



University of the Visayas

UV-BUSINESS

& MANAGEMENT JOURNAL





UV- BUSINESS & MANAGEMENT JOURNAL

©2024 UV-Business & Management Journal, Volume 2, Issue 1, December 2024, College of Business Administration & Graduate School of Business, the University of the Visayas.

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ENHANCING CUSTOMER EXPERIENCE AND OPERATIONAL EFFICIENCY: IMPLEMENTING SELF-SERVICE KIOSKS IN CEBU'S QUICK-SERVICE RESTAURANT

Ruby C. Lidres¹, Jian Carla B. Nanca², Hyacint B. Michael⁴, Renz Whitney G. Pabillon⁵, Aljane P. Ocanada⁶, Rahmcres E. Abarquez⁷, Anthony G. Esguerra⁸
¹²³⁴⁵⁶⁷ Students, ⁸ Faculty, College of Business Administration, University of the Visayas,
Cebu, Philippines

ABSTRACT

Using self-service kiosks (SSKs) in fast-food restaurants has improved customer service by making the process faster and more convenient. Using a descriptive quantitative approach, this study examined how users in Cebu's fast-food industry experience SSKs. Two hundred participants with experience using the kiosks were surveyed. A researcher-made questionnaire, validated with a Cronbach's Alpha score of 0.927, measured four factors: functionality, enjoyment, security/privacy design, and convenience, using a 4-point Likert scale. Ethical approval was given by the Institutional Review Board (IRB) (Ref. No. 2024-203). Data were analyzed using frequency, percentage, and mean scores. The results showed that SSKs were well-received, with users valuing their convenience, efficiency, and ease of use. The kiosks helped reduce communication errors, speed up transactions, and offered secure payment options. However, concerns about data privacy and order accuracy emerged. The study confirms that SSKs improve the dining experience by reducing wait times and allowing for easy customization. To remain practical, continuous improvements in security, accessibility, and user-friendly design are needed.

Keywords: *Self-service kiosks (SSKs), Fast-food industry, User experience, Customer satisfaction, Convenience, Data Privacy*

INTRODUCTION

Adopting self-service kiosks has become increasingly common in the hospitality industry, yet some uncertainty regarding their effectiveness remains unexplored. A significant trend in the industry is the shift from traditional human-operated services to self-service technology (SST), with customer satisfaction and operational efficiency being key drivers of this transformation. Among the most widely accepted innovations are self-service kiosks in fast-food restaurants, which enhance ordering efficiency and streamline transactions. Touchscreen ordering kiosks are fully automated machines that display electronic menus, providing an eco-friendly alternative to traditional printed menus. These devices offer users a self-service experience, responding independently to input commands and simplifying the ordering process. By integrating electronic menus with direct payment options, self-service kiosks enhance customer convenience and reduce service bottlenecks (Torres, 2016). The adoption of SST introduces a new user experience, offering advantages such as ease of use, personalized customization, and reduced waiting times. These kiosks are



installed in prominent restaurant locations in many urban areas to optimize customer flow (Kim & Christodoulidou, 2013). One of the significant benefits of self-service kiosks is their ability to minimize miscommunication between customers and service staff. This is particularly useful in Cebu, one of the Philippines' most visited tourist destinations, where language barriers can pose challenges for foreign visitors. With self-service kiosks, orders are transmitted directly to the kitchen, reducing the risk of mistakes and ensuring greater accuracy in meal preparation (Torres, 2016). The system also gives customers a detailed breakdown of their orders and total costs. Customers can also pay through the counter or digital payment options, making the entire process seamless and efficient. While self-service kiosks can significantly reduce waiting times, their effectiveness depends on user familiarity. First-time users or those unfamiliar with the technology may experience difficulties, potentially leading to longer queues (Krishen et al., 2010). Moreover, these kiosks are primarily designed for younger, tech-savvy users, creating a potential gap in adoption among older generations. Some customers find the interface overly complex and confusing, preferring traditional service interactions instead. Conventional ordering systems are prone to human errors, especially during peak hours, leading to wait times and more prolonged customer frustration. Self-service kiosks address these issues by eliminating human error and expediting service (Chang et al., 2015). Additionally, customers are often more tolerant of their own mistakes when using a kiosk compared to errors made by service staff. C bypassing direct communication with waitstaff enhances customer comfort and speeds up the ordering process. The impact of self-service kiosks extends to order accuracy, service speed, and overall customer satisfaction. According to Lee and Lee (2020), SST can significantly improve operational efficiency in fast-food restaurants, leading to faster service and fewer order inaccuracies. However, the success of these systems depends on an optimal user experience (UX). Interactive elements should be designed for intuitive navigation, allowing users to place orders quickly and efficiently (Collier & Kimes, 2013). A well-structured digital menu with clear and concise information enhances the ordering experience (Orel & Kara, 2014). Furthermore, visually appealing and user-friendly designs increase engagement and satisfaction (Giebelhausen et al., 2014). By prioritizing UX, Cebu's fast-food industry can enhance customer satisfaction, reduce waiting times, and optimize operational processes. As Cebu's fast-food landscape evolves, balancing innovation with traditional service models is essential. This study explores the implementation of self-service kiosks within Cebu's fast-food establishments, analyzing their impact on customer satisfaction and operational efficiency.

METHODOLOGY

The study used a descriptive quantitative research design to assess user experience with self-service kiosks (SSK) in fast-food restaurants in Cebu. The researchers collected and analyzed numerical data using statistics and percentages to evaluate the effectiveness of the kiosks. The research was conducted in Cebu, where self-service kiosks are widely adopted, and the focus was on respondents who lived in Cebu and had used SSKs. A purposive sampling method was used to select 200 customers with firsthand experience with the kiosks. Data were gathered through a researcher-made questionnaire, which was divided into two parts: one assessing the respondent's generation and educational



attainment and the other evaluating user experience across four factors: functionality, enjoyment, security/privacy design, and convenience, using a Likert scale ranging from 1 to 4. An expert validated and tested the questionnaire for reliability, achieving a Cronbach's Alpha score of 0.927. Data collection involved obtaining ethical clearance from the Institutional Review Board (IRB) before distributing the questionnaire. The IRB approved the study with a Notice to Proceed (Ref. No. 2024-203). After collecting the data, the responses were analyzed by calculating the frequency and percentage of respondent profiles, and the mean scores for each factor were calculated to determine user satisfaction.

RESULTS AND DISCUSSION

This study assesses user experiences with self-service kiosks (SSKs) in Cebu's fast-food restaurants, focusing on functionality, enjoyment, security/privacy design, and convenience. Functionality evaluates the ease and efficiency of kiosk use, enjoyment measures user pleasure, security/privacy design examines data protection, and convenience assesses how the kiosk streamlines the ordering process. These factors are essential for determining the effectiveness of SSKs in enhancing customer satisfaction and operational efficiency in the fast-food industry.

Table 1
Functionality

Indicators	Mean	Interpretation
The kiosk has efficient information and services.	3.35	Strongly Agree
The interface was easy to navigate.	3.25	Agree
The kiosk has fast and smooth transaction	3.33	Strongly Agree
The kiosk has accuracy in placing orders	3.10	Agree
The kiosk helps reduce congestion	3.24	Agree
Average Mean	3.25	High Significant Satisfaction

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree

High/Agreement: Ratings ≥ 2.51 and ≤ 4.00 (corresponding to Agreed and Strongly Agreed) – High Significant Satisfaction

Low/Disagreement: Ratings ≤ 2.50 and ≥ 1.00 (corresponding to Disagreed and Somewhat Agreed) – Minimal Significant Satisfaction

Table 1 presents the evaluation of the kiosk's functionality, with scores ranging from 3.10 to 3.35, reflecting users' experiences. The highest mean score of 3.35, under the "Strongly Agree" category, suggests that users found the kiosk highly efficient in providing the required information and services. The lowest mean score of 3.10, categorized as "Agree," highlights that while the kiosk effectively minimizes risks and communication errors between customers and staff, there is room for improvement in ensuring more accurate order placement. This supports Nakamura's (2012) assertion that continuous monitoring by management is necessary to mitigate potential issues early on and maintain operational efficiency. The average mean score of 3.25 indicates a "High Significant Satisfaction" overall, suggesting that users generally find the kiosk to meet their expectations in terms of functionality.



Table 2
Enjoyment

Indicators	Mean	Interpretation
Using the kiosk was an enjoyable experience.	3.18	Agree
The content and services featured are both entertaining and valuable.	3.22	Agree
Kiosks produce a fun and engaging experience, especially for tech-savvy customers.	3.22	Agree
Kiosks allow customization of orders and can quickly provide changes without any rush.	3.16	Agree
Kiosks enable us to deliver their food immediately.	3.13	Agree
Average Mean	3.18	High Significant Satisfaction

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree
High/Agreement: Ratings ≥ 2.51 and ≤ 4.00 (corresponding to Agreed and Strongly Agreed) – High Significant Satisfaction
Low/Disagreement: Ratings ≤ 2.50 and ≥ 1.00 (corresponding to Disagreed and Somewhat Agreed) – Minimal Significant Satisfaction

Table 2 presents the users' experience with enjoyment while using the kiosk, with mean scores ranging from 3.13 to 3.22. The highest mean scores, at 3.22 and rated as "Agree," reflect users' strong approval that the kiosk offers enjoyable and valuable content and services. Additionally, the kiosk provided a fun and engaging experience, particularly appealing to tech-savvy customers who enjoy interacting with digital interfaces and touchscreens. This aligns with the growing influence of mobile devices and digital technologies, which have reshaped consumer behavior in shopping and brand engagement (Bennett & El Azhari, 2015). The average mean score of 3.18 indicates a "High Significant Satisfaction," signifying that users generally find the experience enjoyable and engaging.

