

Retail Stores' Ergonomic Practices, Service Quality And Customer Retention

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Abstract- This study examined the relationship of ergonomic practices and service quality with customer retention in public markets in the Province of Guimaras, Philippines, during fiscal year 2025. Employing a descriptive-explanatory research design, the study surveyed 150 customers using a validated and reliable questionnaire covering demographic profile, ergonomic practices, service quality, and customer retention. Data were analyzed using descriptive statistics, Mann-Whitney U test, Kruskal-Wallis's test, and Spearman's rho. Findings revealed that most respondents were female, aged 46 years old and above, not employed, and commonly purchased fresh produce and wet goods. Ergonomic practices were rated very highly practiced, particularly in vendor positioning, tool accessibility, product arrangement, safety, and customer accommodation, although improvements were needed in price and label visibility. Service quality was rated very good, with strengths in vendor knowledge, respect, and accessibility, while concerns remained regarding pricing transparency, affordability, and promptness of service. Customer retention was high, although exclusive loyalty was limited by competition and pricing considerations. No significant differences were found in ergonomic practices and service quality across demographic groups, while customer retention differed significantly only by educational attainment. Ergonomic practices showed a weak but significant relationship with service quality, whereas neither variable was significantly related to customer retention, suggesting other factors, such as marketing strategies, promotions, competitive alternatives, pricing, and community engagement, play a more critical role. The study provides actionable insights for retail owners, vendors, LGUs, and researchers to optimize store environments, enhance customer experience, and develop strategies to strengthen customer retention and market loyalty.

Keywords: *Ergonomic Practices, Service Quality, Customer Retention, Retail Stores, Public Markets*

I. INTRODUCTION

Background of the Study

Modern retail has been operating in a dynamic environment, and the integration of ergonomic practices has emerged as a pivotal factor influencing service quality and customer retention. Ergonomics, traditionally associated with workplace efficiency and employee well-being, is now recognized for its role in enhancing the retail environment to meet customer needs effectively (Pentony, 2023).

Elements like lighting, signage, and checkout flow reduce physical strain and support better navigation for both customers and staff (Hasanain, 2024; Sharma, 2023). These improvements foster satisfaction and repeat visits, especially when stores are designed to be inclusive and accessible (Moukrim et al., 2023; Tlapana, 2021).

Ergonomic environments shape perceptions of service quality, influencing buying behavior and loyalty (Andriyansah, 2021; Mahto, 2016). Service quality, a critical determinant of customer retention, is significantly influenced by ergonomic improvements. Studies have shown that factors like physical aspects, reliability, personal interaction, customer care, and policy are integral components of service quality that positively affect customer satisfaction and retention (Tran & Hoai, 2024).

Moreover, the physical environment of a store, including its ergonomic design, plays a crucial role in shaping consumer perceptions and behaviors, leading to increased commitment and repeat patronage (Faria et al., 2022). Furthermore, ergonomic spaces enhance employee performance, leading to more effective service delivery, which translates into repeat

purchases and more loyal customers (Lovemore et al., 2023; Bahreini, 2016).

Despite the evident benefits, there remains dearth of studies exploring the direct impact of ergonomic practices and service quality on customer retention, particularly in public markets and rural contexts such as the Province of Guimaras. This study addressed this critical gap by investigating how retail ergonomic practices and service quality influence customer retention within public markets in Guimaras, Philippines, for the fiscal year 2025.

By concentrating on this specific locale, the research offers actionable, context-driven insights that can guide market stakeholders in enhancing retail environments, improving service delivery, and fostering stronger, long-term customer relationships.

Statement of the Problem

This study aimed to determine the retail stores' ergonomic practices, service quality, and customer retention within public markets in the Province of Guimaras, Philippines for the fiscal year 2025.

Specifically, this study sought answers to the following questions:

1. What is the profile of respondents in terms of age, sex, educational attainment, type of products bought, and employment status?
2. What are the retail stores ergonomic practices, as assessed by the respondents, when taken as a whole and when classified according to age, sex, educational attainment, type of products bought, and employment status?
3. What is the retail stores' level of service quality, as assessed by the respondents, when taken as a whole and when classified according to age, sex, educational attainment, type of products bought, and employment status?
4. What is the retail stores' extent of customer retention, as assessed by the respondents when taken as a whole and when classified according to age, sex, educational attainment, type of products bought, and employment status?
5. Are there significant differences in the retail stores' ergonomic practices when classified according to age, sex, educational attainment, type of products bought, and employment status?

6. Are there significant differences in retail stores' level of service quality when classified according to age, sex, educational attainment, type of products bought, and employment status?
7. Are there significant differences in retail store's extent of customer retention when classified according to age, sex, educational attainment, type of products bought, and employment status?
8. Do retail stores' ergonomic practices and service quality significantly influence customer retention?

HYPOTHESES

Relative to the foregoing problem statements, the following null hypotheses were advanced:

1. There are no significant differences in the retail stores' ergonomic practices when classified according to age, sex, educational attainment, type of products bought, and employment status.
2. There are no significant differences in retail stores' level of service quality when classified according to age, sex, educational attainment, type of products bought, and employment status.
3. There are no significant differences in retail store's extent of customer retention when classified according to age, sex, educational attainment, type of products bought, and employment status.
4. There is no significant influence of retail stores' ergonomic practices and service quality on customer retention.

II. THEORETICAL FRAMEWORK

This study is anchored in a collection of theories that explore the interrelationship between retail ergonomic practices, service quality, and customer retention, providing a cohesive framework for understanding how store design influences customer satisfaction and brand loyalty. Central to this exploration are the Theory of Ergonomics, the Theory of Ergodynamics, the SERVQUAL model, Attribution Theory, and Relationship Marketing Theory.

Together, these theories highlight how the physical retail environment and service interactions shape customer perceptions, satisfaction, and loyalty.

The Theory of Ergonomics, introduced by Jastrzębowski (1857) and expanded by Konz and Johnson (2004), serves as the foundation for understanding how the physical environment can be optimized to enhance customer comfort and efficiency. In retail, ergonomic design principles—such as store layout, lighting, signage, and accessibility—play a crucial role in reducing physical strain and improving the overall shopping experience.

By creating spaces that are comfortable and easy to navigate, retailers can directly impact customer satisfaction and encourage repeat visits. Building on this, the Theory of Ergodynamics, proposed by Venda (1995), extends ergonomic principles to emphasize the dynamic interaction between people and their environment.

This theory underscores how the physical space in which customers shop can influence not only their immediate comfort but also their overall engagement and behavior. In retail, an ergonomically optimized environment fosters greater interaction with products and services, leading to a more enjoyable experience. This dynamic interaction between the customer and the store space enhances both satisfaction and the likelihood of brand loyalty.

Moving from the retail environment to the service delivered, the study adopts Grönroos's Theory of Total Perceived Service Quality as its theoretical foundation. Grönroos (1984) argues that consumers evaluate service quality by comparing their expectations with the actual service received, based on three key dimensions: technical quality (what is delivered), functional quality (how it is delivered), and corporate image (which shapes perceptions).

Total perceived service quality reflects the interaction of these dimensions and represents the customer's overall assessment of the service experience. This framework is especially relevant in retail settings, where both the efficiency of service and the manner of its delivery, along with the store's reputation, influence customer satisfaction and retention. Complementing this, Attribution Theory (Heider, 1958; Kelley, 1973) explains how customers interpret their experiences.

Positive experiences may be attributed to the store's ergonomic design, signaling the brand's commitment to customer care and service quality, while poor ergonomic conditions may lead to negative perceptions, reducing satisfaction and loyalty. This highlights that ergonomic practices are not merely about comfort; they serve as cues of brand quality that shape customers' overall perception of service.

Finally, Relationship Marketing Theory (Berry, 1983) offers insights into the long-term impact of positive service experiences. It emphasizes the importance of building strong, lasting relationships with customers, where satisfaction leads to loyalty and advocacy.

Ergonomically designed retail environments contribute to this by ensuring a comfortable and engaging shopping experience, which in turn fosters emotional connections between customers and the brand. These connections are crucial for customer retention, as customers who feel valued and comfortable are more likely to return and recommend the store to others.

Together, these theories provide a comprehensive framework for understanding how ergonomic practices in retail environments shape service quality and customer retention. The Theory of Ergonomics and Ergodynamics highlight the importance of creating customer-friendly spaces, while Grönroos's Theory of Total Perceived Service Quality connects these ergonomic elements to key service quality dimensions.

Attribution Theory reveals how customers perceive and interpret their experiences, and Relationship Marketing Theory emphasizes the long-term advantage of establishing customer loyalty through positive experiences. By combining these views, this study hoped to provide insightful suggestions on how retailers can maximize their environments to enhance customer satisfaction and establish long-lasting relationships.

