ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

Analyzing the Influence of Market Structures on Rice Pricing in San Jose City, Nueva Ecija

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A Managerial Economics Research presented to the Faculty of the Graduate School Nueva Ecija University of Science and Technology Cabanatuan City

In Partial Fulfillment of the Requirements for the Degree of Master of Business Administration

Publication Date: 2025/12/15

How to Cite: Joshua G. Onia; Marietta J. Ablaza; John Ervin C. Garcia; Kymber M. Lapuz; Joyce I. Penas; Fernando T. Saturno Jr.; Roselle Marie B. Salazar; Rein Chester A. Sawi; Mark Eldrin C. Ting; Ryan V. Tipay; Ryan Carlo A. Uy; John Michael S. Villanueva (2025) Analyzing the Influence of Market Structures on Rice Pricing in San Jose City, Nueva Ecija. International Journal of Innovative Science and Research Technology, 10(12), 646-694. https://doi.org/10.38124/ijisrt/25dec476

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

ACKNOWLEDGEMENT

The researchers once came across a meaningful reminder: “You don’t have to stay where you are; growth is a choice.” This guiding thought became a collective source of inspiration throughout the development of this business research. It encouraged the team to move beyond comfort zones, embrace new learning experiences, and pursue continuous growth not only in professional competence but also in purpose, character, and collaboration. Indeed, this study is more than an academic requirement; it represents the team’s shared commitment, resilience, and gratitude.

The successful completion of this research would not have been possible without the support, encouragement, and guidance of the many individuals and institutions who contributed significantly to this endeavor. The researchers offer their sincerest appreciation to the following:

To Dr. Marietta J. Ablaza, subject professor, for her scholarly guidance, constructive insights, and steadfast support throughout the entire research process. Her expertise and thoughtful feedback greatly shaped the depth, direction, and overall quality of this study. Her dedication to academic excellence inspired the team to maintain the highest standards of rigor and integrity.

To our respective supervisors and institutions, for their understanding, flexibility, and consistent support. Their encouragement enabled the researchers to effectively balance academic responsibilities with professional duties. The trust and cooperation extended to the team served as a motivating force in overcoming challenges and meeting the demands of this study.

To all individuals who extended assistance in various stages of the research, including those who contributed to data gathering, analysis, administrative coordination, and technical support. Your willingness to offer time, effort, and expertise played a crucial role in ensuring the smooth and successful completion of this project. Every contribution, whether big or small, helped bring this study to its completion.

To the researchers’ families, whose unwavering love, patience, and sacrifices provided the emotional strength and motivation needed to persevere. Their constant encouragement sustained the team through demanding schedules, long hours of work, and moments of difficulty. This accomplishment stands as much as it is the researchers’ accomplishment.

Above all, to Almighty God, the ultimate source of wisdom, guidance, and purpose. His grace, provision, and faithfulness sustained the team throughout this journey. As written in Proverbs 16:3: “Commit to the Lord whatever you do, and He will establish your plans.” With grateful hearts, the researchers offer all honor and glory to Him.

The Researchers

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

DEDICATIONS

To our families, thank you for being our constant source of strength and inspiration. Your love, encouragement, and unwavering presence have carried us through challenging moments and reminded us of what truly matters. Your support formed the foundation upon which this work was completed.

To our friends, whose genuine companionship, laughter, and encouragement made this academic journey lighter and more meaningful, we are deeply grateful. Your presence provided balance, motivation, and joy throughout the process.

To the communities and support groups that have embraced us along the way, thank you for your kindness, prayers, and steadfast belief in our abilities. Your support served as a comforting reminder that we were never alone in this undertaking.

To our colleagues and mentors, we offer our sincere appreciation for cultivating an environment of excellence, growth, and mutual support. Your guidance, wisdom, and trust empowered us to approach this research with confidence and purpose.

Above all, to Almighty God, the source of wisdom, grace, and strength. This research is humbly dedicated to Him who makes all things possible. May this achievement bring honor to His name.

This work is lovingly and gratefully dedicated to all of you.

The Researchers

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

ABSTRACT

Rice serves as a staple food and a critical component of the Philippine economy, making its pricing a matter of national and local concern. This study analyzed the influence of market structures on rice pricing in San Jose City, Nueva Ecija, a major rice-producing and trading hub in Central Luzon. Employing a descriptive-correlational research design, the study surveyed 40 key participants in the rice value chain, including farmers, wholesalers, retailers, and consumers, using a structured questionnaire and key informant interviews. Data was analyzed through descriptive statistics, reliability testing, correlation, and regression analysis to examine the relationships between market structures, pricing behaviors, stakeholder perceptions, and rice prices.

Findings revealed that while the market superficially appeared competitive due to the presence of multiple sellers, actual control over volume, supply, and wholesale pricing was concentrated among a few traders and millers, limiting competition and creating high entry barriers. Farmgate prices were found to be moderately aligned with production costs, and wholesale and retail prices responded more predictably to supply fluctuations. Stakeholders expressed moderate concerns about fairness and government monitoring of pricing. Statistical analysis confirmed a strong and significant positive relationship between market structure and rice pricing ($r = 0.61$, $p < 0.01$), with regression results indicating that market structure accounted for 39% of price variability ($\beta = 0.68$, $p < 0.01$). Consequently, the null hypothesis stating no significant relationship between market structure and rice prices was rejected.

The study concluded that rice pricing in San Jose City is heavily influenced by structural market factors rather than solely by supply and demand dynamics. To improve price fairness and market efficiency, it recommends strengthening farmer capacity, reducing entry barriers, enhancing government monitoring, and promoting transparency across the rice value chain. These findings provide actionable insights for policymakers, market participants, and consumers while contributing to a deeper understanding of local rice market dynamics.

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CHAPTER ONE
INTRODUCTION

➢ *The Problem and Its Background*

Rice is deeply embedded in the economic, cultural, and social life of Filipinos. As the country's primary staple food, rice accounts for a significant share of household consumption and forms the backbone of rural livelihoods. In the Philippines, any fluctuation in rice price is immediately felt across all socioeconomic groups, making rice not only a commodity but a national concern tied to food security, poverty alleviation, and economic stability. San Jose City in Nueva Ecija, often recognized as one of the most productive agricultural cities in Luzon, plays a crucial role in rice production and trading. Despite this strong foundation in agriculture, the city continues to exhibit variations in rice pricing across different market levels, raising questions about the underlying structures influencing these price behaviors.

Market structures, which refer to the organization and characteristics of a market, including the number of buyers and sellers, the degree of competition, and the presence of entry barriers, play a critical role in determining how prices are formed. Porter (1980) highlights that *"the structure of an industry shapes the nature of competitive interaction and the resulting pricing strategies."* This suggests that rice pricing cannot be understood solely by looking at supply and demand; rather, it must also be analyzed within the context of how actors in the value chain operate and interact. Farmers, millers, traders, and retailers each hold distinct levels of influence, which collectively shape market behavior.

