.

The D&M model has been evolved as follow-up researches add new findings. The meta-analysis over 52 empirical studies, finding that the relationship between service quality and intention to use is not supported except only one study [5] [6]. It suggests the future research should examine how IS research model perform in various context. It is advocated that subjective norms as suitable construct for use of the system as it is the influence of important people who he or she should perform the convinced behavior [7]. In addition, trust is believed to be one of important factors that determine the perceptions about the information and system quality [8] [3].

Incorporating many new findings and argument, the extended D&M model drops the variable of service quality, while it adds variables such as trust, subjective norms, and attitude. Definitions of the variables are presented in the Table 1.

Table 1. Definitions of the variable

Variable	Definition
SYSTEM QUALITY	System quality is concerned with whether or not there are "bugs" in the system, the consistency of the user interface, ease of use, quality of documentation, and sometimes, quality and maintainability of the program code [9].
INFORMATION QUALITY	Information quality is concerned with the issues such as the relevance, timeliness, and accuracy of information generated by an information system [9].
SUBJECTIVE NORMS	Social norms are defined as the degree to which an individual perceives that important, for others believe he or she should use the new system [10]. If the social friends who have used the system feel that Hello Sarkar is not doing as expected, it affects an individual not to use the system.
ATTITUDE	It is operationalized as the degree to which a person has positive evaluative affect about using Hello Sarkar, for he or she thinks it a good and wise idea.
TRUST	Trust is concerned with the belief that the trustee (i.e., government) will act cooperatively to fulfil the trustor's (i.e., users of the government websites) expectations without exploiting their vulnerabilities [11].
USER SATISFACTION	User satisfaction is the degree to which the user of the information system feels that the system meets his or her information needs such as quick response to citizen's complaint and easy to report [12].

3. RESEARCH DESIGN AND DATA COLLECTION

To examine the extended D&M model in Nepal context, this study sets up 13 hypotheses based on the relationships among seven variables adopted. A self-administered questionnaire was constructed by referring to [4]. The final questionnaire consist of 23 questions and 11 demographic questions. They are multiple-type, close-ended, and 7-point scale ones; 1 for "strongly disagree" to 7 for "strongly agree," as [13] employs.

A total of 577 respondents from Kathmandu and adjoining district Lalitpur and Bhaktapur, Nepal gave answers to the survey in the period of December 2018 and January 2019. The respondents are the majority user of Hello Sarkar, for most of them are well accustomed to using computer and internet technology for years.

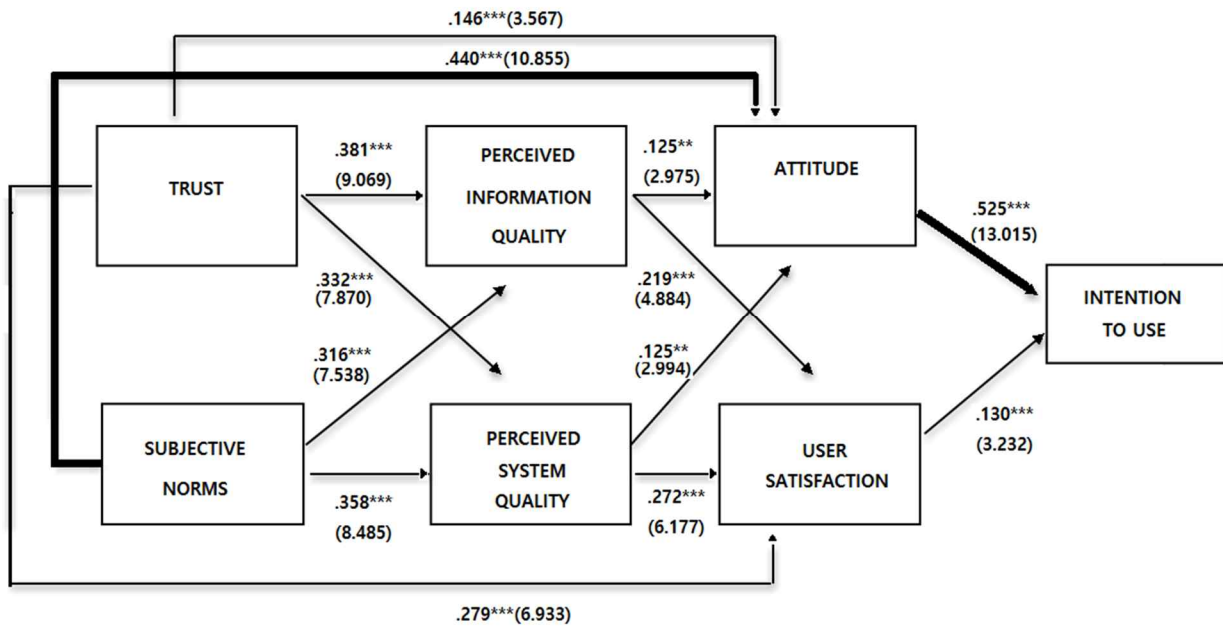
The average age of them ranges from 20 to 39, and 85.5% of them holds bachelor’s degree or more. Male accounts for 55.6% of the sample. The majority of the respondents belongs to public sector having 29.5% followed by private sector employee with 28.4% and students 27.9% respectively.