Table 3
Security & Privacy Design

Indicators	Mean	Interpretation
Including various payment methods, such as cash, credit/debit cards, and mobile payments, makes the checkout procedure easier.	3.19	Agree
Kiosks require accessibility to personal data and all sorts of transactions for verification purposes.	2.99	Agree
Kiosks provide a collection of data to refrain from cyber infiltrators.	3.05	Agree
Kiosks provide an effective privacy design when ordering.	3.09	Agree
5Kiosks have a practical approach to creating privacy and security for the users.	3.09	Agree
Average Mean	3.08	High Significant Satisfaction

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree
High/Agreement: Ratings ≥ 2.51 and ≤ 4.00 (corresponding to Agreed and Strongly Agreed) – High Significant Satisfaction
Low/Disagreement: Ratings ≤ 2.50 and ≥ 1.00 (corresponding to Disagreed and Somewhat Agreed) – Minimal Significant Satisfaction

Based on Table 3, the highest mean score recorded was 3.19, interpreted as Agree, indicating that the checkout procedure is streamlined by offering multiple payment options, including cash, credit/debit cards, and mobile payments. Meanwhile, the lowest mean score of 2.99, also interpreted as Agree, suggests that kiosks require accessibility to personal data and various transactions for verification purposes, reinforcing security measures. The overall average mean of 3.08 falls within the High Significant Satisfaction range, reflecting a generally positive perception of kiosks' security and privacy design.



With the growing consumer interest in mobile commerce (M-Commerce), mobile payment systems have become widely adopted (Ahuja, 2018). These systems often rely on QR codes to store sensitive data, including credit card numbers, bank account details, and personal or organizational information, facilitating secure transactions. Additionally, QR codes are designed to interface with cloud servers, enhancing security services. Recent advancements aim to enable QR code providers to authenticate human scanners, improving audit processes and authorization mechanisms (Wang et al., 2024).

Table 4
 Convenience

Indicators	Mean	Interpretation
The kiosks produce a convenient tool to access services/products.	3.53	Strongly Agree
Fast-food restaurants provide kiosks for their customers to place orders at a reasonable pace.	3.21	Agree
Kiosks minimize waiting time by catering to the needs of customers.	3.32	Strongly Agree
Customers can order and pay simultaneously without joining a queue or talking to the cashier.	3.32	Strongly Agree
The kiosks' physical interface can cater to customers with deficiencies	3.32	Strongly Agree
Average Mean	3.22	High Significant Satisfaction

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree
 High/Agreement: Ratings ≥ 2.51 and ≤ 4.00 (corresponding to Agreed and Strongly Agreed) – High Significant Satisfaction
 Low/Disagreement: Ratings ≤ 2.50 and ≥ 1.00 (corresponding to Disagreed and Somewhat Agreed) – Minimal Significant Satisfaction

Table 4 indicates that the highest mean score is 3.53, interpreted as Strongly Agree, suggesting that kiosks have successfully enhanced convenience in accessing services and products offered by fast-food establishments. This aligns with the growing adoption of touchscreen kiosks in the fast-food industry and other service sectors, driven by advancements in modern information and communications technology (ICT). As a result, a significant transformation in the offline food service industry is anticipated (Lee, 2020). The lowest mean score recorded is 3.21, also interpreted as Agree, implying that kiosks have been implemented in fast-food restaurants to facilitate a seamless ordering experience. With an intuitive interface, customers can easily navigate the system, customize their orders, and place them efficiently without feeling rushed. Additionally, the table shows that kiosks minimize waiting time (3.32, Strongly Agree) and enable customers to order and pay simultaneously without queueing or interacting with a cashier (3.32, Strongly Agree). The same mean score (3.32, Strongly Agree) was also recorded for the kiosks' ability to accommodate customers with physical deficiencies, emphasizing their accessibility features. Overall, the average mean of 3.22 falls within the High Significant Satisfaction range, reflecting a positive reception of kiosk convenience in fast-food operations.



CONCLUSION

This study confirms that self-service kiosks enhance customer satisfaction and efficiency in Cebu's fast-food industry. The results show that kiosks are generally well-received, offering convenience, security, and an enjoyable user experience. Kiosks effectively provide information and minimize communication errors, though improvements in order accuracy are needed. Users, especially tech-savvy customers, find them engaging and easy to use. The availability of multiple payment options adds to their security, but concerns about data privacy highlight the need for stronger protection measures. The most significant advantage of kiosks is convenience, as they reduce waiting times, allow easy order customization, and support customers with physical disabilities. Overall, kiosks improve the fast-food experience, but continuous enhancements in accuracy, security, and accessibility will ensure they remain effective and user-friendly.

RECOMMENDATION

To further improve the effectiveness of self-service kiosks in Cebu's fast-food industry, the following recommendations are suggested:

1. *Enhance Order Accuracy* – Implement better verification features to reduce mistakes in order placement.
2. *Strengthen Data Security* – Improve privacy measures to protect customer information.
3. *Improve User Accessibility* – Ensure kiosks are more inclusive for customers with disabilities.
4. *Optimize Payment Options* – Expand digital and contactless payment methods for greater convenience.
5. *Regular System Updates* – Monitor and upgrade kiosk software to maintain efficiency and user satisfaction.



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THE ROLE OF SOCIAL MEDIA IN ENHANCING DESTINATION MARKETING ENGAGEMENT: A STUDY OF CEBU'S TOURISM

Trisha Marie Bayron¹, Jaycel Clariss Embodo², Joanna Marie Fabricante³,
Hazzel Pangarotan⁴, Lenly Aasawas⁵, Joshua Gequillo Jr.⁶

¹²³⁴⁵Student, ⁶Faculty, College of Business Administration, University of the Visayas,
Cebu, Philippines

ABSTRACT

Social media has transformed how destinations are marketed in the tourism industry by allowing users to create and share content, influencing travel decisions. This study aims to investigate the role of social media in enhancing engagement in destination marketing within Cebu's tourism industry. Specifically, it assesses the perceived role of social media marketing in driving engagement for destination marketing. The research uses a descriptive quantitative approach to examine how social media presence, engagement metrics, partnerships, and user-generated content (UGC) affect destination marketing. With its stunning natural scenery and rich cultural heritage, Cebu provides an ideal context for this study. A sample of 100 active social media users who frequently post about Cebu's destinations was surveyed. The results show that respondents believe social media is crucial for promoting Cebu's tourism. They highlight the importance of sharing travel experiences, how social media influences travel decisions, and how UGC is more trusted than traditional ads. The study emphasizes the need to integrate social media with other marketing strategies and the value of influencer partnerships. In conclusion, social media, particularly UGC, is vital in enhancing engagement in destination marketing for Cebu, contributing to increased traveler interaction and economic growth. It is recommended that destination marketing organizations (DMOs) collaborate with influencers, leverage social media strategies, and encourage tourists to share authentic content to maintain Cebu's competitive edge in the global tourism market.

Keywords: *Social Media, Destination Marketing, User-Generated Content, Competitive Advantage, Content Creation, Travel Decisions*

INTRODUCTION

Social media has dramatically transformed how destinations are marketed and perceived in the rapidly evolving tourism industry. Platforms like Facebook, Instagram, and Twitter have revolutionized communication by enabling users to become creators and critics of destinations, experiences, and services. This shift has empowered consumers, particularly in tourism, where personal stories and testimonials profoundly impact public perception. With tourism contributing 10% to global GDP and creating one in ten jobs worldwide, destination marketing has become a key strategy to support local economies (UNWTO, 2020). As travel destinations strive to reach broader audiences, leveraging social media marketing is essential for success.

This study investigates the role of social media in enhancing engagement in destination marketing in Cebu, focusing on the significant role of user-generated content (UGC). Social media's impact on engaging audiences and promoting destinations has become



indispensable in the competitive field of destination marketing. At the core of this transformation is UGC, where travelers share their personal experiences, stories, and visuals. UGC fosters personal satisfaction, social validation, and travel influence, motivating travelers to become unofficial ambassadors of their destinations. By posting captivating content, such as stories, photos, and videos, travelers contribute to a destination's online presence, which can be a more trusted and influential form of marketing than traditional advertising (Lange-Faria & Elliot, 2012). Social media interactions go beyond simply sharing travel experiences. They create a deeper connection between an individual's identity and the collective experiences of other travelers. Through these shared experiences, social media users contribute to the global narrative that shapes a destination's appeal. This interaction is driven by the desire for connection and validation, which is why social media platforms are crucial spaces for users to engage with one another (Tas, 2020). Research by Kim and Youn (2017) on destination storytelling demonstrates that including authentic elements and positive emotions in narratives can enhance memory recall and increase the likelihood of visit intentions. These findings emphasize the importance of compelling storytelling in destination marketing, especially when using UGC to shape travelers' perceptions. UGC can help destination marketing organizations (DMOs) create more engaging campaigns by sharing authentic, user-driven stories that resonate with potential visitors. This study explores how social media, particularly UGC, enhances engagement in destination marketing within Cebu's tourism sector. It seeks to understand the perceived role of social media marketing in promoting Cebu as a travel destination, the contribution of UGC in tourism engagement, and how social media engagement influences travel decisions. Additionally, the study will examine best practices for DMOs to leverage UGC and social media strategies to improve tourism marketing efforts in Cebu. Ultimately, the research will provide valuable insights into how social media can foster sustainable growth and a competitive advantage for Cebu's tourism sector, contributing to the region's economic and social development. Through a comprehensive review of existing literature, empirical data, and case studies, this study will highlight the power of user-generated content in driving tourism engagement and shaping public perceptions of Cebu as a top travel destination.