In many agricultural markets, power asymmetry is common. Shepherd (2005) observes that *"price distortions are more likely to emerge when certain market participants hold disproportionate control over trading conditions,"* underscoring how intermediaries may dominate pricing decisions, often to the disadvantage of small farmers and ordinary consumers. This concern is mirrored in local observations in Nueva Ecija, where millers and traders serve as key intermediaries who determine the flow of rice from production to distribution. Their decisions, such as stock releases, buying prices, and retail pricing, play a large part in determining the overall price levels experienced by consumers.

Additionally, the behavior and perceptions of market participants also contribute to price fluctuations. Timmer (2010) explains that *"consumer and trader expectations can amplify volatility in staple food markets,"* suggesting that perceptions of scarcity, surplus, or unfair pricing can trigger adjustments in buying and selling behavior, thereby influencing price stability. In highly sensitive markets such as rice, these perceptions can become self-reinforcing, contributing to spikes or dips in price even when supply levels remain relatively stable.

Despite the importance of understanding rice pricing dynamics, localized studies examining the specific market structures of San Jose City remain limited. Most existing literature focuses on national aggregates or regional trends, which may overlook the unique conditions present at the city level. San Jose City hosts a combination of small-scale farmers, independent millers, large consolidators, established traders, and a growing network of retailers and consumers. This diverse composition makes it a strategic location for examining how different market structures shape price formation.

Given the centrality of rice to both producers and consumers in San Jose City, analyzing the influence of market structures on rice pricing is both timely and necessary. This study explored the levels of competition, the presence of entry barriers, the pricing mechanisms of market participants, and the perceptions of stakeholders regarding fairness and affordability. By identifying and analyzing these structural and behavioral factors, the study aims to contribute evidence-based insights that can inform local policies, enhance market efficiency, and promote fairer and more transparent rice pricing systems.

Given these reasons, this research sought to deepen the understanding of how market structures operated within one of the country's most important agricultural hubs. Its findings were expected to support farmers, traders, retailers, consumers, and local government units in crafting strategies that improved pricing systems and strengthened the overall resilience of San Jose City's rice market.

➢ *Literature Review*

The pricing of agricultural products, particularly rice, is a complex issue influenced by various market structures. Understanding these influences is essential for stakeholders in the agricultural sector, including farmers, consumers, and policymakers. This literature review explores existing research on market structures and their impact on rice pricing, with a focus on the context of San Jose City, Nueva Ecija.

Market Structures and Pricing Mechanisms. Market structures are categorized into four main types: perfect competition, monopolistic competition, oligopoly, and monopoly. Each structure has distinct characteristics that influence pricing strategies. In a perfectly competitive market, numerous sellers offer identical products, leading to prices determined by supply and demand dynamics (Mankiw, 2014). Conversely, in an oligopoly, a few firms dominate the market, which can lead to price-setting behaviors that differ from competitive markets (Tirole, 1988). Understanding these structures is crucial for analyzing how rice prices are set

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

in San Jose City, where local traders and farmers operate within varying competitive environments.

The Role of Supply and Demand. The fundamental economic principle of supply and demand plays a critical role in determining rice prices. Research indicates that fluctuations in supply due to factors such as weather conditions, crop yields, and input costs directly affect market prices (Huang et al., 2016). Additionally, consumer demand for rice, influenced by population growth and dietary preferences, further shapes pricing trends. In San Jose City, local supply chains and consumer behavior must be examined to understand their impact on rice pricing.

Government Policies and Interventions. Government policies significantly influence agricultural markets, including rice pricing. Price controls, subsidies, and import regulations can alter market dynamics and affect both producers and consumers. For instance, studies have shown that government interventions can stabilize prices during periods of volatility but may also lead to market distortions (Baffes, 2007). In the context of San Jose City, it is essential to analyze how local and national policies impact rice pricing and the overall market structure.

Local Market Dynamics in San Jose City. Research specific to San Jose City and Nueva Ecija highlights the unique challenges faced by rice farmers and traders. The region's classification as the "Rice Granary of the Philippines" underscores its importance in national rice production. Studies have documented the pricing strategies employed by local traders and the effects of competition among farmers on pricing (Bautista et al., 2018). Understanding these local dynamics is crucial for assessing how market structures influence rice pricing in this specific context.

Implications for Food Security. The relationship between market structures, rice pricing, and food security is a critical area of study. Fluctuating rice prices can have significant implications for food access and security, particularly for low-income consumers. Research indicates that stable pricing mechanisms are essential for ensuring food security in rice-dependent regions (Pingali, 2007). Therefore, analyzing the influence of market structures on rice pricing in San Jose City is vital for developing strategies that promote food security and economic stability.

Overview of the Importance of Rice. Rice is both an economic and political commodity in the Philippines, serving as the staple food for most households and as a major source of livelihood for farmers and traders (Intal & Garcia, 2005; Diaz, 2025). Globally, rice supplies up to 20% of total calorie intake and serves as the primary staple in many Asian and African countries (FAO, 2020). Since the Commonwealth era, rice has been central to food security and market stability policies, particularly for low-income consumers heavily reliant on it (Ponciano & Garcia, 2005). Given its significance, the Philippine government has historically prioritized price stabilization and supply management as core components of its food security agenda. Despite its importance, the global rice market is “thin” and fragmented due to diverse consumer quality preferences (Cuevas, 2016).

Production Trends and Supply Constraints. From 1970 to 1980, rice production in the Philippines grew rapidly, enabling a temporary surplus (Tibao, 2009). However, population growth and urban development led to the conversion of agricultural areas into industrial, commercial, and residential zones, reducing available farmland. This decline in agricultural land contributed to a shortage of local rice supply, prompting the government to increase imports and eventually making the Philippines one of the world’s largest rice importers at the start of the 21st century (Freedman, 2013).

Consumer preferences also influence rice demand and price. Studies by the International Rice Research Institute (IRRI) indicate that income levels strongly affect the choice of rice grain quality. Urban and higher-income consumers are willing to pay premiums for superior rice quality, whereas rural and lower-income consumers prioritize affordability. IRRI findings demonstrate a positive income elasticity for rice quality in the Philippines, suggesting that demand for high-quality rice increases with rising income.

Market Manipulation and Competition in the Rice Industry. The rice market is also influenced by market behavior and structural inefficiencies. Some wholesalers are capable of artificially manipulating supply by hoarding rice to raise prices and later flooding the market to reduce them (Lim, 2023). Briones (2019) analyzed the competition within the rice industry by studying production, harvesting, milling, distribution, and trade, revealing inefficiencies and imbalances along the value chain.

