

Winter 5-11-2018

ADOPTION OF SELF-SERVICE KIOSKS IN QUICK-SERVICE RESTAURANTS

Melody Rastegar
nrastega@uoguelph.ca

Joan Flaherty
jflahert@uoguelph.ca

Hwan-Suk Chris Choi
hwchoi@uoguelph.ca

Follow this and additional works at: https://scholarworks.umass.edu/ttracanada_2018_conference

Rastegar, Melody; Flaherty, Joan; and Choi, Hwan-Suk Chris, "ADOPTION OF SELF-SERVICE KIOSKS IN QUICK-SERVICE RESTAURANTS" (2018). *TTRA Canada 2018 Conference*. 12.

Retrieved from https://scholarworks.umass.edu/ttracanada_2018_conference/12

This Presentation is brought to you for free and open access by the TTRA Canada at ScholarWorks@UMass Amherst. It has been accepted for inclusion in TTRA Canada 2018 Conference by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

ADOPTION OF SELF-SERVICE KIOSKS IN QUICK-SERVICE RESTAURANTS

AUTHORS:

Nazi Melody Rastegar, nrastega@uoguelph.ca
Joan Flaherty, jflahert@uoguelph.ca
Hwan-Suk Chris Choi, hwchoi@uoguelph.ca

ABSTRACT:

This study investigated the factors that influence the customer's decision to use an SSK in QSRs. Specifically, an integrated model incorporating Technology Acceptance Model (TAM) and Satisfaction model was developed to examine the relationship among trust, self-efficacy, perceived ease of use, perceived usefulness, perceived enjoyment, perceived value, satisfaction and behavioral intention toward using these kiosks in quick-service restaurants. In addition, the moderating impact of age, gender and past experience using the self-service kiosk was examined. Structural equation modeling and multiple regression analyses were applied for data

analysis. The results indicate that (a) continued intention was directly influenced by customer satisfaction (b) intrinsic motivation (Perceived enjoyment) strongly influenced customer satisfaction, while extrinsic motivations (perceived usefulness and perceived ease of use) did not influence customer satisfaction (c) self-efficacy had a more significant impact on intrinsic motivation and extrinsic motivations than trust (d) no moderating effects were found between TAM constructs and Satisfaction model constructs. These findings provide theoretical and practical implications for future studies and quick-service restaurant managers who are considering SSKs or have already adopted them.

KEY WORDS:

Self-service technology, Kiosk, Quick-Service Restaurant, Customer Satisfaction, Technology Acceptance Model

PAPER CONTRIBUTION TO CONFERENCE:

Self-service technology is an increasingly important delivery mode in the hospitality and tourism industries, particularly within the quick service restaurant sector. Many studies have contributed to our understanding of why customers use SSTs, identifying the specific factors that influence this choice. However, relatively little research has been conducted on why customers choose to embrace – or reject – this mode in quick-service restaurants. Moreover, the research that has been done tends to focus on initial adoption rather than repeat use and most SST studies in a hospitality have been conducted in hotels and airport settings. Relatively few have been conducted in quick-service restaurants settings. This study attempts to better understand customers' behavioural intention to adopt a new technology in the QSR setting.

The findings of this study will give readers more information about the reasons that people are, or are not, intent on using this technology in the hospitality and tourism setting. It will also provide valuable information for service provider at the hospitality and tourism setting to guide their consideration of investing in and adopting an technology to improve tourism experience.

