

PalArch's Journal of Archaeology of Egypt / Egyptology

THE ROLE OF LEARNING MANAGEMENT SYSTEM ON UNIVERSITY BRANDING: EVIDENCE FROM VIETNAM

Ngo Ngoc Minh

Faculty of Business Administration, Industrial University of Hochiminh City, Hochiminh
City 727900, Vietnam

Corresponding Author; ngongocminh@iuh.edu.vn

Ngo Ngoc Minh. The Role Of Learning Management System On University Branding: Evidence From Vietnam— Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(4), 931-947. ISSN 1567-214x

Keywords: University Branding, Learning Management System; Student Performance, Student Satisfaction

ABSTRACT

This research investigates the effect of learning management system (LMS) on student satisfaction and performance and how LMS ultimately can strengthen the branding of a university. Case studies were conducted at the private Thanglong University in Hanoi-Vietnam. A mixed method including qualitative and quantitative approaches was used in this study. Path analysis was carried out to analyze questionnaire data. Interviews and literature studies were conducted to support the research data. The research model adapted the theory of DeLone and Mc Lean to analyze the success of LMS to leverage university branding as shown by the satisfaction and performance of students as LMS users. The research result indicated that LMS significantly strengthen university branding through the increase of student satisfaction and performance. LMS as a means of reforming higher education towards digitalization is able to answer the demands of students as university stake holders to create a more effective teaching and learning process. The empirical results are expected to contribute to providing input on the development of the LMS system as a part of digital university branding as a source of competitive advantage.

INTRODUCTION

In a very competitive environment, the relationship between the university and

its students can be compared with the relationship between commercial companies and their customers. University management is aware of the current phenomenon that prospective students today are completely immersed in various digital worlds. Higher education institutions must adapt their tools and strategies from conventional to digital. University branding with digital facilities can meet the demands of prospective students as its main stakeholders. Therefore, the university must move to strengthen its branding as a digital campus. E-learning plays an important role in university branding as a digital and modern campus. Leaders in the field of higher education emphasize that e-learning technology can respond effectively to accelerate global competition (Kanuka, 2008), improve the quality of learning experiences (Vovides *et al.*, 2007), eliminate situational barriers (Bates *et al.*, 2019), and is more cost-effective than face-to-face learning (Balvin and Tyler, 2005). Learning Management Systems (LMS) is one form of e-Learning which is used to support teaching and learning programs at many universities nowadays. With appropriate elaboration, LMS can also be used to equalize a university with a virtual university. Coates *et al.* (2005) identify LMS as a means of reforming higher education qualitatively so that it is effective in meeting new demands. The researchers argue that without major reforms, universities that use traditional facilities will not be able to face a new era where they no longer monopolize tertiary education facilities (Bok, 2009).

The theory of DeLone and McLean was adapted to analyze the success of LMS on student satisfaction and performance and the significance of LMS in strengthening university branding. The purpose of this method is to synthesize the success of information systems into more coherent knowledge (DeLone and McLean, 2003). The originality of this research is the modification of the research model to investigate, specifically, the success of LMS in the field of marketing, especially in branding a university. The modification of the research model is based on the statement of DeLone and McLean who suggested that the selection of dimensions and measures of success must depend on the purpose and context of empirical research; however, actions that are tested and proven must still be done. In addition, De Lone and McLean suggest that more field study research is needed to research and incorporate organizational impacts into their original models. Some modifications to the model of DeLone and McLean's information system success have been conducted to focus more on research in accordance with the field under study. Stockdale and Standing (2006) state that when testing according to the context, concepts, and processes of a science, a researcher can add certain measurements to evaluate and build on holistic information systems research, thus contributing to a cumulative framework in a scientific discipline. Previous researchers, Mirani and Lederer (1998), developed a 33-item instrument to measure organizational benefits derived from project information systems (SI). Their measurement framework

consists of three organizational benefit categories: strategic, information, and transactional.

LITERATURE REVIEW

University branding

Kotler (2012) defines a brand as a combination of all elements that aim to distinguish a product or service from another. In line with this, Abimbola (2001) claims that a strong brand can differentiate a company from its competitors and is a valuable asset for the company. According to Hoeffl and Keller (2003), there are various kinds of benefits created from strong brands including improved product performance, increased survival from crises, and ultimately resulting in greater profit margins and customer loyalty. In addition, brands have played an important role in the formation of markets for product and service sustainability (Lehner and Halliday, 2014).

There is not much literature found that specifically reviews university branding. Previous research has examined certain aspects of branding, including the role of the web in university branding (Soegoto, 2018) and brand architecture of British universities (Hemsley-Brown and Goonawardana, 2007). University branding seems to be a very important problem strategically and many universities have issued a large amount of resources for branding strategies but literature even though the returns are not comparable (Temple, 2006). Therefore, the university's branding strategy from various aspects still needs to be studied and is an interesting theme to study. Jevons (2006), believes that branding is an effort that shapes the quality of the university temporarily. Watkins and Gonzenbach (2013) suggest that universities need strong brands to increase awareness of the existence and direction of their offerings, to distinguish themselves from competitors and to gain market share. Conventional branding management techniques are inadequate in higher education (HE) because of the proliferation of branding, digital media fragmentation, increased competition, customer resistance, and internal adjustments to the concept of branding (Jevons, 2006).