Reliability analysis is performed using Cronbach’s alpha. The results range from 0.744 – 0.882, in all seven variables which is regarded as high, indicating the internal consistency of the items measuring the same construct [14].

4. ESTIMATION AND FINDINGS

A series of regression analyses is carried out to perform the path analysis. As shown in Figure 1, three-layered multiple regressions result in the estimation of the paths toward INTENTION TO USE, the proxy of success of Hello Sarkar.

The empirical results support all the thirteen hypotheses of the extended D&M model with significant and positive path coefficients. Paths of SUBJECTIVE NORMS to ATTITUDE to INTENTION TO USE have the greatest effect, and they are depicted as the thick arrows in the figure.



Note 1: Numbers attached to arrows are standardized path coefficients respectively.
 Note 2: The asterisk(*) for significant at 0.10 level, (**) for 0.05 level, and (***) for 0.01 level.
 Note 3: Numbers in parenthese denote t-values associated with the path coefficient.

Figure 1. Results of Estimation

Table 2 decomposes the total effects of variables into direct and indirect ones. ATTITUDE has the greatest direct effect, while SUBJECTIVE NORMS has the greatest indirect effect through a rather complex paths. The greater SUBJECTIVE NORMS is, or the more positive people around the respondent think the e-grievance system, the more likely he or she has an ATTITUDE inclined to think the use of Hello Sarkar as a wise idea. It leads to the greater INTENTION TO USE the information system.

Other variables have significant direct and indirect effects on the dependent variable, too. Although they have

smaller magnitude of the effect, it should be noted that the indirect impact of INFORMATION and SYSTEM QUALITY on ATTITUDE subsequently influence the INTENTION TO USE the system. It suggests that Hello Sarkar should have better user friendly process, available information in website, and ease to use. Then it will bring subsequent positive attitude to use the system continuously.

Table 2. Effects of Variables on INTENTION TO USE

Variables	Total Effect	Direct Effect	Indirect Effect
ATTITUDE	.525	.525	
USER SATISFACTION	.130	.130	
PERCEIVED INFORMATION QUALITY	.094		.094
PERCEIVED SYSTEM QUALITY	.002		.002
TRUST	.119		.119
SUBJECTIVE NORMS	.295		.295

5. CONCLUSION

The empirical results from the users of online public grievance redressal system in Nepal presents interesting findings. First, this study supports the extended D&M model like many other studies. All the thirteen paths made by seven variables has positive and significant coefficients. Second, this study shows that the social and subjective variables like ATTITUDE and NORMS are as much important as information technology per se. It is often believed that the quality of information system including hardwares, speed, and contents would increase people's intention to use e-government like Hello Sarkar. However, this study reemphasizes the importance of social psychology along with the quality of information system. Third, this study leads to a follow-up questions whether the empirical findings prone to social aspect of e-government are universal over the context of Nepal.

