International Journal of Latest Engineering Science (IJLES) E-ISSN: 2581-6659

DOI: 10.51386/25816659/ijles-v9i2p102

Volume: 09 Issue: 02 March to April 2026 www.ijlesjournal.org

The Viability of Service Robots in the Hotel Industry as Perceived by Managers in Cebu City, Philippines

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Abstract

The integration of service robots in hospitality has gained global attention, yet limited research exists on managerial perceptions in developing economies. This study examined how hotel managers in Cebu City, Philippines perceive the viability of service robots across five dimensions: manpower replacement, robot capacity, investment effectiveness, performance, and automation accuracy. Using a quantitative descriptive-correlational design, data were collected from 20 hotel managers and supervisors across nine top hotels in Metro Cebu through purposive sampling. Results revealed consistently negative perceptions (overall aggregate mean = 2.82, interpreted as "Low"), with managers disagreeing that service robots could effectively replace human employees. The performance dimension received the lowest rating (M=3.15, Disagree), while automation accuracy showed the highest relative acceptance (M=2.52, Disagree), with managers acknowledging robots' superiority in multilingual communication and computational tasks. Chi-square analysis indicated no significant relationship between demographic profiles and perceptions. Findings suggest that while managers recognize specific technological advantages of service robots, they maintain strong reservations about their holistic implementation in hospitality settings. The study contributes to the technology acceptance literature by documenting resistance factors in non-Western contexts and offers practical recommendations for educational institutions to enhance human capital through language training and critical thinking development.

Keywords: *service robots, hotel industry, managerial perceptions, technology acceptance, hospitality management, Cebu City*

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1. Introduction

The global hospitality landscape is undergoing transformative change driven by rapid technological advancement. The proliferation of artificial intelligence (AI) and the Internet of Things (IoT) has accelerated the deployment of service robots across various service sectors, including hotels, restaurants, and airports (Huang & Rust, 2018; Wirtz et al., 2018). The COVID-19 pandemic further intensified this trend, as contactless services became not merely convenient but essential for operational continuity (Hrynowski, 2020). From robotic concierges to automated baggage handling, service robots promise efficiency gains and novel guest experiences.

Japan's Henn-na Hotel stands as a pioneering example, employing dinosaur robots at the front desk, robotic porters, and facial recognition technology throughout its operations (Palvia& Vemuri, 2016). Similarly, Starwood's Aloft hotels have experimented with robot butlers, while Alibaba's Flyzoo Hotel in China operates as a fully automated facility (Lv, 2020). These innovations suggest a future where human-robot collaboration becomes commonplace in hospitality.

However, the trajectory of robotic adoption faces significant challenges. Reports from early adopters reveal operational limitations: the Henn-na Hotel eventually reduced its robotic workforce due to poor service quality and guest dissatisfaction (Gale & Mochizuki, 2019). Robots struggle with tasks requiring intuition, empathy, and complex problem-solving—capabilities central to hospitality excellence (Huang & Rust, 2018). Current AI technology remains predominantly mechanical and analytical, lacking the intuitive and empathetic intelligence that characterizes superior human service providers.

The Philippines presents an intriguing context for examining these dynamics. As a premier tourist destination—Cebu alone attracted 1.4 million foreign visitors in 2019 (Philippine News Agency, 2020)—the country's hospitality sector must balance technological innovation with culturally embedded service expectations. Yet research on service robot acceptance in Southeast Asian developing economies remains sparse. Most existing studies originate from technologically advanced nations (Japan, South Korea, United States) or focus on customer rather than managerial perspectives (Belanche et al., 2020; Gursoy et al., 2019).

Managers occupy a critical position in technology adoption decisions. Their perceptions shape investment priorities, implementation strategies, and organizational readiness for technological change. Understanding how hotel managers in Cebu perceive service robots provides valuable insights into the viability of such technologies in emerging hospitality markets. This study addresses three research questions: (1) What is the profile of hotel managers in Metro Cebu? (2) How do these managers perceive service robots across five dimensions: automation accuracy, performance, investment effectiveness, manpower replacement, and workload capacity? (3) Is there a significant relationship between manager profiles and their perceptions?