METHODOLOGY

The study employed a descriptive quantitative research approach to examine the role of social media in destination marketing engagement in Cebu. This approach facilitated a systematic analysis of key elements in destination marketing, focusing on collecting and analyzing numerical data to assess perceptions, experiences, and outcomes related to Cebu's marketing efforts. The research was conducted in Cebu, known for its cultural heritage and natural beauty, providing a relevant context for studying the impact of social media on destination marketing within the city's tourism industry. The study targeted active social media users who frequently posted content about Cebu destinations, with a sample of 100 respondents selected through a simple random sampling method to ensure a broad representation of social media activity in the region. A survey was used to gather data on the perceptions and experiences of Cebu's social media users regarding destination



marketing, with a standardized Likert scale used to assess agreement or disagreement with statements about the impact of social media. Data collection began with topic selection and concept paper approval, followed by ethical clearance from the Institutional Review Board (IRB). Researchers then distributed the surveys, providing clear explanations to participants, and the collected data were analyzed for interpretation. Mean scores were calculated to assess social media presence, engagement metrics, influence partnerships, and user-generated content. The university's IRB approved the study, with ethical clearance granted under reference number NP2024CBA-135.

RESULTS AND DISCUSSION

This study investigates the role of social media in enhancing engagement in destination marketing within the Cebu tourism industry.

Table 1
 Social Media Presence

Factors	Mean	Interpretation
Shared or posted about destinations in Cebu on social media accounts.	3.56	Strongly Agree
Social media presence is for promoting destinations in Cebu.	3.39	Strongly Agree
Social media platforms should collaborate with destination marketing organizations to promote tourism in Cebu.	3.46	Strongly Agree
Destination marketing organizations in Cebu effectively utilize social media to engage with their audience.	3.45	Strongly Agree
Social media platforms help address travelers' inquiries and concerns about visiting Cebu.	3.38	Strongly Agree
Average Mean	3.45	Strongly Agree

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree

The table highlights respondents' perceptions concerning how social media contributes to tourism promotion in Cebu. The mean scores range from 3.38 to 3.56 in every question, all classified as "Strongly Agree." Among the factors, the most significant average score of 3.56 shows strong agreement that respondents actively share or post about Cebu's destinations on social media. In contrast, the lowest mean score of 3.38 indicates strong agreement that social media can help address their inquiries and provide needed information for travelers looking to go to Cebu. The overall factor of 3.45 points to an overwhelming agreement that social media is vital for promoting tourism, engaging audiences, and addressing travelers' needs in Cebu. Moreover, participants agree that having a presence on social media platforms is another way for destination marketing organizations to promote Cebu destinations and, hence, should collaborate with them. This has been supported by studies that found that destinations with strong social media presence have experienced higher tourist engagement and satisfaction rates (Leung et al.,2013). The average ratings generally indicate that social media plays a massive role in promoting tourism in Cebu and facilitating communication between travelers and destination marketing organizations.



Table 3
 Engagement Metrics

Factors	Mean	Interpretation
Engage with destination-related content on social media platforms.	3.51	Strongly Agree
Social media has influenced the popularity of Cebu destinations.	3.37	Strongly Agree
Destination marketing organizations in Cebu can leverage user-generated content to enhance engagement on social media platforms.	3.31	Strongly Agree
Destination marketing organizations in Cebu effectively integrate social media campaigns with other marketing channels to maximize impact and engagement.	3.27	Strongly Agree
Social media platforms effectively engaged potential travelers interested in visiting Cebu.	3.39	Strongly Agree
Average Mean	3.37	Strongly Agree

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree

The table shows how various respondents in Cebu perceive social media engagement parameters for tourism promotion. The mean scores range between 3.27 and 3.51, all of which fall under the “Strongly Agree” category. The fact that the highest mean score was recorded at 3.51 implies that the respondents are firmly convinced of engaging with destination-related content on social media. The lowest mean score of 3.27 indicates a strong agreement that destination marketing organizations effectively integrate social media with other marketing channels. An overall factor at 3.37 signifies a consensus about audience engagement through social media, influence on destinations' popularity, and improved marketing effectiveness. The participants know that social media platforms effectively engage potential travelers, and user-generated content is valuable for luring visitors. Social media platform engagement is important for measuring tourism's marketing effectiveness (Hudson & Thal, 2013). Hence, there is a need for a consistent plan of action that combines all available tools under one roof, enhancing impact and involvement in promoting Cebu as a tourist destination



Table 4
 Influence Partnership

Factors	Mean	Interpretation
1. Visited a destination in Cebu based on content I saw on social media.	3.59	Strongly Agree
2. Social media helps create a sense of community among travelers interested in visiting destinations in Cebu.	3.39	Strongly Agree
3. Influencers and celebrities promoting destinations in Cebu significantly influence social media platforms.	3.52	Strongly Agree
4. Social media interactions positively influence travelers' decision to visit Cebu.	3.46	Strongly Agree
5. Marketing destinations through social media encourages repeat visits to Cebu.	3.48	Strongly Agree
Average Mean	3.49	Strongly Agree

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree

Table 4 illustrates that the mean scores for social media partnerships in promoting tourism in Cebu ranged from 3.39 to 3.59, all interpreted as “Strongly Agree.” Accordingly, the highest mean score, 3.59, represents a strong agreement among respondents towards visiting a destination in Cebu based on social media content. In contrast, the lowest mean score, 3.39, depicts strong agreement that social media assists in creating a sense of community among tourists. There is widespread consensus regarding this type of information's role in travel choices and the existence of travel communities interested in Cebu. Respondents strongly agree since influencers and celebrities endorsing Cebu's destinations significantly impact social media. Influencer marketing and community building via networks are highly effective tools within the tourism industry (Godey et al., 2016). The overall factor means of 3.49 reveals that there is a need for social media partnerships to shape travel decisions and encourage revisits to Cebu again and again.

Table 5
 User-Generated Content

Factors	Mean	Interpretation
1. User-generated content (photos, videos, stories) about destinations in Cebu is influential in travel decisions.	3.41	Strongly Agree
2. User-generated content is more trustworthy than traditional destination advertisements.	3.28	Strongly Agree
3. Authenticity in user-generated content is essential when promoting destinations in Cebu.	3.32	Strongly Agree
4. Sharing my own travel experiences in Cebu on social media platforms.	3.59	Strongly Agree
5. Social media has changed how destinations in Cebu are marketed compared to traditional methods.	3.41	Strongly Agree
Average Mean	3.40	Strongly Agree

4 (3.26- 4.00)-Strongly Agree; 3(2.51- 3.25)-Agree; 2(1.76- 2.50)-Disagree; 1(1.00 -1.75)-Strongly Disagree

The table represents the participants' views of UGC promoting tourism in Cebu, with mean scores ranging from 3.28 to 3.59, all considered as Strongly Agree. The highest mean score,



3.59, suggests that respondents fully support posting their travel experiences on social media while in Cebu, and the lowest mean score, 3.28, indicates strong agreement with the trustworthiness of UGC compared to conventional advertising. Such results show that UGC significantly affects travel choices, with the opinions and views of fellow travelers being instrumental in molding such attitudes towards specific destinations and ensuring visits take place there. Survey participants highly value this authenticity and argue that a real traveler's experience holds much credibility and influence over prospective tourists. User-generated content has an impact on tourism through the provision of genuine and relatable travel experiences (Cox et al., 2009). Travelers trust it more since it is viewed as more authentic than traditional marketing areas (Ayeh et al., 2013). The overall factor was found to have a mean score of 3.40, implying that UGC is highly influential, trustworthy, and authentic when influencing traveling decisions and altering marketing compared to traditional methods.

CONCLUSION

Social media marketing in Cebu has experienced a significant transformation as it increasingly relies on social media platforms, primarily because of the effect of user-generated content (UGC). The research results show that having a presence in social media, influencer collaborations, UGC, and engagement metrics are instrumental in promoting Cebu as a tourist destination. This leads to increased traveler involvement, influences travel decisions, and substitutes traditional advertising with added credibility. Hence, social media is now a must-have component of destination marketing in Cebu, which determines the image and interaction patterns with tourists.

It is essential to acknowledge the limitations of the data. Social media marketing is important for promoting Cebu as a tourist destination, but the findings may be influenced by the biases inherent in user-generated content and engagement metrics. The study relies on quantitative data, which might not fully capture the nuances of traveler behavior and preferences. Future research could address these limitations using descriptive quantitative methods to explore the underlying motivations and perceptions driving tourist engagement with social media content. Sustainable tourism development in Cebu could be achieved by examining the long-term effects of social media marketing strategies on destination image and visitor satisfaction. Despite these limitations, the investigation provides a solid foundation for comprehending the significance of online platforms in destination promotion and provides valuable insights into enhancing the tourist experience in Cebu.

RECOMMENDATION

Based on the findings of this study, the following recommendations were derived:
Support for User-Generated Content: The DMOs should encourage tourists to share their experiences online through user-generated content. Encouraging a community of content creators will make a destination more authentic and appealing, thus attracting more visitors and maintaining its position in the global tourism market.