Conceptual Framework

This study determined the retail stores' ergonomic practices, service quality, and their influence on

customer retention within the public markets, while considering the demographic variables of age, sex, educational attainment, type of products bought, and employment status. The conceptual framework was based on the premise that ergonomic practices, including store layout, lighting, signage, product placement, checkout efficiency, relational aspects, and accessibility, positively enhance service quality by improving comfort, convenience, and ease of navigation.

Enhanced service quality, in turn, directly impacts customer retention, fostering repeat visits, continuous patronage, brand preference, and positive word-of-mouth. Thus, both ergonomic practices and service quality play a crucial role in shaping customer loyalty and sustaining long-term relationships with retail stores.

Demographic variables played a crucial role in shaping these relationships. While these demographic characteristics did not directly influence customer retention, the Profile of the Respondents, such as the age, sex, educational attainment, type of products bought, and employment status, was used to classify respondents for comparative analysis. This allowed the study to determine whether significant differences exist in their assessments of ergonomic practices, service quality, and customer retention when grouped according to their demographic characteristics.

Age, categorized as “20–35 years,” “36–45 years,” and “46 years and above,” was considered in relation to ergonomic preferences and service quality, as older market-goers tend to give greater importance to accessibility, seating, and ease of movement, while younger shoppers tend to prioritize layout, clear signage, and overall shopping convenience.

Sex was also taken into account in relation to shopping experiences, as male and female customers may differ in their assessment of service quality and ergonomic practices. Female shoppers were generally assumed to be more attentive to ambiance, cleanliness, organization, and accessibility, giving greater value to comfort, detailed store layouts, and responsive customer service. Male shoppers, on the other hand, were often associated with preferences for efficiency, straightforward navigation, and

functionality, with greater attention to service speed and ease of product location. These differing expectations suggest that assessments of ergonomic practices may vary between sexes and contribute to how customers evaluate service quality and decide whether to return to the store.

Customers with varying educational backgrounds, categorized into “elementary,” “high school,” “college,” and “post-graduate”, may approach the shopping experience with different expectations. Those with lower educational attainment may prioritize straightforward store layouts, clear signage, and accessible pathways that facilitate easy navigation and interaction with vendors.

In contrast, customers with higher educational attainment may place greater value on the quality of interpersonal interactions, responsiveness of market staff, and the overall relational experience, expecting vendors to provide attentive, courteous, and helpful service. As educational levels increase, customers may become more discerning, seeking not only organized and accessible spaces but also engaging, customer-centered interactions that enhance their shopping experience.

Customers’ expectations and preferences in traditional public markets may also vary according to the type of products they purchase, such as “dry goods”, “wet goods”, “fresh produce”, and “household items”. Those buying dry goods may prioritize organized shelving, clear labeling, and quick access to frequently purchased items. Shoppers of wet goods and fresh produce often value cleanliness, vendor attentiveness, and careful handling to ensure product quality. Customers purchasing household items may focus on both accessibility and the helpfulness of vendors in locating specific products.

Lastly, employment status, categorized as “Employed” and “Not Employed,” was also examined in relation to shopping behavior and preferences for ergonomic features in traditional public markets. Employed individuals and students, who often have limited time, tend to value efficient layouts, clear signage, and prompt, helpful interactions with vendors. Meanwhile, those who are

not employed, including retirees, are more likely to give importance to comfort, accessibility, and personal engagement with vendors, preferring market environments that support relaxed browsing and attentive, customer-centered service.

This study also assumed that ergonomic practices in retail environments, along with service quality, directly influence customer retention. It posits that stores with well-designed ergonomic features and high satisfactory service quality are more likely to encourage repeat patronage, forming the basis for sustained customer retention.

This framework explained how ergonomic practices and service quality may serve as key predictors of customer retention. If both variables significantly influence retention, it suggests that customers are more likely to continue patronizing vendors who provide a comfortable, safe, accessible, and well-organized buying environment, together with reliable and responsive service.

For vendors, this meant that retaining customers depends not only on product availability or price but also on the overall quality of the customer experience. Therefore, improving store ergonomics and service delivery could become a strategic advantage in building customer trust, satisfaction, and long-term loyalty.

The relationship among these variables and concepts are illustrated in Figure 1.

III. RESEARCH PARADIGM

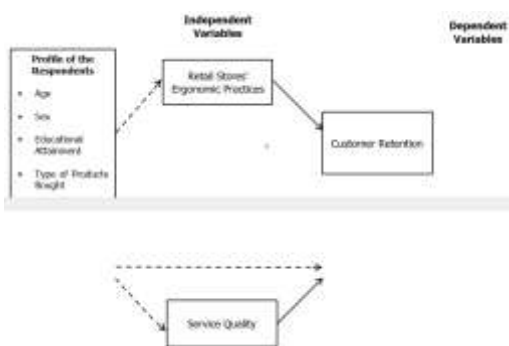


Figure 1. Schematic Diagram Showing the Relationship Among the Variables of the Study

IV. SIGNIFICANCE OF THE STUDY

This study shed light on how ergonomic practices within retail public markets shape customer perceptions of service quality and influence customer retention. Its findings were expected to benefit retail owners and vendors, customers, LGUs, researchers, and future researchers.

Retail Business Owners and Vendors. This study highlighted the importance of integrating ergonomic practices to enhance service quality in traditional public markets. By understanding how different demographic groups perceived and responded to ergonomic features, vendors could design more customer-friendly environments, ultimately fostering stronger customer retention and potentially increasing profitability.

Customers. The study emphasized the role of ergonomics in creating a more comfortable and convenient shopping experience. Findings could encourage vendors to improve store layouts, accessibility, and relational interactions, ensuring that customers of all backgrounds, including those with mobility or physical limitations, could navigate and shop with ease.

Local Government Units (LGUs). This research provided data-driven insights to support the development of policies and programs for improving public market facilities. These findings could guide initiatives aimed at enhancing accessibility, organization, and overall market efficiency, ensuring that retail spaces accommodate diverse customer needs.

Researcher. The study allowed the researcher to deepen their understanding of how ergonomic practices and service quality influence customer retention in public markets. It provided practical experience in data collection, analysis, and interpretation, enhancing the researcher's skills in conducting empirical studies relevant to retail management and consumer behavior.

Future Researchers. Future researchers could build on this study by examining additional variables, expanding the scope to other market settings, or

conducting comparative studies across regions. The findings serve as a foundation for further investigation into ergonomic innovations, consumer preferences, and strategies for improving service quality and customer loyalty.

Definition of Terms

To provide context and to ensure clarity and consistency, the following key terms were defined conceptually and operationally as they apply to this study:

Customer Retention. Customer retention refers to a company's ability to retain its existing customers over a specified period. It reflects the strength of the relationship between the business and its customers, indicating how well the company meets or exceeds customer expectations, leading to repeat patronage and brand loyalty (Hashemi-Pour et al., 2022).

In this study, customer retention was operationally defined as the degree to which customers expressed their intention to continue buying from the same retail store and to recommend it to others. It measured customers' future behavioral intentions, particularly their willingness to return for future purchases, recommend the store, and maintain patronage based on their satisfaction with the store environment and overall shopping experience.

Customer retention was assessed through a survey questionnaire using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The results provided a quantitative measure of customers' likelihood of repeat patronage and recommendation. **Ergonomic Practices.** Ergonomic practices or simply ergonomics is the study of how a worker interacts with his or her working environment.

This includes the physical space in which a person works, as well as the tools and materials, work practices, and work structure, whether the person works alone or as part of a team (Koirala & Nepal, 2022).

In this study, ergonomic practices in public market stalls were operationally defined as the extent to

which vendors arranged and maintained their physical space, tools, materials, and work processes to support efficient, safe, accessible, and comfortable customer transactions.

It measured the consistency of ergonomic conditions in terms of technical aspects, such as product arrangement, stall layout, tools, equipment, and physical space; functional aspects, such as ease of movement, accessibility, safety, convenience, and efficiency of service; and relational aspects, such as vendor assistance, attentiveness, and customer-friendly interaction.

These practices were assessed through a survey questionnaire using a 5-point frequency-based Likert scale, ranging from 1 (Never) to 5 (Always), allowing respondents to indicate how often each ergonomic practice was observed or experienced in the retail store.

Service Quality. Service quality is the degree to which a service meets or exceeds customer expectations. It encompasses various dimensions, including reliability, responsiveness, assurance, empathy, and tangibles, which collectively contribute to the overall perception of service excellence (Kankam, 2023).