Wholesale and Retail Pricing Dynamics. Several studies examine the relationship between wholesale and retail prices in the Philippines. Diaz (2025) analyzed regional and quality-based price spreads, showing that margins increase for premium and well-milled rice as wholesale prices rise, indicating non-uniform markups by rice quality. By geographic analysis by Bathan (2024) reveals that retail markets adjust to wholesale shocks at varying speeds (1.18–3.60 months), with elasticity differing by region, reflecting imperfect market integration. Historical analyses of market structure in Southern Luzon by Chupungco et al. (2013) highlight the layered role of millers, wholesalers, and retailers in shaping price spreads. The PCC (2019) also notes that while rice prices are integrated in the long run, short-term inefficiencies and local market power persist among intermediaries.

Role of Nueva Ecija as the “Rice Granary of the Philippines”. Nueva Ecija is known as the “Rice Granary of the Philippines” because of its country’s top rice producer due its multiple municipalities that have a vast of agricultural land and irrigation access,

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

it is also has the largest province and the biggest rice producer in the country. (Kwan et al., 2025) As rice is the most vital staple food in the Philippines, thousands and thousands of Filipino farmers and traders are making this as their main source of income, as the production and trade of rice continues, it has greatly contributed to the economic growth of the province and the livelihood of its people.

Despite being called as "Rice Granary of the Philippines," and consistently being the number one producer of palay and contributing significantly to the country (Santos et al., 2018), the rice industry in Nueva Ecija still faces significant challenges that impact the livelihoods of its farmers. studies reveal that despite their contribution, rice farmers often face low income due to rising production costs, unstable market prices, and climate-related risks (Briones, 2019). The Philippines achieved self-sufficiency in the 1970s and briefly became a well-known rice exporter, rapid population growth and limited farmland led it to shift into a net importing position by the 1990s (Simeon, 2019). The country struggles with imbalances between rice supply and consumers demand, worsen by factors such as diminishing productive land, rising input costs, increased climate vulnerabilities, and a growing population that pushes the consumptions beyond the domestic production capabilities, resulting to be completely heavily reliant on importing different quality of rice and making the country as the world's largest rice importer. (Nocum & Pastorfide, 2025)

In addition to that, Philippine rice market presents distinct dynamics shaped by import dependence, demographic pressures, and policy interventions. By 2017, the Philippines sourced most of its imports from Vietnam and Thailand (Santiago, 2019).

Rice Production, Market Structures, and Price Dynamics. Rice plays a critical role in Philippine food security, serving as the staple for most households and a major source of livelihood (Intal & Garcia, 2005; Diaz, 2025). Its centrality in nutrition and economics has historically driven the government to prioritize price stabilization and supply management (Ponciano & Garcia, 2005).

The Philippine rice market is influenced by market structures and participant power. Prices are affected by production costs, input and labor price increases (Arcalas, 2021; PSA, 2024). The dynamics of rice price inflation in the Philippines also reveal that world rice price changes can have a significant and persistent impact, with domestic fuel price shocks also playing a role. (Antonio et al., 2025). Meanwhile, international rice prices were typically lower than domestic retail prices, though the gap narrowed during the height of the crisis, at times turning in favor of world prices due to heavy government intervention. In addition to this, Socioeconomic factors significantly shape perceptions of rice quality, and evidence suggests that even lower-income consumers are increasingly attentive to premium-quality characteristics. Several studies support this growing segmentation, noting that higher-grade rice varieties tend to have narrower price spreads consistent with their positioning in premium markets (Doe, Brown, & White, 2019), Additionally, a study in China by Wang et al. (2020) indicate that consumer preferences for rice are becoming increasingly differentiated, they are now placing greater emphasis on aroma, grain length, and the milling quality, resulting to segmentation between premium and regular rice varieties. These patterns align with earlier work by Fackler and Goodwin (2001), who argued that well-functioning markets exhibit price integration where prices across locations and market layers move in similar directions.

The degree of competition and the distribution of market power among these participants significantly affect how rice prices are formed at various stages of the value chain, in the case of Nueva Ecija, where rice trading networks are often dominating by the presence of a few large millers and traders, market structure tends to be oligopolistic rather than competitive structure (Chavez, 2025) In addition to this, studies from various countries such as from Bangladesh, Minten et al. (2013) indicates that traders and millers exercising significant influence in shaping the pricing behavior, determine quality standards, and influence farmgate to retail price spreads.

Policy responses to address the structural weaknesses of the rice sector have been the subject of extensive research. Initial reform efforts, such as the Asian Development Bank's Grains Sector Development Program (GSDP) in the late 1980s, promoted the liberalization of grain pricing, improvement of buffer stock management, and restructuring of the National Food Authority (Asian Development Bank, 2000). Cororaton (2004) argued that these reforms were economically sound and necessary but required safety nets for adversely affected farmers. Recent studies recommend rice tariffication to balance affordability, food security, and competitiveness (Briones et al., 2017; Clarete, 2015). Overall, market structures, production costs, and consumer behavior collectively shape rice price dynamics in the Philippines.

Promoting Fair Pricing and Market Efficiency. Rising rice prices are often attributed to oligopolistic market structures, where a small number of traders and millers wield significant market power (Briones & de la Peña, 2015). This market concentration allows traders to generate high profits at the expense of lower-income consumers who rely heavily on rice as a staple food. Structural inefficiencies, including import restrictions and limited competition at the wholesale and milling levels, worsen pricing differences (Briones, 2019).

Understanding the relationship between wholesale and retail prices is critical for enhancing market efficiency. Studies show that wholesale price levels directly affect retail markups, especially for premium rice grades, indicating a partial alignment between production costs and consumer prices (Diaz, 2025). Market interventions aimed at reducing barriers, increasing transparency, and encouraging competition have the potential to lower retail prices and improve overall fairness (Briones & de la Peña, 2015).

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Rising rice prices in the Philippines are often linked to oligopolistic market structures, where a small number of traders wield significant market power and may generate high profits at the expense of consumers (Briones & de la Peña, 2015). This asymmetry raises concerns about both fairness and efficiency in the rice market. Addressing these challenges requires regulatory reforms, price monitoring, improved market integration, infrastructure development, and targeted policies that protect low-income consumers while maintaining incentives for efficient production and distribution.

➢ *Conceptual Framework*

This study is anchored on a conceptual framework that aims to identify and organize the key factors influencing rice pricing in San Jose City, Nueva Ecija. The framework serves as a guide in systematically analyzing how market structures, pricing behaviors, and stakeholder perceptions interact to determine the actual prices of rice in the community. By examining these variables, the study provides a structured approach to understanding the mechanisms that drive price fluctuations and to identifying potential strategies for promoting fair and competitive rice markets.