Literature Review

2.1 Defining Service Robots

Service robots are defined as semi-autonomous or fully autonomous mechanical devices designed to interact with humans and provide services in retail, hospitality, healthcare, and warehouse settings (International Federation of Robotics, 2016). Unlike industrial robots confined to manufacturing applications, service robots operate in human-centric environments, requiring mobility and social interaction capabilities (Haidegger et al., 2013). This distinction proves crucial for hospitality applications, where robots must navigate unpredictable human behaviors and dynamic physical spaces.

2.2 AI Intelligence Levels and Service Capabilities

Huang and Rust's (2018) framework categorizes AI into four intelligence levels: mechanical, analytical, intuitive, and empathetic. Mechanical AI handles routine, repetitive tasks; analytical AI processes data and identifies patterns; intuitive AI demonstrates understanding and judgment; empathetic AI recognizes and responds to human emotions. Current service robots operate primarily at the first two levels, excelling at standardized operations but faltering when situations demand nuanced human interaction.

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This limitation has practical implications. Service robots at the Henn-na Hotel failed to adequately address guest complaints, process non-standard requests, or provide the emotional warmth associated with hospitality (Can & Tung, 2019). Guests reported frustration with language barriers and robots' inability to assist beyond programmed parameters. These experiences suggest that while robots can enhance efficiency in structured tasks, they cannot yet replicate the comprehensive service experience delivered by trained human staff.

2.3 Service Robot Applications in Hospitality

Global implementations demonstrate both potential and limitations. Starwood's Aloft hotels deployed robot butlers for room deliveries (Lv, 2020). The Las Vegas Wayne Hotel integrated Amazon Echo devices with Alexa digital assistants throughout guest rooms. Alibaba's Flyzoo Hotel combined facial recognition, voice commands, and automated payments for seamless check-in and room control (Lv, 2020).

Research by Chung et al. (2020) emphasizes that robots must effectively perceive and respond to human presence. This requirement extends beyond technical functionality to include social intelligence—recognizing emotional states, adapting communication styles, and demonstrating appropriate behavioral responses. The gap between technical capability and social intelligence remains a primary barrier to widespread adoption.

2.4 Service Quality Implications

Service quality in hospitality encompasses multiple dimensions: reliability, assurance, tangibles, empathy, and responsiveness (Grönroos, 1984). Robots demonstrate strength in tangible aspects—consistent execution, physical stamina, and information accuracy—but struggle with empathy and assurance (Chiang & Trimi, 2020). Customers expect not merely task completion but genuine engagement and personalized attention. When robots fail to deliver these experiential elements, service quality perceptions decline.

Studies by Ivanov and Webster (2019) identify additional disadvantages: robots function effectively only in structured situations, lack creativity, and cannot adapt to unprogrammed scenarios. They may be perceived as threats by employees and labor unions (Kazandzhieva&Filipova, 2019), creating organizational resistance that complicates implementation.

Theoretical Framework

This study is grounded in technology acceptance literature, which posits that perceived usefulness and perceived ease of use predict adoption intentions (Davis, 1989). In organizational contexts, managerial perceptions mediate between technological capabilities and implementation decisions. Belanche et al. (2020) extended this framework to service robots, identifying factors such as perceived humanness, social presence, and task fit as influential in acceptance decisions.

The conceptual framework for this study incorporates five dimensions derived from the literature: (1) automation accuracy—the precision of robot task execution; (2) performance—the quality of service delivery; (3) investment effectiveness—the financial viability of robotic implementation; (4) manpower replacement—the extent to which robots can substitute human workers; and (5) workload capacity—the ability to handle multiple tasks and information storage. These dimensions collectively capture the multidimensional nature of managerial evaluations.

