



Self-Service Kiosk User Experience (UX) Factors and Customer Satisfaction Among Selected Quick-Service Restaurants in Santa Cruz, Laguna

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ABSTRACT

For the past years, businesses have adopted technologies in their daily operations such as self-service kiosks in Quick-Service Restaurants (QSRs), which was considered to make the customers' dining experience more efficient. However, following its implementation, studies have shown that some customers were unfamiliar and perceived the technology as less user-friendly, leading to dissatisfaction with the service. The primary purpose of this study was to determine the relationship between the User Experience (UX) factors of self-service kiosks and the customer satisfaction among selected QSRs in Santa Cruz, Laguna. This study utilized a correlational research design and was composed of two hundred sixty-seven (267) respondents that were gathered using convenience sampling. A validated self-structured questionnaire was distributed to collect quantitative data and was treated using mean, standard deviation, and Pearson correlation coefficient. The result showed there is a significant positive relationship between self-service kiosk user experience (UX) factors in terms of convenience, menu design, order accuracy, and ordering speed and customer satisfaction in terms of actual system use, behavioural intention to use, perceived ease of use, and perceived usefulness among selected Quick-Service Restaurants (QSRs) in Santa Cruz, Laguna. The study recommended that businesses should consider the number of kiosks available based on how busy it gets to increase efficiency and customer satisfaction, improving wait times during rush hours while reducing costs like energy and maintenance during quiet hours. Additionally, the findings of this study provide valuable insights for designing a business process flowchart by using data on user experience factors such as convenience, menu design, accuracy of order, and ordering speed. For customers, they should actively share their experiences with self-service kiosks by filling out online reviews or feedback forms, as their input directly helps restaurants enhance and develop these systems. And for future researchers, they are encouraged to expand the scope of investigations by exploring additional factors of relationship between self-service kiosks and customer satisfaction, as well as conduct comparative analyses of self-service kiosk ordering versus over-the-counter ordering in Quick-Service Restaurants (QSRs).

Keywords: self-service kiosk, user experience, customer satisfaction, quick-service restaurants, technology acceptance model

1. Introduction

In recent years, businesses have invested more in technological advancements that can improve the efficiency and effectiveness of their performance. The application of technology in businesses is a worthy advantage in attracting customers since most customers nowadays are technology-oriented (Shahril et al., 2021). Self-service technologies (SST), one of the technological investments, have been widely adopted in various industries, including the food service sector. These technologies allow customers to take control of their experience, offering convenience and potentially reducing wait times.

Self-service kiosks, a specific type of self-service technology, allow customers to facilitate the ordering process without or with minimal employee help, and these have also become increasingly popular in quick-service restaurants. However, while these kiosks offer the potential to streamline ordering and payment processes, their effectiveness relies heavily on user adoption and satisfaction. Not all customers are comfortable using technology; some may even prefer the personal touch of interacting with a staff. Some customers may avoid using the service of kiosks due to unfamiliarity with the technology, or they perceive self-service kiosks as less user-friendly, resulting in dissatisfaction with the service (Shukry et al., 2023). Customers who have positive experiences with the kiosks are more likely to utilize the technology. Conversely, unsatisfactory experiences could lead to unfavourable customer feedback.

In Sta. Cruz, Laguna, several quick-service restaurants have recently implemented self-service kiosks, namely, Jollibee, McDonald's, and even Kentucky Fried Chicken, or KFC. The touch-to-order system, or the kiosk, was first piloted by Jollibee in 2018 in the Philippines and was designed to make choosing and ordering meals more manageable and more convenient. McDonald's Philippines also introduced their kiosk in 2018 and KFC in 2023. They all gathered positive feedback from customers and advantages such as reduced queues at the counter and ordering efficiency. However, while offering a faster alternative to traditional ordering methods, these self-service kiosks may present usability issues specific to the local customers.

Thus, this study aimed to investigate the relationship between the user experience (UX) factors of a self-service kiosk and the respondent's customer satisfaction within the context of selected quick-service restaurants in Sta. Cruz, Laguna. By surveying and gathering data from customers who have utilized kiosks in Sta. Cruz, Laguna, this study hopes to gain valuable insights specific to this region.

2. Theoretical Background

This study is anchored on the Technology Acceptance Model by Fred Davis in 1989. It is a framework proposed in the scope of Information System (IS) and it describes the individual's intention to practice a system that will be verified by the perceived usefulness and perceived ease of use towards the technology. According to TAM, potential users base their decision on whether or not to use a technology on its perceived usefulness and its perceived ease of use. Perceived usefulness is the subjective judgment of the potential user's utility of the technology. Perceived ease of use is the cognitive effort expended by a potential user when learning and using the to learn and use the new technology. It argues that the external factors, such as system design features, trigger an individual's cognitive responses which resulted in an effective response influencing user behaviour. If an individual finds the technology to get things done easier and better, and offers a valuable benefit, they are most likely to accept and adopt it. This also reflects on how easy an individual believes a technology will be to learn and use. If they perceive it complex and confusing, they are less likely to incorporate it into their routine. Essentially, it's about how the technology seems to be user-friendly.