University branding plays an important role in determining public attitudes towards the university. Higher education institutions need to maintain or develop different images to create competitive advantage in competitive markets. Building this image in the eyes of students as stakeholders is very important. The basis of brand development in educational institutions is to enable the institution to appeal to students and to distinguish a higher education institution from its main competitors (Hemsley-Brown and Goonawardana, 2007).

Student satisfaction

The learning environment is one of the factors that can give satisfaction to students to actively participate in college activities. Therefore, a positive relationship is needed between lecturers and students, fellow students, physical environment, infrastructure and relationships with university staff. One of the university's supports for creating a good learning environment is through information systems such as LMS that include academic support for providing advice and input related to the teaching and learning process and to help communicate with the instructors and related staff (Bates *et al.*, 2019). The same is conveyed by the research of Rakhshandehroo and Ivanova (2019) which says that satisfaction in the campus environment will increase if the university can provide a system capable of supporting students administratively, systematically and able to provide formal and informal support for students and university staff.

Interactive learning with information systems is able to increase student satisfaction when compared to traditional lecture activities because interactive learning creates more interaction with lecturers and other students related to the chosen study outside the traditional classroom. Student satisfaction can be measured using a Likert scale with several questions, such as giving recommendations to other friends about the system and teaching staff according to the characteristics of students. This can be used as a benchmark to see how satisfied students are with learning activities that have been followed. Therefore it is important for universities to provide infrastructure that is able to motivate students to be more interested in answering questions and understanding material well (Alcalde and Nagel, 2019; Bait and Shabbir, 2020). This is supported by the research of Violante and Vezzetti (2013) which was conducted to examine satisfaction with medical science students, which shows that using interactive web-based learning applications can improve student satisfaction. In line with this study, the results of other studies state that students become more interactive with learning content, participatory, and more motivated in learning.

Other research says that measuring the level of student satisfaction can be used as a key element for evaluating universities and learning systems as indicators of sustainable learning. This study found that student interaction and learning content were the strongest interactions and had a significant influence on student satisfaction (Alqurashi, 2019; Shabbir *et al.*, 2020). The development of online learning is currently very rapid, especially for tertiary institutions, but some educators are still experiencing concerns about providing effective learning through online media. However, based on the research that has been done, it was found that online learning is able to provide new challenges for educators and students in developing their knowledge, but traditional learning is still

needed to create a more communicative, social, interpersonal, and effective atmosphere.

The factors that contribute to building the university's reputation based on the research conducted on university graduate satisfaction are the assessment of graduates and the quality of education that has been obtained. So, it is important for the campus to provide the best quality education for students and to provide new experiences to students in the learning process. Satisfaction of university graduates is not only judged by the amount of salary obtained after graduation, but is closely related to the quality of the program and the image of the university. A study conducted at the Thanglong University with regression analysis showed a positive relationship between the quality of services provided by universities and the level of student satisfaction (Gul *et al.*, 2019). The LMS system as a form of service for students is thought to increase student satisfaction as a user and customer of a higher education institution.

Student performance

Self-efficacy of computers, interaction, performance expectations, and learning climate are the main determinants of student satisfaction and significantly affect performance expectations. Student interaction with the system has a significant influence on the learning climate (Castillo-Merino and López, 2014). This showed a positive influence on student performance in adopting innovation in learning and online teaching, adoption of Information Technology (ICT) in universities and the ability of students to use this technology in the education process by students and teachers or the selection of appropriate methods with digital use has a positive effect on performance (Al-Rahmi *et al.*, 2015). The use of digital systems is used to connect with students and also to convey learning models that influence academic and collaborative performance that are positive and significant with interaction, involvement, perceived ease of use, and perceived benefits (Cradler *et al.*, 2002; Shabbir *et al.*, 2020). This paper also explains the importance of using technology about collaborative learning methods and leadership shown by technology planning to improve schools. In addition, by setting standards and explicit learning goals for students is part of effective technology implementation. Online learning systems can effectively promote learning and improve student performance if it is timely, manageable, motivating and directly related to the assessment criteria. The education industry has shown important developments in recent years and shows its role in economic growth and productivity in terms of the achievements of its graduates. High student performance as a result of supportive university support will be reflected in the students' final grades and productivity (Galy *et al.*, 2011). This is where the growth of the education market needs to be facilitated by digital technology. Technology in the graduate production process must lead to

the provision of good education infrastructure. In line with this, Akinoglu and Tandogan (2007) explain that the use of e-learning systems at universities can lead to increased efficiency in education production in terms of scale (number of student enrolment), achievement, and cost. In addition, e-learning policy at universities is an important driving factor for improving the quality and promotion of strategic planning. By following this direction, universities must advance and become institutions with an efficient way to provide high-quality education based on the use of digital technology (Youssef and Dahmani, 2008; Shabbir et al., 2020).