Statement of the Problem

This study sought to identify the perception of hotel managers on the viability of service robots among top hotels in Metro Cebu, Philippines.

Specifically, this research aimed to answer the following questions:

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1. **What is the profile of the respondents in terms of:**
    - 1.1 Age
    - 1.2 Gender
    - 1.3 Civil status
    - 1.4 Hotel department assigned
    - 1.5 Number of years working in the industry
2. **What is the respondents' perception of service robots in the context of the following factors?**
    - 2.1 Service Robot Automation Accuracy
    - 2.2 Service Robot Performance
    - 2.3 Effectiveness of Investment in Service Robots
    - 2.4 Manpower Replacement
    - 2.5 Service Robot Workload Capacity
3. **Is there a significant relationship between the respondents' profile and their level of perception of service robots?**
4. **Based on the findings, what recommendations may be proposed to enhance the competitiveness of human hotel employees in light of advancing service robot technology?**

Research Methodology

3.1 Research Design

This study employed a quantitative descriptive-correlational research design. The descriptive approach enabled systematic characterization of managerial perceptions across predefined dimensions, while the correlational component examined relationships between respondent profiles and perception patterns. This design aligns with established practices in hospitality technology research (Belanche et al., 2020).

3.2 Research Environment

The study was conducted in Metro Cebu, Philippines, encompassing three major cities: Cebu City, Mandaue City, and Lapu-Lapu City. This location was selected due to Cebu's prominence as a tourist destination and the concentration of internationally recognized hotels in the metropolitan area. The Department of Tourism ranks Cebu as the second most preferred destination for foreign visitors, ensuring a robust hospitality sector with diverse managerial perspectives.

Nine hotels were purposively selected based on popularity, reputation, and brand recognition: Waterfront Hotel and Casino, Marco Polo Plaza Cebu, and Radisson Blu Cebu (Cebu City); Bai Hotel Cebu, Maayo Hotel, and Toyoko Inn Cebu (Mandaue City); and Shangri-La's Mactan Resort and Spa, Dusit Thani Mactan Cebu Resort, and Crimson Resort and Spa Mactan (Lapu-Lapu City). This selection ensured representation across the metropolitan area and included both international chains and prominent local establishments.

3.3 Research Respondents

Respondents comprised 20 hotel managers and supervisors, including department managers, operational supervisors, and inventory managers. Purposive sampling was employed to select participants with direct decision-making authority or operational oversight relevant to technology adoption. Inclusion criteria required respondents to hold supervisory positions with at least one year of industry experience. The sample size, while modest, aligns with the study's exploratory nature and focus on obtaining in-depth perceptions from qualified informants (Sun, 2018).

3.4 Research Instrument

Data were collected using a structured questionnaire developed based on the five-dimensional framework. The instrument comprised two sections: (1) demographic profile (age, gender, civil status, assigned department, years of

industry experience); and (2) 25 Likert-scale items measuring perceptions across five dimensions (five items per dimension). Items were rated on a four-point scale: 4.00–3.25 (Strongly Agree/Very High), 3.24–2.50 (Agree/High), 2.49–1.74 (Disagree/Low), and 1.74–1.00 (Strongly Disagree/Very Low). The four-point scale eliminated neutral responses, forcing directional evaluation.

The instrument underwent expert validation by three hospitality research faculty members, who assessed content validity, clarity, and alignment with theoretical constructs. Pilot testing with five non-participating hotel supervisors established internal consistency (Cronbach's $\alpha = 0.87$).

3.5 Data Gathering Procedures

Data collection proceeded in three phases. Phase 1 involved submitting formal request letters to hotel general managers, explaining the study's purpose and requesting permission to conduct surveys. Phase 2 commenced upon approval, with researchers distributing questionnaires to eligible respondents. Each respondent received 20 minutes to complete the survey independently. Phase 3 involved data encoding and statistical analysis.