In this study, service quality was operationally defined as customers' assessment of the service provided by retail stores in public markets. It measured five dimensions: reliability in service delivery, responsiveness to customer needs, assurance through courtesy and trustworthiness, empathy through personal attention, and tangibles through the store's cleanliness, organization, and physical appearance. It was assessed using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Scope and Limitations of the Study

This study investigated retail stores' ergonomic practices, service quality, and their influence on customer retention, while considering demographic factors such as age, sex, educational attainment, type of products bought, and employment status. Conducted in public markets within the Province of

Guimaras, Philippines, for the year 2025, the study examined how key ergonomic aspects – technical, functional, and relational – shaped customer experiences, perceptions of service quality, and customer retention.

The study employed a descriptive-explanatory research design to determine the influence of ergonomic practices and service quality on customer retention. A total of 150 retail customers were surveyed, selected using quota sampling, and data were collected through a researcher-designed questionnaire. The instrument was organized into four sections: Part I captured demographic information; Part II assessed the ergonomic practices; Part III evaluated service quality; and Part IV measured customer retention. To ensure content validity and reliability, the questionnaire was reviewed by a panel of experts which included two research specialists, a statistician, and an English critic. The validation was guided by the Goods and Scates criteria for validity. Reliability testing was also conducted to confirm the consistency of measurements.

Data were analyzed using SPSS software. Descriptive statistics, including frequency counts, percentages, ranks, and means, were computed to summarize the data. The Chi-Square test, Mann-Whitney U test, and Kruskal-Wallis's test were applied to determine significant differences in ergonomic practices, service quality, and customer retention across demographic groups.

Spearman's rho was used to determine whether higher assessments of ergonomic practices and service quality were significantly associated with higher levels of customer retention. A significance level of 0.05 was used to evaluate the strength and significance of relationships among variables.

However, certain limitations were acknowledged. The study relied on customer perceptions and self-reported experiences, which may be subject to personal biases. It did not account for external factors such as economic conditions, market competition, or individual shopping habits that could independently influence customer loyalty. Additionally, as the study was geographically confined to retail stores in

Guimaras, its findings may not be generalizable to other regions with different consumer dynamics or retail conditions.

Despite these limitations, the research provided valuable insights for retailers aiming to enhance service quality through improved ergonomic designs, for policymakers advocating for more inclusive and accessible retail standards, and for researchers interested in further exploring the relationship between ergonomic environments, service quality, and customer retention in the retail sector.

V. REVIEW OF RELATED LITERATURE AND STUDIES

This section delves into the pertinent literature and studies, explaining key concepts and research findings relevant to the examination of retail stores' ergonomic practices, service quality, and customer retention within the public markets in the Province of Guimaras, Philippines, for the fiscal year 2025.

Conceptual Literature

In the contemporary retail landscape, understanding the interplay between ergonomic practices, customer satisfaction, and customer loyalty is pivotal for achieving sustained business success. This conceptual literature review explores these dimensions, drawing on existing literatures to interpret their interconnections.

On Retail Stores' Ergonomic Practices

Ergonomics, derived from the Greek words "ergon" (work) and "nomos" (natural laws), is the scientific discipline focused on understanding the interactions between humans and other elements within a system. It applies theoretical principles, data, and methods to design in order to optimize human well-being and overall system performance (IEA, 2021). Practitioners in this field, known as ergonomists, design or adjust work environments to suit the worker, thereby minimizing discomfort and reducing the risk of work-related injuries. This approach ensures that the employee's needs are prioritized when evaluating and configuring a workstation (UNC, 2024).

Ergonomics is a multidisciplinary field that integrates various areas of study such as human anatomy, biomechanics, physiology, psychology, sociology, medicine, and engineering. It encompasses three main domains: organizational, cognitive, and physical. The organizational domain focuses on how workplace design, policies, and processes impact communication, work systems, networking, and teamwork, the cognitive domain addresses mental processes like perception, memory, reasoning, and motor responses while the physical domain is concerned with human anatomical, anthropometric, physiological, and biomechanical characteristics as they relate to physical activity (IEA, 2021; Whiting, 2019).

Retail ergonomics focuses on ensuring customer comfort at the point of sale by stimulating their senses in a way that enhances their shopping experience. Sensory ergonomics, which integrates emotions and sensations into marketing strategies, plays a key role in this process. Positive sensory experiences create emotional connections that encourage brand loyalty.

A major aspect of this is the scenic box, which includes design elements like lighting, colors, materials, sounds, and scents. These elements work together to create a memorable brand experience. Additionally, store staff contribute to brand identity through their interactions, appearance, and professionalism, making a lasting impression on customers. Both physical and emotional well-being influence the purchasing process.

A comfortable store layout with well-placed furniture, signage, and relaxation areas encourages customers to stay longer, increasing sales opportunities. Staff training is also essential to ensure confident interactions that build customer trust. Strategic use of sensory elements—such as music, lighting, and scents—can guide customer behavior and stimulate purchases. Ultimately, creating a cohesive sensory and emotional experience enhances customer engagement and strengthens brand positioning (Shopping Basket, 2020).

On Service Quality

Service quality has long been recognized as a critical determinant of success in the retail sector. In the modern retail environment, characterized by intense competition and rapidly evolving customer expectations, delivering superior service quality is essential for achieving customer satisfaction, loyalty, and long-term profitability (Rane et al., 2023). Service quality and customer satisfaction are closely intertwined, with service quality being a key driver of customer satisfaction. It measures how well a company's products, services, and overall experience meet customer expectations (Rapiti & Silvestri, 2020).

Surveys and ratings provide valuable insights that help businesses refine their offerings and services to enhance customer experiences. Prioritizing satisfaction is essential for all organizations, including retail, industrial firms, government agencies, service providers, and nonprofits, as it directly impacts competitiveness and growth. To establish customer satisfaction, businesses must first identify their target audience and understand their expectations. Recognizing what customers value allows companies to tailor their products and services, ensuring a quality service that fosters loyalty and long-term success (American Society for Quality (ASQ), 2025).

The conceptualization of service quality often draws from the SERVQUAL model, which outlines dimensions such as tangibility, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988). However, recent literature suggests that the traditional SERVQUAL framework requires adaptation to address new realities in retail, such as digital integration and experiential expectations (Sharma et al., 2024).

Retail service quality is increasingly seen as a multidimensional construct that not only encompasses the basic elements of service delivery but also incorporates emotional and experiential aspects. According to Rane et al. (2023), modern consumers evaluate service quality not only based on functional outcomes but also on how retail interactions make them feel—highlighting the growing importance of emotional engagement in the

customer journey. Moreover, physical evidence within stores, such as store layout, cleanliness, and ambiance, remains a powerful influencer of perceived quality, particularly in brick-and-mortar settings (Calvo-Porrall & Lévy-Mangin, 2021).

The rise of omnichannel retailing further complicates the measurement and management of service quality. Customers today expect a seamless experience across physical stores, online platforms, and mobile apps. Service failures or inconsistencies across channels can significantly damage overall perceptions of quality (Gao & Fan, 2021). Consequently, service quality in retail must now be viewed through an integrated lens, where digital and physical touchpoints contribute collectively to the overall service experience (Darvidou, 2024).

Employee-customer interactions remain central to service quality perceptions. Frontline employees are not merely service providers but also brand ambassadors whose behavior can directly influence customer satisfaction (Zahoor & Khan, 2022). Training, empowerment, and motivation of employees are thus critical strategies for retailers aiming to enhance service quality. Furthermore, personalization of service—leveraging customer data to offer tailored recommendations and solutions—has emerged as a new frontier for creating superior retail experiences (Chandra et al., 2022).

Finally, the COVID-19 pandemic introduced new dimensions to service quality, including health and safety measures, speed of service, and contactless transactions (Villanueva et al., 2023; Sulu et al., 2022). Retailers who adapted quickly to these new expectations by innovating their service delivery processes were better able to maintain customer trust and loyalty.

In sum, service quality in retail stores is a dynamic, evolving concept influenced by both traditional service dimensions and emerging customer expectations driven by technological and societal changes. Retailers must adopt a holistic and flexible approach to service quality management to stay competitive in an increasingly complex market environment.

On Customer Retention

Customer retention has emerged as a cornerstone of sustainable business success in highly competitive markets. It refers to the ability of a company to maintain its customer base over time by fostering loyalty, satisfaction, and engagement (Olson, 2024). It is a customer's ongoing preference for a brand, shown through repeat purchases, engagement, and advocacy.

While customer acquisition remains vital, research consistently shows that retaining existing customers is more cost-effective and yields higher lifetime value compared to acquiring new ones (Lee, 2025; Kumar, 2022).

At the conceptual level, customer retention is closely linked to customer satisfaction, perceived value, and trust. According to Singh et al. (2023), satisfaction arises when customers perceive that their expectations have been met or exceeded, leading to positive emotional connections with the brand. These connections foster a sense of loyalty, making customers more resistant to switching even when competitors offer attractive alternatives. Trust also plays a critical role in retention; customers are more likely to stay with firms they perceive as reliable, transparent, and committed to their well-being (Yum & Kim, 2024).