Implement comprehensive social media campaigns: Destination Marketing Organizations need to link their social media offerings with other marketing strategies to increase their



impact and audience participation. This well-rounded strategy—which consists of the same message on each platform—is consistent and effective across the board.

Engage users through content creation: Encourage users to create content by creating a platform and programs provided by DMOs for such contributions. Cebu should share visitors' experiences. It will create a community, boost the online reputation, and bring more tourists to Cebu who may come back again.

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PROCUREMENT OF LABORATORY EQUIPMENT: IMPLICATIONS FOR PROGRAM PRICING DECISIONS

Jess Ann Joy U. Casas¹, Maria Clarence H. Gomez², Lianne Marie Joy B. Moncada³, Almarie T. Pescadero⁴, Roqsan Kate G. Ronzales⁵, Jazmaine Fortuna⁶

¹²³⁴⁵Student, ⁶Faculty, College of Business Administration, University of the Visayas, Cebu, Philippines

ABSTRACT

This study aims to develop a structured pricing decision framework for a private university in Cebu City to allocate the cost of newly acquired laboratory equipment. Specifically, it seeks to determine an appropriate laboratory fee for mechanical engineering students while addressing the university's need for a standardized pricing mechanism. By analyzing available data and applying suitable costing methods, the research ensures that fee adjustments accurately reflect acquisition costs while remaining fair and reasonable for students. The study provides insights into efficient cost allocation and pricing strategies, supporting informed decision-making in resource management. The findings will assist the university in maintaining financial sustainability and market competitiveness while aligning with its mission, vision, and objectives. Furthermore, this research contributes to cost management in the private education sector by offering a practical framework for pricing decisions based on acquisition costs. It highlights the importance of accurate cost calculation and allocation in ensuring long-term institutional stability. The study's recommendations will serve as a valuable guide for private universities, particularly in Cebu City, in making effective pricing decisions that balance financial viability with their commitment to high-quality education.

Keywords: *Cebu City, pricing decision, cost allocation, laboratory fees, equipment acquisition, financial sustainability*

INTRODUCTION

Universities continually invest in new laboratory equipment to align with the evolving demands of education and industry. As technology advances, educational institutions must keep pace to provide students with hands-on learning experiences that enhance their competencies. According to Avi Hofstein (2003), science educators emphasize that laboratory-based learning offers rich educational benefits, allowing students to develop practical skills, critical thinking, and a deeper understanding of theoretical concepts. A well-equipped laboratory and proper management are crucial in achieving positive learning outcomes. Many universities have significantly increased investments in infrastructure and laboratory resources to maintain high academic standards. This commitment aims to enhance the quality of education, ensuring that students are well-prepared for professional and research-based endeavors. As one of Cebu's leading non-sectarian institutions, the selected university has upgraded its laboratory facilities to align with modern trends and institutional goals. These improvements align with its mission to provide high-quality



education, meet emerging academic and industry needs, and fulfill its vision, objectives, and institutional learning outcomes. As part of this initiative, the university has procured new laboratory equipment to facilitate action-based learning, enabling students to gain practical experience that complements theoretical instruction.

However, despite acquiring these laboratory tools, researchers found that they remained unused due to the timing of their procurement. The equipment was purchased during the COVID-19 pandemic, during which face-to-face laboratory sessions were suspended. With the return to in-person learning, the university now faces the challenge of integrating the cost of these acquisitions into student laboratory fees. Unlike other institutions with established policies, the selected university lacks a standardized mechanism for determining pricing adjustments whenever new laboratory equipment is acquired. This absence of a structured approach raises concerns about transparency, fairness, and financial sustainability in fee adjustments. Pricing decisions are critical in educational institutions, impacting revenue generation, student affordability, and accessibility to quality education. A well-calibrated pricing strategy helps ensure that costs are fairly distributed while maintaining the institution's financial stability. According to Monroe (2003), pricing decisions are among the most critical managerial choices, directly influencing profitability, institutional sustainability, and market competitiveness. Similarly, Reibstein (2002) asserts that price is a dominant factor in consumer decision-making, meaning that tuition and fee structures must be carefully evaluated to balance affordability and institutional needs. If not appropriately managed, abrupt fee increases may discourage enrollment and financially strain students. Given these considerations, this study aims to develop a pricing decision framework that will appropriately allocate the acquisition cost of the newly procured laboratory equipment. The research will assess available data and cost-allocation methods to formulate a rational, equitable, and justifiable approach for adjusting laboratory fees. By doing so, the study will provide insights into how educational institutions can implement pricing decisions that are both financially viable and student-friendly. Ultimately, the findings will contribute to institutional policy development, ensuring that tuition fee adjustments related to laboratory equipment acquisitions are transparent, data-driven, and aligned with best financial practices.

METHODOLOGY

The researchers selected the finance and accounting department and the engineering division to gather relevant data. These departments provided key insights for the study, and an open-ended questionnaire was used to collect thorough responses. A descriptive research design was applied, utilizing in-person and online data collection. To ensure ethical compliance, permission was obtained from department heads through a consent letter. Profile information for the mechanical engineering program was gathered from the program head, while additional financial data was obtained from the finance department. Secondary data and document analysis further enhanced the understanding of the institution's accounting system. A purposive sampling method ensured that participants provided relevant insights. The research instrument had two sections: one for program profile details and another for financial data on laboratory equipment procurement. Data was presented in tables for clarity, and the collection method depended on the researchers'



and departments' preferences. The study aimed to develop a pricing decision and assess project profitability using appropriate cost allocation methods. Cost allocation helps in decision-making, reducing expenses, and increasing profitability (Steinberg). Costs were assigned based on cost drivers (Pirrong, 1993) and would be incorporated into laboratory fees for mechanical engineering students. A pricing decision would outline the per-student cost, and a sensitivity analysis would test the return on investment based on enrollment and fees (Goris & Yoe et al., 2014). The break-even point would also be calculated to determine the required number of enrollees to cover annual investment costs. The final pricing decision, return on investment, and break-even analysis would be presented to the finance department. The per-student cost would inform the proposed laboratory fee structure as part of the institution's cost management plan.

RESULTS & DISCUSSION

The data are acquired from the responses of the selected participants of the study. The researchers used an open-ended questionnaire answered by the College of Engineering, Technology, and Architecture and the Finance and Accounting Department to gather information regarding the profile of the newly procured laboratory equipment and the profile of mechanical engineering. The profiles are used to develop pricing decisions. The data obtained from the questionnaire is summarized below:

Table 1.
Profile of Newly Acquired Laboratory Equipment

Name of Laboratory	Total no. of subjects per laboratory	Total no. of units per laboratory	Total no. of hours used per subject per laboratory	Laboratory Accommodation	Total no. of new laboratory equipment	Total quantity/unit of the new laboratory equipment	Total costs of new laboratory equipment	Estimated Useful life of new laboratory equipment
1. Materials & Engineering Laboratory/ME Laboratory	7	8	432	Minimum of 18 students	7	9	₱12,050,532.00	5 Years
2. ME Laboratory 2	6	8	432	Minimum of 18 students	4	4	₱15,166,165.00	5 Years
3. ME Laboratory 3	6	8	432	Minimum of 18 students	3	3	₱5,412,100.00	5 Years
4. Workshop Laboratory	6	7	378	Minimum of 18 students	40	140	₱837,510.00	5 Years
5. Machine Shop Laboratory	9	11	594	Minimum of 18 students	8	11	₱26,548,450.00	5 Years
6. Instrumentation/Ac/Dc Laboratory	9	10	540	Minimum of 18 students	7	7	₱13,679,156.00	5 Years

Source: University Records

Table 1 presents the profile of the newly acquired laboratory equipment for the Mechanical Engineering Program in the selected college. It provides key details for assessing laboratory usage, capacity, and cost allocation. The table includes the laboratory's name, indicating the facility used for engineering courses. It also outlines the total number of subjects utilizing the laboratory and the corresponding number of units and required hours per subject, where one unit is equivalent to 54 hours per semester. Additionally, the table specifies the laboratory accommodation capacity, reflecting the maximum number of



students it can accommodate based on its size and university regulations. The profile details the number of new laboratory equipment procured to ensure full laboratory functionality, including the total quantity of each unit acquired. The total cost of the new equipment is also documented, providing a basis for financial analysis and pricing decisions. Lastly, the estimated useful life of the laboratory equipment is indicated, following the university's standard policy of a five-year service lifespan. This comprehensive data serves as a foundation for evaluating resource utilization, cost allocation, and the development of an appropriate pricing mechanism for laboratory fees.

Table 2
 Cost Allocation

Name of Laboratory	Annual Cost of Investment	Rate Per Laboratory Hour	Laboratory Charge/ 1-Unit Subject Per Student
1. Materials & Engineering Laboratory/ME Laboratory 1	₱2,410,106.40	₱796.99	₱2,390.98
2. ME Laboratory 2	₱3,033,233.00	₱1,170.23	₱3,510.69
3. ME Laboratory 3	₱1,082,420.00	₱417.60	₱1,252.80
4. Workshop Laboratory	₱167,502.00	₱73.85	₱221.56
5. Machine Shop Laboratory	₱5,309,690.00	₱993.21	₱2,979.62
6. Instrumentation/Ac/Dc Laboratory	₱2,735,831.20	₱562.93	₱1,688.78

Source: University Records

Table 2 presents the cost allocation data essential for determining pricing decisions related to laboratory fees. It includes the annual cost of investment, which represents the total expenses incurred by the university for each laboratory every year. This figure is calculated by dividing the total cost of the laboratory equipment by its estimated helpful lifespan, as outlined in Table 1. Additionally, the table provides the rate per laboratory hour, which indicates the cost associated with utilizing the laboratory equipment for a specific duration. This rate is derived by dividing the annual investment cost by the total number of hours the laboratory is used, ensuring an accurate financial assessment of operational expenses. Furthermore, the table specifies the laboratory charge per 1-unit subject per student, representing the fee students must pay to access laboratory facilities for their coursework. This charge is determined by multiplying the rate per laboratory hour by three, reflecting the standard number of hours the laboratory uses per week. The data in Table 2 provides a structured approach to cost allocation, ensuring a fair and transparent pricing decision that aligns with the university's financial sustainability and students' affordability.