The research protocol adhered to ethical guidelines established by the University of Cebu Ethics Review Board (ERB Certificate attached). Respondents provided informed consent, were assured of confidentiality, and retained the right to withdraw without penalty.

3.6 Data Analysis

Data were analyzed using descriptive and inferential statistics. Frequency counts and percentages described respondent profiles. Weighted means and standard deviations assessed perception levels across dimensions, with interpretation based on the established four-point scale. Chi-square tests examined relationships between demographic variables and perception levels, with significance set at $p < 0.05$. Statistical analyses were performed using SPSS Version 26.

Results

4.1 Respondent Profile

Table 1 presents the demographic characteristics of the 20 respondents. Ages ranged from 21 to 55 years, with the largest groups aged 26 years (15%) and 35 years (15%). Females comprised 60% of respondents (n=12), while males represented 40% (n=8). The majority were single (70%, n=14) compared to married (30%, n=6). Regarding industry experience, 40% (n=8) reported five years in hospitality, followed by 15% (n=3) with ten years. Departmental assignments included front office, housekeeping, food and beverage, sales and marketing, and administration.

Table 1: Demographic Profile of Respondents

Variable	Category	Frequency (N=20)	Percentage
Age	21-30 years	12	60.0%
	31-40 years	5	25.0%
	41-55 years	3	15.0%
Gender	Female	12	60.0%
	Male	8	40.0%
Civil Status	Single	14	70.0%
	Married	6	30.0%
Years Experience	1-5 years	11	55.0%
	6-10 years	6	30.0%
	11+ years	3	15.0%

DOI: 10.51386/25816659/ijles-v9i2p102
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4.2 Perceptions of Service Robots

4.2.1 Manpower Replacement Dimension

Table 2 displays perceptions regarding manpower replacement. All five indicators received mean scores in the "Disagree" range (2.80–2.95). The highest-rated item, "Robots can be more efficient than humans in the hotel industry," scored 2.95 (Disagree), while three items—cost-effectiveness, impact on success, and sales improvement—each scored 2.80 (Disagree). The aggregate mean of 2.84 (Disagree) indicates that managers do not view service robots as viable replacements for human workers.

Table 2: Perceptions of Manpower Replacement

Indicator	Mean	Description	Interpretation
Robots can be more efficient than humans	2.95	Disagree	Low
Robots can be cost-effective manpower replacement	2.80	Disagree	Low
Robots can have more impact to be successful	2.80	Disagree	Low
Robots can help improve sales and profit	2.80	Disagree	Low
Acceptance of robots is very important	2.85	Disagree	Low
Aggregate Mean	**2.84**	**Disagree**	**Low**

These findings align with Qiu et al. (2020), who found that hospitality professionals value skilled human employees more highly than robotic alternatives, particularly for customer service interactions requiring attitude and behavioral nuance.

4.2.2 Robot Capacity Dimension

Table 3 summarizes perceptions of robot capacity. Four of five indicators scored in the "Disagree" range (2.65–3.05), while one indicator—"Robots will be able to perform in contrast to or in collaboration with humans"—received an "Agree" rating (2.40). The aggregate mean of 2.70 (Disagree) suggests managers doubt robots' capacity to match human performance across core hospitality functions.

Table 3: Perceptions of Robot Capacity

Indicator	Mean	Description	Interpretation
Robots will perceive all instructions given	2.65	Disagree	Low
Robots will answer guests' inquiries	2.65	Disagree	Low
Robots will multitask without malfunctioning	3.05	Disagree	Low
Robots will perform in collaboration with humans	2.40	Agree	High
Robots will do human tasks	2.75	Disagree	Low
Aggregate Mean	**2.70**	**Disagree**	**Low**

The agreement with collaborative potential (2.40) merits attention. While managers reject full robotic autonomy, they acknowledge possibilities for human-robot teamwork—a finding consistent with Baldwin's (2019) augmentation perspective, which posits that humans and robots can complement each other's strengths.