ADOPTION OF SELF-SERVICE KIOSKS IN QUICK-SERVICE RESTAURANTS

Introduction

Over the last two decades, the rapid growth of information and communication technology (ICT) allows hospitality and tourism operations to employ various technologies to facilitate customer service and to enhance customer experience and satisfaction (Dabholkar & Bagozzi, 2012). Many studies have contributed to our understanding of why customers use SSTs in hotels and airport settings (Kim et al., 2008). However, most technology adoption studies have focused on initial adoption rather than repeat use (Fernandes & Pedroso, 2017). Relatively few have been conducted in QSR settings (Morosan, 2011). And relatively few have integrated customer satisfaction with technology acceptance (Kim et al., 2008; Kim & Qu, 2014). To address these gaps, this study presents a conceptual model that combines a technology acceptance model (Davis, 1986) and a satisfaction model (Cronin, Brady, & Hult, 2000). Specifically, this study aims to identify factors that influence the customer's decision to use an SSK in QSRs; and to explain the relationships among those factors. In addition, the moderating impact of age, gender and past experience using the self-service kiosk will be examined.

LITERATURE

Technology acceptance model (TAM) is one the most accepted technique to explain users' intention to use a certain technology. Many empirical studies have shown evidence that this model accurately explain users' intention to adopt a new technology (Kim & Qu, 2011; Morosan, 2011). Furthermore, to develop our understanding of customers' evaluation of SSK in QSRs, the present study borrows some parts of satisfaction model (satisfaction, perceived value, and behavioural intention) (Cronin et., 2000). It is the most comprehensive model, because this model looks at both the direct and indirect impacts. An integrated model incorporating Technology Acceptance Model (TAM) and Satisfaction model is developed to examine the relationship among trust, self-efficacy, perceived ease of use, perceived usefulness, perceived enjoyment, perceived value, satisfaction and behavioral intention toward using kiosks in quick-service restaurants

Methods

The target population for this study is QSR customers and the study population is McDonald's customers over the age of 18 who have used its SSK at least once in the last six months. Based on the proposed model, this study uses a quantitative research approach and develops a survey that targets self-service kiosk customers in a quick service restaurant re their perception and evaluation of the self-service kiosk. An online questionnaire is created and developed on the online survey website (Qualtrics) to collect data and distributed through Amazon Mechanical Turk (M-Turk) panel online. The survey consists of 32 questions, excluding demographic and past experience questions. which were assessed on a five-point Likert scale from 1 (strongly agree) to 5 (strongly disagree). Of 415 usable questionnaires, 51% were female, 72% were 26-45, 37% were highly educated and more than two third (70%) of the respondents had an income between \$ 18000 to \$72000.

Results/Discussion/Implications

Anderson & Gerbing 's (1999) two-step approach was used to analyze the proposed model: 1) Confirmatory factor analysis (CFA) for measurement model, 2) Structural equating

model(SEM) for the hypothesis test. CFA is conducted to test the validity of measurements and to remove unnecessarily items via AMOS. After running CFA, items with factor loading lower than 0.50, will be eliminated to achieve higher reliability and 29 items were retained in the model, showing a satisfactory level of model fit with the indices: Chi-square= 937.400, DF= 346, $p < .01$, NFI= .90, CFI= .94, RMSEA= 0.064. The second step to evaluate the proposed model is structural equation modeling (SEM). SEM is used to evaluate the relationships among variables, to test hypotheses, and to assess the model fit. All the model fit indices indicated the structural model fit with the data at the acceptable level: $\chi^2/df=2.748$, GFI=0.856, NFI=0.90, IFI=0.94, CFI=0.94, and RMSEA=0.065. Among the 15 proposed hypotheses in a direct effect, 10 hypotheses were statistically significant. Variance inflation factors (VIF) was adopted to test the multicollinearity. All VIF values ranged between 1.418 to 2.960 which is less than the proposed cut off threshold of 5 (Hair et al, 2011), suggesting on absence of multicollinearity. Multi-factor analysis was used to test the moderating impact of age, gender and past experience and the finding indicates that there was no significant age, gender and past experience difference in the relationship between the three beliefs in TAM and satisfaction model.

