

The Acceptance of Customer Towards Service Robots in Restaurants

Nurnabilah Mazlan¹, Hasniza Abdullah^{1*}, Aida Khalida Mohamed Idris¹

¹ Faculty of Hotel and Tourism Management, University Technology MARA, Penang, Malaysia

*Corresponding Author: habdulla@uitm.edu.my

Received: 30 August 2023 | Accepted: 10 October 2023 | Published: 31 October 2023

DOI: <https://doi.org/10.55057/ijbtm.2023.5.3.62>

Abstract: *The purpose of this thesis is to examine the readiness of customers towards service robots in restaurants. Problems faced by customers who are not satisfied with service robots in restaurants such as the issue of not being familiar with service robots and feeling uncomfortable engaging with them. The other issue is that service robot interactions' emotional and functional components may affect consumers and significantly impact their experiences and performances. However, the use of robot service in restaurant help to reduce physical contact between staff and customers due to the pandemic Covid-19 cases right now. Through the use of the quantitative method, this research focuses on Technology readiness, Perceived ease of use, Perceived Usefulness, and Readiness of Customers for service quality of robot service restaurants. A literature review was conducted to identify information on independent and dependent variables. Furthermore, this study's main objective is to identify customer readiness towards service robots in restaurants. The response of this study was a total of 119 respondents. The results show that Technology readiness, Perceived ease of use, Perceived usefulness, and Readiness of customer affect customer satisfaction. The three independent variables of this research had a positive relationship. In conclusion, it is important to maintain the quality of services to customers to make them continue to enjoy the experiences and give them a sense of satisfaction while using the service robots in restaurants.*

Keywords: Service robot restaurant, Technology readiness, Perceived ease of use, Perceived usefulness

1. Introduction

The idea of robot eateries is fresh. Any new product cannot operate successfully without the initial support of customers. Therefore, before making a purchase, it is crucial to comprehend the causes of customers' behavioral intentions toward robot restaurants. Customers' views of restaurant features may be significant predictors of behavioral intention, according to prior studies in traditional restaurants (Zhu, 2022). Customers may feel differently about the use of robotic devices, especially in the context of services, according to previous studies. On the one hand, the use of AI robotic devices may enhance how customers view the performance and quality of services (Lin et al., 2020). Since it has been established that a restaurant's most important qualities are its food, service, and atmosphere. The term "coolness" indicates a consumer's view of a product or service's high quality and expectation that it will creatively accomplish user goals while also implying considerable interest (Cha, 2020). Furthermore, research has revealed that customer-robot interactions' empathy and information-sharing are positively correlated with the intentions of robot use (Ivanov & Webster, 2021).

As a result, researchers have concentrated their efforts on creating and testing various models relating to the employment of robots in service delivery. The impact of lockdown and the severity of the illness makes some people more interested in the contact-free options offered by these autonomous inventions every day. Robotics are essential to industries that manufacture things like cars and airplanes, but they are comparatively underrepresented in the customer-facing areas of the hotel and travel industries. Their research has addressed several concerns regarding the employment of delivery robots, such as the issue of restaurant patrons may not be familiar with robots and feel uncomfortable engaging with them because the usage of service robots in restaurants is still in its early stages (Zhang et al., 2022). The emotional and functional components of service robot interactions, as well as other issues that may affect consumers and significantly impact their experiences and performances, have not been sufficiently covered in this research (Hlee et al., 2022). Therefore, this study intends to investigate the readiness of customers towards service robots in restaurants. The objective of this study is as follows:

- 1) To examine service quality on Technology Readiness towards the Readiness of Customers.
- 2) To identify Perceived ease of use towards the Readiness of Customers.
- 3) To investigate Perceived usefulness towards the Readiness of Customers.

The research hypothesis for this study are:

Hypothesis 1: Technology readiness will have a significant positive effect on the readiness of customers towards service robots in restaurants.

Hypothesis 2: Perceived ease of use will have a significant positive effect on the readiness of customers towards service robots in restaurants.