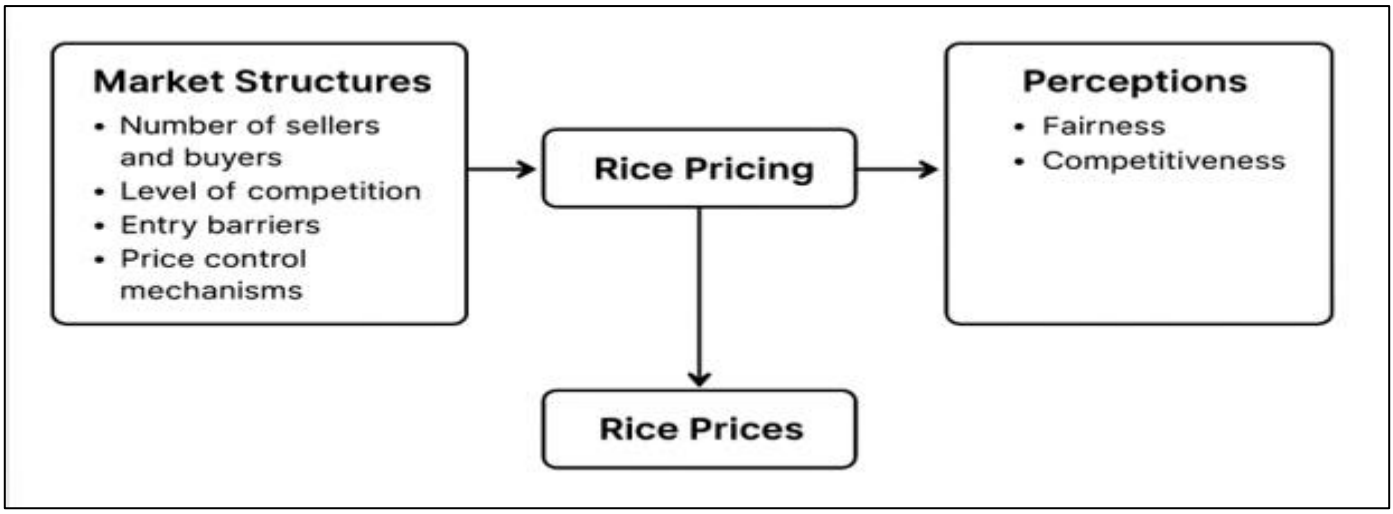

Fig 1 Conceptual Framework

The conceptual framework illustrates how different market structures influence rice pricing, ultimately determining the actual prices experienced by consumers in San Jose City, Nueva Ecija. Market structures are defined by factors such as the number of sellers and buyers in the market, the level of competition, the presence of entry barriers, and the mechanisms used for price control within the rice industry. These characteristics establish the environment in which participants operate and shape the way prices are set throughout the rice value chain, including farmgate, wholesale, and retail levels.

At the core of the framework is rice pricing, which serves as the mediating process connecting market conditions to actual price outcomes. Rice pricing reflects how the dynamics of supply and demand, competition, and market regulations manifest in real-world price levels. In competitive markets with low entry barriers, prices are generally more stable and transparent, allowing for predictable patterns that benefit both producers and consumers. In contrast, markets dominated by a few major players often experience price distortions, as limited competition can give rise to higher prices or fluctuations that do not reflect actual supply and demand.

Market structure alone, however, does not fully determine prices. Stakeholder perceptions play a significant role in influencing market behavior. Traders' views on competitiveness and profitability, as well as consumers' perceptions of fairness and affordability, can shape purchasing decisions, trading strategies, and pricing practices. For example, if consumers perceive prices as unfair or excessively high, they may reduce demand or seek alternative sources, prompting adjustments in pricing and market interactions.

The interactions between market structure, pricing behavior, and stakeholder perceptions create a dynamic system that continuously influences rice prices. Market structures set the rules of competition, pricing translates these rules into measurable outcomes, and stakeholder perceptions provide feedback that can reinforce or challenge existing practices. This interplay ensures that rice prices are not determined by a single factor but by the combined effects of these elements acting together in the market.

Overall, the conceptual framework highlights that the rice prices observed in San Jose City are the product of multiple interacting forces. Understanding this relationship allows policymakers, traders, and community stakeholders to identify areas where interventions or improvements can lead to fairer, more stable, and more competitive pricing. By analyzing how market structure, pricing, and perceptions interact, the framework provides a comprehensive view of the mechanisms behind rice pricing and its impact on the local community.

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➢ *Statement of the Problem*

This study aimed to analyze the influence of market structures on rice pricing in San Jose City.

Specifically, it sought to answer the following questions:

➢ *What is the Demographic Profile of the Respondents in Terms of:*

- Age
- b. Gender
- c. Civil Status
- d. Educational Attainment
- e. Role in the Rice Value Chain (Farmer, Wholesaler, Retailer, Consumer)
- f. Years of Involvement in Rice Production/Trading/Retailing

➢ *What are the Prevailing Market Structures of Rice Trading in San Jose City in Terms of:*

- Number of sellers and buyers
- Level of competition
- Entry barriers
- Price control mechanisms

➢ What is the current pricing pattern of rice among different market types (e.g., public markets, private retailers, wholesalers)?
➢ Is there a significant relationship between market structure and rice pricing in San Jose City?
➢ To what extent do market structure factors influence the variation in rice prices?
➢ What are the perceptions of consumers and traders regarding the fairness and competitiveness of rice prices in San Jose City?
➢ What possible measures can be recommended to promote fair pricing and enhance market efficiency in the local rice industry?

- *Hypothesis*

Ho: There is no significant relationship between market structure and rice prices in San Jose City, Nueva Ecija.

While factors such as the number of sellers and buyers, level of competition, and entry barriers are often considered important in determining rice prices, existing research increasingly shows that these variables alone may not consistently predict actual price levels. For instance, studies by Fabiosa et al. (2017) and Dawe and Maltsoglou (2019) emphasized that other elements, such as pricing strategies, government interventions, and seasonal supply fluctuations, often have a stronger influence on rice prices than market structure alone. Similarly, research by Alarcon et al. (2018) and Muthoni (2020) highlights that local stakeholder behavior, including trading decisions and consumer demand, can significantly modify market outcomes even when the market structure appears competitive.

Theoretically, the Price Transmission Theory (Gabre-Madhin, 2001) supports this view. It posits that observed prices in local markets are not determined solely by structural factors but also by the way prices are transmitted along the value chain, including farmgate, wholesale, and retail levels. This includes factors such as margins, information asymmetry, and negotiation power, which interact with market structure to shape final prices.

Moreover, in the context of San Jose City, stakeholder perceptions, particularly those of traders and consumers regarding fairness, competitiveness, and affordability, can influence market behavior independently of the underlying market structure. As highlighted by Reardon et al. (2015) and Warr (2020), even in markets with multiple participants, perceived price manipulation or lack of transparency can affect purchasing patterns and cause price deviations. This suggests that rice prices may be more directly influenced by pricing practices and stakeholder responses than by structural factors alone.

➢ *Scope and Delimitations of the Study*

This study examines the factors influencing rice pricing in San Jose City, Nueva Ecija, focusing on market structures, pricing behaviors, and stakeholder perceptions. It explores how the number of sellers and buyers, competition levels, entry barriers, and price control mechanisms affect rice prices at the farmgate, wholesale, and retail levels, as well as how trader and consumer perceptions influence purchasing behavior and pricing outcomes.