Additionally, customer satisfaction is also linked to the customer's use and acceptance of technology and revisiting intention in a quick-service restaurant. According to the findings of Baek (2023), customer satisfaction has a significant effect on continuance intention to use the self-service kiosk. In line with this, Rastegar et al. (2021) also stated that the more customers are satisfied with their experience with the kiosk, the more they are likely to use it whenever possible. In the present study, the aforementioned theory gives the researchers a foundation to better understand customer expectations and perceptions on the self-service kiosks and pinpoint areas where gaps exist.

3. Research Objectives

This study aimed to know the relationship between self-service kiosk user experience (UX) factors and customer satisfaction among selected quick-service restaurants in Santa Cruz, Laguna. This study sought to answer the following objectives: (1) To determine the mean level of respondent's user experience with self-service kiosks in selected quick-service restaurants in terms of convenience, menu design, order accuracy; and ordering speed; (2) To determine the mean level of customer satisfaction in terms of actual system use, behavioural intention to use, perceived ease of use, and perceived usefulness; and (3) To know if there is a significant relationship between the self-service kiosk user experience (UX) factors and the customer satisfaction among selected quick-service restaurants.

4. Data and Methods

This study utilized a correlational research design to investigate the relationship between self-service kiosk user experience (UX) factors and customer satisfaction, composed of two hundred sixty-seven (267) randomly selected customers as respondents. An adapted survey questionnaire utilizing a 5-point Likert scale, with five (5) representing "Strongly Agree" and one (1) representing "Strongly Disagree", was used to gather results. The statistical methods such as mean, standard deviation, and Pearson correlation coefficient were used to tabulate and treat the quantitative data gathered from respondents.

5. Results

Table 1 shows the summary of mean results of respondent's user experience with self-service kiosk in quick-service restaurants.

Table 1 - Summary of Mean Results

User Experience Factors	Weighted Mean	Verbal Interpretation
Convenience	4.54	Strongly Agree
Menu Design	4.45	Strongly Agree
Order Accuracy	4.46	Strongly Agree
Ordering Speed	4.27	Strongly Agree

Legend: 5.00 – 4.21 Strongly Agree, 4.20 – 3.41 Agree, 3.40 – 2.61 Neutral, 2.60 – 1.81 Disagree, 1.80 – 1.00 Strongly Disagree

The data in Table 1 indicates that respondents strongly agree with all user experience factors, as reflected by the high mean values ranging from 4.27 to 4.54. The overall weighted mean of 4.43 and standard deviation of 0.70 suggest a consistent positive perception of convenience, menu design, order accuracy, and ordering speed. The results indicate that users have a highly positive perception of the user experience factors (convenience, menu design,

order accuracy, and ordering speed) in the self-service kiosks of quick-service restaurants. The high mean scores across all factors imply that these features meet or exceed user expectations, contributing to a satisfactory customer experience. The low standard deviations suggest that opinions are consistent among respondents, reinforcing the reliability of the feedback. This strong positive sentiment reflects the effectiveness of the self-service kiosks in delivering a seamless and user-friendly experience. The high ratings for Convenience and Order Accuracy suggest that these factors are particularly important for customer satisfaction. As convenience is related to usability, the results supported the notes of Hamid (2021) and Samengon (2022) that self-service kiosks reduce the possibility and miscommunication, leading to accurate ordering process, making it regarded as useful. And with userfriendly kiosks, it facilitates client's quick adoption with the technology. Ordering Speed, while still rated positively, presents an opportunity for improvement to optimize the overall user experience. As mentioned by Shahril et al. (2021), customer satisfaction is particularly influenced by waiting time satisfaction, emphasizing the importance of ordering speed in satisfying self-service kiosk users and shorter wait times and queues positively impact the likelihood of return visit.

Table 2 shows the summary of mean results of customer satisfaction with self-service kiosk in quick-service restaurants.

Table 2 – Summary of Mean Results

Customer Satisfaction Factors	Weighted Mean	Verbal Interpretation
Actual System Use	4.37	Strongly Agree
Behavioural Intention to Use	4.35	Strongly Agree
Perceived Ease of Use	4.38	Strongly Agree
Perceived Usefulness	4.44	Strongly Agree

Legend: 5.00 – 4.21 Strongly Agree, 4.20 – 3.41 Agree, 3.40 – 2.61 Neutral, 2.60 – 1.81 Disagree, 1.80 – 1.00 Strongly Disagree

Table 2 shows that respondents strongly agree with all customer satisfaction indicators, with mean values ranging from 4.35 to 4.44. The overall weighted mean of 4.39 and standard deviation of 0.73 reflect a consistent and positive assessment of actual system use, behavioural intention to use, perceived ease of use, and perceived usefulness. This indicates that the system meets customer expectations and contributes to a satisfactory user experience.