Table 3
Return on Investment

Name of Laboratory	Estimated No. of Enrollee	Annual Cost of Investment	Projected Income	Projected Net Income	Return on Investment
1. Materials & Engineering Laboratory/ME Laboratory 1	133	₱2,410,106.40	₱2,544,001.20	₱133,894.80	5.3%
2. ME Laboratory 2	120	₱3,033,233.00	₱3,370,258.89	₱337,025.89	11.1%
3. ME Laboratory 3	126	₱1,082,420.00	₱1,262,823.33	₱180,403.33	16.7%
4. Workshop Laboratory	132	₱167,502.00	₱204,724.67	₱37,222.67	22.2%
5. Machine Shop Laboratory	207	₱5,309,690.00	₱6,784,603.89	₱1,474,913.89	27.8%
6. Instrumentation/Ac/Dc Laboratory	216	₱2,735,831.20	₱3,647,774.93	₱911,943.73	33.3%

Source: University Records

Table 3 presents data on the return on investment (ROI) for the newly acquired laboratory equipment, calculated based on the proposed pricing structure and the estimated number of enrollees. The data indicate that the university will achieve a positive return on investment if student enrollment surpasses the break-even point. Laboratories with student numbers close to this threshold tend to yield lower returns, whereas those with significantly higher enrollment generate greater profitability. The table includes key financial metrics, such as the estimated number of enrollees, which refers to the projected annual student count derived from historical data and calculated based on the number of subjects each laboratory serves. It outlines the projected income, representing the expected annual revenue generated by multiplying the estimated number of students by the laboratory charge per 1 unit subject per student and the number of units for each laboratory. The projected net income is then computed by deducting the annual investment cost from the projected income, reflecting the university's actual financial gain from the laboratory fees. Finally, the return on investment is calculated as a percentage by dividing the net income by the annual investment cost, providing a measure of the efficiency of the proposed pricing structure. This analysis helps the university assess the financial sustainability of the newly acquired equipment and supports data-driven pricing decisions to ensure long-term operational viability.

Table 4.
Break-Even Point

Name of Laboratory	Laboratory Fixed Cost	Laboratory Charge/ 1-Unit Subject Per Student	Break-Even Point
1. Materials & Engineering Laboratory/ME Laboratory 1	₱ 301,263.30	₱2,390.98	126
2. ME Laboratory 2	₱ 379,154.13	₱3,510.69	108
3. ME Laboratory 3	₱ 135,302.50	₱1,252.80	108
4. Workshop Laboratory	₱ 23,928.86	₱221.56	108
5. Machine Shop Laboratory	₱ 482,699.09	₱2,979.62	162
6. Instrumentation/Ac/Dc Laboratory	₱ 273,583.12	₱1,688.78	162

Source: University Records

Table 4 presents data for break-even point analysis, which is essential for understanding the financial viability of the newly acquired laboratory equipment. The table includes key financial indicators, such as the laboratory fixed cost, which is calculated by dividing the



annual cost of investment (presented in Table 2) by the total number of units per laboratory (provided in Table 1). This fixed cost reflects the expenses of operating each laboratory, independent of the number of students enrolled. The break-even point is then determined by dividing the fixed cost by the rate per 1 unit per laboratory (indicated in Table 2). The break-even point represents the minimum number of enrollees required per semester to cover the expenses incurred from procuring the laboratory equipment. At this point, the university neither makes a profit nor incurs a loss. If the number of enrollees exceeds the break-even point, the laboratory generates a profit; conversely, if the enrollment is below the break-even point, the laboratory incurs a loss. These findings are crucial for revenue projections and pricing decisions, as they offer insight into the financial dynamics of the laboratory's operations. Additionally, this analysis helps manage financial risks by ensuring the university can set appropriate pricing that covers costs while supporting long-term sustainability.

Sensitivity Analysis

Sensitivity analysis determines how different values of an independent variable affect a particular dependent variable under a given set of assumptions. In other words, sensitivity analyses study how various sources of uncertainty in a mathematical model contribute to the model's overall uncertainty. This technique is used within specific boundaries that depend on one or more input variables (Kenton et al., 2021). The researchers will utilize the effects of a 10% change in prices and the number of enrollees to evaluate their impact on the university's profitability. The 10% change is based on the historical data from the research instrument given to the respected departments. The number of prices and enrollees varies, and in every change that happens, it never decreases more than 10%, nor does it increase to 10% as it fluctuates every school year. The researchers used sensitivity analysis to test the data's results, which helps identify how the independent factors affect the dependent factors. They also tested the results of the pricing decision model and the number of enrollees the selected university needs to reach.

Table 5.
As to both price and number of enrollee changes

Name of Laboratory	Scenario 1				Scenario 2			
	Price <u>increased</u> at 10%	Enrollee <u>decreased</u> by 10%	Income Annually	Profit or Loss	Price <u>decreased</u> at 10%	Enrollee <u>increased</u> by 10%	Income Annually	Profit or loss
LAB 1	₱2,630.08	113	₱2,386,006.76	(₱24,099.64)	₱2,151.88	139	₱2,386,006.76	(₱24,099.64)
LAB 2	₱3,861.76	97	₱3,002,903.80	(₱30,329.20)	₱3,159.62	119	₱3,002,903.80	(₱30,329.20)
LAB 3	₱1,378.08	97	₱1,071,595.01	(₱10,824.99)	₱1,127.52	119	₱1,071,595.01	(₱10,824.99)
LAB 4	₱243.72	97	₱165,824.37	(₱1,677.63)	₱199.40	119	₱165,824.37	(₱1,677.63)
LAB 5	₱3,277.58	146	₱5,256,586.01	(₱53,103.99)	₱2,681.66	178	₱5,256,586.01	(₱53,103.99)
LAB 6	₱1,857.66	146	₱2,708,465.36	(₱27,365.84)	₱1,519.90	178	₱2,708,465.36	(₱27,365.84)

Table 5.1.
Continuation as to both price and number of enrollee changes

Name of Laboratory	Scenario 3				Scenario 4			
	Price increased at 10%	Enrollee increased by 10%	Income Annually	Profit or loss	Price decreased at 10%	Enrollee decreased by 10%	Income Annually	Profit or loss
LAB 1	₱2,630.08	139	₱2,916,230.49	₱506,124.09	₱2,151.88	113	₱1,952,187.35	(₱457,919.05)
LAB 2	₱3,861.76	119	₱3,670,215.75	₱636,982.75	₱3,159.62	97	₱2,456,921.29	(₱576,311.71)
LAB 3	₱1,378.08	119	₱1,309,727.23	₱227,307.23	₱1,127.52	97	₱876,759.55	(₱205,660.45)
LAB 4	₱243.72	119	₱202,674.23	₱35,172.23	₱199.40	97	₱135,674.48	(₱31,827.52)
LAB 5	₱3,277.58	178	₱6,424,716.24	₱1,115,026.24	₱2,681.66	146	₱4,300,843.10	(₱1,008,846.90)
LAB 6	₱1,857.66	178	₱3,310,346.56	₱574,515.36	₱1,519.90	146	₱2,216,017.12	(₱519,814.08)

Legends:

LAB 1	:	Materials & Engineering Laboratory/ME Laboratory 1
LAB 2	:	ME Laboratory 2
LAB 3	:	ME Laboratory 3
LAB 4	:	Workshop Laboratory
LAB 5	:	Machine Shop Laboratory
LAB 6	:	Instrumentation/Ac/Dc Laboratory

Table 5 and Table 5.1 analyze the potential financial impacts of price changes and the number of enrollees in the university's laboratories. In Scenario 3, where the price is increased by 10%, the data shows that the annual income and profitability of the laboratories tend to improve. For instance, Laboratories such as LAB 1 and LAB 5 experience an increase in revenue, resulting in positive profits. This indicates that a price increase can contribute to higher financial gains for the university. However, this outcome is contingent on maintaining steady student enrollment. While higher prices can lead to higher income, balancing the increased cost with market demand and competition is essential, ensuring that students remain engaged and interested in enrolling.

On the other hand, Scenario 4 examines the impact of a 10% decrease in enrollment coupled with a 10% reduction in pricing. Here, the financial performance of the university generally suffers. The price reduction may make the laboratories more accessible to students, but the corresponding decrease in enrollees does not fully compensate for the loss in income. For example, in LAB 1, while the price is lowered, the reduction in enrollment leads to a significant income loss. Similarly, in other laboratories like LAB 5 and LAB 6, a price decrease combined with a reduction in enrollees results in negative profits. These findings underscore the need for careful analysis before pricing decisions that could negatively impact revenue and profitability. The data also reveals that pricing and enrollment levels are closely linked. A 10% price increase paired with a 10% increase in enrollment generally leads to higher income and profitability, as seen in LAB 1 and 2. However, these positive outcomes require strategic market positioning to ensure demand remains strong despite price hikes. Conversely, a price decrease with a decrease in enrollment does not fully offset the income loss, further emphasizing the need for balance in pricing decisions. Ultimately, these findings highlight the complexity of managing pricing and enrollment strategies. The university must carefully analyze the potential financial outcomes of any changes to pricing or enrollment, ensuring that both factors are considered to optimize revenue and profitability. The economic performance of the engineering department's laboratories relies on a delicate balance between making labs accessible and maintaining sufficient income to cover costs and generate profit.

