



Short Paper

Technology Acceptability of the Inventory Management Application on Selected Catering Services

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Abstract

Efficient inventory management is a critical component of catering operations, influencing cost control, service quality, and overall business sustainability. The transition from manual inventory tracking to automated inventory management applications has



revolutionized operational workflows, improving accuracy and minimizing food waste. This study evaluates the technological acceptability and effectiveness of an Inventory Management Application in selected catering businesses in Tomas Morato and Timog, Quezon City, Philippines. Utilizing a quantitative descriptive-correlational research design, data was gathered from 100 catering service providers through structured, validated surveys. Findings indicate high user satisfaction, with respondents citing improved efficiency, demand forecasting, and cost reduction as key benefits. Statistical analyses, including Pearson correlation and regression tests, confirmed strong positive relationships between the application's functionalities—such as automated reordering, stock tracking, and purchase order management—and its perceived effectiveness. Demographic factors such as age and gender showed no significant impact ($p > 0.05$), but job roles influenced how respondents prioritized features, emphasizing the need for role-specific training and adaptation strategies. This study bridges existing research gaps on adopting inventory management technologies in catering services, providing empirical evidence on their impact on operational efficiency and waste reduction. The findings support Sustainable Development Goals (SDG) 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production) by highlighting the role of digital transformation in fostering sustainability within the food service sector. Future research should explore long-term adoption trends and potential integration with AI-driven forecasting models.

Keywords – Inventory Management Application, Catering Services, Benefits, Efficacy, Technology Acceptability.

INTRODUCTION

Efficient inventory management is a critical component of catering operations, directly influencing service quality, cost control, and overall operational efficiency. The hospitality and food service industries face persistent challenges such as supply chain disruptions, stockouts, overstocking, and inventory spoilage, necessitating the adoption of advanced technological solutions (Mujasi, 2021). Traditional inventory methods often lead to inefficiencies, inaccuracies, and financial losses (Muller, 2019), highlighting the need for innovative, data-driven inventory management solutions.

The digital transformation of the hospitality industry, including barcode scanning, cloud-based systems, and AI-driven inventory tools, has significantly improved operational efficiency. SMEs are adopting inventory management applications for cost-effectiveness and functional adaptability (Fortune Business Insights, 2024). Despite technological advancements, gaps persist, particularly in the catering sector where fluctuating demand and perishable goods pose unique challenges (Dhaliwal, 2023).

The COVID-19 pandemic emphasized the necessity for automation and real-time tracking, as manual inventory systems failed under sudden market shifts Pavlenko (2021). In this evolving landscape, inventory management applications provide solutions through automated replenishment and real-time data analysis, reducing waste and improving procurement efficiency.

This study investigates the technological acceptability and impact of inventory management applications in catering businesses in Tomas Morato and Timog, Quezon City, analyzing their contribution to operational improvements. By addressing this research gap, the study provides empirical data to guide technology adoption strategies in the catering industry, aligning with SDG 9 and SDG 12 goals of fostering innovation and sustainability.

Background of the Study

Efficient inventory management plays a vital role in the success of catering services, directly impacting cost control, service quality, operational efficiency, and business sustainability. Traditionally, catering businesses relied on manual inventory methods, often leading to stock inaccuracies, financial losses, and increased food waste (Muller, 2019; Dhaliwal, 2023). However, the evolution of digital technologies has transformed inventory operations, with inventory management applications offering real-time tracking, automated reordering, demand forecasting, and optimization of stock levels (Fortune Business Insights, 2024).

Despite the global trend toward automation, the adoption of inventory management applications within catering services in the Philippines, particularly in business hubs like Tomas Morato and Timog, Quezon City, remains under-explored. Catering businesses face unique challenges such as fluctuating customer demand, perishable inventory, and regulatory compliance, requiring flexible yet reliable technological solutions (*10 Best practices for inventory cycle counts - EMERGE App. 2023*, December 3; Eldred et al., 2023).

Given the increasing need for operational agility, sustainability, and technology-driven service enhancement, this study investigates the technological acceptability, efficacy, and perceived benefits of Inventory Management Applications among catering service providers. Anchored on the Technology Acceptance Model (TAM) by Davis (1989), the study explores how demographic factors, system functionalities, and operational outcomes interrelate, providing empirical data to support strategic technology adoption in the catering industry.

The Rationale of the Study

The hospitality and catering sectors operate within dynamic and highly competitive environments where inventory accuracy, cost management, and sustainability are critical for business survival and growth. With the rise of digital transformation and the intensified need for operational resilience following the COVID-19 pandemic Pavlenko (2021), catering businesses must adopt efficient inventory management technologies to stay competitive.

While prior studies have validated the benefits of inventory management applications in broader hospitality contexts (Spoilers, 2023; Zysman & Kenney, 2018), limited local research has specifically assessed their technological acceptability, efficacy, and realized benefits within the catering services sector in the Philippines. This creates a significant research gap, especially considering the complex operational needs of catering services handling perishable goods and fluctuating client demands.