4.2.3 Effectiveness of Investment Dimension

Table 4 presents investment-related perceptions. All five indicators scored in the "Disagree" range (2.75–3.20), yielding an aggregate mean of 2.93 (Disagree). The highest-rated item, "It's more effective to invest in service robots than humans," scored 3.20 (Disagree), indicating strong rejection of robotic superiority in resource allocation.

Table 4: Perceptions of Investment Effectiveness

Indicator	Mean	Description	Interpretation

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More effective to invest in robots than humans	3.20	Disagree	Low
Robots can provide client satisfaction	2.75	Disagree	Low
Robots can be more useful than humans	3.00	Disagree	Low
Robots can help boost high profits	2.85	Disagree	Low
Investing in robots is worth the risk	2.85	Disagree	Low
Aggregate Mean	**2.93**	**Disagree**	**Low**

This finding reflects financial considerations identified in the literature: service robot investments entail substantial acquisition costs, specialized IT support, and maintenance requirements (Wirtz et al., 2018). Return on investment remains uncertain, particularly for small-to-medium enterprises (Bilgihan et al., 2011; Melian-Gonzalez &Bulchand-Gidumal, 2016).

4.2.4 Performance Dimension

Table 5 reveals the strongest negative perceptions among all dimensions. Four indicators scored in the "Disagree" range (3.00–3.20), while one—"Do you think the performance of service robots is enough for human replacement?"—received a "Strongly Disagree" rating (3.25). The aggregate mean of 3.15 (Disagree) indicates managers firmly believe robots cannot deliver service quality comparable to humans.

Table 5: Perceptions of Robot Performance

Indicator	Mean	Description	Interpretation
Robots can give pleasant conversation	3.15	Disagree	Low
Robots are more adaptive to customer needs	3.15	Disagree	Low
It would be convenient to use robot staff	3.20	Disagree	Low
Robots guarantee more guest safety/security	3.00	Disagree	Low
Robot performance is enough for human replacement	3.25	Strongly Disagree	Very Low
Aggregate Mean	**3.15**	**Disagree**	**Low**

These results corroborate Can and Tung's (2019) observation that robotic service decreases affective experience due to technology's limitations in emotional mimicry. Managers recognize that hospitality excellence requires dimensions of service that current robots cannot provide.

4.2.5 Automation Accuracy Dimension

Table 6 presents mixed findings. Three indicators scored in the "Disagree" range (2.55–2.85), while two received "Agree" ratings: "Robots can provide information in more languages than human employees" (2.20) and "Robots will deal with calculations better than human employees" (2.30). The aggregate mean of 2.52, while still within the "Disagree" range, approaches the threshold for "Agree," suggesting relative openness to robotic advantages in specific technical domains.

Table 6: Perceptions of Automation Accuracy

Indicator	Mean	Description	Interpretation
Robots provide more accurate information	2.85	Disagree	Low
Robots are faster than humans	2.55	Disagree	Low
Robots provide information in more languages	2.20	Agree	High
Robots deal with calculations better than humans	2.30	Agree	High
Robots are more polite than humans	2.70	Disagree	Low
Aggregate Mean	**2.52**	**Disagree**	**Low**

These findings highlight specific robotic strengths: multilingual capabilities and computational accuracy. Managers acknowledge these advantages while maintaining skepticism about robots' holistic service suitability.

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4.3 Overall Perception Summary

Table 7 summarizes perceptions across all dimensions. Performance received the lowest rating (3.15, Disagree), followed by investment effectiveness (2.93, Disagree), manpower replacement (2.84, Disagree), robot capacity (2.70, Disagree), and automation accuracy (2.52, Disagree). The overall aggregate mean of 2.82 (Disagree) indicates that managers in Metro Cebu hotels perceive service robots as low-viability substitutes for human employees.