Recent studies highlight that personalization is an increasingly important driver of customer retention. Tailoring products, services, and communications to individual customer preferences creates a sense of relevance and emotional connection, significantly enhancing loyalty (EHL Graduate School, 2024; Casaca & Miguel, 2024). Moreover, the integration of digital technologies, such as artificial intelligence and data analytics, allows businesses to anticipate customer needs and deliver timely, customized experiences (Ijomah et al., 2024; Rane, 2023).

Beyond service quality and personalization, relationship marketing strategies have been emphasized as crucial for retention. Building long-term relationships rather than focusing solely on transactional exchanges leads to higher emotional commitment, which in turn strengthens retention (Rosário & Casaca, 2023). This involves consistent

communication, rewarding loyalty, and demonstrating genuine appreciation for customers over time.

Another important dimension is customer engagement. Engagement goes beyond satisfaction; it involves customers actively interacting with the brand across multiple touchpoints, both online and offline (Hamdan, 2024; Ng et al., 2020). Highly engaged customers are not only more likely to remain loyal but also tend to advocate for the brand, amplifying retention through positive word-of-mouth. Customer retention is a multifaceted concept influenced by satisfaction, trust, personalization, relationship-building, and engagement. In today's competitive and digitally driven markets, firms must adopt a proactive, customer-centric approach to foster lasting loyalty and ensure sustainable growth.

Related Studies

Foreign Studies

The following studies collectively emphasize the critical role of ergonomic factors, store design, service quality, and customer engagement in shaping retail success. The studies underscore that retailers can improve customer satisfaction, foster long-term loyalty, and enhance retention, ultimately leading to a more successful and competitive retail environment.

Palit et al. (2019) investigated the impact of ergonomic factors on restaurant customers' comfort, focusing on visual display, anthropometric, and environmental ergonomics. Their findings showed that anthropometric and environmental factors significantly enhanced customer comfort, while visual display had no notable effect. Additionally, direct measurements revealed that 52.38% of the restaurant's ergonomic standards were met. The study highlights key ergonomic considerations for improving customer convenience in restaurant settings.

In another study, Faria et al. (2022) examined the influence of service quality and store design on customer satisfaction and loyalty.

Their research found that service quality positively impacts customer satisfaction and commitment, but

store design moderates this relationship. Consumers who highly valued store design showed a weaker link between satisfaction and commitment, suggesting that a significant portion of their satisfaction stems from their appreciation of the store environment. This study emphasizes the importance of considering store design as a crucial element in marketing strategies to foster customer loyalty and competitiveness.

Meanwhile, Calvo-Porrá and Lévy-Mangin (2021) focused on the role of store atmosphere in shaping customer satisfaction and store choice. The study revealed that customers perceive store atmospherics differently depending on the shopping context—hedonic or utilitarian.

In hedonic shopping, internal ambient conditions and merchandise layout were the key factors, while in utilitarian shopping, external environment and layout were more important. This research provides valuable insights into how different store attributes influence satisfaction and offers retailers opportunities to differentiate themselves.

Similarly, Gorji et al. (2021) examined how both physical (layout and design) and social (employee interaction) factors of a store environment affect customer behavior. They found that the social environment has a direct impact on customer behavior, with store attachment acting as a key mediator.

Employee behavior also played a significant role, with the store environment having a stronger effect in discount department stores than in regular department stores. This study highlights the importance of the store environment in shaping customer behavior and underscores the variations between different types of stores.

Furthermore, Fuller et al. (2023) explored the impact of two in-store factors—distraction and shelf position—on a new brand's visibility. Their findings indicated that shoppers are more likely to notice and pay attention to a new brand when distracted, as they spend more time in front of the shelf and are more open to new products. The study also found that the optimal shelf position, typically used for established brands, may not have the same effect for new brands,

offering valuable insights for improving new brand launches and in-store marketing strategies.

Conversely, Melisa et al. (2024) investigated the influence of store atmosphere, customer value, and halal-labeled products on customer loyalty, with customer satisfaction serving as a mediating variable, in Miss Glam Padang City. Employing a quantitative approach with 150 purposively selected respondents, data were gathered through questionnaires and analyzed using Structural Equation Modeling (SmartPLS 4).

Results indicated that customer value exerts a significant impact on both satisfaction and loyalty, while halal-labeled products significantly affect satisfaction but not loyalty directly. In contrast, store atmosphere demonstrated no significant effect on either satisfaction or loyalty. Moreover, customer satisfaction was found to significantly strengthen loyalty and mediate the effects of customer value and halal-labeled products, though not that of store atmosphere.

Sulaiman et al. (2020) investigated the effects of store atmosphere, store image, and store location on purchase decisions and customer loyalty among Matahari Department Store shoppers in Samarinda. Using data from 120 respondents analyzed through SEM, the study revealed that store atmosphere and store location significantly influenced purchase decisions, indicating that customers were more likely to buy when the environment was pleasant and the store was conveniently located. In contrast, store image had no meaningful effect on purchasing behavior.

When it came to customer loyalty, however, the results were different: store atmosphere, store image, and store location all showed no significant impact, suggesting that these factors alone were not enough to ensure repeat patronage. Instead, purchase decisions themselves emerged as the strongest driver of loyalty, showing that once customers decided to buy, they were more likely to remain loyal. These findings suggest that while an attractive atmosphere and strategic location can encourage purchases, true loyalty depends on the quality of the purchase experience rather than external factors alone.

In the context of service quality, Musasa and Tlapana (2023) investigated the impact of retail service quality on shopping frequency in supermarkets in Durban, South Africa. Their study found that service quality positively influences shopping frequency, with atmospherics and reliability having the strongest impact. However, the policy dimension had no effect on shopping behavior, suggesting the need for further research into this aspect. This research underscores the importance of enhancing service quality, particularly through atmospherics and reliability, to encourage repeat visits.

Murad et al. (2024), on the other hand, examined how self-checkout technology impacts customer satisfaction, emphasizing factors like speed, usability, shorter queues, and overall customer experience. They found that customer experience was the most significant factor influencing satisfaction, followed by shorter queues and speed. The study highlighted that positive system experiences led to higher satisfaction, while technical issues and delays decreased satisfaction. Retailers are encouraged to improve self-checkout systems to ensure better customer retention and loyalty.

Singh et al. (2023) conducted a systematic literature review on service quality, customer satisfaction, and loyalty, particularly in financial institutions. The review highlighted the importance of high service standards, a strong company image, and trust in fostering customer satisfaction and loyalty. The study emphasized that maintaining high service quality is crucial for businesses seeking to improve customer retention and build long-term relationships.

Suriانشa et al. (2024) explored the impact of service quality and customer experience on customer retention at Ramayana department stores in DKI Jakarta. Their study showed that service quality positively affects customer experience, which in turn significantly influences customer retention. The research also found that customer experience fully mediates the relationship between service quality and retention, emphasizing the importance of engagement in fostering loyalty.

On the other hand, Harriet et al. (2024) examined how service quality, customer loyalty, and customer

retention are connected in private healthcare facilities in Mbarara City. Using a cross-sectional design, the study collected quantitative data from customers of 36 private healthcare centers through self-administered questionnaires.

Analysis with SPSS employed Pearson correlation and OLS regression to test the relationships. The findings showed that service quality significantly improved customer loyalty, and loyalty in turn strongly influenced retention. However, service quality alone did not have a direct impact on customer retention.

This suggests that patients remain loyal—and eventually stay with a healthcare provider—primarily when service quality fosters trust and satisfaction first. The study emphasized that healthcare facilities should focus on enhancing service quality through reliable staff, responsive care, assurance of quality services, and proper medical equipment. By doing so, private healthcare providers can strengthen loyalty, which ultimately drives long-term retention.

Local Studies

Unlike the global context, where retail ergonomics, service quality, and customer retention have been extensively explored, there is a noticeable lack of studies addressing these areas locally. The available research tends to focus on different industries, offering insights that, while valuable, may not fully capture the unique dynamics of the retail sector.

The following studies, though related, examine settings such as travel agencies, restaurants, and food service businesses. They highlight critical factors influencing service quality and customer loyalty but underscore the need for more focused research on ergonomic practices and their role in enhancing retail experiences and sustaining customer retention.

Gumasing et al. (2023) examined the impact of ergonomic factors on job satisfaction and productivity in the Philippine BPO sector, particularly among call center agents. Given the limited ergonomic research in this industry, the study explored how different ergonomic domains shape agents' work experiences.

Using an online survey and variance-based partial least squares structural equation modeling (PLS-SEM), the results showed that macro- and physical ergonomics significantly enhance productivity, while cognitive and macro-ergonomics influence job satisfaction. The close link between job satisfaction and productivity emphasizes the need for comprehensive ergonomic improvements, with the study providing a valuable framework for future research.