The research is limited to rice markets within San Jose City and includes traders, wholesalers, retailers, and consumers directly involved in the local rice value chain. While broader national or global factors are acknowledged, they are not the focus. The study captures current pricing trends and market conditions during data collection and does not analyze historical price fluctuations or farm-level production factors.

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Primary data will be collected through structured questionnaires and key informant interviews, while secondary data such as market reports will supplement the analysis. The study does not attempt to predict future rice prices but focuses solely on describing current market structures, pricing patterns, and stakeholder perceptions.

The study emphasizes the mediating role of rice pricing in translating market conditions and stakeholder perceptions into actual prices. It aims to provide insights into local market dynamics rather than prescribe specific policy interventions.

➢ *Significance of the Study*

This study was highly significant as it aimed to uncover the underlying factors that influenced rice pricing in San Jose City, Nueva Ecija. By examining the roles of market structures, pricing behaviors, and stakeholder perceptions, the research sought to provide a comprehensive understanding of how rice prices were determined at the farmgate, wholesale, and retail levels. This understanding was intended to aid in the formulation of strategies and interventions that promoted fair, competitive, and transparent pricing, ultimately benefiting the entire rice value chain.

Local government authorities and policymakers greatly benefited from this study as it provided evidence-based insights into the mechanisms that drove rice prices in the community. These findings helped guide the development of local programs or regulations that enhanced market competitiveness, stabilized prices, and ensured that rice remained affordable for consumers while supporting the profitability of local producers. The study also contributed to broader agricultural policy discussions aimed at improving food security and market efficiency in Nueva Ecija.

Traders, wholesalers, and retailers involved in the rice value chain found the study useful in understanding how market conditions and stakeholder perceptions influenced pricing strategies and sales outcomes. With this knowledge, they were able to make more informed business decisions, optimize pricing, plan inventory more effectively, and respond to changes in market dynamics. Improved understanding of pricing mechanisms also enhanced negotiation practices and collaboration across the value chain.

Consumers in San Jose City indirectly benefited from the study, as it shed light on the factors that affected the prices they paid for rice. Increased awareness of how market structure and stakeholder behavior influenced pricing empowered them to make more informed purchasing decisions and engage in more effective consumer practices. This also helped foster a more transparent and accountable local rice market that prioritized fairness and accessibility.

Future researchers in agricultural economics, market analysis, and community food systems found this study valuable as it provided a conceptual framework linking market structure, pricing behavior, and stakeholder perceptions to actual prices. The research served as a reference for comparative studies, replication in other regions, or further exploration of market dynamics, price transmission, and policy interventions. By combining practical and academic contributions, the study aimed to enhance both knowledge and practice in the local rice market.

In sum, this study aimed to provide a detailed understanding of rice pricing dynamics in San Jose City, offering actionable insights for policymakers, traders, and consumers, while contributing to academic knowledge on agricultural market operations and community food security.

➢ *Definition of Terms*

To facilitate better understanding, the following key terms were defined conceptually or operationally:

- Market Structure – This refers to the organizational and competitive characteristics of the rice market, including the number of sellers and buyers, level of competition, entry barriers, and price control mechanisms that influence how rice prices are determined (Fabiosa et al., 2017; Dawe & Maltsoglou, 2019).
- Rice Pricing – This pertains to the process by which rice prices are established at different levels of the value chain, including farmgate, wholesale, and retail prices. It reflects how market conditions and stakeholder behaviors translate into actual price levels (Alarcon et al., 2018; Muthoni, 2020).
- Stakeholder Perceptions – These are the views and opinions of market participants, particularly traders and consumers, regarding the fairness, competitiveness, and transparency of rice prices. Such perceptions can influence purchasing behavior and market interactions (Reardon et al., 2015; Warr, 2020).
- Farmgate Price – This refers to the price of rice at the point of production, paid directly to farmers before it enters the wholesale or retail market (Dawe & Maltsoglou, 2019; Fabiosa et al., 2017).
- Wholesale Price – This is the price at which rice is sold in bulk, typically from distributors or wholesalers to retailers, before reaching the final consumers (Alarcon et al., 2018; Muthoni, 2020).
- Retail Price – This refers to the price of rice at the consumer level, reflecting the cumulative effects of production costs, wholesale margins, and market behavior (Fabiosa et al., 2017; Reardon et al., 2015).
- Competition – This pertains to the level of rivalry among sellers in the rice market, which affects pricing, market entry, and

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

consumer choice (Dawe & Maltsoglou, 2019; Alarcon et al., 2018).

- Entry Barriers – These are factors that make it difficult for new sellers to enter the rice market, such as capital requirements, access to suppliers, or regulatory constraints (Fabiosa et al., 2017; Muthoni, 2020).
- Price Control Mechanisms – These refer to policies or practices used to regulate rice prices, including government interventions, recommended price ranges, or market agreements among traders (Reardon et al., 2015; Warr, 2020).
- Price Transmission – This is the process through which changes in market conditions at one level of the rice value chain, such as farmgate prices, affect prices at subsequent levels, including wholesale and retail (Gabre-Madhin, 2001; Fabiosa et al., 2017).
- Rice Value Chain – This refers to the full range of activities and participants involved in producing, distributing, and selling rice, from farmers to consumers (Alarcon et al., 2018; Dawe & Maltsoglou, 2019).
- Price Stability – This pertains to the degree to which rice prices remain relatively constant over time, reflecting a balance between supply, demand, and market regulation (Reardon et al., 2015; Warr, 2020).
- Price Distortion – This refers to a situation where rice prices deviate from expected market equilibrium due to monopolistic practices, market manipulation, or insufficient competition (Fabiosa et al., 2017; Muthoni, 2020).
- Market Dynamics – These are the forces and interactions within the rice market that influence pricing, including supply and demand fluctuations, competition, and stakeholder behavior (Alarcon et al., 2018; Reardon et al., 2015).
- Price Transmission Theory – This is a theoretical framework that explains how changes in prices at one level of the market, such as the farmgate, are transmitted to higher levels, such as wholesale and retail, and how market structure affects this process (Gabre-Madhin, 2001; Warr, 2020).
- Market Transparency – This refers to the availability and accessibility of accurate information regarding rice supply, demand, and pricing, which allows participants to make informed decisions (Reardon et al., 2015; Dawe & Maltsoglou, 2019).
- Affordability – This pertains to the extent to which rice prices are within the financial reach of consumers, particularly low- and middle-income households (Fabiosa et al., 2017; Warr, 2020).

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

CHAPTER TWO
RESEARCH METHODOLOGY

This chapter presents the research design, locale of the study, respondents, sample and sampling procedure, instruments, data gathering procedures, data analysis techniques and ethical concerns to describe, assess, and analyze the factors influencing the turnover intention of the contract of service personnel of the DA - Philippine Carabao Center.