This study addresses this gap by:

- Evaluating the efficacy of inventory management applications across key operational functions.
- Assessing the extent of operational benefits such as cost savings, food waste reduction, and regulatory compliance.
- Examining the influence of demographic factors on system efficacy and perceived benefits.
- Analyzing the correlation between the application's functional efficacy and the overall benefits realized by catering businesses.
- Proposing an action plan to enhance technology adoption and operational efficiency.

By generating context-specific insights, the study aims to assist catering businesses in Tomas Morato and Timog, Quezon City in optimizing inventory operations, fostering sustainable practices, and leveraging technology for business growth. Furthermore, it contributes to achieving Sustainable Development Goals (SDG) 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production) by promoting digital innovation and responsible resource management within the local food service sector.

**TECHNOLOGICAL ACCEPTABILITY OF THE INVENTORY MANAGEMENT APPLICATION
ON SELECTED CATERING SERVICES**

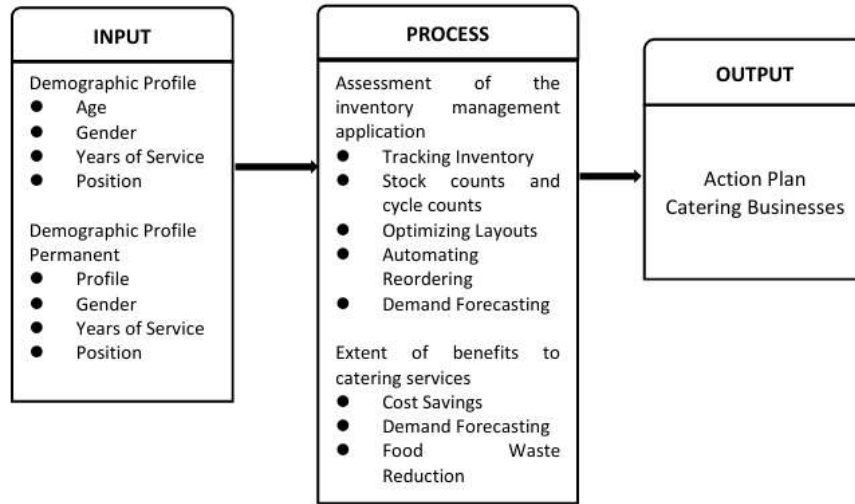


Figure 1. Conceptual Framework of the Study

The conceptual framework illustrates the relationship among the key components of the study on the technological acceptability of the Inventory Management Application in selected catering services. The Input focuses on the respondents' demographic profiles, such as age, gender, years of service, and position, which are essential in understanding variations in technology adoption. The Process involves assessing the efficacy of the inventory management system across critical operational functions—such as inventory tracking, stock counting, layout optimization, automated reordering, purchase order management, and demand forecasting—and evaluating the extent of benefits realized, including cost savings, food waste reduction, and improved demand forecasting. Finally, the Output leads to the development of an actionable plan designed to further optimize inventory practices within catering businesses.

This framework provides a clear and logical flow that aligns tightly with the study objectives, ensuring that both technological efficacy and practical business outcomes are critically examined. It also underscores the importance of linking demographic influences with system usage, making the study's findings actionable for real-world improvements.

Theoretical Underpinnings

In today's digital era, technology adoption is a critical factor influencing business success, particularly in industries like catering services. Generational differences shape how individuals perceive and integrate technology. Baby Boomers encountered technological change through television, Generation X witnessed the rise of personal computers, Millennials grew up with the internet, and Generation Z now navigates a

mobile-first, AI-driven environment (Dimock, 2019). These varying exposures impact how different age groups adopt inventory management applications, with younger generations generally more adaptable and older generations often requiring additional support and training (Séguy et al., 2019).

The Technology Acceptance Model (TAM) by Davis (1989) provides the primary lens for this study. TAM posits that technology adoption is driven by two key factors: Perceived Usefulness (PU)—the degree to which users believe the technology enhances job performance—and Perceived Ease of Use (PEOU)—how effortless users perceive operating the system to be. In the context of catering services, PU reflects how inventory applications improve tracking, stock accuracy, cost control, and waste reduction, while PEOU measures how easily staff members can navigate and integrate the system into operations (Lew et al., 2020).

TAM has been expanded by researchers to include external factors influencing adoption, such as staff training and support, system reliability, and customer expectations. Well-designed, reliable systems, combined with appropriate training, build trust and foster long-term technology use. Furthermore, the concept of image—introduced by Moore (1991)—recognizes that employees, particularly from Generation X and Z, are influenced by peer validation and perceptions of technological prestige. A modern, cutting-edge system is more likely to be embraced if it enhances professional reputation and aligns with industry standards.

