Modeling the Success of Windows Domain Network (WDN) Using the DeLone and McLean Information System (IS) Success Model: A University Case

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ABSTRACT

This work attempts to evaluate the success of the Windows Domain Network (WDN) using the DeLone and McLean information system (IS) success model. With a case in a University in the Philippines, this study utilized a total of 290 valid responses from 424 participants. Results using structural equation modeling (SEM) indicate that information, service, and system quality demonstrate a moderately positive relationship with system usage and have a significant relationship with user satisfaction. On the other hand, system usage exhibits a significant relationship both to user satisfaction and net benefits, while user satisfaction demonstrates a positive relationship with net benefits. Findings also suggest that information quality, system quality, and service quality have a positive influence on system usage while only service quality yields no significant influence on user satisfaction. Implications of these findings are discussed in this work.

KEYWORDS

Information Systems, IS Success Model, Structural Equation Modeling, Windows Domain Network

1. INTRODUCTION

Information and communications technology (ICT) have been a vital platform in delivering courses in higher education institutions. Ghavifekr et al. (2014) maintained that global findings have shown that ICT drives enhanced student learning and improved teaching experience. Although setting up and implementing these devices may incur significant cost to organizations, the advantages, and benefits they bring to students’ learning and skill development outweighs the costly investment.

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Delivering computing courses in higher education has gone through a multifaceted transformation due to the demands of local and international accreditation bodies, student diversity, and globalization. While these demands change over time, the direction of these institutions is to promote skill development among its students. In tertiary computing programs, one way to employ skill development is through laboratory-based learning. This delivery in a laboratory set-up should be coupled with adequate hardware and software facility and laboratory services.

While laboratory instruction is imperative, there is oftentimes an unclear set of guidelines on how laboratory-based learning should be conducted or how the laboratory system be designed or framed, thus, pressing institutions to venture into laboratory systems networking through its institutional policies, external consultations, and benchmarking or by solely depending to the technical know-how of the laboratory staff. This leads to different laboratory system set-ups such as learning management systems approach, e-learning system, domain network system, workgroup system, or individual stations set-up.

One important system feature that is widely used in organizations with relatively wide-scope networks is the Windows Domain Network (WDN) which may be pivotal, for instance, on how courses in the laboratories are managed and delivered. Through the WDN, instructors and students can acquire and utilize personal login information and workspace, share course materials such as exercises, projects, hands-on activities, and technical requirements, and store, access, submit and manage personal and academic-related files within the network. This intranet system allows its users to conduct its desired computing activities within the privileges granted by the system administrator. However, despite the capabilities of the WDN, its success has not been reported in the current literature. Such success evaluation process falls under the general information system (IS) success assessment.

The use of IS in recent years has been a critical disruptive paradigm due to the role of IS in increased work efficiency, work integration, information quality, scale economies, among others. IS has flourished its presences across its application architecture in organizations, particularly those with wide-scope networks. Such ISs includes customer relationship management systems, enterprise resource planning system, knowledge systems, academic management systems, and decision support systems, among others. Note that the list is not intended to be comprehensive. The success of IS thus becomes vital to organizations as they strive for greater efficiency and integration. The goal of evaluating IS is to find the worth and importance of IS (Doherty & King, 2000). Davis and Jackson (2005) pointed out that examining IS success is crucial in any organization because it promotes continuous system improvements to meet organizational goals better.

In the current literature, one of the most popular assessment frameworks for the success of IS is the DeLone and McLean IS success model which was introduced initially in DeLone and McLean (1992) and was updated in DeLone and McLean (2003). An integrative discussion of these two models is presented in DeLone and McLean (2016). The initial model of DeLone and McLean (1992) reflects six constructs, namely: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. With empirical reports presented in various applications, the initial model was updated to highlight a three-tier model with six constructs: system quality, information quality, and service quality on the first tier, intention to use or use and user satisfaction on the second tier, and net benefits on the third tier. The major update of the model lies in three aspects: (1) the inclusion of service quality as support services become an integral component of IS particularly on IS with elaborate details and users with low ICT background, (2) the integration of individual impact and organizational impact into one construct represented as net benefits, and (3) the feedback mechanism of net benefits to use intention and user satisfaction constructs which is crucial in continuous improvement initiatives. The IS success model presents a framework on these overarching constructs and the between-construct relationships. The model poses questions whether one element causes another and vice versa, under an IS of consideration (DeLone & McLean, 2002). It is user-specific and provides a clear understanding of what level of success the IS is seeking for. Furthermore, it also determines how strong or weak constructs affect each other, which can be related
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