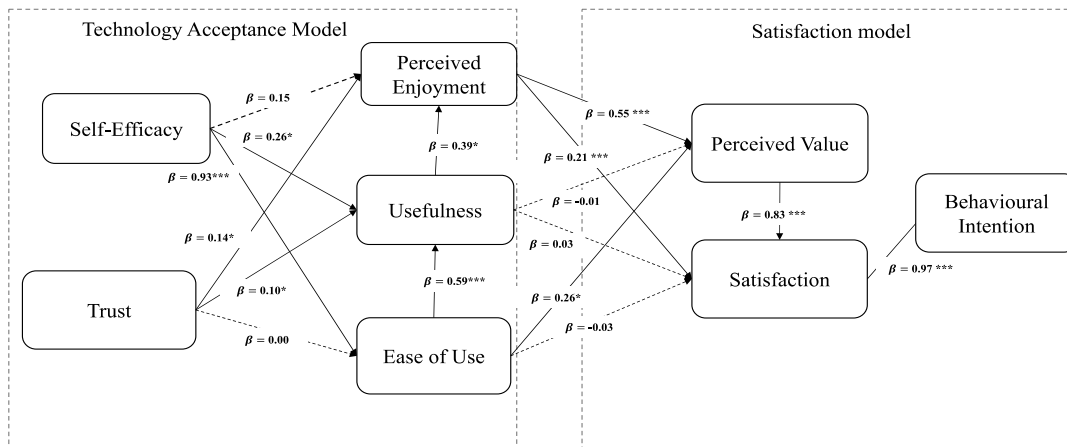


Figure 1-Structural Model
 Note: ***= $p < 0.001$; **= $p < 0.01$; *= $p < 0.05$

CONCLUSION

This study shows that customer satisfaction is the most powerful factor influencing the customer's decision to continue using SSKs. This study contributes to the existing literature on technology post-adoptive behaviour and repurchase intention in the hospitality industry by developing and testing an extended version of the TAM. This new version includes the variables of enjoyment, trust, and self-efficacy in an offline hospitality context: self-service kiosk adoption in QSRs. Earlier research (Davis, 1989) pointed out the need to consider the role of additional (external) variables in the TAM. This study addresses that need by testing and confirming the direct effect of external variables such as trust and self-efficacy on the TAM -- variables that had never been empirically tested together for kiosk adoption in QSRs.

References

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, *103*(3), 411.
- Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing*, *76*(2), 193–218. [https://doi.org/10.1016/S0022-4359\(00\)00028-2](https://doi.org/10.1016/S0022-4359(00)00028-2)
- Dabholkar, P. A., & Bagozzi, R. P. (2002). An Attitudinal Model of Technology-Based Self-Service: Moderating Effects of Consumer Traits and Situational Factors. *Journal of the Academy of Marketing Science*, *30*(3), 184–201. <https://doi.org/10.1177/0092070302303001>
- Davis, F. D. (1986). A technology acceptance model for empirically testing new end-user information systems: Theory and results. *Management, Ph.D.*(April), 291. <https://doi.org/oclc/56932490>
- Fernandes, T., & Pedroso, R. (2017). The effect of self-checkout quality on customer satisfaction and repatronage in a retail context. *Service Business*, *11*(1), 69–92. <https://doi.org/10.1007/s11628-016-0302-9>
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(139-151).
- Kim, M., & Qu, H. (2014). Travelers' behavioral intention toward hotel self-service kiosks usage. *International Journal of Contemporary Hospitality Management*, *26*(2), 225–245. <https://doi.org/10.1108/IJCHM-09-2012-0165>
- Kim, T. G., Lee, J. H., & Law, R. (2008). An empirical examination of the acceptance behaviour of hotel front office systems: An extended technology acceptance model. *Tourism Management*, *29*(3), 500–513. <https://doi.org/10.1016/j.tourman.2007.05.016>
- Morosan, C. (2011). Customers' Adoption of Biometric Systems in Restaurants: An Extension of the Technology Acceptance Model. *Journal of Hospitality Marketing & Management*, *20*(6), 661–690. <https://doi.org/10.1080/19368623.2011.570645>