Applying TAM and its extensions allows catering businesses to better understand the drivers and barriers to adopting inventory management applications. It also highlights the importance of strategic investments in training, system quality, and continuous innovation to ensure operational efficiency, customer satisfaction, and long-term competitiveness. Thus, technology adoption in catering services is not merely about system integration; it represents a broader shift toward building agile, future-ready enterprises.

The Objective of the study

General Objective:

The study aims to evaluate the efficacy and benefits of the latest inventory management application in the operations of restaurants and catering services in Tomas Morato and Timog, Quezon City, as a basis for proposing an action plan for improvement.

Specific Objectives:

Specifically, the study seeks to:

1. Determine the demographic profile of the respondents in terms of age, gender, years of service and position

2. Assess the level of efficacy of the latest inventory management application in the operations of restaurants and catering services in terms of tracking Inventory, stock counts, and cycle counts, optimizing layouts, automating reordering, purchase order management, demand forecasting, and inventory optimization.
3. Evaluate the extent of the benefits of the inventory management application to catering services in terms of cost savings, demand forecasting, food waste reduction, technology adoption, and regulatory compliance.
4. Determine whether there is a significant difference in the level of efficacy of the inventory management application when grouped according to the demographic profile of the respondents.
5. Determine whether there is a significant difference in the level of benefits of the inventory management application when grouped according to the demographic profile of the respondents.
6. Examine the significant relationship between the efficacy level and the benefits of the inventory management application to catering services.
7. Develop an action plan to support and enhance the catering business operations in Tomas Morato and Timog, Quezon City.

LITERATURE REVIEW

Efficacy and Benefits of Inventory Management Applications in Catering Services

Inventory management applications play a crucial role in catering businesses by ensuring stock levels are maintained efficiently, minimizing waste, and optimizing profitability (Priya, 2024). These applications streamline operations by automating reordering processes, tracking inventory in real-time, and providing accurate stock counts (Spoilers, 2023). Furthermore, inventory tracking software simplifies stock management by ensuring accurate monitoring of material flow across various sites, reducing manual errors, and enhancing efficiency (Muller, 2019; Adhikari, 2023). By leveraging inventory management applications, catering businesses can optimize stock levels by analyzing sales data and market trends, reducing stockouts and overstocking. The integration of automated inventory systems ensures businesses maintain accurate records, facilitating smoother operations and better resource allocation (Pavlenko (2021)). Therefore, the use of inventory management applications significantly improves efficiency, reduces waste, and enhances profitability in catering services.

Challenges, Issues, and Gaps in Inventory Management Application Use in Catering Services

Despite the benefits of inventory management applications, catering businesses face several challenges in implementing these systems. One major issue is the high cost

of software, hardware, and training, which poses a barrier to small and medium-sized enterprises (Shakya, Liret, & Owusu, 2022). Additionally, businesses must manage perishable inventory efficiently, as food spoilage due to improper tracking can lead to financial losses (10 Best Practices for Inventory Cycle Counts 2024, January 6). Manual errors in inventory control, such as inaccurate stock counts and delays in updating records, can further disrupt catering operations (Pavlenko, 2021). While barcode and RFID scanners have improved accuracy, their adoption remains inconsistent due to cost constraints (Eldred et al., 2023). Moreover, ensuring that employees are adequately trained to use advanced inventory systems is another challenge, as workforce adaptability plays a critical role in maximizing system efficiency (Thakur, 2017). Addressing these key challenges requires strategic planning and investment in workforce development, ensuring that inventory management applications function optimally within catering businesses.

Impact of Technological Advancements on Inventory Management in Catering Services

The continuous evolution of technology has transformed inventory management in the catering industry, enhancing efficiency and accuracy in stock control. Digital solutions such as cloud-based inventory management systems provide real-time data accessibility, improving procurement decisions and reducing risks of overstocking or shortages (Zysman & Kenney, 2018). Point-of-sale (POS) systems integrated with inventory software allow businesses to track ingredient usage, manage purchasing decisions, and control costs more effectively (Spoilers, 2023). Additionally, automation in reordering ensures that stock replenishment is based on actual demand, reducing human error and improving overall operational efficiency (Muller, 2019; Jenkins, 2024). Moreover, demand forecasting powered by artificial intelligence (AI) enables catering businesses to predict inventory needs more accurately, helping to prevent stock shortages while minimizing excess inventory (Tan, 2024; Fabregas, 2024). The rapid adoption of digital tools in inventory management has improved the operational agility of catering businesses, allowing them to keep up with dynamic market demands and consumer expectations.

