

[Back](#)

How do service robots generate customer value? Rethinking service robot acceptance model (sRAM) through necessary condition analysis

[Acta Psychologica](#) • Article • Open Access • 2026 • DOI: 10.1016/j.actpsy.2026.107875

[Tarofder, Arun Kumar](#)^a ; [Khan, Md Irfanuzzaman](#)^b ; [Azam, S.M. Ferdous](#)^c ; [Haque, Ahasanul](#)^d ; [Nawaz, Nishad](#)^e

^a Faculty of Business and Law, School of Management and Marketing Taylor's University, Lakeside Campus
No. Jalan Taylor's, Darul Ehsan, Selangor, Subang Jaya, 47500, Malaysia

[Show all information](#)

0

Citations

[View PDF](#)[Full text](#) [Export](#)[Save to list](#)[View PDF](#)[Document](#)[Impact](#)[Cited by \(0\)](#)[References \(95\)](#)[Similar documents](#)

Abstract

This study reframes the Service Robot Acceptance Model (sRAM) as a value-centred framework. It examines how functional, social, relational and individual factors shape customer value in robot-mediated restaurant encounters and how this value drives re-patronage intention, word-of-mouth intention and robot–human rapport across generational cohorts. On-site intercept surveys were conducted with 351 diners in Kuala Lumpur restaurants using service robots. Using a disjoint two-stage PLS-SEM, the four second-order antecedent blocks predicted customer value and three post-use outcomes. Multi-group analysis tested generational moderation (Baby Boomers, Generation X, Generation Y, Generation Z). Fuzzy-set qualitative comparative analysis (fsQCA) and necessary condition analysis (NCA) identified cohort-specific configurations leading to high customer value. Relational and functional factors are the strongest overall predictors of customer value, followed by social and individual factors. Customer value, in turn, consistently predicts re-patronage intention, word-of-mouth intention and robot–human rapport. Generational results show distinct value-formation logics: Baby Boomers combine functional, relational and social drivers, Generation X relies mainly on social cues, Millennials on individual and relational factors, and Generation Z primarily on functional performance. fsQCA reveals equifinal

configurations, with different combinations of functional, social, relational and individual conditions producing high value by cohort. Managers should intentionally design robot encounters by aligning functional, social, relational, and individual value drivers with the expectations of different generational cohorts, moving beyond uniform interaction styles toward cohort-sensitive value orchestration. The study extends sRAM beyond adoption by positioning customer value as the central post-use mechanism, integrating four antecedent blocks with generational and configurational perspectives to explain how service robots generate loyalty, word of mouth and rapport in hospitality settings. © 2026 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY license. <http://creativecommons.org/licenses/by/4.0/>

Author keywords

Acceptance model; Chatbot; Customer value; fsQCA; Generational cohort; Service robot

Indexed keywords

EMTREE medical terms

adult; Article; artificial intelligence chatbot; baby boomer; birth cohort; causality assessment; cognitive robotics; confirmatory factor analysis; consumer; customer experience; economic aspect; female; Generation Z; human; human relation; individual coping; loyalty program; male; man machine interaction; mental effort; millennial; multivariate analysis of variance; normal human; oral communication; outcome expectation; pareidolia; restaurant; social aspect; social interaction; structural equation modeling

Corresponding authors

Corresponding author

[View PDF](#)

Affiliation Department of Business Management, College of Business Administration, Kingdom University, Bahrain

Email address n.navaz@ku.edu.bh

© Copyright 2026 Elsevier B.V., All rights reserved.

- Abstract
- Author keywords
- Indexed keywords
- Corresponding authors

About Scopus

[What is Scopus](#)

[Content coverage](#)

[Scopus blog](#)

[Scopus API](#)

[Privacy matters](#)

Language

[日本語版を表示する](#)

[查看简体中文版本](#)

[查看繁體中文版本](#)

[Просмотр версии на русском языке](#)

Customer Service

[Help](#)

[Tutorials](#)

[Contact us](#)

ELSEVIER

[Terms and conditions](#) ↗ [Privacy policy](#) ↗ [Cookies settings](#)

All content on this site: Copyright © 2026 [Elsevier B.V.](#) ↗, its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the relevant licensing terms apply.

 RELX™

[View PDF](#)