LMS and DeLone and McLean information system success model

According to Galy *et al.* (2011), the integrative research framework that is often used in measuring information system success is the technology acceptance model and the DeLone and McLean model with also the measuring of the variables used in the field of education. The DeLone and McLean model is a model used to measure the success of information systems, which is created based on theoretical and empirical studies of information systems discovered by DeLone and McLean in 1992 with the initial research model as shown in Figure 1: conceptual/theoretical in nature or narratives of program and/or course development experiences. In the empirical studies, survey methodology was the most commonly used method. Few studies also used learning management system usage and student learning performance data.

This model is widely used by researchers to assess the success of application systems from 1992 to 2002. Some researchers have stated about the difficulty of implementing the DeLone and MacLean Information System Success Model to define and operationalize the success of information system in a particular research context. To accommodate this, in 2003, DeLone and McLean again developed and improved the information system success model as shown in **Figure 2.**

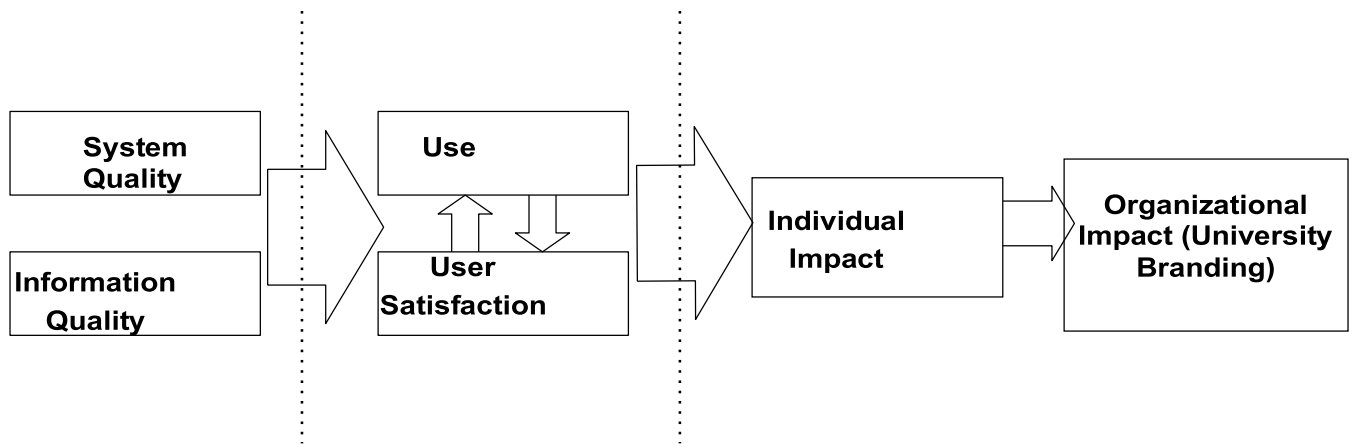


Figure 1. Model DeLone and McLean (1992)

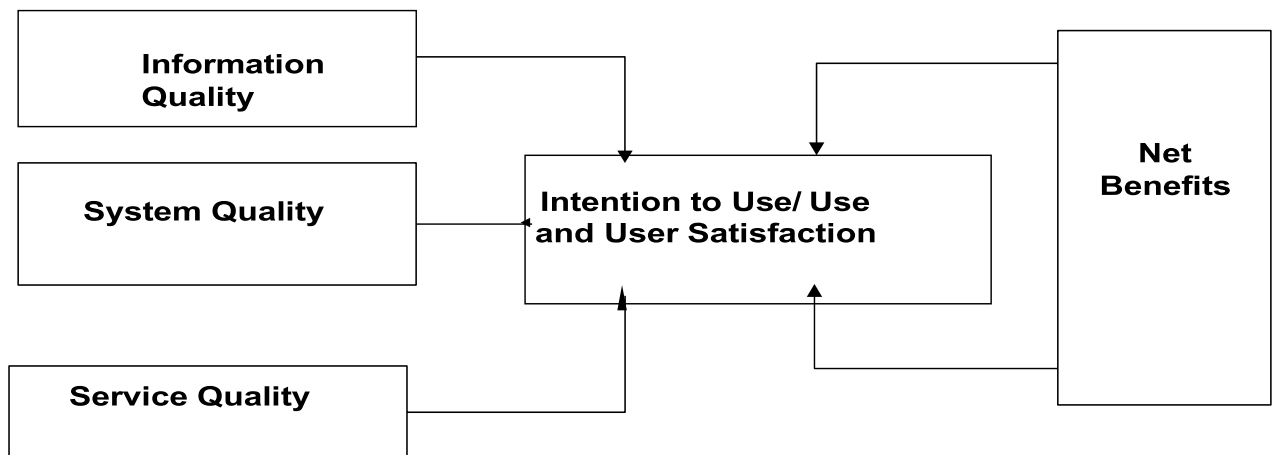


Figure 2. The Updated Model of DeLone and McLean (2003)