➢ *Research Design*

This study will employ a descriptive-correlational research design to examine the factors influencing rice pricing in San Jose City, Nueva Ecija. A descriptive-correlational design is appropriate when the objective is to describe the characteristics of a population and determine the relationships between variables without manipulating them (Lopez & Schwenk, 2020). This design allows the researcher to analyze current market conditions and assess whether, and to what extent, relationships exist between market structures, pricing behaviors, stakeholder perceptions, and actual rice prices.

The descriptive aspect of the study will focus on profiling the rice market in terms of the number of sellers and buyers, level of competition, entry barriers, price control mechanisms, and the perceptions of traders and consumers regarding fairness and competitiveness. It will also describe rice pricing patterns at the farmgate, wholesale, and retail levels. The correlational aspect, on the other hand, will examine the statistical relationships between these market and perception variables and the actual rice prices observed in the community.

➢ *Research Locale*

This study was conducted in San Jose City, Nueva Ecija, a major rice-producing area in Central Luzon, Philippines. San Jose City served as a hub for rice trading and distribution, with a wide range of participants in the rice value chain, including farmers, wholesalers, retailers, and consumers.

The study locale was selected in response to the growing concern about fluctuations in rice prices in the community, which had significant implications for affordability, market stability, and the economic welfare of both producers and consumers. Focusing on San Jose City allowed for a detailed examination of local market structures, pricing behaviors, and stakeholder perceptions that directly influenced rice prices at the farmgate, wholesale, and retail levels.

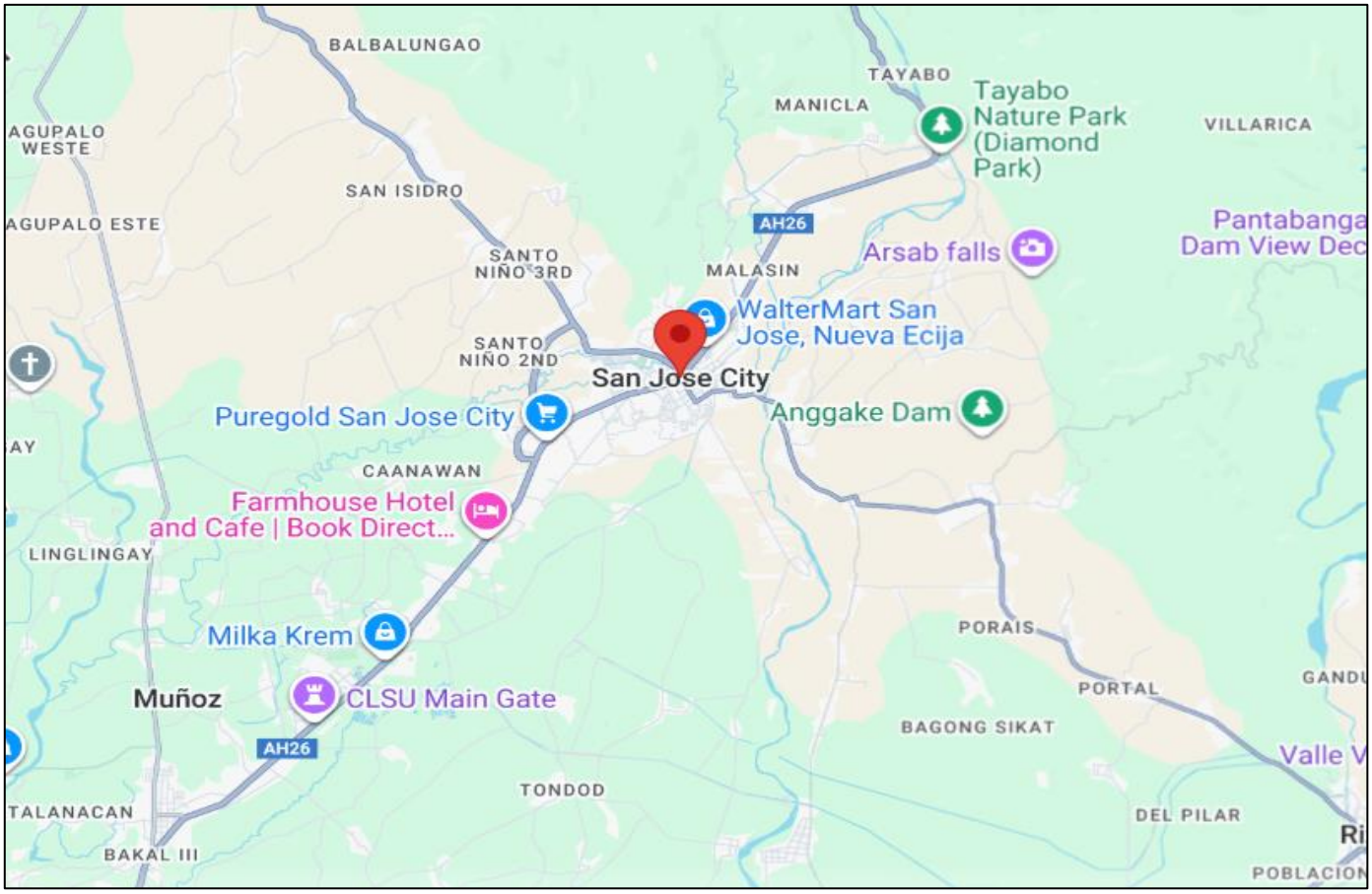

Fig 2 Map of San Jose City, Nueva Ecija

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

➢ *Respondents with Sample and Sampling Procedure*

The respondents of this study were rice market participants in San Jose City, Nueva Ecija, including farmers, wholesalers, retailers, and consumers who were directly involved in the local rice value chain. These individuals were considered vital sources of information due to their direct experience with market structures, pricing behaviors, and stakeholder perceptions that influenced rice prices. The varying characteristics of these respondents, such as type of market participation, business scale, and purchasing habits, provided a well-rounded understanding of the rice pricing phenomenon from multiple perspectives.

To select the respondents, this study utilized purposive sampling, a non-probability sampling method that involved selecting participants based on their relevance and knowledge of the rice market (Etikan, Musa, & Alkassim, 2016). This method was particularly practical in situations where the population was specific to the study's objectives, as was the case with market participants who had firsthand involvement in rice production, distribution, and consumption. Purposive sampling allowed the researcher to gather timely and relevant information from participants who were most knowledgeable and could provide meaningful insights about rice pricing dynamics.

A list of key market participants, including registered traders and farmers' associations, was obtained from local agricultural offices and cooperatives. Invitations to participate in the survey and interviews were sent through available communication channels such as email, phone, and social media. This approach enabled the researcher to collect comprehensive and relevant data while ensuring alignment with the study's objectives of understanding the factors that influenced rice prices in San Jose City.