Building on the importance of workplace ergonomics, Cerna et al. (2024) focused on resort housekeepers in Northern Cebu. Applying Herzberg's Two-Factor Theory, they explored how posture, workspace design, and environmental factors affected job satisfaction. A survey of 97 housekeepers revealed that although posture-related discomforts were moderately common, their direct impact on job satisfaction was minimal. The finding challenges traditional theories on motivation in hospitality settings and highlights the need for further investigation into other job satisfaction drivers.

Beyond work environments, layout design also significantly influences consumer behavior. Tiu et al. (2022) investigated how shelf positioning affects impulse buying among Filipino Millennials. Through a survey of 225 participants, the study found that both horizontal and vertical shelf placements influence impulse purchases, with age and educational attainment moderating these effects. These findings suggest that strategic store layouts, just like ergonomic designs in workplaces, can strongly shape user behavior and decision-making patterns.

In terms of service interactions, several studies have emphasized the central role of service quality in shaping customer satisfaction. Balinado et al. (2021) analyzed the automotive after-sales service at Toyota Dasmariñas-Cavite using the SERVQUAL model. Their findings highlighted that reliability and empathy were key drivers of customer satisfaction, while tangibles, responsiveness, and assurance had little impact. This underscores the need for businesses to prioritize trust and personal connection in service delivery.

Similarly, Brucal et al. (2022) explored service quality among accounting firms in Pampanga, Philippines. Applying the SERVQUAL framework, they found that service quality significantly influenced customer satisfaction, while price affected service quality itself. Moreover, factors such as client tenure and the type of services provided also shaped perceptions of quality. The study confirmed that service quality mediates the relationship between pricing and client satisfaction, offering strategic insights for firms aiming to strengthen client relations.

Focusing on the public sector, Cuevas and Tamayo (2024) assessed the Customer Care Center (CCC) of the BOC-Port of Manila, evaluating dimensions like tangibility, reliability, responsiveness, assurance, and empathy. The study noted generally high service quality and customer satisfaction levels, although satisfaction varied based on employment type and transaction nature. The moderate positive correlation between service quality and satisfaction informed an action plan aimed at further enhancing CCC's services.

In the digital arena, Marcos (2020) examined the influence of e-Service Quality on customer satisfaction in Philippine e-Banking. Surveying 405 clients before and during the pandemic, Marcos found that Efficiency & Ease of Use, Reliability, and Security & Privacy significantly boosted satisfaction, although frequent use weakened these effects. These findings highlight how service quality, whether face-to-face or online, remains a critical factor in maintaining strong customer relationships.

Similarly, Prasetyo and Fuente (2020) explored customer satisfaction in online shopping during the COVID-19 pandemic. Using Structural Equation Modeling (SEM), they found that product/service quality, pricing, consumer behavior, and technological factors significantly influenced buying decisions and satisfaction, while operational factors did not. Together, these studies highlight that whether in-person or digital, quality interactions are central to customer experience.

Morales et al. (2025) focused on the public transportation sector, examining how service quality,

customer satisfaction, and ride frequency shape future loyalty among Filipino bus commuters. Using moderated mediation analysis, they found that service quality indirectly influenced loyalty through customer satisfaction, while ride frequency strengthened this relationship. The study offers practical insights for transport providers aiming to cultivate long-term commuter loyalty.

Similarly, Raquel (2018) studied the fast-food industry in the Philippines, investigating how customer satisfaction impacts loyalty behaviors such as repurchase intention, word-of-mouth marketing, and brand recall. Surveying 400 respondents, the study revealed that food quality, service quality, and price were significant drivers of loyalty, with the physical environment also playing a role in brand recall and word-of-mouth advocacy. These findings emphasize the importance of continuously improving service standards and environmental factors to secure customer loyalty.

Aday and Fabros (2018) also investigated customer retention among selected IATA travel agencies in Makati City, analyzing how demographics and factors like brand image, customer value, customer experience, service quality, and loyalty influenced retention. Most respondents were young, married women with moderate income levels.

The study found that while brand image contributed to retention, customer value, service quality, customer experience, and loyalty were seen as stronger factors, driven by attentive service, new offerings, and positive experiences. Significant differences in perceptions of brand image and customer value were observed across age, gender, income, and civil status, while service quality differed only by civil status. An action plan was recommended to help agencies strengthen customer retention.

Similarly, Rondilla et al. (2023) examined customer retention at Daidee's Place Garden and Resto Bar, focusing on how price, ambiance, satisfaction, food quality, and service influence loyalty. While all five factors positively affected retention, price emerged as the most influential, followed by ambiance, satisfaction, and service, with food quality receiving

the lowest ratings, especially regarding ingredients and food presentation.

The study noted operational issues such as customer noncompliance with restaurant rules and late audits, which affected service delivery. Positive customer interactions and maintaining affordable pricing were found to significantly support retention. The researchers recommended improving food quality and presentation, securing more reliable suppliers, maintaining ingredient stock, and offering a seasonal menu to enhance customer experience and loyalty.

Relevance of Related Literature and Studies

The reviewed literature offers valuable insights into the factors shaping customer retention, service quality, and ergonomic practices, providing a strong basis for understanding these dynamics in retail.

While studies such as Rondilla et al. (2023) have examined the effects of price, ambiance, service quality, and food offerings on loyalty in the foodservice sector, research directly addressing these elements in retail remains limited. Nonetheless, these studies underscore the importance of customer experience in driving loyalty.

Conceptual works further emphasize the role of ergonomics in enhancing customer experiences. Retail ergonomics, which blends human factors and sensory marketing, improves comfort, extends store visits, and boosts sales through design elements such as lighting, sound, layout, and scent (IEA, 2021; UNC, 2024). Beyond efficiency, such designs create positive emotional experiences that strengthen brand loyalty.

Service quality also remains central to satisfaction and loyalty. Frameworks like SERVQUAL (Parasuraman et al., 1988) continue to be relevant but must adapt to address omnichannel demands and emotional engagement (Sharma et al., 2024). Recent studies highlight that customers value not only functional outcomes but also how service interactions make them feel, making the emotional and experiential aspects of service delivery increasingly significant (Calvo-Porrall & Lévy-Mangin, 2021).

Retention is closely tied to satisfaction, trust, personalization, and perceived value (Singh et al., 2023; Yum & Kim, 2024). Businesses that invest in personalized experiences, loyalty programs, and relationship marketing are more successful in sustaining retention, particularly when supported by digital tools like AI and data analytics that anticipate needs and provide tailored engagement (Ijomah et al., 2024).

Contrasting earlier assumptions, recent studies present a more nuanced view. Melisa et al. (2024) found that customer value strongly influences satisfaction and loyalty, while halal-labeled products affect satisfaction more than loyalty and store atmosphere shows little effect. Similarly, Sulaiman et al. (2020) noted that store atmosphere and location influence purchase decisions but not loyalty, which is shaped more by purchasing experiences. In healthcare, Harriet et al. (2024) showed that service quality enhances loyalty, which in turn drives retention, underscoring loyalty's mediating role. Together, these findings suggest that retention depends less on environment or service factors alone and more on perceived value and meaningful experiences.

Overall, the literature demonstrates the interconnectedness of ergonomic design, service quality, and customer retention. Addressing these dimensions collectively allows retailers to create customer-centered environments that enhance loyalty and long-term commitment. The limited research on localized retail ergonomics highlights a gap that the present study seeks to address, offering deeper insights into effective customer-focused business practices.

VI. RESEARCH METHODOLOGY

This part presents a comprehensive discussion of the research methodology, detailing the research design, target respondents, procedures for validating the instrument and testing its reliability, as well as the tools used for data collection and analysis. It also outlines the data gathering process and the statistical methods employed to interpret the findings accurately and systematically.

Research Design

This study adopted a descriptive–explanatory research design to examine the influence of retail stores’ ergonomic practices and service quality on customer retention. The descriptive aspect of the design provided a clear picture of the existing ergonomic conditions in retail settings, such as layout, lighting, signage, checkout design, and accessibility. It also captured customer perceptions of service quality and their likelihood of continued patronage.

Descriptive research, as Pardy and Popan (2023) explained, documented the characteristics of a given phenomenon, revealing patterns and trends without influencing the variables under study. It detailed behaviors, situations, events, and outcomes without necessarily predicting or establishing cause-and-effect relationships. In this study, it portrayed how ergonomic practices and service quality were implemented in retail stores and how customers responded to them.

The explanatory component sought to clarify why certain phenomena occurred by examining the underlying causes and correlations between variables. Its primary purpose was to uncover causal mechanisms that could guide practical interventions (Hamaker et al., 2020).