With this new model (Figure 2), the challenge for researchers is to clearly and carefully define stakeholders and the context in which the “net benefit” is measured. The success steps of “net benefit” are the most important, but net benefits cannot be analyzed and understood without measuring “system quality” and “quality information” and their impact on user satisfaction (Petter *et al.*, 2008). Learning management system (LMS) as an application system is a software applications that help automate administrative processes and reports, in this case in the world of education (Chaffey *et al.*, 2009). This software is used to make lecture material online, manage learning activities and their

results, and facilitate interaction, communication, and cooperation between teachers and students. LMS is a modern tool in training and evaluating an outcome, so it can be used to monitor training and effectiveness in an educational organization. In general, LMS is used as a medium to send a function in sending, searching, reporting, and managing the contents of learning material, student development, and student interaction. LMS research using the DeLone and McLean update model is expected to be able to describe the success of LMS in increasing student satisfaction and performance as a university stake holder. These two variables can be used to analyze the extent to which LMS can increase the net benefit which is specialized in the domain of university branding.

METHODOLOGY

Path analysis is a statistical technique used to test causal relationships between two or more variables. Path analysis is different from other regression analysis techniques, where path analysis allows testing using mediating / intervening / intermediary variables. The success of LMS to improve university branding will be analyzed properly after measuring student satisfaction and performance towards LMS. Modifications to the DeLone and McLean models are conducted to focus research on the field of marketing. Case studies were conducted at a private university in Hanoi-Vietnam that is Thanglong University which organizes digital-based education by developing LMS as one of the information systems used by students in the learning process. The questionnaire was distributed to 311 respondents with a purposive sample method. Respondents were calculated using the Slovin formula at the 0.05 level to improve the accuracy of the data from the population of entrepreneurial class students who had used LMS as many as 1400 people. The questionnaires were distributed to 311 respondents randomly started from 17 to 27 March, 2020 in entrepreneurship class. Validation analysis was carried out by Pearson's method, while reliability analysis was carried out with Cronbach's Alpha formula. The design of the research model used in this study is as follows:

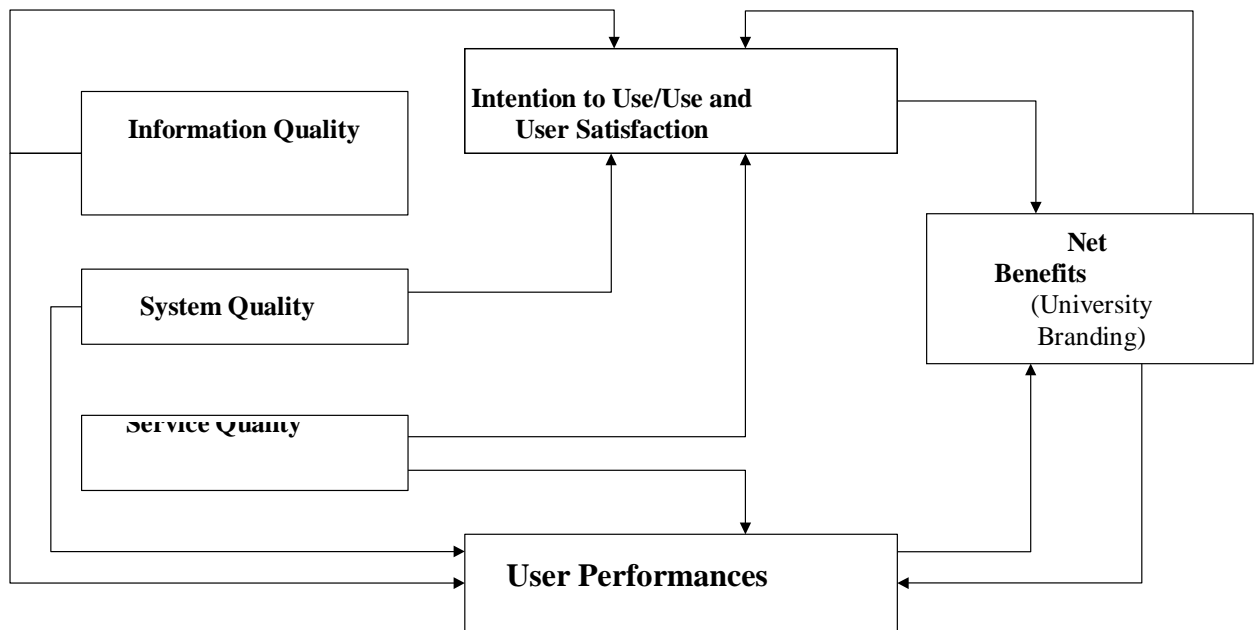


Figure 3. LMS Branding Model (adapted from the DeLone and McLean Model)

From Figure 3, the researchers put forward hypothesis:

H1: LMS has a significant effect on User Satisfaction (US) and User Performance (UP).