Bringing to conclusion, it is very vital for the Government of Nepal to enhance information and system quality to increase the positive attitude and subjective norms to use the Hello Sarkar in the future. The success of any e-government system can be determined only by it's continuous usage, so that it is the challenge for every government to maintain electronic system for usefulness, ease of use, information flow, service quality and prompt service delivery. It requires the government to have a specific action plan to maintain the e-grievance system and to enhance the information and system quality.

References

- [1] Hu, P. J.H., Brown, S. A., Thong, J. Y. L., Chan, F. K. Y., and Tam, K. Y. (2009). Determinants of service quality and continuance intention of online services: The case of e-tax. *Journal of the American Society for Information Science and Technology*, Vol. 60, No. 2, pp. 292–306, 2009
- [2] Sambasivan, M., Wemyss, G. P., and Rose, R. C. User acceptance of a G2B system: A case of electronic procurement system in Malaysia. *Internet Research*, Vol. 20, No. 2, pp. 169–187, 2010.
- [3] Khayun, V., Ractham, P., and Firpo, D. Assessing e-excise success with DeLone and McLean's model. *Journal of Computer Information Systems*, Vol. 52, No. 3, pp. 31–40, 2012.
- [4] Rana, N.P., Dwivedi, Y.K., Williams, M.D. and Piercy, N.C. An extended DeLone and McLean's

- information system model for examining success of online public grievance redressal system in Indian context. *International Journal of Indian Culture and Business Management*, Vol. 10, No. 3, pp. 267-290, 2015.
- [5] Petter, S. and McLean, E. R. A meta-analytic assessment of the DeLone and McLean IS success model: An examination of IS success at the individual level. *Information & Management*, Vol 46, No. 3, pp. 159–166, 2009.
- [6] Rai, A., Lang, S. S., and Welker, R. B. Assessing the validity of IS success models: An empirical test and theoretical analysis. *Information Systems Research*, Vol. 13, No. 1, pp. 50–69, 2002.
- [7] Schaupp, L. C., Belanger, F., and Fan, W. Examining the success of websites beyond e-commerce: An extension of the IS success model. *Journal of Computer Information Systems*, Vol. 49, No. 4, pp. 42–52, 2009.
- [8] Teo, T. S., Srivastava, S. C., and Jiang, L. Trust and electronic government success: An empirical study. *Journal of Management Information Systems*, Vol. 25, No. 3, pp. 99–132, 2008.
- [9] Seddon, P. B. A respecification and extension of the DeLone and McLean model of IS success. *Information Systems Research*, Vol. 8, No. 3, pp. 240–253, 1997.
- [10] Venkatesh, V., Morris, M., Davis, G., and Davis, F. User acceptance of information technology: Toward a unified view. *MIS Quarterly*, Vol. 27, No. 3, pp. 425-478, 2003.
- [11] Pavlou, P. A., and Fygenson, M. Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly*, Vol. 30, No. 1, pp. 115–143, 2006.
- [12] Ives, B., Olson, M. H., and Baroudi, J. The measurement of user information satisfaction. *Communications of the ACM*, Vol. 26, No. 10, pp. 785–793, 1983.
- [13] Wang, Y.S., and Liao, Y.W. Assessing e-government systems success: A validation of the DeLone and McLean model of information systems success. *Government Information Quarterly*, Vol 25, No. 4, pp. 717–733, 2008.
- [14] Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., and Black W. C. *Multivariate Data Analysis with Readings*(5th Edition). Englewood Cliffs, NJ: Prentice Hall, 1998.