In this study, it was applied to determine how ergonomic practices and perceived service quality influenced customer retention, as well as to identify potential drivers of loyalty in retail settings. Explanatory research, as noted by George and Merkus (2021), is particularly valuable when limited information is available, as it deepens understanding of a given topic, explains how and why a phenomenon takes place, and offers insights that may support predictions of future occurrences.

The demographic profiles, which include age, sex, educational attainment, type of product bought, and employment status, were treated as grouping variables. The independent variables consisted of ergonomic practices and service quality, while customer retention served as the dependent variable. By integrating descriptive and explanatory approaches, the research design provided a nuanced

understanding of how ergonomic practices and perceived service quality influenced customer retention, while also examining whether differences emerged across customer demographic groups.

Respondents of the Study

In this study, data were obtained from 150 retail customers across the public markets of the five municipalities of Guimaras, Philippines, in 2025. The respondents were selected through quota sampling, a non-probability technique wherein the target population was divided into subgroups, including but not limited to geographic location, time frame and demographic characteristics, and participants were chosen based on predetermined quotas (Nikolopoulou, 2022).

This approach ensured proportional representation from each municipality, thereby providing a balanced understanding of customer experiences throughout the province.

Data collection was conducted over the course of one week, coinciding with the designated market day in each municipality. Surveys were administered between 8:00 a.m. and 12:00 noon, and once the quota of 30 customers per municipality was reached, data collection was concluded. Eligible participants were actual shoppers in the public markets of Guimaras who voluntarily consented to participate.

The sample encompassed a broad demographic mix, including sex, educational attainment, type of products purchased, and employment status, thus capturing diverse perspectives within the province’s customer base.

The distribution of respondents is shown in Table 1.

Table 1. Distribution of Respondents

	N	%
Buenavista	30	20%
Jordan	30	20%
Sibunag	30	20%
San Lorenzo	30	20%

Nueva Valencia	30	20%
Total	150	100

Data Gathering Instrument

Data for this study were collected using a structured, researcher-designed questionnaire consisting of four sections to comprehensively examine the influence of ergonomic practices and perceived service quality in retail stores on customer retention.

Part 1 gathered essential demographic information from participants, including age, sex, educational attainment, type of products bought, and employment status. This information enabled analysis of how different demographic factors influenced perceptions of ergonomic practices, service quality, and subsequent customer retention.

Part 2 of the questionnaire evaluated the presence and implementation of ergonomic practices in retail stores, focusing on the technical, functional, and relational aspects of the retail environment. A survey questionnaire utilizing a 5-point frequency-based Likert scale was employed, ranging from 1 (Never) to 5 (Always), allowing respondents to indicate how often each ergonomic practice was observed or experienced in the retail store.

This section aimed to systematically assess the extent to which these ergonomic components enhanced customer comfort and contributed to an improved shopping experience.

Part 3 assessed the level of service quality as perceived by customers in retail stores. Participants evaluated statements related to key dimensions of service quality, including reliability, responsiveness, assurance, empathy, and tangibles. These dimensions encompassed the consistency and accuracy of service delivery, the promptness and courtesy of staff, personalized customer care, and the appearance of the store’s facilities and personnel.

Respondents indicated their level of agreement using a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). This section provided a comprehensive evaluation of how customers

perceived the overall quality of service within the retail environment.

Part 4 examined customer retention by evaluating participants’ intentions to continue patronizing the retail store and recommend it to others. Statements reflected behavioral intentions, such as the likelihood of making future purchases, recommending the store, and overall satisfaction with the shopping experience. Participants expressed their agreement using a 5-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5). This section aimed to provide insights into the long-term relationship between the retail store and its customers based on perceptions and future intentions.

Mean scores for ergonomic practices, service quality, and customer retention were interpreted according to a pre-established scale to categorize levels of agreement and assess trends in customer perceptions reflected in the following sections.

Ergonomic Practices		
Scale of Means	Description	Interpretation
4.21 – 5.00	Very Highly Practiced	Ergonomic practices are consistently observed and effectively implemented in the retail store, greatly enhancing customer comfort and shopping experience.
3.41 – 4.20	Highly Practiced	Ergonomic practices are frequently observed and implemented in the retail store, generally enhancing customer comfort and shopping experience.
2.61 – 3.40	Moderately Practiced	Ergonomic practices are reasonably observed in the retail store, with some features adequately implemented while others require improvement.
1.81 – 2.60	Less Practiced	Ergonomic practices are seldom observed, resulting in limited support for

1.00 – 1.80	Least Practiced	customer comfort and shopping convenience. Ergonomic practices are rarely or not observed in the retail store, providing minimal or no contribution to customer comfort and shopping experience.
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Service Quality		
Scale of Means	Description	Interpretation
4.21 – 5.00	Excellent	Customers are extremely pleased with the stores' service quality, finding all aspects of the store's design and ergonomics to be outstanding.
3.41 – 4.20	Very Good	Customers are generally satisfied with the stores' service quality, with most elements of the store and its ergonomic features meeting or exceeding their expectations.
2.61 – 3.40	Average	Customers are indifferent with the stores' service quality, with some aspects of the store's design and ergonomics meeting expectations, while others fall short.
1.81 – 2.60	Poor	Customers are dissatisfied with the stores' service quality, finding several aspects of the store's design and ergonomics unsatisfactory or below expectations.
1.00 – 1.80	Very Poor	Customers are extremely displeased with the stores' service quality, with most aspects of the store's design and ergonomics failing to meet expectations.

Customer Retention		
Scale of Means	Description	Interpretation
4.21 – 5.00	Very High	Customers consistently choose this store over competitors, frequently return, and actively recommend it to others due to exceptional satisfaction and experience.
3.41 – 4.20	High	Customers regularly return to this store and are likely to recommend it, though they may also consider alternatives.
2.61 – 3.40	Moderate	Customers occasionally return to this store but also consider other options, showing no strong preference or loyalty.
1.81 – 2.60	Low	Customers rarely return to this store and are unlikely to recommend it, often due to dissatisfaction with certain aspects of the experience.
1.00 – 1.80	Very Low	Customers do not return to this store and actively discourage others from shopping here, indicating significant dissatisfaction.

Validity of the Research Instrument

Ensuring the validity of a researcher-developed questionnaire was critical to confirm that the instrument accurately measured the intended constructs—retail stores' ergonomic practices, service quality, and customer retention. Validity reflected the extent to which the questionnaire captured the true essence of these variables, thereby enhancing the credibility and applicability of the research findings (Middleton, 2019).

Before undergoing panel validation, drafts of the questionnaire were submitted to the research adviser for review, allowing for preliminary feedback and refinement. Following this, the instrument was subjected to thorough validation by a panel of research experts, a statistician, and an English

language critic. These specialists evaluated the questionnaire using the Good and Scates Criteria, which included assessing subject relevance, clarity, significance, substance, representation, and comprehensiveness.

Incorporating the feedback from both the adviser and the validation panel refined the questionnaire, strengthened its reliability, and ensured that it effectively captured meaningful insights into the ergonomic practices of retail stores and their influence on service quality and customer retention.

Reliability of the Instrument

To ensure the reliability of the research instrument, a pilot test was conducted with 30 customers from Buenavista Public Market surveyed on a different timeframe from the actual survey. These participants were excluded from the final sample to avoid potential bias. The sample size was considered sufficient for assessing the questionnaire's reliability, accounting for a 20% non-response rate and meeting the minimum requirement for reliability analyses (Bujang et al., 2024).

The instrument's reliability was evaluated using the Kuder-Richardson Formula 20 (KR-20) for ergonomic practices and Cronbach's alpha for service quality and customer retention, calculated through SPSS software. Cronbach's alpha values, which range from 0 to 1, indicated the internal consistency of the items. The pilot test results showed a reliability of 0.72 for ergonomic practices, 0.96 for service quality, and 0.95 for customer retention, confirming that the questionnaire items consistently measured the intended constructs and were suitable for the main study.

Data Gathering Procedure

This study examined the influence of retail stores' ergonomic practices and service quality on customer retention, and it was conducted in three meticulously structured phases, emphasizing methodological rigor, efficiency, and adherence to ethical standards.

The first phase entailed the development of a conceptual framework to delineate the study's key variables and guide the design of the research

instrument. This framework functioned as a strategic roadmap, ensuring that the questionnaire items aligned precisely with the study's objectives and comprehensively addressed ergonomic practices, service quality, and customer retention.

The initial draft of the questionnaire was submitted to the research adviser for review prior to panel validation. Subsequently, a panel of experts, including statisticians, English critic, and subject-matter specialists, evaluated the instrument for clarity, relevance, and accuracy, providing feedback that was integrated to refine the final version. The questionnaire was then pilot-tested to assess its reliability, while necessary permissions were obtained from relevant authorities to facilitate smooth and ethical data collection.