H2: LMS has a significant effect on university branding through User Satisfaction and User Performance.

RESULTS AND DISCUSSION

The results of validation and reliability tests on research data show that all data are valid and reliable. All statement items are declared valid because the r-value is greater than r-table ($r\text{-value} \geq 0.198$). Validity testing is done using Pearson Correlation. All variables are declared reliable because they have a reliability value of more than 0.600. Reliability testing was done using Cronbach's Alpha (Gliem and Gliem, 2003). After the data is proven valid and reliable, the results of the respondent's answers are processed using Path Analysis. The estimation model is used to design the structural equation for path analysis. All path coefficients created between variables are positive which indicate that each increase in the independent variable will be followed by the increase in the dependent variable. Path equation showed that the R- square value is 0.537,

meaning that system quality, information quality, and service quality affect user satisfaction by 53.7%. Then the R-square value of the second path equation is 0.403, which means that system quality, information quality, and service quality affect user performance by 40.3%. And the R-square value for the third path equation is 0.514, meaning that user satisfaction and user performance affect the net benefit (university branding) by 51.4%.

As shown in Figure 4, the t values of the three independent sub-variables are significant since the estimate t values of these variables are greater than t-table. Also in terms of the p-probability values, all of these variables are less than 5 percent. These indicate that system quality, information quality and service quality have positive and significant effects on the increasing of user satisfaction. Note that, of these three variables, the system quality (6.023) has greater contribution, followed by the information quality (5.366) and service quality (4.099) toward the user satisfaction. Apply to information system (IS) context, user satisfaction is a subjective evaluation of the various outcomes of IS evaluated on a pleasant-unpleasant continuum (Seddon, 1997). Meanwhile, System quality was measured in terms of ease-of-use, functionality, reliability, flexibility, data quality, portability, integration, and importance (DeLone and McLean, 2003). All of these fulfilled elements in LMS can build students satisfaction.

The previous studies concerning information quality found that IQ contributes significantly on individual impact compare to organization impact; decision-making performance, job effectiveness, and quality of work. Information quality was measured in terms of accuracy, timeliness, completeness, relevance, and consistency (DeLone and McLean, 2003). This study has confirmed the previous research since the result showed significant result on the satisfaction, performance and net benefit. However, the SQ is more felt with real benefits by students as LMS users so that the value of SQ is higher than IQ (Ramirez and Gracia, 2005). The tested the relationship between “information quality” and “individual impacts” found the association to be significant. Individual impact was measured in terms decision-making performance, job effectiveness, and quality of work. When compared with SEQ, the SQ still showed a higher value because according to DeLone and McLean (2003), SEQ includes hardware and software that is visible, reliable, responsive, empathetic and comfortable for the user. For students as users and university stakeholders, SQ seems to be more important than SEQ since they need a user friendly application as the highest preference.

Figure 4 showed that Service Quality (SEQ) has the highest influence on the user performance (UP) by 6.703 compare to SQ (2.790) and IQ (2.260). The result of the study is supported by the previous research performed by Zeithaml,

et al. (1990). They indicated that there are several factors of SEQ that will increase the user performance such as are word-of-mouth (WOM) communications, personal needs, past experiences, and communications by service provider to the user. The students share their story about their experiences in using LMS. It might become stimulation for other students to use LMS. The more they like to use LMS, the more they can do assignment effectively. In addition, student' personal needs influence their expectation of LMS service. Good communication between provider, in this case the directorate of Development of Information System Technology (PTSI) and students has contribute to increase the performance of students by using LMS. Therefore, SEQ can be a very powerful shaper of expectations during LMS development. Furthermore, service quality is the most researched area of services marketing. There are ten requirements that are useful for customer evaluation of service quality: reliability, responsiveness, physical evidence, communication, credibility, security, competence, politeness, customer understanding and service accessibility. Indeed, the ten requirements of SEQ can force the student performance to be well developed. Responsiveness is the extent to which customers perceive the readiness of service providers to help them immediately. Assurance is the level of respect of service provider workers and their ability to communicate trust to customers. Empathy is the concern and importance of providing service providers to individual customers, and to what extent certain customer needs and preferences can be understood and articulated. Finally, tangibility is evidence of facilities, personnel, and communication materials used by companies while offering services to customers.