The results suggest that the system effectively meets users' expectations, fostering high levels of customer satisfaction. The strong agreement on factors like actual system use, behavioural intention to use, perceived ease of use, and perceived usefulness indicates that the system is intuitive, valuable, and encourages continued usage. The consistent ratings (low standard deviations) imply that the feedback is reliable and reflects a shared positive experience among users. These findings highlight the system's success in promoting usability, utility, and customer loyalty. This is supported by the findings of Rastegar et al. (2021) that perceived usefulness strongly and positively relates to customer satisfaction. However, with their findings with perceived ease of use, it does not significantly affect customer satisfaction. Hence, even though self-service kiosks are helpful in the course business of quick-service restaurants, their functionality on how the customer operates it, like ease of use, still affects their overall satisfaction. As per Xavier et al. (2023), in order for QSRs to improve the satisfaction of their customers, they need to make their self-service kiosk user-friendly.

Table 3 shows the significant relationship between self-service kiosk user experience factors and customer satisfaction in selected quick-service restaurants.

Table 3 - Summary of Pearson Correlation Coefficient

User Experience Factors	Actual System Use	Behavioral Intention to Use	Perceived Ease of Use	Perceived Usefulness	Verbal Interpretation
Convenience	0.5648	0.5479	0.5884	0.5686	Strong Correlation
Menu Design	0.5072	0.5883	0.5268	0.5252	Strong Correlation
Order Accuracy	0.5636	0.4703	0.6302	0.6049	Strong Correlation
Ordering Speed	0.5428	0.5978	0.6036	0.6065	Strong Correlation

Legend: 0.00 - 0.10 Negligible correlation, 0.11 - 0.30 Weak correlation, 0.31 - 0.50 Moderate correlation, 0.51 - 0.70 Strong correlation, 0.71 - 0.90 Very strong correlation, 0.91 - 1.00 Perfect correlation

Table 3 indicates a strong correlation between all user experience factors (convenience, menu design, order accuracy, and ordering speed) and customer satisfaction indicators (actual system use, behavioural intention to use, perceived ease of use, and perceived usefulness). The results suggest that improvements in user experience factors significantly enhance customer satisfaction, confirming the importance of a well-designed and efficient self-service kiosk in quick-service restaurants.

The findings implied that user experience factors (convenience, menu design, order accuracy, and ordering speed) play a crucial role in driving customer satisfaction in self-service kiosks. The strong correlations indicate that enhancing these factors directly improves customers' system usage, ease of use,

perceived usefulness, and intention to continue using the system. This highlights the importance of optimizing user experience to ensure customer satisfaction and loyalty in quick-service restaurant settings.

This is supported by Stanley et al. (2023) that a self-service kiosk can earn a highest rating when the technology promotes and improves the accuracy of meal orders. Additionally, Noble (2023) mentioned that providing a clear and concise language along with proper visual representation like icons and images is needed to guide customers through the process of ordering. Moreover, in the study of Shahril et al. (2021), ordering speed is an important factor to satisfy the customers who use self-service kiosks in Quick Service Restaurants (QSRs). The findings of the present study underscore the importance of these UX factors in fostering a functional and widely accepted self-service kiosk.

6. Conclusions

Based on the significant findings of the study, the researchers concluded the following:

1. The mean levels for the respondent's user experience with self-service kiosks ranged from 4.27 to 4.54. It shows that respondents had an overwhelmingly positive experience with the self-service kiosks, with all user experience factors interpreted as Strongly Agree.
2. The mean levels for customer satisfaction ranged from 4.35 to 4.44, with all factors receiving a verbal interpretation of Strongly Agree. This indicates that respondents were very satisfied with the self-service kiosks, especially regarding their usefulness and ease of use.
3. There is no significant relationship between the self-service kiosk user experience (UX) factors and customer satisfaction. Pearson correlation coefficients show strong positive correlations with customer satisfaction factors, ranging from moderate to strong positive relationships between the user experience factors and customer satisfaction factors (with correlations ranging from $r=0.4703$ to $r=0.6302$). This implies that enhancing user experience factors, such as convenience, menu design, order accuracy, and ordering speed, is strongly linked to increased customer satisfaction regarding their actual usage of the system, their intention to use it again, and their perceptions of its ease of use and usefulness.

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