CONCLUSION

This study emphasizes the importance of cost allocation for newly procured equipment, as it plays a pivotal role in determining annual investment costs and pricing strategies for mechanical engineering laboratories. The decision to invest in new equipment significantly impacts pricing structures, requiring careful consideration of potential profitability. By projecting income and analyzing the laboratory's profit and loss, the study reveals that increasing prices and enrollment can effectively cover costs and generate a profit. However, alternative scenarios, such as price reductions or decreases in enrollment, may result in financial losses, highlighting the necessity for strategic optimization and operational adjustments to achieve the break-even point. The findings underscore that effective pricing decisions hinge on accurate planning and carefully utilizing relevant data. Considering the interplay between pricing changes, student enrollment, and overall financial performance is crucial to minimize uncertainty and make informed decisions. The university can ensure sustainable financial outcomes by optimizing revenue while balancing student demand and maximizing profitability and accessibility. Therefore, this study provides valuable insights into how pricing strategies can be aligned with enrollment trends to support the long-term financial viability of the mechanical engineering department.

RECOMMENDATION

Based on the study's findings, the following recommendations are made:

1. Adopt the Pricing Framework: Use the developed pricing strategy to allocate acquisition costs effectively and ensure reasonable student tuition fee increases.
2. Project Profitability for Future Acquisitions: Consider potential profitability when deciding on future equipment purchases, prioritizing investments likely to generate positive returns.
3. Improve Cost Management: Implement the pricing decision and profitability projections to enhance cost management and support efficient procurement decisions.
4. Serve as a Reference for Future Research: This study can guide future research on laboratory fee allocation, contributing to better cost management practices in academic settings.

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**PERCEIVED AWARENESS AND SATISFACTION OF FARMERS ON THE
IMPLEMENTATION OF RA 11203: A CASE STUDY IN A CEBU
MUNICIPALITY**

**Sergia Sildora¹, Kenneth Alcala², Mary Rose Cahayagan³, Lyssa Mae Duran⁴, Jay
Kenneth Edilo⁵, Ben Herald Gomez⁶, Mary Jean Ladbon⁷, John Rainier Nogueras⁸,
Armfred Almeresz⁹**

¹²³⁴⁵⁶⁷⁸Student, ⁹Faculty, College of Business Administration, University of the Visayas,
Cebu, Philippines

ABSTRACT

This study examines farmers' perceived awareness and satisfaction with the implementation of RA 11203 in a municipality in Cebu, Philippines. The Rice Tariffication Law replaced quantitative restrictions on rice imports with tariffs, aiming to improve availability and affordability. However, its effects on local farmers remain a critical concern. Using a descriptive research method, data were collected through a structured questionnaire to assess farmers' understanding, perceived benefits, and overall satisfaction with the law. Findings indicate that farmers are intensely aware of RA 11203 and its objectives. Many recognize its role in improving productivity and efficiency through financial assistance and access to modern farming technology. However, despite these benefits, respondents express dissatisfaction with its effectiveness in stabilizing rice prices. While some farmers receive government subsidies, they find the support insufficient to sustain a stable livelihood due to high production costs and low wholesale prices. Additionally, removing import quotas has not significantly reduced market rice prices, contradicting the law's intended impact. Increased competition from imported rice has driven down farm gate palay prices, leaving farmers struggling to secure fair earnings. These economic challenges raise concerns about the long-term sustainability of local rice farming. The study highlights the gap between policy objectives and real-world outcomes, emphasizing the need for more substantial government interventions. Under the current framework, ensuring fair pricing, sustainable income, and balanced trade policies is essential to supporting Filipino rice farmers.

Keywords: *Farmers, Rice Tariffication, Tariff Quota, Agricultural Policy, Cebu, Philippines*

INTRODUCTION

The enactment of Republic Act No. 11203, also known as the Rice Tariffication Law (RTL), aimed to liberalize the importation, exportation, and trading of rice by replacing quantitative import restrictions with tariffs. President Rodrigo Roa Duterte signed into law on February 14, 2019, the legislation amended Republic Act No. 8178 (Agricultural Tariffication Act), which previously imposed tariffs on agricultural imports except rice. The primary goal of RTL was to ensure rice affordability and availability in the market while generating funds to support local farmers through the Rice Competitiveness



Enhancement Fund (RCEF). However, the law's impact on local farmers remains debatable, particularly regarding its effectiveness in stabilizing rice prices and improving farmers' livelihoods. This study aims to assess farmers' perceived awareness and satisfaction with the implementation of RA 11203 in a municipality in Cebu. Specifically, it evaluates farmers' understanding of the law, their level of satisfaction with government support programs, and the challenges they face under the policy. According to Casayuran (2020), the Rice Tariffication Law provided farmers with credit access, high-quality inbred rice seeds, training, and farm mechanization to enhance productivity and competitiveness. However, studies such as those by Vertudes et al. suggest that farmers have encountered significant challenges. While the law intended to lower rice prices, many farmers reported adverse outcomes, particularly a drastic decline in farm gate prices for palay. The increased competition from imported rice has driven local palay prices down, negatively affecting small-scale farmers' incomes. Additionally, the rising costs of farm inputs—such as seeds, fertilizers, and machinery—have further strained their financial stability. Despite government subsidies, many farmers struggle to earn a sustainable livelihood. Data from previous years indicate that in 2017, the average palay production cost per kilogram was ₱12.42, while the average farm gate price of dry palay was ₱18.21, yielding a profit margin of 46.62%. However, due to the price decline under RTL, farm gate prices have dropped to around ₱12.00 per kilogram, making it difficult for farmers to maintain the same level of profitability. Some estimates suggest that for farmers to sustain previous earnings, production costs must be reduced to ₱6.65 per kilogram, which is an unrealistic target given the current price of farm inputs. Concerns over the law's impact have led to renewed efforts to repeal RTL, with advocacy groups such as Bantay Bigas and the Amihan National Federation of Peasant Women calling for its revocation. Critics argue that the law has failed to lower retail rice prices while simultaneously exacerbating financial difficulties for farmers, leading to job losses, farmer bankruptcies, and reduced livelihoods. This study seeks to determine the level of awareness and satisfaction among local farmers regarding the Rice Tariffication Law. Specifically, it examines how age, sex, years of farming experience, and membership in farmer organizations influence their perceptions. Additionally, it explores farmers' satisfaction with the government's support mechanisms, challenges, and limitations in adapting to the law's implementation. Addressing these aspects, this study aims to provide valuable insights for policymakers, helping them develop more targeted support mechanisms that promote the sustainability of the agricultural sector while balancing the needs of farmers and consumers.

METHODOLOGY

The study employed a descriptive survey research design under quantitative research, utilizing a structured questionnaire to assess farmers' awareness and satisfaction with the Rice Tariffication Law (RTL). This method allowed for an accurate interpretation of data by collecting responses on a Likert scale, ranging from fully aware to not aware and fully satisfied to very dissatisfied. The research was conducted in a municipality in Cebu, where 50 farmers were selected through purposive sampling based on specific criteria, including having at least five years of experience in rice farming and being 20 years old or above.



The questionnaire, written in both Bisaya and English, consisted of 20 structured questions to measure their awareness and satisfaction regarding RTL. Data-gathering involved obtaining official permissions, identifying qualified farmers, and conducting face-to-face surveys over two weeks. If an official list of farmers was unavailable, researchers manually identified farmers in key agricultural barangays. For data analysis, the researchers applied statistical tools, including the Likert scale and weighted mean, to interpret the responses systematically. The Likert scale categorized responses into four levels, ensuring an objective assessment of farmers' perceptions. Ethical considerations were strictly followed, including obtaining informed consent, ensuring confidentiality, and adhering to RA 10173 Data Privacy Act of 2012 to protect respondents' personal information. Furthermore, the study underwent an ethics review and received approval from the UV-Research Ethics Committee under Reference No. 2023-34, ensuring compliance with research ethics standards.

RESULTS AND DISCUSSION

This section presents the data collected during the study, analyzing the level of satisfaction and awareness of the Rice Tariffication Law among local farmers in a municipality in Cebu. The study surveyed 50 respondents, using tables to display the data. Demographic factors, such as farming experience, age, gender, and membership in farming associations, were included in the analysis. The Likert scale was used to measure respondents' opinions, and the data provided insights into the law's impact on the local farming community.

Description of the Respondents

The demographic profile of the respondents in the study, which examines their level of satisfaction and awareness of the Rice Tariffication Law, includes factors such as age, years of farming experience, gender, and membership in farming associations. Regarding age, most respondents, 28 individuals or 56%, were aged 51 and above, while a smaller group, three respondents (6%), were between 20 and 30 years old. Regarding farming experience, the highest proportion, 17 respondents (34%), had 46 years or more of experience. As for gender, 27 respondents (54%) were male, and 23 respondents (46%) were female. Notably, all 50 respondents were affiliated with farming associations.