The result of data analysis showed that the application of LMS is effective to strengthen branding in university through the increasing of user satisfaction and user performance. In line with this, Abimbola (2006) said that future demand should be fast responded by the company. Knowing the best response is also a crucial goal of businesses. LMS is one of the best responses toward the students demand in the digital environment. University must be able to answer rapid changes through innovative and modern system such as LMS to strengthen its branding as the part of digitalized communities. Branding represents one of the core marketing practices that university has a strong connection and bonding with its external environment. LMS is an infrastructure that support branding of university as the modern campus. LMS as the part of brand, therefore, represents an important determinant of the effectiveness and university ability to link its internal and external environment successfully.

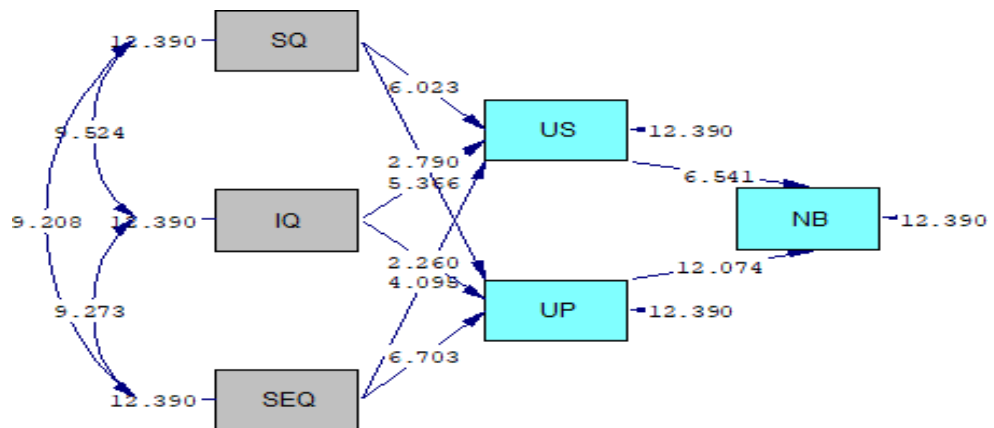


Figure 4. T Values of LMS Branding Model

The influence of user performance on net benefit/university branding is higher than user satisfaction with net benefit/university branding. User performance in this study is an individual impact on the original model of DeLone and McLean that measures indicators of decision making, work effectiveness and quality of work. Thus the branding of a university tends to be determined by student performance because it is a real action compared to satisfaction which is a concept. Student performance is measured by how much student contributes to university branding which include the number of tasks that can be completed (output quantity), the quality of work done (output quality), timeliness of output (presence at work), attendance and cooperation. This finding is in line with the state that the whole services provided by universities are indicated by the standard of education, research and community service aiming to meet the requirements and even exceed the expectation of customer (students, alumni, lecturers and educational staff, user of graduates and society in general). Thus, LMS is able to meet the standard of education which enable the students to feel satisfaction and perform a good achievement as the outcome. The high performance and satisfaction is lead to strengthen of university branding as the digital campus to win global competition.

From the results of this study, LMS is proven to be able to strengthen university branding through the process of branding process which is a coherent integration of various branding instruments such as trademarks, symbols, logos, registered designs, university brand names and integrated communication (Keller *et al.*, 2011). Through LMS, the trademark of a university as a digital and modern campus will be further strengthened. Communication between teachers and students in delivering material is also felt to be more effective; not

limited to space and time through LMS.

In addition, through LMS students feel the added value, such as the ease of conveying various tasks effectively and efficiently, accuracy in completing tasks, the accuracy of sending assignments in a timely manner, monitoring of student positions in collecting their tasks and student satisfaction with perceived conditions of communication intertwined with the lecturers in the form of discussions and information on the values obtained quickly proved that there was solid collaboration with the lecturers. (Agung and Yuniar, 2014). In the specific case, where the research was conducted, Thanglong University as the digital campus has been applying LMS with the special additional features. LMS of Thanglong enables students to check the similarity index of paper assignment by themselves. This LMS has been integrated with Turnitin as one of reliable plagiarism checker software. In this respect, LMS can guarantee the quality of student's assignment. In the future, LMS might be integrated with the other software to increase its quality. Additionally, LMS of Thanglong also has advantage in the virtual programming laboratory. It is very useful for all students, especially for them who take the special course in programming. LMS allows the students to perform simulation in computer programming. Again, LMS facilitates students to improve their performance on learning process.

The university branding framework proposed in this paper makes a distinct contribution to the previous studied because it focuses the application of LMS to strengthen branding in the educational sector. Linking branding with the LMS provides the view on how a university as a service organization with undifferentiated mass of people and process (Bendoli *et al.*, 2006), coupled with the unique characteristics of its services, able to perform high quality of information technology infrastructure as its marketing tools. The application of LMS is proven to be able to increase user satisfaction and user performance in this research. Hence, LMS with its feature and its uniqueness including the features of assignment submission, updated news and information concerning university activity, tuition fee, lecturer schedule, lecturing material, consultation room, etc. become the stimulation of student's satisfaction. The comfort and convenience facilitating by LMS also stimulate the high performance of the students itself. The result of the research indicates that by applying LMS, universities can differentiate themselves through serving the needs of different segments, therefore LMS is effective to strengthen university branding. Ultimately satisfaction and performance built by LMS implementation able to strengthen a university branding as a benefit.