Hypothesis 3: Perceived usefulness will have a significant positive effect on the readiness of customers towards service robots in restaurants.

2. Literature Review

2.1 Technology Readiness

Technology readiness was described with four underlying facets, which are optimism, innovativeness, discomfort, and insecurity. Among these, optimism refers to the constructive assumptions and viewpoints that people can gain from using technology-driven goods and services, like increased effectiveness, control, and flexibility. Innovativeness is the ability to be a pioneer, leader, or influencer in the acceptance of new technologies. On the other side, discomfort depicts the state of being overwhelmed by new technology or having inadequate control over it, while insecurity is associated with doubt and mistrust regarding technology and its ability to function as intended. Similar to how optimism and inventiveness are seen as TR drivers, discomfort and insecurity are seen as TR inhibitors (Kim & Han, 2022). The regulating function of technology readiness, the general psychological condition of people's treatment of technology, and how people's readiness to accept the introduction of new technology into their experiences impacts their satisfaction with its advantages (Gao et al., 2022).

H1: Technology readiness will have a significant positive effect on the readiness of customers towards service robots in restaurants.

2.2 Perceived Ease of Use

The perceived ease of use of novel technology-based offerings was posited as an individual's attitude being influenced by antecedents, which then have an impact on use intentions and actual usage (Kim & Han, 2022). The extent to which a professor thinks the application and its elements will be simple to use (Mobile Technology Adoption : Assessing Faculty Acceptance Using the Technology Acceptance Model Dissertation Manuscript Submitted to Northcentral

University School of Business and Technology Management in Partial Fulfillment of the Requirements for the De, 2018).

H2: Perceived ease of use will have a significant positive effect on the readiness of customers towards service robot in restaurants.

2.3 Perceived Usefulness

The perceived usefulness of novel technology-based offerings was posited as antecedents that influence individual attitudes, and consequently affect use intentions and actual usage (Kim & Han, 2022).

H3: Perceived usefulness will have a significant positive effect on the readiness of customers towards service robot in restaurants.

2.4 Theoretical Framework

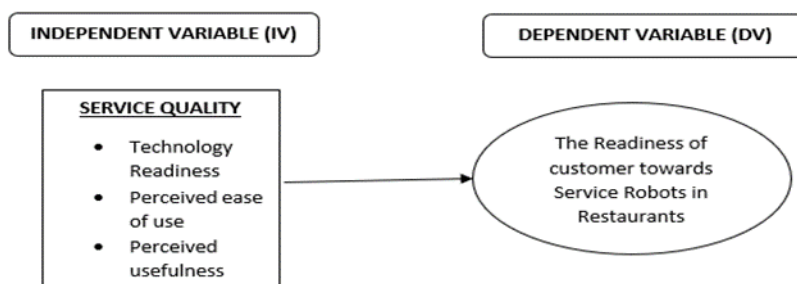


Figure 1

3. Methodology

3.1 Research Design

The research design in this research is a quantitative method. A cross-sectional survey will be used for this investigation. Only one set of data will be collected over the course of two weeks.

The survey's minimum sample size can be reached in this amount of time by gathering all the information from the respondent. The section on sample design will include a presentation of the gathered data. The research venues and subjects for this study will be the patrons of robot-service restaurants. Since these locations are well recognized as the "city of gastronomy," which draws travelers who enjoy fine cuisine, restaurants there have been chosen. Robot "waiters" serve the food in the restaurant. The robot will deliver meals and drinks to guests' tables. Probability sampling is inapplicable for the current investigation since there is no reliable source of data on the population size and sampling frame for customers who have visited robot service restaurants. According to the Department of Statistics Malaysia, (2021), stated that the residents of Selangor were a total of 7.0 million. As a result, the sample size was restricted to Selangor residents who were 18 years of age and above. Purposive sampling, a non-probability method, was thus employed in this study. Based on a power analysis technique using G*Power software version 3.1.9.7, 119 samples were the bare minimum needed for this study. Google Forms has been used to create a questionnaire. Through online platforms including Facebook, Instagram, WhatsApp, and Telegram, a link to the Google form has been provided. This study was concerned with customer satisfaction with the service quality provided by service robot restaurants through an online questionnaire to collect data.