➢ *Research Instrument with Validity and Reliability*

This study utilized a self-constructed survey questionnaire as the primary instrument for gathering quantitative data on the factors influencing rice pricing in San Jose City, Nueva Ecija. The instrument was designed to align with the objectives and conceptual framework of the study, aiming to assess the perspectives of farmers, wholesalers, retailers, and consumers regarding market structures, pricing behaviors, and stakeholder perceptions that affected rice prices.

The questionnaire consisted of three major parts. The first part focused on the demographic and background profile of respondents, including type of market participation (farmer, wholesaler, retailer, or consumer), business scale, purchasing habits, and length of involvement in the rice market. These variables were essential for describing the respondents and for conducting correlation analysis that explored the possible relationships between respondent characteristics and perceptions of rice pricing.

The second part of the questionnaire measured the key factors believed to influence rice prices, integrating market structure, pricing behavior, and stakeholder perception dimensions into a unified section. Items explored respondents' experiences with competition, entry barriers, price control mechanisms, transparency of price information, and fairness of market transactions. Additionally, questions addressed the degree to which market dynamics, such as supply and demand fluctuations and interactions among participants, influenced the stability and affordability of rice prices in the community.

To facilitate standardized responses and enable quantitative analysis, all items in the second part of the questionnaire were rated using a four-point Likert scale, ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). The four-point format was chosen to eliminate a neutral midpoint, thereby encouraging participants to lean toward either positive or negative perceptions. This approach enhanced the clarity of results and helped identify distinct trends in attitudes and experiences related to the factors influencing rice pricing.

Validity refers to the extent to which the research instrument accurately measured the concepts it intended to assess, while reliability pertains to the consistency of the instrument in producing stable and repeatable results under similar conditions (Heale & Twycross, 2015). To ensure content validity, the researcher consulted with experts in data analytics, market analysis, and local trade practices. The instrument was reviewed by three validators: a data analyst, a market analyst, and a management accountant. Their feedback was used to refine the questionnaire's clarity, relevance, and appropriateness in capturing market, pricing, and perception variables.

Prior to full implementation, a pilot test was conducted with 15 market participants who were not part of the actual study sample. The pilot test examined the clarity, relevance, and reliability of the instrument. Internal consistency of the survey items was assessed using Cronbach's Alpha, with values above 0.70 considered acceptable for reliability. Adjustments were made to any items showing low consistency or overlapping content across subscales.

For data analysis, the Pearson Product-Moment Correlation Coefficient (r) was used to determine the strength and direction of relationships between respondent characteristics and perceptions of rice pricing. All statistical analyses were conducted using SPSS software (Version 20).

The reliability of the instrument was interpreted using the scale proposed by Karl Pearson:

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

Table 1 Value Verbal Description of Pearson Correlation Coefficient

Interval Coefficient	Relationship Level
0.80 – 1.000	Very strong
0.60 – 0.799	Strong
0.40 – 0.599	Moderate
0.20 – 0.399	Weak
0.00 – 0.199	Very weak

A Pearson correlation value of 0.40 or higher was considered indicative of a moderate relationship, suggesting that the instrument demonstrated a satisfactory level of internal consistency and was capable of reliably measuring the intended constructs related to market structures, pricing behaviors, and stakeholder perceptions. This level of correlation supported the reliability of the questionnaire items in capturing the views and experiences of farmers, wholesalers, retailers, and consumers regarding the factors that influenced rice prices in San Jose City, Nueva Ecija. It ensured that the survey effectively reflected the relationships between market conditions, participant perceptions, and actual price outcomes, allowing for meaningful analysis and interpretation of the collected data.

- *Data Gathering Procedure*

Before commencing the data-gathering process, the researcher conducted a review of relevant literature, local market reports, and institutional records from the San Jose City agricultural offices. These preliminary steps guided the construction of a self-made survey questionnaire and interview guide aligned with the research objectives. The initial drafts of the questionnaire and interview guide were submitted to three subject matter experts, an agricultural economist, a local market analyst, and a representative from a rice cooperative, for expert review. Their feedback ensured that the items were clearly stated, relevant, and consistent with the key variables identified in the study, particularly market structures, pricing behaviors, and stakeholder perceptions.

Prior to the interviews, the researcher prepared a short, informative briefing for potential respondents, clearly explaining the study's objectives, emphasizing the importance of voluntary participation, and assuring strict confidentiality and anonymity of all responses. Interviews were conducted physically at convenient locations for the participants, such as local marketplaces, cooperatives, or farms, to ensure comfort and accessibility. Each session followed the structured questionnaire and open-ended interview guide, covering two main sections: demographic and background information, and factors influencing rice prices, including market structure, competition, pricing mechanisms, and stakeholder perceptions.

A schedule for interviews was coordinated in advance with the respondents to ensure availability and minimize disruption to their daily activities. Ethical protocols, including obtaining informed consent and recording responses with permission, were strictly followed. Each interview lasted approximately 20 to 30 minutes, allowing for thorough discussion while respecting participants' time.

Upon completion of all interviews, responses were securely stored, and the data were analyzed with the assistance of a professional statistician using SPSS software for quantitative items and thematic analysis for qualitative responses. These structured, face-to-face data-gathering procedures ensured the reliability and depth of information, generating meaningful insights into the factors affecting rice pricing in San Jose City, Nueva Ecija.

- *Data Analysis Technique*

The analytical method deemed most appropriate for addressing the study's research questions was descriptive-correlational analysis. This method was employed to examine the survey and interview responses of farmers, wholesalers, retailers, and consumers actively participating in the rice market in San Jose City, Nueva Ecija. Descriptive-correlational analysis was particularly suitable for this study because it allowed for the systematic exploration of relationships between independent variables, such as market structures, pricing behaviors, and stakeholder perceptions, and the dependent variable, which was rice prices at the farmgate, wholesale, and retail levels. It also enabled the researcher to provide an accurate portrayal of respondent profiles and identify trends associated with pricing patterns in the local rice market.

The quantitative data gathered through the structured questionnaire were encoded and analyzed using the Statistical Package for the Social Sciences (SPSS) software. Descriptive statistical tools, including frequencies, percentages, means, and standard deviations, were used to summarize and present demographic data and responses to individual items across the identified constructs. To determine the strength and direction of the relationships between market characteristics, stakeholder perceptions, and rice prices, the Pearson Product-Moment Correlation Coefficient (r) was applied. This statistical test was appropriate for examining potential linear relationships between continuous variables and helped establish whether specific market factors or perceptions were significantly associated with rice price levels.

Responses to the survey items were measured using a four-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (4). This scale provided a standardized metric for evaluating the level of agreement or disagreement of respondents regarding statements related to market competitiveness, pricing mechanisms, and fairness of transactions. The use of this scale ensured

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

consistency in measurement and interpretation of data, ultimately supporting the reliability and validity of the results.

In addition, qualitative data gathered from open-ended interview questions and observational notes underwent thematic analysis to identify recurring patterns, opinions, and insights regarding market dynamics and stakeholder behavior. The integration of quantitative and qualitative analyses provided a comprehensive understanding of how market structures and participant perceptions jointly influenced rice pricing in San Jose City.