Role of Inventory Management Applications in Driving Innovation and Efficiency in Catering Businesses

Inventory management applications have become an essential tool in modernizing catering operations, ensuring that businesses remain competitive in a rapidly evolving industry. Automated inventory tracking systems enhance supply chain management by improving logistics, reducing waste, and streamlining procurement processes (Reche, 2020). The adoption of lean inventory management approaches allows catering businesses to maintain the right balance between supply and demand, ensuring smooth service operations while minimizing excess stock (Imeokparia, 2013). Additionally,

technology integration in inventory management supports regulatory compliance by tracking food labeling, storage conditions, and traceability, ensuring adherence to food safety standards (Henson, 2024). Moreover, inventory optimization strategies help catering businesses reduce operational costs by balancing stock levels with customer demand, ultimately enhancing profitability (Sigma Computing, n.d.; Ma & Wang, 2019). As technology continues to advance, catering businesses must embrace inventory management applications to improve efficiency, reduce costs, and adapt to industry changes, ensuring long-term sustainability and growth.

The synthesis of the literature highlights the essential role of inventory management applications in catering services, from improving operational efficiency to addressing industry challenges and leveraging technological advancements. While these applications offer significant benefits, businesses must overcome financial and workforce-related barriers to fully integrate digital inventory solutions. The ongoing evolution of technology presents new opportunities for catering businesses to enhance their inventory management systems, ensuring adaptability and resilience in a competitive market. Future research should focus on how emerging technologies, such as AI and blockchain, can further revolutionize inventory management in the catering industry, contributing to efficiency, innovation, and sustainability.

METHODOLOGY

Research Design

This study employed a quantitative, descriptive-correlational research design to examine the technological acceptability of Inventory Management Applications in selected catering services. The research measured the impact of these applications on operational efficiency, cost-effectiveness, user satisfaction, and inventory waste reduction. A cross-sectional survey method was utilized to gather data from catering service providers.

Population, Sample Size, and Sampling Technique

The target population consisted of catering businesses operating in Tomas Morato and Timog, Quezon City. A total of 100 respondents participated in the study. A quota sampling technique ensured balanced representation across different types of catering businesses, while a purposive sampling method specifically targeted individuals with direct experience using inventory management applications.

Research Instrument

The primary instrument for data collection was a structured, researcher-developed questionnaire. The questionnaire was composed of three sections: the demographic

profile (age, gender, years of service, industry, position), the perceived efficacy of inventory management application functionalities (inventory tracking, reordering, purchase management, etc.), and the perceived benefits related to technology adoption. Each item utilized a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

To ensure content validity, three experts in hospitality management and information systems reviewed the questionnaire. A pilot testing procedure involving 15 respondents not included in the main study was conducted, resulting in a Cronbach's alpha of 0.87, indicating excellent reliability.

Data Collection and Analysis

Data collection was conducted through direct, on-site administration of the validated questionnaire. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize respondents' profiles and responses. Inferential statistics such as Pearson correlation analysis, multiple regression, independent sample t-tests, and one-way ANOVA were employed to examine the relationships between demographic factors and technological acceptability outcomes.

P-values and correlation coefficients were calculated and interpreted, adhering to assumptions of normality and homoscedasticity. Data visualization through tables and figures was applied to better present key findings. Statistical analysis was verified by a professional statistician to ensure rigor and accuracy.

RESULTS

Objective 1: Demographic Profile of the Respondents

The demographic profile showed that most respondents were aged 26 to 35 (47%), followed by 18 to 25 (26%), suggesting that a predominantly young and tech-savvy workforce is leading the digital adoption of inventory management systems. This supports Rosell's (2021) view that daily technology use enhances productivity, while Ferguson (2023) emphasized the role of technological exposure in operational efficiency. Gender distribution was nearly equal (52% female, 48% male), mirroring Quezon City's general demographics (Philippine Statistics Authority, 2023), and indicating broad digital adoption across genders, in line with IntelliTrans (2023) on rapid market adaptation. Regarding experience, the majority (68%) had three to five years in the catering industry, suggesting adaptability to digital tools at early career stages (McCarthy, 2018). By position, waitstaff (42%) formed the largest group, followed by supervisors (10%) and owners/managers (10%), reinforcing that inventory management tasks are widely shared across operational roles. This supports Groh, K. (2022, December 21) notion of

institutional knowledge-sustaining operations, while Tongol and Cabalunan (2021) stressed that long-serving employees must continually adapt to evolving technologies. Overall, the demographic profile indicates strong potential for digital system integration but highlights the need for additional support to fully engage longer-tenured staff.