Self-directed surveys that are carried out online with a paperless design make it easier for respondents to reply to the survey and for the study's researcher to analyze the data. Questionnaires will be sent to respondents or customers who are experienced in visiting service robots in restaurants through Google Forms to complete the survey via WhatsApp, Facebook, Telegram, and Instagram platform. The questionnaire used in this research contains 5 sections A, B, C, D, and E to measure the variables. Closed-ended questions, correlation, and regression approaches mean, mode, median, and other metrics were employed in this research analysis to provide answers to the research questions posed to the targeted respondents. Data was collected from customers who are experienced in visiting service robots in restaurants through Google Forms. There were 28 items in the questionnaire. The questionnaire consists of sections A, B, C, D, and E. The Respondents will be answering the survey in Section A for Demographic Profile regarding Gender, Age, Race, Occupation, and Income per Month (RM). In sections B, C, and D, the respondents will answer the question by marking the answer using Five-Likert Scale which is measured by the rating scale starting from 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly Disagree.

The data collected will be analyzed and entered into a computer using Statistical Programmed for Social Science (SPSS) software to generate the result. Analysis of data will be done after the data collection process. The link to the online survey will be sent to 385 respondents to obtain at least 119 responses using G*Power software version 3.1.9.7. Pearson correlation was used to examine the relationship between the variable.

4. Result and Analysis

Data collected from 175 respondents through Google Forms were analyzed using Statistical Package for Society Science (SPSS) software.

4.1 Descriptive Analysis

It is recorded that the majority of respondents who participated in the online survey who have experienced the service robots in restaurants. The highest of the data stated that Female (64.0

percent), Aged ranging 21 to 25 years old (62.9 percent), Malay (82.9 percent), Student (57.7 percent), and for Income per Month (50.3 percent).

4.2 Reliability Test

Table 1 shows the number of items in the variable used in the questionnaire and the Cronbach Alpha value. For this research, the reliability test will be collected for 28 samples through a pilot study and will be measured by Cronbach Alpha value using SPSS software.

Table 1: Reliability Test

No.	Variable	No. of Items	Cronbach Alpha
1	Technology Readiness	6	0.754
2	Perceived Ease of Use	7	0.812
3	Perceived Usefulness	10	0.836
4	Readiness of Customer	3	0.723

4.2 Pearson Correlation

Table 2 shows the value of the Pearson Correlation and shows that all hypothesis was accepted. A positive relationship exists if the correlation coefficient is greater than zero. While, if the value is less than zero, the relationship will be negative. All correlation is significant at the 0.01 level for the 1-tailed test. Results of the Pearson Correlation Coefficient (p-value) range from 0.694 to 0.904. These correlations suggest that there are significant and positive relationships in the readiness of customers toward service robots in restaurants.

Table 2: Pearson Correlation

Hypothesis	Pearson Correlation	Conclusion
Hypothesis 1	0.694	Accepted
Hypothesis 2	0.606	Accepted
Hypothesis 3	0.904	Accepted

4.3 Regression Analysis

Table 3 shows the analysis of regression to identify whether the Independent Variables (IV) for Technology Readiness, Perceived Ease of Use, and Perceived Usefulness affect the Dependent Variable on the Readiness of Customers towards services robot restaurants. Multiple linear regression was assessed to examine H1, H2, and H3 if there is a positive relationship between the readiness of customers towards service robots in restaurants. As a result, this study confirmed that there is one variable (Perceived Usefulness) that has a relationship with the readiness of customers towards service robots in restaurants. This study also confirmed that other variables were rejected.