In the second phase, the validated questionnaire was administered to the selected participants. To ensure accurate and efficient data gathering, trained research aides assisted in the process. These aides underwent comprehensive orientation and training to guarantee proper administration of the instrument, clarify participant instructions, and maintain data integrity.

Ethical considerations were rigorously upheld: participants were fully informed of the study's purpose, the intended use of the data, potential risks or benefits, and their rights to confidentiality. All responses were securely stored to safeguard participant privacy. Data collection occurred over a one-week period within the same month, using self-administered questionnaires.

The final phase focused on the systematic analysis of the collected data. Statistical procedures were conducted using SPSS and Microsoft Excel to examine the influence of ergonomic practices and service quality on customer retention. Findings were interpreted using established scales to derive coherent conclusions and actionable recommendations for retail operators. Formal acknowledgments were extended to experts, authorities, and research aides who contributed to the study.

Throughout the research, ethical standards were strictly observed. Participant privacy was protected, potential risks were minimized, and all procedures were conducted transparently in accordance with best

practices for survey research. By combining rigorous methodological approaches with trained support personnel, the study produced robust and insightful findings regarding the impact of ergonomic practices on customer satisfaction and retention public markets in Guimaras, providing evidence-based guidance to inform strategic decisions in small business management.

Statistical Tools Used

To comprehensively analyze the data on retail stores' ergonomic practices, service quality, and customer retention, the study employed a suite of statistical methods, each serving a distinct analytical purpose:

Frequency Count. A frequency distribution was used to enumerate participants across various demographic and operational variables, including sex, educational attainment, employment status, type of products bought, and shopping frequency. This approach provided a detailed overview of respondent characteristics, facilitating an understanding of the sample's composition.

Percentage. Percentage analysis was conducted to calculate the relative frequency of respondents within each demographic category. By dividing the frequency of each category by the total number of respondents and multiplying by 100%, this method highlighted the proportional representation of different groups within the study sample.

Mean. The mean was computed to determine the levels of ergonomic practices, service quality, and customer retention as perceived by respondents. This measure provided insights into general trends and average performance levels associated with these variables.

Mann-Whitney U Test. To assess differences in service quality and customer retention between two independent groups—such as sex—the Mann-Whitney U Test was applied. As a non-parametric test, it did not assume a normal distribution and was appropriate for ordinal data, determining whether significant differences existed between these groups.

Kruskal-Wallis H Test.

The Kruskal-Wallis H Test was employed to evaluate differences in service quality and customer retention across multiple independent groups, including comparisons based on age, educational attainment, employment status, and shopping frequency. Being a non-parametric test, it was suitable for analyzing data that did not meet the assumptions of parametric tests.

Spearman's Rho Correlation Analysis. Spearman's rho correlation analysis was employed to examine the relationship between ergonomic practices, service quality, and customer retention. This nonparametric statistical tool was used to determine the strength and direction of the association among the variables.

Specifically, the analysis assessed the relationship between ergonomic practices and customer retention, as well as between service quality and customer retention. The results provided insights into how variations in ergonomic practices and service quality were associated with changes in customer retention.

All statistical analyses were conducted at a significance level of 0.05, ensuring the reliability and validity of the findings. By applying these methods, the study provided a comprehensive analysis of the factors influencing retail stores' ergonomic practices, customer satisfaction, and retention, offering valuable insights for future research and practical applications.

VII. RESULTS AND DISCUSSIONS

This section presents a comprehensive synthesis of the study's key findings, highlights the principal conclusions, and provides informed recommendations based on the analysis of the influence of retail stores' ergonomic practices and service quality on customer retention in public markets across the Province of Guimaras, Philippines, for the fiscal year 2025.

Summary of the Study

This study investigated the retail stores' ergonomic practices, service quality, and their influence on customer retention in public markets in the Province of Guimaras, Philippines for the fiscal year 2025.

Specifically, this study answered the following questions:

1. What is the profile of respondents in terms of age, sex, educational attainment, type of products bought, and employment status?
2. What are the retail stores ergonomic practices, as assessed by the respondents, when taken as a whole and when classified according to age, sex, educational attainment, type of products bought, and employment status?
3. What is the retail stores' level of service quality, as assessed by the respondents, when taken as a whole and when classified according to age, sex, educational attainment, type of products bought, and employment status?
4. What is the retail stores' extent of customer retention, as assessed by the respondents when taken as a whole and when classified according to age, sex, educational attainment, type of products bought, and employment status?
5. Are there significant differences in the retail stores' ergonomic practices when classified according to age, sex, educational attainment, type of products bought, and employment status?
6. Are there significant differences in retail stores' level of service quality when classified according to age, sex, educational attainment, type of products bought, and employment status?
7. Are there significant differences in retail store's extent of customer retention when classified according to age, sex, educational attainment, type of products bought, and employment status?
8. Do retail stores' ergonomic practices and service quality significantly influence customer retention?

The study accounted for demographic factors such as age, sex, educational attainment, type of products bought, and employment status. Employing a descriptive-explanatory research design, 150 customers were surveyed using a validated and reliable questionnaire that assessed demographics, ergonomic practices, service quality, and customer retention. Data analysis included descriptive statistics and inferential tests, such as Mann-Whitney U, Kruskal-Wallis, and Spearman's rho.

The study recognized certain limitations, including reliance on self-reported perceptions, exclusion of external factors like market competition, and its

restricted geographic scope, which may limit generalizability. Despite these constraints, the findings were expected to provide valuable insights for retail owners and vendors, customers, LGUs, and researchers aiming to enhance service quality, optimize ergonomic design, and strengthen customer retention in retail environments.

Findings of the Study

The following findings were derived from the study:

1. The demographic and socioeconomic profile of respondents revealed that the majority of retail store customers in the public markets of Guimarães were older adults, predominantly aged 46 and above (42.7%), with females constituting a significant majority (76.0%). Most respondents had attained at least a high school or college education (94.7% combined) and were primarily not employed (71.3%), reflect a large proportion of homemakers or dependents. In terms of purchasing behavior, respondents prioritized food-related essentials, with fresh produce being the most commonly bought item (34.0%), followed by wet goods (30.0%) and dry goods (24.7%), while household items were the least purchased (11.3%).
2. The study revealed that ergonomic practices in the public market were very highly practiced across all indicators and demographic groups, with an overall mean of $M = 4.86$ ($SD = 0.12735$). Vendors were rated highest for face-to-face positioning, efficient tool use, accessibility of supplies, and product arrangement ($M = 4.98$, $SD = 0.14$). Safety and customer accommodation, such as handing products safely and assisting elderly or differently-abled customers, were also highly observed ($M = 4.96$, $SD = 0.19662$), as was service responsiveness ($M = 4.88$ – 4.91). The only slightly lower-rated item was price and label visibility ($M = 4.40$, $SD = 0.49154$). Across demographics, younger (≤ 35 years) and employed respondents reported slightly higher scores ($M = 4.89$), while older respondents (≥ 46 years) and household item buyers reported slightly lower scores ($M = 4.84$ – 4.85), indicating that ergonomic practices were applied uniformly and effectively for all customer groups.