CONCLUSION

Quality system indicators contribute the most dominant to student satisfaction compared to other indicators. While service quality has the most dominant

influence on student performance compared to others. Student satisfaction and performance is built by a system of quality, information quality, and service quality both directly and indirectly. Student satisfaction and performance strengthens university branding as a digital and modern campus. This research recommends that the development of an LMS system needs to be carried out by universities that still use conventional systems. For universities that have used LMS, it is recommended to focus more on strengthening the quality of the system while taking into account information quality and service quality to improve student satisfaction. Furthermore, in order to improve student performance, it is recommended that more focus is given on building service quality, for example through increased bandwidth and related infrastructure improvements. In the future, this research needs to be deepened by examining the relationship between satisfaction and performance, so that a more comprehensive marketing strategy model is obtained.

REFERENCES

- Abimbola, T. (2001). Branding as a competitive strategy for demand management in SMEs. *Journal of Research in Marketing and Entrepreneurship*, 3(2), 97-106. <https://doi.org/10.1108/14715200180001480>
- Abimbola, T. (2006). Market access for developing economies: Branding in Africa. *Place Branding Public Dip*, 2, 108-117. <https://doi.org/10.1057/palgrave.pb.5990049>
- Akinoglu, O., and Tandogan, R.O. (2007). The Effects of Problem-Based Active Learning in Science Education on Students' Academic Achievement, Attitude and Concept Learning. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(1), 71-81.
- Alcalde, P., & Nagel, J. (2019). Why does peer instruction improve student satisfaction more than student performance? A randomized experiment. *International Review of Economics Education*, 30, 100149. <https://doi.org/10.1016/j.iree.2018.10.001>
- Alqurashi, E. (2019). Predicting student satisfaction and perceived learning within online learning environments. *Distance Education*, 40(1), 133-148. <https://doi.org/10.1080/01587919.2018.1553562>
- Al-Rahmi, W., Othman, M., & Yusuf, L. (2015). The role of social media for collaborative learning to improve academic performance of students and researchers in Malaysian higher education. *International Review of Research in Open and Distributed Learning*, 16(4), 177-204.
- Bait, Mohammed & Shabbir M. S., Ali & Rana, Seemab. (2020). Oman's Ability to Attract FDI: Dunning Instrument Survey Analysis Capacidad de Omán para atraer IED: análisis de la encuesta de instrumentos Dunning. *Propósitos y Representaciones*. 8. 640-2307.
- Bates, E. A., Kaye, L. K., & McCann, J. J. (2019). A snapshot of the student

- experience: exploring student satisfaction through the use of photographic elicitation. *Journal of Further and Higher Education*, 43(3), 291-304. <https://doi.org/10.1080/0309877X.2017.1359507>
- Bok, D. (2009). *Universities in the marketplace: The Commercialization of Higher Education*. Princeton University Press.
- Castillo-Merino, D., & Serradell-López, E. (2014). An analysis of the determinants of students' performance in e-learning. *Computers in Human Behavior*, 30, 476-484. <https://doi.org/10.1016/j.chb.2013.06.020>
- Coates, H., James, R., & Baldwin, G. (2005). A critical examination of the effects of learning management systems on university teaching and learning. *Tertiary Education and Management*, 11, 19-36.
- Cradler, J., McNabb, M., Freeman, M., & Burchett, R. (2002). How does technology influence student learning?. *Learning and Leading with Technology*, 29(8), 46-49.
- Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19(4), 9-30. <https://doi.org/10.1080/07421222.2003.11045748>
- Chaffey, D., Ellis-Chadwick, F., Mayer, R., & Johnston, K. (2009). *Internet marketing: strategy, implementation and practice*. Pearson Education.
- Galy, E., Downey, C., & Johnson, J. (2011). The effect of using e-learning tools in online and campus- based classrooms on student performance. *Journal of Information Technology Education*, 10, 209-230.
- Gliem, J.A., and Gliem, R.R. (2003). Calculating, Interpreting, And Reporting Cronbach's Alpha Reliability Coefficient For Likert-Type Scales. Midwest Research to Practice Conference in Adult, Continuing, and Community Education. <http://hdl.handle.net/1805/344>
- Gul, S., Jan, S., & Shah, F. A. (2019). The Impact of Service Quality on Students Satisfaction in higher Education Institutes of Khyber Pakhtunkhwa. *Review of Economics and Development Studies*, 5(1), 33-39. DOI: [10.26710/reads.v5i1.536](https://doi.org/10.26710/reads.v5i1.536)
- Hemsley-Brown, J., & Goonawardana, S. (2007). Brand Harmonization in the International Higher Education Market. *Journal of Business Research*, 60, 942-948.
- Hoeffler, S., and K.L. Keller. (2003). The marketing advantages of strong brands. *Journal of Brand Management*. 10 (6), 421-445. <https://doi.org/10.1057/palgrave.bm.2540139>
- Jevons, C. (2006). Universities: a prime example of branding going wrong. *Journal of Product & Brand Management*, 15(7), 466-467. <https://doi.org/10.1108/10610420610712856>
- Kanuka, H. (2008). *Understanding e-learning technologies-in-practice*. The Theory and Practice of Online Learning, Part I, 91-118.