Table 7: Summary of Perceptions Across Dimensions

Dimension	Aggregate Mean	Description	Interpretation
Manpower Replacement	2.84	Disagree	Low
Robot Capacity	2.70	Disagree	Low
Investment Effectiveness	2.93	Disagree	Low
Performance	3.15	Disagree	Low
Automation Accuracy	2.52	Disagree	Low
Overall Aggregate Mean	**2.82**	**Disagree**	**Low**

4.4 Relationship Between Profile and Perceptions

Table 8 presents chi-square analysis results examining relationships between demographic variables and perception levels across all five dimensions. Computed chi-square values ranged from 0.092 to 9.795, all below critical values at df = 2, 4, or 6 (5.991 to 12.592). All p-values exceeded 0.05, indicating no statistically significant relationships. The null hypothesis—that no relationship exists between respondent profiles and perceptions—was retained for all comparisons.

Table 8: Chi-Square Analysis of Profile-Perception Relationships

Profile Variable	Dimension	Computed χ^2	df	Critical χ^2	Decision
Age	Automation Accuracy	4.985	4	9.488	Not significant
	Performance	4.393	4	9.488	Not significant
	Investment Effectiveness	6.476	4	9.488	Not significant
	Manpower Replacement	6.691	4	9.488	Not significant
	Workload Capacity	7.738	4	9.488	Not significant
Gender	All dimensions	3.018–8.410	6	12.592	Not significant
Department	All dimensions	7.423–9.795	6	12.592	Not significant
Civil Status	All dimensions	1.712–5.013	4	9.488	Not significant
Years Experience	All dimensions	0.092–1.559	2	5.991	Not significant

This uniformity of perceptions across demographic groups suggests that negative views of service robot viability are widely shared among hotel managers, independent of age, gender, experience, or departmental affiliation.

Discussion

5.1 Interpretation of Findings

The consistently negative perceptions across all five dimensions reveal fundamental skepticism among Cebu hotel managers regarding service robot viability. This finding contrasts with technological optimism prevalent in industry publications and developed-nation research, highlighting the importance of contextual factors in technology acceptance.

The strongest resistance emerged in the performance dimension (M=3.15), suggesting that managers prioritize service quality dimensions that robots cannot currently deliver: emotional engagement, adaptive problem-solving, and authentic human connection. This aligns with Huang and Rust's (2018) framework—robots excel at mechanical and analytical tasks but lack intuitive and empathetic intelligence essential for hospitality excellence. Reis et al.

DOI: 10.51386/25816659/ijles-v9i2p102
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(2020) similarly emphasized that frontline employees play irreplaceable roles in service recovery and complex problem resolution.

Investment concerns (M=2.93) reflect realistic financial assessment. Service robot implementation requires significant capital outlay, technical infrastructure, and specialized human resources (Wirtz et al., 2018). For Philippine hotels operating in a developing economy with different labor cost structures than Japan or South Korea, the return-on-investment equation may be less favorable. Small-to-medium enterprises, which constitute much of Cebu's hospitality sector, face particular constraints (Bilgihan et al., 2011).

The manpower replacement dimension (M=2.84) indicates that managers do not view robots as substitutes for human workers. This perspective finds support in Qiu et al. (2020), who documented hospitality professionals' belief that skilled human employees provide superior value due to their attitudes, behaviors, and interpersonal capabilities. Guest satisfaction and memorable experiences depend heavily on human interaction quality (Kim et al., 2012).

Robot capacity perceptions (M=2.70) reveal doubts about robotic functionality in unstructured hospitality environments. Current robots operate effectively only in structured situations with clear parameters (Ivanov & Webster, 2019). Hotels present dynamic environments with unpredictable guest requests, physical obstacles, and social complexities that challenge robotic capabilities. The malfunctioning risk identified in item 3.05 reflects practical concerns about operational reliability.