Table 1.
Level of Awareness of the Law

Item	Mean	Interpretation
The Rice Tariffication Law.	3.34	Fully Aware
Knowledge about the law and how it is implemented.	3.70	Fully Aware
The Rice Competitive Enhancement Fund (RCEF).	2.86	Somewhat Aware
The government supports programs for farmers under the Rice Tariffication Law (e.g., RCEF).	2.98	Somewhat Aware
The government assigned agencies to be effective and efficient by implementing the RCEF programs.	2.56	Somewhat Aware
The RCEF programs offer to improve yield and income.	2.36	Not Very Aware
The benefits of the Law (e.g., free inbred rice seeds, etc.)	3.10	Somewhat Aware



Farm mechanization assistance	3.02	Somewhat Aware
Changes to the palay farm gate prices.	3.22	Somewhat Aware
Market price competition.	3.08	Somewhat Aware
Average Mean	3.02	Somewhat Aware

The data analysis reveals various levels of awareness among the respondents regarding different aspects of the Rice Tariffication Law. The highest mean score, 3.70, indicates that respondents were fully aware of the Rice Tariffication Law and its implementation. This suggests a strong understanding of the law itself and its operational processes. Conversely, the lowest mean score of 2.36 reflects limited awareness, particularly regarding the benefits of the Rice Competitive Enhancement Fund (RCEF), such as its programs to improve yield and income. Other aspects of the law showed a somewhat higher level of awareness. Respondents were slightly aware of the RCEF programs (mean of 2.86) and the government's support to farmers under these programs (mean of 2.98). The government agencies' effectiveness in implementing these programs was met with a mean score of 2.56, reflecting a moderate level of awareness. Additional aspects of the law, such as changes to the “palay” farm gate prices (mean of 3.22), market price competition (mean of 3.08), and farm mechanization assistance (mean of 3.02), all indicated a somewhat aware stance among the respondents. The mean score of 3.02 suggests that respondents are generally mindful of the law. Still, there is room for improvement in communication, especially concerning the RCEF programs and the agencies involved in their execution. This highlights the need for greater transparency and information dissemination to farmers to ensure they fully understand the benefits and processes associated with the law.

Table 2.
 Level of Satisfaction from the Government Support

Item	Mean	Interpretation
Increase the competitiveness of the local rice.	2.7	Satisfied
Free Training sessions on modern rice farming techniques.	3.4	Fully Satisfied
The farmers are yielding more rice than before.	2.5	Dissatisfied
The annual fund.	3.1	Satisfied
The farm machinery.	3.2	Satisfied
Government support.	3.2	Satisfied
Free certified inbred seeds.	3.4	Fully Satisfied
It has made the rice farming sector more efficient.	3.0	Satisfied
It has improved the availability and accessibility of rice seeds and other farming inputs for farmers.	3.2	Satisfied
Contributed to the stability of rice prices in the market.	1.9	Dissatisfied
Average Mean	2.7	Satisfied

Table 2 presents the respondents' satisfaction with the government support they received, including free inbred rice seeds, farm machinery, annual funds, and free training sessions. The average mean score of 2.7 suggests that respondents were generally satisfied with these farming inputs. They believe these measures have positively impacted improving productivity and efficiency in rice farming practices. The highest satisfaction was reflected



in the free training sessions on modern rice farming techniques and the provision of free certified inbred seeds; both earned a mean score of 3.4, indicating that respondents were fully satisfied. Additionally, respondents were satisfied with the farm machinery (mean of 3.2), the annual fund (mean of 3.1), and government support in general (mean of 3.2), all of which contributed to the overall positive perception of these initiatives. However, the study revealed significant dissatisfaction with the effectiveness of these measures in stabilizing rice prices. The item related to the stability of rice prices in the market received the lowest weighted mean score of 1.9, indicating that respondents were highly dissatisfied with the perceived impact of these efforts on market price stabilization. Despite improvements in farming efficiency and productivity, respondents expressed skepticism about the government's ability to address price fluctuations effectively. The mean score of 2.5 for the statement "The farmers are yielding more rice than before" also suggests dissatisfaction, as respondents felt that increased yields did not necessarily translate to improvements in price stability. This indicates a notable gap between the measures' success in enhancing farm productivity and their ability to address the broader issue of rice price stability in the market. In summary, while government support has been positively received in terms of improving farming practices, the lack of perceived effectiveness in stabilizing rice prices indicates an area that requires further attention and intervention.

CONCLUSION

The study indicates that most farmers are fully aware of the Rice Tariffication Law and how it is implemented. This shows that the law's information has been effectively communicated, and farmers understand its benefits, such as market regulations and price stability. This awareness can potentially improve their economic outcomes. It is essential to ensure the law's effective implementation, continuous support for farmers, and active engagement to maximize its benefits. Farmers are generally satisfied with the government's support for rice farm machinery and equipment, contributing to improved productivity. To build on this success, the government should continue to expand these programs to ensure that all farmers have access to the necessary tools and resources. The free training sessions on modern farming techniques have positively impacted, but there is room for improvement. Enhancing these training sessions regarding content, delivery, and accessibility can further increase farmer satisfaction and effectiveness. However, one significant challenge that local farmers face is the large volume of rice imports, which forces them to sell their harvest at lower prices. Despite government support, many farmers are calling for repealing the Rice Tariffication Law due to the negative impact on their income. While the law is designed to improve rice yields, the support is insufficient, and specific resources like farm machinery are often inaccessible due to affordability or availability issues. In conclusion, the study highlights the importance of balancing policies supporting consumers and local farmers. The price disparity between rice sold to distributors and what consumers pay suggests inefficiencies in the system. A comprehensive approach is needed to ensure that farmers and consumers benefit from the law.

RECOMMENDATION

Based on the study results, It is recommended that the government enhance the implementation of the Rice Tariffication Law by providing more accessible and affordable resources, such as farm machinery and training programs, to all farmers. Policymakers should also consider addressing the negative impact of rice imports on local farmers by implementing measures to stabilize farm gate prices. Additionally, further efforts should be made to ensure that the law's benefits reach all farmers, particularly those facing financial challenges. By creating a balanced approach, the government can better support farmers' livelihoods and rice's affordability for consumers.

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ASSESSING THE LEVEL OF FINANCIAL LITERACY AMONG SENIOR CITIZENS IN A BARANGAY IN CEBU CITY: A BASIS FOR DEVELOPING A FINANCIAL LITERACY PROGRAM

Gian Carlo D. Busico¹, Amy Christ C. Cimafranca², April Nee Gumahad⁴, Rohna R. Monilar⁵, Fedencia A. Pintor⁶, Philip Almanon⁷

¹²³⁴⁵⁶Student,⁷Faculty, College of Business Administration, University of the Visayas, Cebu, Philippines

ABSTRACT

This study aimed to assess the level of financial literacy among senior citizens in a barangay in Cebu City, serving as the basis for developing a financial literacy program. It specifically evaluated their financial knowledge in three key areas: savings, spending behavior, and investments, while also describing their demographic profile, including age, gender, and previous occupation. The motivation for this research arose from the financial struggles many senior citizens face and the need to equip them with essential financial management skills. Senior citizens must understand how to manage their finances, particularly regarding savings, spending control, and investment strategies. The study was conducted in a barangay in Cebu City, with 30 senior citizen respondents selected through convenience sampling. A quantitative research approach, specifically descriptive survey research, was employed to gather data, with a weighted mean used to evaluate their knowledge of savings, spending, and investments. The findings revealed that many senior citizens have a fear of and lack knowledge about investing. Based on these results, the study recommends developing a targeted financial literacy program to help senior citizens understand the importance of financial literacy in improving their financial well-being.

Keywords: *Savings, Spending Behavior, Investments, Senior Citizens, Financial Literacy*

INTRODUCTION

Saving and investing are crucial elements of financial management for senior citizens, providing a strong foundation for their finances and ensuring long-term financial security. Seniors can accumulate funds for future needs, emergencies, and other long-term objectives by saving. Safe and strategic investing is also key to mitigating running out of money during retirement. However, many elderly individuals face increased housing and healthcare costs, reduced mobility, and job loss, all of which can strain their finances. Additionally, studies show that spending habits typically decrease after retirement, with 33% of families experiencing an increase in their spending habits six years post-retirement (Hanna, 2018). Despite this, a significant % of individuals aged 50 and above, 44%, expect their expenses to remain the same, while 34% anticipate a decrease, and only 22% expect an increase (Lusardi & Mitchell, 2017). For those who have accumulated wealth, wise savings and investment decisions are often the key to their financial stability. However, older generations face challenges as work and retirement have not evolved simultaneously. These changes have left seniors more vulnerable to financial fraud, and with declining average incomes, many struggle to maintain their standard of living. Pension income may



increase over time, but older individuals often live alone, reducing their disposable income and limiting their financial flexibility (OECD, 2019). The financial well-being of senior citizens plays a significant role in restoring quality and dignity to their lives. Many older individuals spend more, invest in liquid financial instruments, and support family members financially. As such, it is essential to maintain an appropriate amount of cash for short-term expenses and contingencies in retirement. For this reason, financial management students and professionals must focus on preparing seniors to manage their finances effectively in later years, ensuring they can age with dignity and stability.

This study aims to assess the level of financial literacy among senior citizens in a barangay in Cebu City, providing the foundation for developing a financial literacy program to help senior citizens better manage their finances. By exploring key areas such as savings, spending behavior, and investments, this research seeks to understand the gaps in financial knowledge among seniors and offer recommendations for improving their financial literacy and overall financial health.