- Keller, K. L., Parameswaran, M. G., & Jacob, I. (2011). *Strategic brand management: Building, measuring, and managing brand equity*. Pearson Education India.
- Lehner, M., & Halliday, S. (2014). Branding sustainability: Opportunity and risk behind a brand-based approach to sustainable markets. *Ephemera: Theory and Politics in Organization*, 14(1), 13-34.
- Mirani, R., & Lederer, A. L. (1998). An instrument for assessing the organizational benefits of IS projects. *Decision Sciences*, 29(4), 803-838. DOI: [10.1111/j.1540-5915.1998.tb00878.x](https://doi.org/10.1111/j.1540-5915.1998.tb00878.x)
- Petter, S., DeLone, W., and MacLean, E. (2008). Measuring information systems success: models, dimensions, measures, and interrelationships. *European Journal of Information Systems*, 17, 236-263.
- Rakhshandehroo, M., & Ivanova, P. (2019). International student satisfaction at English-medium graduate programs in Japan. *Higher Education*, 79, 39-54.
- Ramirez, P., & Garcia, R. (2005). Success of ERP systems in Chile: an empirical study. In Proceedings of European, Mediterranean & Middle Eastern Conference on Information Systems, 1- 16.
- Seddon, P. B. (1997). A respecification and extension of the DeLone and McLean model of IS success. *Information Systems Research*, 8(3), 240-253.
- Shariff, M & Ahmad, N & Shabbir, Muhammad. (2020). Utopía y Praxis Latinoamericana publica bajo licencia Creative Commons Atribución-No Comercial-Compartir Igual 4.0 Internacional (CC BY-NC-SA 4.0 Moderating effect of access to finance of the gem and jewelry industry Efecto moderador del acceso a la financiación de la industria de joyas y gemas. 25. 264-279.
- Shabbir, Muhammad & Bait, Mohammed & Sulaiman, Ali & Al-Kumaim, Nabil & Mahmood, Arshad & Abbas, Mazhar. (2020). Green Marketing Approaches and Their Impact on Consumer Behavior towards the Environment-A Study from the UAE. Sustainability. 10.3390/su12218977.
- Soegoto, E. S. (2018). Implementing Laravel framework website as brand image in higher- education institution. In IOP Conference Series: Materials Science and Engineering, 407(1), 012066. DOI: [10.1088/1757-899X/407/1/012066](https://doi.org/10.1088/1757-899X/407/1/012066)
- Stockdale, R., & Standing, C. (2006). An interpretive approach to evaluating information systems: A content, context, process framework. *European Journal of Operational Research*, 173(3), 1090-1102. DOI: [10.1016/j.ejor.2005.07.006](https://doi.org/10.1016/j.ejor.2005.07.006)
- Temple, P. (2006). Intervention in a Higher Education Market: a Case Study. *Higher Education Quarterly*, 60(3), 257-269. <https://doi.org/10.1111/j.1468-2273.2006.00320.x>

- Violante, M.G., and Vezzetti, E. (2013). Virtual interactive e-learning application: an evaluation of a student satisfaction. *Computer Applications in Engineering Education*, 23(1). DOI: [10.1002/cae.21580](https://doi.org/10.1002/cae.21580)
- Vovides, Y., Sanchez-Alonso, S., Mitropoulou, V., & Nickmans, G. (2007). The use of e-learning course management systems to support learning strategies and to improve self-regulated learning. *Educational Research Review*, 2(1), 64-74. DOI: [10.1016/j.edurev.2007.02.004](https://doi.org/10.1016/j.edurev.2007.02.004)
- Watkins, B.A., and Gonzenbach, W.J. (2013). Assessing university brand personality through logos: an analysis of the use of academics and athletics in university branding. *Journal of Marketing for Higher Education*, 23(1), 15-33. DOI: [10.1080/08841241.2013.805709](https://doi.org/10.1080/08841241.2013.805709)
- Youssef, B.A., & Dahmani, M. (2008). The impact of ICT on Student Performance in Higher Education: Direct Effects. Indirect Effects and Organisational Change, *RUSC: Universities and Knowledge Society Journal*, Fundació Universitat Oberta de Catalunya, 5(1), 45-56.
- Zeithaml, V.A., Parasuraman, A., and Berry, L.L. (1990). *Delivering Quality Service: Balancing Customer Perception and Expectations*. New York: Free Press.