Table 1. Demographic Profile of the Respondents

Construct	Categories	Frequency	Percentage
Age	18 to 25	26	26.0%
	26 to 35	47	47.0%
	36 to 45	22	47.0%
	46 to 59	5	5.0%
	Total	100	100%
Sex	Male	48	48.0%
	Female	52	52.0%
	Total	100	100%
Years of Experience	3 to 5 years	68	68.0%
	6 to 10 years	18	18.0%
	11 to 15 years	7	7.0%
	16 years or more	7	7.0%
	Total	100	100%
Positions	Owner/Manager	10	10.0%
	Supervisor	10	10.0%
	Administrator	3	3.0%
	Chef	6	6.0%
	Waitstaff	42	42.0%
	Bartender	9	9.0%
	Event Planner/Coordinator	1	1.0%
	Others	19	19.0%
	Total	100	100%

Objective 2: Assessment of the Efficacy of Inventory Management Application

The summary of findings shows that catering businesses strongly agreed on the efficacy of the inventory management application, with mean scores between 4.38 and 4.60. Tracking inventory received the highest rating (4.60), confirming the importance of real-time tracking and visibility (Alexia Inc., 2023; Elahi et al., 2009). Strong ratings for stock counts (4.48) and layout optimization (4.47) align with Best et al. (2022) and Guo et al. (2021), emphasizing accurate counts and flexible space management. Although automating reordering (4.38) scored slightly lower, it still affirmed the system's value, reflecting Srivastava et al. (2020) and Eldred et al. (2023) on the need for flexible automation. Purchase order management (4.49), demand forecasting (4.44), and inventory optimization (4.48) confirmed the system's role in improving operational flow (Milondzo & Mashau, 2015; Dhaliwal et al., 2023; Ma X et al., 2019; Deng & Liu, 2021). The results imply that the application greatly boosts inventory efficiency, though improvements in automation precision and forecasting responsiveness are needed to further optimize catering operations and reduce costs.

Table 2. Summary of the Assessment of the Efficacy of Inventory Management Application across Different Aspects

Efficacy Aspect	Overall Mean Score	Interpretation	Key Highlights
Tracking Inventory	4.60	Strongly Agree	Highly reliable in maintaining accurate and up-to-date stock records
Stock Counts and Cycle Counts	4.48	Strongly Agree	Highly effective in conducting regular stock counts without disrupting operations
Optimizing Layouts	4.47	Strongly Agree	Highly effective in organizing inventory to improve picking efficiency
Automating Reordering	4.38	Strongly Agree	Very efficient in providing timely reorder notifications and preventing stockouts
Purchase Order Management	4.49	Strongly Agree	Highly effective in simplifying the creation, modification, and tracking of purchase orders
Demand Forecasting	4.44	Strongly Agree	Significantly enhances inventory planning, reducing overstocking and shortages
Inventory Optimization	4.48	Strongly Agree	Crucial role in aligning inventory levels with sales data to minimize costs and maximize efficiency

Objective 3: Assessment of the Benefits of Inventory Management Application

The summary of findings shows that catering businesses strongly agreed on the benefits of the Inventory Management Application across all areas, with overall mean scores ranging from 4.33 to 4.45. Cost savings (4.44) emerged as a key benefit, aligning with Seseli et al. (2023), who emphasized that effective inventory management improves cash flow and minimizes operational costs. Similarly, strong ratings for demand forecasting (4.43) and food waste reduction (4.33) support the findings of Chen et al. (2019) and Sharma et al. (2022), affirming that accurate forecasting and sustainability practices are enhanced by inventory systems. Technology adoption (4.45) received the highest rating, confirming the insights of Liu et al. (2024) that real-time tracking and digital integration significantly boost operational efficiency. Regulatory compliance (4.40) was also recognized as crucial, echoing Hosseini et al. (2019) on the importance of traceability and reporting in maintaining supply chain resilience.

Table 3. Summary of the Level of Extent on the Benefits of Inventory Management Application to Catering Services

Benefit Area	Overall Mean Score	Interpretation	Key Highlights
Cost Savings	4.44	Strongly	Effective in reducing costs, improving cash flow, and

		Agree	minimizing stock-related expenses
Demand Forecasting	4.43	Strongly Agree	Helps optimize stock levels and adapt to dynamic market demands
Food Waste Reduction	4.33	Strongly Agree	Promotes sustainability by minimizing waste through accurate tracking and proactive adjustments
Technology Adoption	4.45	Strongly Agree	Streamlines operations enhance decision-making and eases technology integration
Regulatory Compliance	4.40	Strongly Agree	Strengthens traceability, reporting accuracy, and adherence to regulatory requirements

The consistently strong ratings suggest that the Inventory Management Application plays a vital role in improving operational efficiency, financial management, sustainability practices, and compliance in catering services. However, slight gaps in waste tracking, seasonal demand forecasting, and full departmental integration highlight areas where system refinements could further maximize its effectiveness.

Objective 4: Differences in Efficacy Based on Demographic Profile

The results reveal that there are no significant differences in the respondents' assessment of the efficacy of the Inventory Management Application when grouped according to age, gender, years of experience, and position. These findings suggest that the application is consistently perceived as effective and user-friendly across different demographic groups. This aligns with Dimock (2019) and Iwasokun & Alimi (2022), who emphasized that well-designed inventory systems appeal universally across age groups due to their intuitive interfaces and technological integration. The absence of gender-based differences also supports Ferrari et al. (2022) and Prihatiningtias & Wardhani (2021), who highlighted that inclusive technology design fosters equitable acceptance. Similarly, the consistency across experience and position groups echoes the insights of McCarthy (2018) and Chuang & Oliva (2015), emphasizing that modern inventory systems should be accessible and beneficial regardless of users' expertise or role.