3. The assessment of service quality in public markets revealed that customers generally perceived it as Very Good, with an overall mean of 4.08 (SD = 0.60). Strengths were noted in human-centered aspects, such as vendor knowledge of products (M = 4.41), respect and patience toward all customers, including the elderly and differently-abled (M = 4.31), and accessibility of product displays (M = 4.24), indicating strong relational and interpersonal service. Most other indicators, including attentiveness to customer needs (M = 4.16), honesty in transactions (M = 4.11), and cleanliness of stalls (M = 4.00), were rated Very Good. However, operational and transparency-related areas such as price labeling (M = 3.53), handling of customer questions without delay (M = 3.83), and affordability of products (M = 3.89) received relatively lower ratings, highlighting areas for improvement. Across demographics—age, sex, education, type of products purchased, and employment status—service quality remained consistently Very Good, with minor variations; for example, elementary-educated respondents rated service slightly higher (M = 4.27), and male respondents gave a marginally higher rating (M = 4.16) compared to females (M = 4.06). These results indicate that while interpersonal and relational aspects of service are strong, operational efficiency and transparency remain areas requiring enhancement.
4. The assessment of customer retention in public markets revealed an overall high level, with a mean score of 4.04 (SD = 0.61), indicating that customers regularly return, are satisfied with their shopping experiences, and are likely to recommend the market to others. The highest-rated item, “customers’ confidence that future visits will also be satisfying,” scored 4.25 (SD = 0.71), reflecting strong trust in service consistency. Other highly-rated indicators included willingness to recommend the market to family and friends (M = 4.20, SD = 0.75) and loyalty to certain vendors due to good service (M = 4.16, SD = 0.79). However, lower-rated items such as “willingness to remain loyal compared to other stores” (M = 3.93, SD = 0.87), “preference for shopping at the market over other stores” (M = 3.91, SD = 0.91), and “reluctance to switch to competitors” (M = 3.87, SD = 0.80) imply that customers may still consider alternatives, particularly when price, convenience, or product variety is a factor. Across demographics, retention remained high, with younger respondents (≤ 35 years) showing the highest loyalty (M = 4.13, SD = 0.57), and buyers of dry goods demonstrating the strongest retention (M = 4.18, SD = 0.51), whereas household item buyers and college-educated respondents showed slightly lower loyalty. Overall, these findings indicate that trust, vendor relationships, and positive shopping experiences are key drivers of retention, though competitive factors can influence exclusive loyalty.
5. The analysis of differences in ergonomic practices across demographic and customer-related variables revealed no significant differences in respondents’ assessment. The Mann–Whitney U test showed that sex and employment status did not significantly change how customers evaluated ergonomic practices, with mean ranks of males (74.68) and females (75.76), $U = 2022.50$, $p = .894$, and employed (84.40) versus not employed (71.93), $U = 1918.00$, $p = .104$. Similarly, the Kruskal–Wallis H test indicated no significant differences for age ($H = 3.973$, $p = .410$), educational attainment ($H = 2.969$, $p = .227$), or type of products purchased ($H = 3.208$, $p = .361$). These findings show that ergonomic practices were consistently implemented across all demographic groups. Customers of different ages, education levels, employment statuses, sexes, and shopping preferences reported similar recognition and appreciation of the market’s ergonomic arrangements, highlighting a uniform standard of comfort, safety, and efficiency in service delivery.
6. The analysis of differences in service quality across demographic and customer-related variables revealed no statistically significant variations. The Mann-Whitney U test indicated that male (Mean Rank = 81.18) and female respondents (Mean Rank = 73.71) did not differ significantly in their assessment of service quality, $U = 1847.50$, $p = .367$. Similarly, employed (Mean Rank = 75.00) and unemployed respondents (Mean Rank = 75.70) showed no significant difference, $U = 2279.00$, $p = .929$. The Kruskal-Wallis test further confirmed the lack of

significant differences across age groups ($H = 0.043$, $p = .979$), educational attainment ($H = 0.987$, $p = .611$), and types of products purchased ($H = 0.366$, $p = .947$). These results indicate that perceptions of service quality are consistently high across sex, employment status, age, education, and product preferences, suggesting that retail stores deliver a standardized service experience regardless of these customer characteristics.

7. The analysis of customer retention across demographic and purchasing variables showed mostly consistent patterns, with one notable exception. The Mann–Whitney U-test revealed no significant differences between male ($U = 2036.00$, $p = .944$) and female respondents, or between employed and not employed respondents ($U = 2280.00$, $p = .932$), indicating that sex and employment status do not affect retention. Similarly, the Kruskal-Wallis’s test showed no significant differences by age ($H = 1.200$, $p = .549$) or type of products bought ($H = 3.688$, $p = .297$). However, educational attainment had a significant effect on customer retention ($H = 6.173$, $p = .046$), with high school graduates showing the highest mean rank ($M = 84.85$), elementary-educated respondents ranking next ($M = 71.25$), and college graduates the lowest ($M = 66.88$). These results suggest that customer retention is largely uniform across sex, employment status, age, and product types, but varies by educational level, with customers of lower to moderate education demonstrating stronger loyalty.
8. The correlation analysis on the relationships among ergonomic practices, service quality, and customer retention in the public markets, indicated a significant positive relationship between ergonomic practices and service quality ($r = .172$, $p = .036$), signifying that higher levels of ergonomic implementation were associated with slightly higher service quality. Despite being statistically significant, the correlation was weak, indicating a modest association. In contrast, the relationship between ergonomic practices and customer retention was not significant ($r = .021$, $p = .803$), and the relationship between service quality and customer retention was also positive but not statistically significant ($r = .147$, $p =$

.073). These findings imply that while ergonomic practices contribute to perceived service quality, neither ergonomics nor service quality alone had a statistically meaningful impact on customer retention. This infers that other factors beyond ergonomic arrangements and service quality may influence whether customers continue patronizing the market.

VIII. CONCLUSIONS OF THE STUDY

Based on the results of the study, the following were concluded:

1. Retail store customers in Guimaras public markets are predominantly older, female, and non-employed individuals who focus their purchases on food essentials, highlighting the influence of demographic and socioeconomic factors on consumer behavior.
2. Public market vendors uphold strong ergonomic practices in efficiency, accessibility, and customer interaction, but persistent gaps in price visibility and lighting highlight the need for targeted improvements in environmental and structural design.
3. Service quality in public markets is generally very good, with strong vendor knowledge, respect, and accessibility, though improvements in pricing transparency, promptness, and affordability are needed.
4. Customer retention in public markets is perceived as high, but competition and pricing limit exclusive loyalty, highlighting opportunities to strengthen customers’ commitment.
5. Perceptions of ergonomic practices in retail stores are uniform across demographic groups, indicating consistent implementation and a baseline standard recognized by all customers.
6. Service quality in retail stores is perceived uniformly across all demographic groups and product categories, reflecting consistent and standardized customer service delivery.
7. Customer retention is consistent across age, sex, employment status and products bought, but significantly higher among customers with lower educational attainment, indicating the need for tailored engagement strategies for more educated shoppers.

8. Ergonomic practices in the public market were significantly associated with service quality, but neither ergonomic practices nor service quality significantly influenced customer retention, highlighting the need to consider additional factors in sustaining customer loyalty.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are proposed to enhance retail operations, customer experience, and market loyalty in the public markets of Guimaras:

1. Targeted Marketing and Product Strategies: Retail owners and vendors should focus marketing and product strategies on older, female, non-employed shoppers, emphasizing fresh produce and essential goods. LGUs can support educational campaigns on healthy eating for homemakers, while researchers may explore how demographic factors influence purchase patterns. Customers can provide feedback to help tailor market offerings.
2. Enhanced Market Environment: Retail owners and LGUs should improve stall lighting and price visibility to create a more accessible shopping environment. Vendors can regularly audit displays for clarity and accessibility. Researchers may investigate the effects of environmental enhancements on shopping behavior, and customers can report poorly lit or unclear stalls to guide improvements.
3. Operational Efficiency and Transparency: Vendors should adopt clear pricing systems and prompt service protocols. Retail owners can provide training on price labeling and efficient service, while LGUs may introduce standard pricing guidelines. Researchers may evaluate the link between operational improvements and customer satisfaction, and customers can offer suggestions to improve service efficiency.
4. Customer Loyalty Programs: Retail owners should implement loyalty programs and promotional offers to strengthen customer commitment. Vendors can provide discounts or bundled deals for repeat customers. LGUs can promote local markets to highlight advantages over competitors, while researchers can study which incentives effectively boost loyalty. Customers can participate in these programs to maximize benefits.
5. Standardized Ergonomic Practices: Retail owners should maintain consistent ergonomic practices across all stalls, ensuring a uniform customer experience. Vendors should train staff on these practices, while LGUs can provide ergonomic guidelines or certifications. Researchers may explore other factors affecting retention, and customers can recognize and support well-implemented setups.
6. Consistent Service Quality: Retail owners should continue staff training to maintain high and standardized service quality. Vendors can implement quality checklists across products, and LGUs may establish service benchmarks. Researchers can study additional variables influencing perceived service quality, and customers should provide feedback when service deviates from standards.
7. Tailored Engagement for Educated Shoppers: Retail owners and vendors should develop engagement strategies for college-educated customers, including personalized promotions or value-added services. LGUs can support workshops on customer engagement. Researchers may examine how educational attainment affects loyalty, and customers can provide input on preferences that increase retention.
8. Focus Beyond Ergonomics: Retail owners should prioritize factors beyond ergonomics, such as promotions, product variety, and pricing strategies, to enhance customer loyalty. Vendors can allocate resources to improve the customer experience and loyalty programs. Researchers may identify the strongest non-ergonomic drivers of retention, while LGUs can assist with market promotions and infrastructure support. Customers can participate in loyalty initiatives rewarding repeated patronage.
9. Complementary Strategies to Service Quality: Retail owners should combine high service quality with strategic marketing, competitive pricing, and promotional activities. Vendors can build trust and personal connections with customers. LGUs can promote market advantages, and researchers can explore alternative drivers of loyalty. Customers can

contribute feedback to guide service and promotional improvements.

10. Comprehensive Retention Strategies: Retail owners and vendors should implement holistic strategies encompassing targeted promotions, competitive pricing, product variety, and community engagement initiatives. LGUs can support promotional campaigns and organize events to strengthen emotional and community ties. Researchers may study the combined effects of these factors on loyalty for future interventions, and customers can actively engage in promotions, events, and feedback mechanisms to enhance market experiences.

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