METHODOLOGY

This study employed a descriptive research design to assess the financial literacy levels among senior citizens in a barangay in Cebu City. The researchers utilized an adapted questionnaire to gather relevant data. Convenient sampling was applied, as it was deemed sufficient for the primary investigation, and no specific eligibility criteria were set for participation. Data were collected through a self-administered questionnaire distributed to the selected respondents. The questionnaire aimed to assess the respondents' financial literacy and the impact of this knowledge on their financial management practices. The questionnaire was divided into two sections. The first section gathered demographic information, including age, gender, and previous work experience. The second section focused on key financial indicators, which were assessed using a 1-4 Likert scale with corresponding interpretations based on the framework by Box (year). The study employed descriptive statistical methods such as weighted mean, percentage, and frequency distribution to analyze the collected data. These measures provided insights into senior citizens' financial behaviors and literacy levels, allowing the researchers to draw meaningful conclusions about their financial management practices.

RESULTS AND DISCUSSION

This study aims to assess the level of financial literacy among senior citizens in a barangay in Cebu City. Below is a discussion of the study's results.

Results

Table 1
Distribution of the Respondents According to Age

Age	Frequency	Percentage (%)
60-65 years old	16	54%
66-70years old	10	33%
75 years old	4	13%
Total	30	100%



Table 2
 Distribution of the Respondents According to Gender

Gender	Frequency Distribution	Percentage Distribution
Female	19	63%
Male	11	37%
Total	30	100%

Table 3
 Distribution of the Respondents According to Previous Work

Previous Work	Frequency Distribution	Percentage Distribution
Government	13	43%
Private	9	30%
Self- Employed	8	27%
Total	30	100%

Table 4
 Level of senior citizens' financial literacy in terms of savings

Savings	Mean	Interpretation
Save money for retirement	1.5	Not utilized
Save money for medicines	2.9	Moderately utilized
Save money for household expenses	3.0	Moderately utilized
Save money for daily needs	2.8	Moderately utilized
Save money in the bank	1.7	Slightly utilized
Save all the time when you have an excess/extra money	2.3	Slightly utilized
Save money for any emergency	2.7	Moderately utilized
Save money to invest	1.8	Slightly utilized
Saving money for family gatherings or vacations	1.9	Slightly utilized
I do not have savings	1.8	Slightly utilized
Average Weighted Mean	2.3	Slightly utilized

Table 5
 Level of senior citizens' financial literacy in terms of spending

Spending Behavior	Mean	Interpretation
Spending money for daily needs	3.56	Highly utilized
Find it more satisfying to spend money than to save it for the long term	2.90	Moderately utilized
Spending money on vacation	1.83	Slightly utilized
Spending money for healthcare needs	2.96	Moderately utilized
Tend to buy some gifts for grandchildren	2.06	Slightly utilized
Tracking monthly expenses	1.80	Slightly utilized
Prioritize to spend money for daily meal	3.83	Highly utilized
I tend to spend money as soon as I get it	3.03	Highly utilized
Spend on home appliances	1.96	Slightly utilized
Spending money on vicious	1.70	Slightly utilized
Average Weighted Mean	2.56	Slightly utilized



Table 6
 Level of senior citizens' financial literacy in terms of Investment

Investment	Mean	Interpretation
Invest in real estate	1.0	Not utilized
Invest in life and health insurance	2.2	Slightly utilized
Invest in housing loans	1.1	Not utilized
Invest in corporate bonds	1.0	Not utilized
Invest in long-term investments	1.23	Not utilized
Invest in small business	1.4	Not utilized
Invest in gold jewelry	2.0	Slightly utilized
Invest in an emergency fund	1.3	Not utilized
Invest in treasury bills	2.0	Slightly utilized
No investment	2.6	Moderately utilized
Average Weighted Mean	1.6	Slightly utilized

Discussions

Table 1 presents respondents' frequency and percentage distribution based on age. The findings reveal that most respondents are between 60 and 65, comprising 54% of the total sample. The second largest age group falls between 66 and 70, accounting for 33%, while only 13% of respondents belong to the 75-year-old and older category. The prominence of respondents in the 60–65 age range indicates that this group is likely the most financially active among senior citizens. This highlights the importance of tailoring financial literacy programs to this age group, as they may still be involved in economic decision-making. Financial literacy initiatives targeting this age range could focus on strengthening financial management skills, particularly in areas such as retirement planning.

Table 2 illustrates the gender distribution of the respondents. A majority, 63%, of the participants were female, while 37% were male. This shows a predominantly female representation, which suggests that financial literacy programs for senior citizens should consider gender-specific challenges. For women, particularly those in senior age groups, issues such as savings, pensions, and economic security may be more pressing due to longer life expectancies and potential gaps in retirement savings. Tailoring financial education to address these gender-related factors could improve outcomes for senior women.

Table 3 highlights respondents' previous work experience. The largest group of respondents, 43%, had worked in government positions, followed by 30% who had worked in the private sector and 27% who were self-employed. Given that many respondents have a background in government service, they likely have access to pension plans or other forms of government-provided financial support. This emphasizes the need to incorporate financial literacy education into retirement planning programs, especially for government employees. Financial literacy programs could focus on building personal savings and investment strategies for those with private or self-employment backgrounds, as they may not have the same pension guarantees.



Table 4 presents the level of financial literacy among senior citizens in terms of savings. The average weighted mean for the respondents' overall savings behavior is 2.3, indicating that savings are "Slightly utilized." Respondents save moderately for household expenses (mean = 3.06), medicines (mean = 2.93), and daily needs (mean = 2.80). However, they are less likely to save for emergencies (mean = 2.73), family gatherings or vacations (mean = 1.93), and retirement (mean = 1.53). The low engagement in saving for retirement, in particular, points to a significant gap in long-term financial planning. Financial literacy programs should focus on encouraging senior citizens to prioritize saving for retirement and emergencies alongside their immediate needs.

Table 5 examines the respondents' spending behavior. The findings indicate that spending on daily meals (mean = 3.83) and daily needs (mean = 3.56) is "Highly utilized." Many respondents also report spending money as soon as it is received (mean = 3.03), suggesting impulsive spending habits. Spending on healthcare (mean = 2.96) and a tendency to find spending more satisfying than saving (mean = 2.90) were moderately utilized. Conversely, respondents were "Slightly utilized" in spending on vacations (mean = 1.83), gifts for grandchildren (mean = 2.06), and tracking monthly expenses (mean = 1.80). The overall mean for spending behavior was 2.56, interpreted as "Moderately utilized." These findings highlight the need for financial education programs that teach senior citizens the importance of budgeting, tracking expenses, and prioritizing essential spending, especially given the limited income that many senior citizens face.

Table 6 explores the financial literacy of senior citizens in terms of investing. The average weighted mean of 1.6 suggests that investment behavior is "Slightly utilized" by most respondents. Some respondents showed moderate utilization in having no investments (mean = 2.56), while others showed minimal engagement in life and health insurance (mean = 2.2) and gold jewelry (mean = 2.0). Investment in real estate (mean = 1.0), corporate bonds (mean = 1.0), and long-term investments (mean = 1.23) were very low, indicating limited involvement in these areas. This suggests a significant gap in knowledge about investment opportunities among senior citizens. Financial literacy programs should focus on introducing safe, low-risk investment options suitable for senior citizens and exploring alternative income-generating methods, such as social programs. Additionally, senior citizens' limited investment options due to age-related restrictions and risk aversion should be addressed within broader financial planning strategies.

These findings align with Rajeswari's (2015) assertion that investment options for senior citizens are often restricted, primarily due to age-related limitations and a preference for low-risk investments. Moreover, external factors such as rising inflation and declining interest rates further complicate investment decisions. In light of these challenges, savings may present a more feasible method for senior citizens to generate income in their later years, supported by expanding public services and investments in human capital.

CONCLUSION

Based on the findings, most respondents are 60-65 years old. Based on the study's results, the conclusion highlights the importance of spending, savings, and investments in shaping the financial stability of senior citizens in a barangay in Cebu City. While spending on daily needs and personal expenses is crucial for their immediate well-being, many senior



citizens prioritize these daily expenses over long-term financial planning, such as savings and investments. Their living conditions primarily influence this tendency, which does not always allow for consistent savings. Regarding investments, the lack of interest and knowledge, combined with concerns about stability and age, further limits their engagement with investment opportunities. Most senior citizens in this study preferred securing their health and insurance rather than exploring other financial avenues. Despite their limited involvement in savings and investments, senior citizens demonstrated considerable control over their spending habits, often making financial decisions based on necessity rather than long-term financial goals. This study underscores that while senior citizens in the barangay make thoughtful decisions about daily expenses, there is a significant opportunity to enhance their financial literacy, particularly in saving and investing. Financial literacy programs tailored to this demographic should address their specific needs, focusing on retirement planning, low-risk investment options, and building savings, ultimately contributing to their financial well-being and long-term stability.

RECOMMENDATION

It is recommended that financial literacy programs for senior citizens in Cebu City be tailored to address their specific needs and challenges. These programs should focus on practical savings strategies, particularly encouraging saving for emergencies and retirement, areas where senior citizens showed less engagement. Additionally, the programs should introduce low-risk investment options suited to their financial situation and provide guidance on budgeting and managing limited incomes. By improving their understanding of basic financial concepts, senior citizens can make more informed financial decisions, enhancing their overall financial security and well-being.

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