Table 4. Summary of the Test of Significant Differences on the Level of Efficacy of Inventory Management Application by Demographic Profile

Demographic Factor	Statistical Test Used	Significant Difference Found?	Interpretation
Age	Kruskal-Wallis Test	No	Perceptions of efficacy are similar across all age groups
Gender	Mann-Whitney U Test	No	Male and female respondents assess efficacy similarly
Years of	Kruskal-Wallis	No	Efficacy is perceived consistently

Experience	Test		regardless of experience level
Position	Kruskal-Wallis Test	No	No variation in the perception of efficacy across job positions

The findings imply that the Inventory Management Application successfully transcends demographic barriers, ensuring wide usability and acceptance. This suggests that future improvements can focus more on enhancing features rather than user-specific adaptations, further promoting organizational efficiency and fostering an inclusive digital transformation across all sectors of catering operations.

Objective 5: Differences in Benefits Based on Demographic Profile

The findings reveal that no significant differences exist in the assessment of the Inventory Management Application’s benefits based on age, gender, and years of experience, but a significant difference was found based on position, specifically regarding demand forecasting, technology adoption, and regulatory compliance. This suggests that while the application is generally perceived as beneficial across most demographics, job roles influence the perception of certain features. Ha (2020) and Harris (2021) support that technology adoption attitudes are consistent across age groups when user-friendliness is prioritized. Similarly, Villarreal-Molina et al. (2022) and Torres et al. (2016) affirm that gender does not majorly alter technology benefits perception when job roles are clearly defined. However, Rosell (2021) and Rijswijk et al. (2020) emphasized that differences by role often emerge in technology adoption, stressing the need for role-specific training.

Table 5. Summary of the Test of Significant Differences on the Level of Benefits of Inventory Management Application by Demographic Profile

Demographic Factor	Statistical Test Used	Significant Difference Found?	Interpretation
Age	Kruskal-Wallis Test	No	Perceived benefits are similar across age groups
Gender	Mann-Whitney U Test	No	Perceived benefits are consistent between male and female respondents
Years of Experience	Kruskal-Wallis Test	No	Perceived benefits are consistent across varying experience levels
Position	Kruskal-Wallis Test	Yes (Demand Forecasting, Technology Adoption, Regulatory Compliance)	Some perceived benefits differ by job position

The results imply that while the Inventory Management Application is broadly accepted across age, gender, and experience, targeted support and training should be provided based on employee position to optimize understanding and maximize the

application’s benefits. Tailoring communication and support strategies can ensure all staff, regardless of role, fully harness the system’s capabilities in catering operations.

Objective 6: Relationship Between Efficacy and Benefits

The correlation analysis shows a consistently high and statistically significant positive relationship between each efficacy dimension of the Inventory Management Application (IMA) and its perceived overall benefits, with Spearman’s rho coefficients ranging from 0.771 to 0.845. This implies that as the effectiveness of tracking inventory, stock counting, layout optimization, automated reordering, purchase management, demand forecasting, and inventory optimization improves, the perceived benefits in catering operations significantly increase. Field Fastener (2023) and Indeed Editorial Team (2024) emphasized that effective inventory tracking and automation streamline processes, reduce costs, and enhance operational outcomes. Similarly, Tian & Wang (2022) and Akindipe (2014) affirmed that optimized layouts and real-time data handling directly impact service efficiency and employee productivity. The strong positive relationship found across all aspects further aligns with Liu et al. (2024) and Khan & Siddiqui (2019), highlighting that accurate, technology-driven inventory management drives operational excellence and employee satisfaction.

Table 6. Summary of the Correlation between the Efficacy Level and the Overall Benefits of Inventory Management Application

Efficacy Aspect	Spearman’s Coefficient	Rho	Significance (p-value)	Interpretation
Tracking Inventory	0.771		< .001	High positive, significant correlation
Stock Counts and Cycle Counts	0.782		< .001	High positive, significant correlation
Optimizing Layouts	0.778		< .001	High positive, significant correlation
Automating Reordering	0.839		< .001	High positive, significant correlation
Purchase Order Management	0.840		< .001	High positive, significant correlation
Demand Forecasting	0.843		< .001	High positive, significant correlation
Inventory Optimization	0.845		< .001	High positive, significant correlation

These findings imply that enhancing the efficacy of each functional area of the Inventory Management Application will proportionally enhance its overall benefits to catering businesses. Thus, investment in continuous system improvements, user training, and feature optimization can significantly amplify operational efficiency, cost control, customer satisfaction, and sustainable growth in catering services.