Table 3: Regression Analysis

Variables	B	Std. Error	Beta	t	Sig.
Readiness of Customers	-0.178	0.175		-0.013	0.313
Technology Readiness	-0.100	0.057	0.085	-1.760	0.080
Perceived Ease of Use	-0.019	0.061	0.017	-0.315	0.754
Perceived Usefulness	1.156	0.059	0.966	19.737	0.000

4.5 Discussion

The research found that the level of customer satisfaction toward service quality of service robots in restaurants affect the readiness of customer towards service robots in restaurants. The result shows that all the variables have a significant relationship with the readiness of customers towards service robots in restaurants. The use of service robot restaurants does not have problems because the robot can work full time compared to employees. Service robot restaurants are a quick way to ensure that customers can get what they want at any time and as a result sales increase will result in profit. Service robot restaurants can attract people's attention and this will cause more people to visit the restaurant.

5. Conclusion

The study was carried out using data from earlier investigations of robot services. The study was looking at what makes customers return to a restaurant after they've had a service robot restaurant experience. The factors studied were Technology readiness, Perceived ease of use, and Perceived usefulness affects the readiness of customers towards services of robot

restaurants. Therefore, the cause-effect correlations were a little challenging to understand due to the numerous constructs and the three-step study procedure. To properly grasp customer intention to use robot services in restaurants, future research must take these into account and broaden the findings from this study.

Acknowledgement

The authors would like to thank the University Technology MARA, Penang Campus for providing the supports for this study.

References

- Cha, S. S. (2020). Customers' intention to use robot-serviced restaurants in Korea: relationship of coolness and MCI factors. *International Journal of Contemporary Hospitality Management*, 32(9), 2947–2968. <https://doi.org/10.1108/IJCHM-01-2020-0046>
- Gao, J., Ren, L., Yang, Y., Zhang, D., & Li, L. (2022). The impact of artificial intelligence technology stimuli on smart customer experience and the moderating effect of technology readiness. *International Journal of Emerging Markets*, 17(4), 1123–1142. <https://doi.org/10.1108/IJOEM-06-2021-0975>
- Hlee, S., Park, J., Park, H., Koo, C., & Chang, Y. (2022). Understanding customer's meaningful engagement with AI-powered service robots. *Information Technology and People*. <https://doi.org/10.1108/ITP-10-2020-0740>
- Ivanov, S., & Webster, C. (2021). Willingness-to-pay for robot-delivered tourism and hospitality services – an exploratory study. *International Journal of Contemporary Hospitality Management*, 33(11), 3926–3955. <https://doi.org/10.1108/IJCHM-09-2020-1078>
- Kim, J. J., & Han, H. (2022). Hotel Service Innovation with Smart Technologies: Exploring Consumers' Readiness and Behaviors. *Sustainability (Switzerland)*, 14(10), 1–16. <https://doi.org/10.3390/su14105746>
- Lin, H., Chi, O. H., & Gursoy, D. (2020). Antecedents of customers' acceptance of artificially intelligent robotic device use in hospitality services. *Journal of Hospitality Marketing and Management*, 29(5), 530–549. <https://doi.org/10.1080/19368623.2020.1685053>
- Mobile Technology Adoption: Assessing Faculty Acceptance Using the Technology Acceptance Model Dissertation Manuscript Submitted to Northcentral University School of Business and Technology Management in Partial Fulfillment of the Requirements for the De.* (2018). March.
- Zhang, X., Balaji, M. S., & Jiang, Y. (2022). Robots at your service: value facilitation and value co-creation in restaurants. *International Journal of Contemporary Hospitality Management*, 34(5), 2004–2025. <https://doi.org/10.1108/IJCHM-10-2021-1262>
- Zhu, D. H. (2022). Effects of robot restaurants' food quality, service quality and high-tech atmosphere perception on customers' behavioral intentions. *Journal of Hospitality and Tourism Technology*, 13(4), 699–714. <https://doi.org/10.1108/JHTT-01-2021-0022>