The automation accuracy dimension (M=2.52), while still negative, approached the "Agree" threshold, suggesting areas where managers recognize robotic advantages. Multilingual communication and computational accuracy represent genuine strengths—robots can store and retrieve information in multiple languages without error, and they execute calculations with perfect precision. These capabilities could enhance service delivery if appropriately integrated with human oversight.

5.2 Theoretical Implications

This study contributes to technology acceptance theory by documenting perception patterns in a non-Western, developing-economy context. The findings suggest that acceptance models must account for cultural and economic factors that shape evaluations. Philippine hospitality emphasizes personal relationships, emotional warmth, and adaptive service—values that may conflict with robotic service delivery. Technology acceptance research should incorporate cultural dimensions of service expectations.

The absence of demographic effects (Table 8) indicates that these perceptions are widely shared across manager profiles. This uniformity suggests that resistance to service robots stems from fundamental industry characteristics rather than individual differences. Hospitality's human-centric nature may inherently limit robotic substitution regardless of manager characteristics.

The mixed findings on automation accuracy—acknowledging robotic strengths in specific domains while rejecting overall viability—support nuanced theoretical perspectives. Rather than binary acceptance/rejection, managers engage in differentiated evaluation, recognizing that robots may excel at certain tasks while failing at others. This aligns with task-technology fit theory (Goodhue & Thompson, 1995), which posits that technology adoption depends on alignment between task requirements and technological capabilities.

5.3 Practical Implications

For hotel managers and industry stakeholders, these findings suggest that service robot implementation should proceed cautiously, with realistic expectations about capabilities and limitations. Rather than wholesale replacement, hotels might consider targeted deployment in areas where robotic strengths align with operational needs: multilingual information kiosks, automated check-in/out, and computational support for back-office functions.

For hospitality educators, the findings highlight areas for human capital development. Since managers acknowledge robotic advantages in multilingual communication and computational accuracy, these capabilities should be cultivated in human workers. Language training programs and critical thinking development can help hotel employees maintain competitive advantage. Schools offering hospitality courses should consider requiring foreign language study and integrating logical reasoning modules into curricula.

For technology developers, the results identify improvement priorities. Enhancing robots' social intelligence, adaptive capabilities, and emotional responsiveness would address the performance gaps that managers identified. Development efforts should focus on making robots more human-like in service delivery rather than merely automating routine tasks.

5.4 Limitations and Future Research

This study has several limitations. The sample size (N=20), while appropriate for exploratory research, limits generalizability. Future studies should include larger samples across multiple Philippine cities. The focus on managerial perceptions excludes customer perspectives, which may differ; research should examine guest experiences with robotic services. The cross-sectional design captures perceptions at one point in time; longitudinal studies could track how perceptions evolve as technology advances and exposure increases.

Additional research should explore why managers in Cebu hold more negative views than counterparts in Japan or South Korea. Possible factors include cultural differences in technology acceptance, labor cost structures, hospitality training emphases, and exposure to robotic implementations. Comparative studies across Asian markets would illuminate these dynamics.

Conclusion

This study examined how hotel managers in Metro Cebu perceive the viability of service robots across five dimensions. Findings reveal consistently negative perceptions, with managers disagreeing that robots can effectively replace human employees in hospitality settings. Performance concerns generated the strongest resistance, while automation accuracy showed relative openness to robotic advantages in multilingual communication and computational tasks. Demographic characteristics showed no significant relationship with perception patterns.

These results indicate that service robots are currently perceived as low-viability substitutes for human workers in Cebu's hotel industry. Managers value the emotional intelligence, adaptive capability, and authentic human connection that robots cannot yet provide. However, recognition of specific robotic strengths suggests opportunities for targeted deployment in complementary roles.

The study contributes to understanding technology acceptance in developing-economy hospitality contexts and offers practical guidance for managers, educators, and technology developers. As robotic technology continues advancing, periodic reassessment of perceptions will be essential to track evolving viability assessments. For now, human workers remain irreplaceable in delivering the warm, personalized service that defines hospitality excellence in the Philippine context.

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