Objective 7: Development of an Action Plan for Catering Businesses

Based on the findings, an action plan was proposed, focusing on training, optimizing layouts, enhancing forecasting accuracy, promoting cross-departmental system adoption, and strengthening regulatory compliance tracking. The plan emphasized continuous system updates and employee empowerment to maximize the application's benefits. This aligns with Mondal et al. (2023), who stressed that technology adoption success depends on systematic training and process integration. Similarly, Henson (2024) highlighted the role of technology in improving food safety and regulatory compliance in service industries.

The action plan provides a strategic framework for catering businesses aiming to fully leverage inventory management applications for operational resilience, regulatory adherence, and competitive advantage.

DISCUSSION

The findings of this study reveal that the Inventory Management Application (IMA) significantly improved operational efficiency, cost control, and sustainability practices in the catering businesses surveyed. The consistently high mean scores across efficacy indicators, particularly in inventory tracking, stock counts, and layout optimization, affirm the applicability of the Technology Acceptance Model (TAM), specifically highlighting high levels of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) among users. This corroborates the work of Lew et al. (2020) and Davis (1989), who emphasized that technological tools that are perceived as both useful and user-friendly drive higher acceptance and effective usage.

Demographic analysis showed no significant differences in perceived efficacy and benefits based on age, gender, or years of experience, aligning with Dimock's (2019) and Ferrari et al.'s (2022) findings that technology acceptance increasingly cuts across demographic lines when intuitive design and role-based training are provided. However, job position influenced perceptions of specific benefit areas such as demand forecasting, technology adoption, and regulatory compliance, consistent with Rosell (2021) and Rijswijk et al. (2020) who asserted that operational roles modulate technological interaction, necessitating tailored support strategies.

Proposed Action Plan Matrix Based on Study Results: Technological Acceptability of Inventory Management Application

Area Needing Improvement	Findings / Study Basis	Action Plan / Intervention	Person(s) Responsible	Expected Outcomes
Inventory Tracking Across Multiple Locations	Tracking inventory across multiple sites had the lowest mean (4.55) under Tracking Inventory.	Conduct specialized training on multi-site inventory tracking; improve system configuration for multi-location updates.	IT Specialists, Operations Manager	Improved real-time inventory visibility across all catering locations.
Stock Count Simplification	Stock Count process simplification rated lowest at 4.43.	Introduce simplified cycle counting templates and automate reminders through the system.	Kitchen Manager, Supervisors	More efficient and less error-prone stock counting processes.
Real-Time Inventory Location Tracking	Tracking stock by location had the lowest mean (4.37) in Optimizing Layouts.	Upgrade system mapping features for real-time inventory location monitoring.	IT Specialists, Supervisors	Faster retrieval, and better warehouse/storage management.
Reorder Forecast Accuracy	Forecasting for reorders scored the lowest (4.28) in Automating Reordering.	Integrate AI-based demand forecasting into the Inventory Management Application.	IT Specialists, Vendor Partner	More accurate reorder points; fewer shortages and overstocks.
Manual Overrides for Reordering	Manual overrides rated lower at 4.37.	Refine system to balance automation and manual flexibility; staff training on override protocols.	Operations Manager	Flexibility in reordering without risking stock imbalances.
Forecast Reporting and Real-Time Updates	Forecast adjustments and real-time update reliability scored low (4.38 - 4.41) in Demand Forecasting.	Provide training on interpreting forecast reports and updating them manually when needed.	Supervisors, IT Specialists	Improved inventory planning through timely updates.
Inventory Optimization Recommendations	Inventory optimization tied to purchase orders had the	Enhance system integration between inventory optimization	IT Specialists	More efficient stock management and procurement linkage.

	lowest rating at 4.39.	modules and purchase order management.		
Food Waste Monitoring	Optimization of order to avoid overstocking perishables scored lowest (4.24) in Food Waste Reduction.	Implement alerts for perishable stock nearing expiration; provide training on waste monitoring tools.	Kitchen Manager	Minimized food waste and improved sustainability efforts.
Full Departmental Adoption of the System	Adoption across departments scored lowest at 4.35 in Technology Adoption.	Implement cross-department onboarding sessions; assign system "champions" per department.	Operations Manager, HR Department	Wider and faster system acceptance across all units.
Regulatory Compliance (Labor Scheduling and Food Safety Monitoring)	Labor regulation compliance tracking scored low at 4.35 in Regulatory Compliance.	Strengthen the system's labor scheduling modules; ensure better training on compliance features.	HR Manager, IT Specialists	Stronger regulatory compliance monitoring and reduced audit risks.

The strong, positive correlation between the efficacy of inventory management functionalities and the realized benefits (Spearman’s rho ranging from 0.771 to 0.845) underscores the centrality of system effectiveness in delivering tangible business outcomes. These results reinforce Tian and Wang’s (2022) argument that optimized operational processes through digital systems contribute directly to better service delivery, financial savings, and inventory control. Similarly, Field Fastener (2023) and Akindipe (2014) emphasized that high system reliability and real-time capabilities translate into measurable operational improvements.

