Exploring the relationship between system quality and continuance intention to use e-campus: The mediating effect of satisfaction

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Abstract. The rapid growth of information technology has led many sectors to equip their organizations with the latest IT facilities. Although many organizations are equipped with IT facilities, there are some institutions that do not fully utilize IT facilities. This study will identify the role of satisfaction as mediator of the relationship between system quality and continuance intention. The study was conducted at a private university in the east coast of Malaysia. The research data in the analysis uses Bootstrapping techniques to test the hypothesis. Research findings indicate that satisfaction plays a significant role as a mediator. Further studies discuss practical implications.

1. Introduction

The use of IT in higher education institutions is growing rapidly. There are a variety of new applications that facilitate the teaching and learning process as well as university administration. In fact, the investment allocated to provide IT facilities is so huge. Although, great investments have been made, there are still users who do not fully utilize the system provided and consequently will cause wastage.

Based on research in the literature, there are various theories and models used by scholars to explain why certain individuals accept or reject a new technology. these theories are like TAM, OR, DOI and more. System quality is one of the factors relating to the intention to continue using technology as reported in [1], [2] and [3]. However, there is a lack of information in the literature on the role of satisfaction as a mediator between the relationship of system quality and continuance intention. The aim of our research is to study the role of satisfaction as a mediator of the relationship between system quality and continuance intention.
2. Literature review

2.1. System quality
According to [4] system quality pertains to the degree of quality of information processing in the mobile ecosystem while using services and/or accessing information through any mobile network, such as mobile networks and applications. There are several dimensions that represent system quality such as accessibility that can be considered as a necessary condition for system quality [5]. On the other hand, the size and complexity of the applications being built will affect end-users’ ability to make decisions about system quality [6]. The importance of system quality is undeniable, as [7] findings in his interviews revealed system quality and two dimensions of information quality as important determinants of user satisfaction.

2.2. Related literature on satisfaction as a mediator
According to [8] system quality and information quality had a significant indirect, positive effect on satisfaction. Another study by [9] found that user satisfaction play mediator roles on the effect of system quality on net benefit. Study by [10] found that satisfaction mediates the effect of system quality on intention to reuse. While study by [11] found that the mediating role of e-satisfaction on the relationship between sport website quality and e-loyalty was significant. Another study by [2] proved that there is significant total effect for the indirect effects of system quality towards intention via satisfaction to use e-government. There will also an established link between system quality and satisfaction [12] [13] [14] [15] [16] [17] as well as satisfaction towards continuance [14] [16]. As such, we believe that satisfaction can play a role as a mediator between system quality and continuance intention. Thus, the following research hypothesis will be tested

H: Satisfaction mediates the relationship between system quality and continuance intention

![Figure 1. Research model](image)

3. Methodology
The instrument was established on the basis of appropriate literature review, as well as previous questionnaires that other researchers used. The questionnaire used to collect data was largely a structured survey questionnaire. A total of 400 questionnaires were conveniently distributed to the students. Of the 400 questionnaires distributed to the students, a total of 325 questionnaires were returned, this reflects a return of 87.5 percent. The Statistic Package for Social Science (SPSS) was used to analyse the data and regression analyses was used to test the hypothesis.
4. Data analysis

Using bootstrapping method for significant test. Using PROCESS model 4, we first tested whether satisfaction mediated the relationship between system quality and continuance intention. The results indicated a significant total direct effect (path c; without mediator) of system quality on continuance intention ($B=0.63$, $t (13,828) =23.76$, $p=0.001$, 95%CI [0.54, 0.72], a significant direct effect (path c'; with mediator) ($B=.418$, $t (5.903)$, $p=0.001$, 95%CI [0.28, 0.56]and a significant indirect effect through satisfaction ($B=0.27$, 95% CI=0.03, 0.05) Thus, this study can conclude that the mediation effect of satisfaction is statistically significant between system quality and continuance intention, indicating that H1 is supported.

| Model 1 | coefficient | $R^2$ | SE | t-value | p-value | LLCI | ULCI |
|---------|-------------|------|----|---------|---------|------|------|
| System quality | .6336 | .3953 | .0443 | 14.3033 | .000 | .5464 | .7207 |

*Outcome variable: Satisfaction

| Model 2 | coefficient | $R^2$ | SE | t-value | p-value | LLCI | ULCI |
|---------|-------------|------|----|---------|---------|------|------|
| System quality | .4187 | .3826 | .0709 | 5.9032 | .0000 | .2791 | .5583 |
| satisfaction | .4279 | | .0704 | 6.0793 | .0000 | .2894 | .5664 |

*Outcome variable: continuance intention

| Model 4 | Effect | BootstrapSE | BootstrapLLCI | BootstrapULCI |
|---------|--------|-------------|---------------|---------------|
| Satisfaction (indirect effect) | .2711 | .0567 | .1649 | .3898 |

5. Discussion

This finding illustrated that system quality had not only a direct impact on continuance intention to use e-campus but also serves as an indirect effect via satisfaction. This result is similar to previous research [18] which found that information satisfaction is a full mediator of information quality in luxury and economic behavioural intentions, and a partial mediator in mid-scale segments. This finding implies that when the users feel that e-campus system quality is in a good shape, they were more likely to satisfy with the services, which in turn positively influence their loyalty to use e-campus.

6. Conclusion

The aim of this study was to evaluate the impact of user satisfaction as a mediator between system quality and continuance intention to use e-campus. The theoretical framework was derived partially from the DeLone and McLean. Empirical data were collected at the private university using the system. A questionnaire comprising five-point Likert scale items was developed to test the proposed model. Only one independent variable and one dependent variable involved in this study. The findings are consistent with the literature in terms of the mediation impact of user satisfaction. The finding could be useful for regulators to develop guidance and policies when developing new information system in the higher education industry to better match users’ needs.
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