Notably, the study’s results also revealed subtle gaps, particularly in areas such as automated reordering precision, forecast reporting updates, and food waste tracking. While these shortcomings were not severe enough to lower the overall positive ratings, they suggest potential friction points that could undermine system benefits over time if not addressed. These findings partially contradict assertions made by Spoilers (2023) and Jenkins (2024), who posited that inventory applications uniformly eliminate operational inefficiencies. Instead, the current study highlights that while the core functions are effective, continuous calibration and refinement are necessary to sustain operational advantages, supporting Thakur’s (2017) emphasis on ongoing user training and system updating.

The action plan developed based on these findings also reflects a synthesis of best practices suggested in existing literature. Training-focused interventions are consistent with Mondal et al. (2023), who emphasized that technological success depends not only on system design but also on continuous capacity building. Similarly, the recommendation to enhance AI-driven forecasting functions is aligned with the future-oriented suggestions of Fabregas (2024) and Tan (2024) that emerging technologies like AI are essential for meeting evolving market demands in inventory management.

Overall, the study not only validates previous literature regarding the critical role of inventory management applications in modern catering operations but also surfaces practical nuances that demand strategic, role-sensitive interventions to fully optimize technological benefits.

CONCLUSIONS AND RECOMMENDATIONS

The study confirmed the significant efficacy and benefits of Inventory Management Applications in the catering sector. Users found the system effective across key functions such as inventory tracking, demand forecasting, and automated reordering. Strong positive correlations between application functionalities and perceived benefits affirm the system's vital role in improving operational workflows. While demographic factors like age and gender had no significant influence, job position moderately affected perceptions, highlighting the need for role-specific support. Minor integration challenges underscore the importance of continuous technical training and system updates to optimize application usage and sustain operational improvements.

Based on the study findings and the areas identified with relatively lower mean scores, the following recommendations are proposed to strengthen the efficacy and benefits of the Inventory Management Application (IMA) in catering businesses in Tomas Morato and Timog, Quezon City:

1. Implement continuous, role-specific training programs
2. Catering businesses should provide structured training sessions focused on specific employee roles (e.g., waitstaff, supervisors, managers) to enhance competencies in using the Inventory Management Application, particularly in functions that showed relatively lower performance, such as multi-site inventory tracking and manual override protocols. This aligns with the study's objective of improving system efficacy across operational areas and addresses the gap identified in real-time multi-location inventory updates.
3. Upgrade system functionalities for forecasting and automation
4. Developers should prioritize enhancing the application's AI-driven demand forecasting capabilities and real-time update reliability, as these were identified as the lowest-rated aspects within automating reordering and demand forecasting dimensions. Strengthening predictive analytics and improving the precision of

reorder points will ensure better inventory optimization and directly support the goal of maximizing operational efficiency and minimizing stock wastage.

5. Enhance user interface and cross-departmental system adoption.
6. System developers should refine user interfaces to further simplify complex functions such as inventory location tracking and forecast reporting adjustments, ensuring ease of navigation for users across different departments. Management should also initiate onboarding programs that promote full departmental adoption, as partial engagement limits the application's overall effectiveness. These actions align with the study objective of ensuring consistent system use across diverse organizational roles.
7. Institutionalize regular feedback mechanisms and system audits.
8. Management should establish formal mechanisms (e.g., quarterly user surveys, and system performance reviews) to capture staff feedback regarding system usability, forecasting accuracy, and automation challenges. Insights gathered should inform periodic system updates, ensuring that evolving operational needs are promptly addressed, thus sustaining the perceived benefits of the application in terms of cost savings, regulatory compliance, and technology adoption.
9. Focus future research on financial sustainability and integration of advanced technologies.
10. Further studies should explore the long-term financial impact of Inventory Management Application adoption, particularly its effects on cash flow, profitability, and operational resilience. Additionally, research should examine the feasibility and effectiveness of integrating emerging technologies such as blockchain for inventory traceability and AI-based dynamic forecasting models, to further strengthen inventory management systems in catering operations.

IMPLICATIONS

The findings emphasize the critical role of Inventory Management Applications in enhancing operational efficiency, minimizing costs, and improving inventory control in catering businesses. The positive feedback across diverse demographic groups suggests that digital inventory tools are widely acceptable and adaptable within different workplace settings. Businesses that prioritize continuous system updates, employee training, and user-centered design enhancements are likely to achieve higher operational performance and technological adoption success. Industry stakeholders and policymakers are encouraged to develop supportive frameworks that promote technological integration and regulatory compliance in inventory management practices.

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Conflict of Interest

No conflicts of interest exist between the authors that are significant to the article's content.

Informed Consent

All participants in the study provided informed consent.

Ethics Approval

Approval to conduct the study was granted following the review and endorsement of the research protocol by the Research Ethics Committee of Trinity University of Asia, Quezon City, Philippines.

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