The findings generated from this analysis guided the formulation of recommendations aimed at improving price transparency, market efficiency, and fairness in the local rice market, ultimately supporting better decision-making for producers, traders, and consumers.

Table 2 Scale for Data Interpretation on Factors Influencing Rice Pricing

Scale	Mean range	Verbal interpretation (VI)	Verbal description (VD)
4	3.26 - 4.00	Strongly agree	The respondent viewed the statement as very true.
3	2.51 - 3.25	Agree	The respondent viewed the statement as true.
2	1.76 - 2.50	Disagree	The respondent viewed the statement as somewhat true.
1	1.00 - 1.75	Strongly disagree	The respondent viewed the statement as not true.

- *Ethical Concerns*

The main ethical issue in this research was the potential breach of respondents' right to privacy, particularly because the study involved collecting opinions, experiences, and perceptions regarding rice pricing, market practices, and interactions among stakeholders in San Jose City, Nueva Ecija. These matters were sensitive, as participants, including farmers, wholesalers, retailers, and consumers, might have preferred to keep their perspectives private to avoid misunderstandings or unintended consequences. Disclosure of such information could have caused discomfort or affected participants' relationships within the local market. Nevertheless, obtaining these insights was essential for understanding the factors influencing rice prices, and measures were taken to address these ethical concerns to ensure the research was conducted responsibly.

To safeguard ethical standards, several measures were implemented. First, data gathering commenced only after securing approval from relevant local authorities and cooperative leaders in San Jose City. Second, transparency was maintained by providing participants with a clear explanation of the study's objectives, significance, and the structure of the research instrument. Third, informed consent was obtained from all respondents. The researcher explained the purpose of the study in simple, understandable language, emphasizing that participation was entirely voluntary and that respondents could withdraw at any time. Participants were assured that all data would be treated with strict confidentiality and that no personal identifiers would be disclosed. The information provided was used solely for academic and research purposes.

Another ethical concern addressed in this study was the obligation to protect respondents from potential harm arising from their participation. To ensure safety and convenience, all interviews and surveys were conducted in safe, accessible locations such as local markets, cooperatives, or farms, following proper scheduling and consent protocols. The researcher took care to avoid causing undue pressure, discomfort, or disruption to participants' daily activities.

Lastly, to uphold academic integrity, the researcher sought permission for any reference materials or instruments adapted from previous studies, ensuring that they were used solely for research purposes without commercial intent. Upon completion of the study, the researcher committed to sharing the final results with participants, either by providing a printed copy or an accessible digital link to the finished manuscript, promoting transparency and respect for their contributions to the research.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

CHAPTER THREE
PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter presents the detailed analysis of the data gathered from 40 respondents consisting of farmers, wholesalers, retailers, and consumers in San Jose City, Nueva Ecija. The analysis is structured according to the study's variables: market structure indicators, rice pricing indicators, stakeholder perceptions, and the statistical relationship between market structure and rice pricing.

➢ *Profile of Respondents*

Table 3 Profile of Respondents

Respondent Group	Frequency	Percentage
Farmers	10	25%
Wholesalers	6	15%
Retailers	8	20%
Consumers	16	40%
Total	40	100%

The respondent distribution demonstrates a balanced representation of actors in the rice supply chain: farmers (25%), wholesalers (15%), retailers (20%), and consumers (40%). This composition is critical because each sector experiences rice pricing differently. Farmers witness the earliest stage of the pricing chain, farmgate pricing, while wholesalers and retailers determine and transmit price adjustments downstream. Consumers, being the end-users, observe only the final price and often perceive it as either reasonable or excessively high.

The significant number of consumers provides a wide lens on how pricing dynamics are felt on the ground, while the inclusion of farmers, wholesalers, and retailers captures the structural realities shaping those prices. This distribution allows the study to build a multi-perspective understanding of market conditions and pricing behavior.

➢ *Reliability Analysis for Market Structure Scale*

Table 4 Individual Responses of Respondents for Market Structure Scale

Respondent	Item 1	Item 2	Item 3	Item 4	Item 5
1	4	3	3	4	3
2	3	3	2	4	3
3	4	3	3	4	3
4	3	3	2	3	3
5	4	4	3	4	4
6	3	3	2	4	3
7	4	3	3	4	3
8	3	3	3	4	3
9	4	4	3	4	3
10	3	3	2	3	3
11	4	4	3	4	3
12	3	3	2	4	3
13	4	3	3	4	3
14	3	3	3	4	3
15	4	4	3	4	4
16	3	3	2	4	3
17	4	3	3	4	3
18	3	4	2	4	3
19	4	3	3	4	3
20	3	3	2	3	3
21	4	4	3	4	3
22	3	3	2	4	3
23	4	3	3	4	3
24	3	3	3	4	3
25	4	4	3	4	4
26	3	3	2	4	3
27	4	3	3	4	3
28	3	3	2	4	3
29	4	4	3	4	3

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30	3	3	2	3	3
31	4	3	3	4	3
32	3	3	3	4	3
33	4	4	3	4	4
34	3	3	2	4	3
35	4	3	3	4	3
36	3	3	2	4	3
37	4	4	3	4	3
38	3	3	2	4	3
39	4	3	3	4	3
40	3	3	2	4	3

Table 5 Reliability Analysis for Market Structure Scale

Scale	No. of Items	Cronbach's Alpha	Interpretation
Market Structure	5	0.72	Acceptable Reliability

The five-item scale measuring Market Structure yielded a Cronbach's Alpha of 0.72, which indicates acceptable internal consistency. This means that respondents provided consistent answers across the items related to the components of market structure, including the number of sellers and buyers, level of competition, entry barriers, and degree of price control.

➢ *Descriptive Statistics of Key Variables*

- *Market Structure Indicators*

Table 6 Individual Responses of Respondents on Market Structure Indicators in San Jose City, Nueva Ecija

Respondent	Number of Sellers	Number of Buyers	Competition Level	Entry Barriers	Price Control
1	4	3	3	4	3
2	3	4	2	4	3
3	4	3	3	4	3
4	3	3	2	3	3
5	4	4	3	4	4
6	3	3	2	4	3
7	4	3	3	4	3
8	3	3	3	4	3
9	4	4	3	4	3
10	3	3	2	3	3
11	4	4	3	4	3
12	3	3	2	4	3
13	4	3	3	4	3
14	3	3	3	4	3
15	4	4	3	4	4
16	3	3	2	4	3
17	4	3	3	4	3
18	3	4	2	4	3
19	4	3	3	4	3
20	3	3	2	4	3
21	4	4	3	4	3
22	3	3	2	4	3
23	4	3	3	4	3
24	3	3	3	4	3
25	4	4	3	4	4
26	3	3	2	4	3
27	4	3	3	4	3
28	3	3	2	4	3
29	4	4	3	4	3
30	3	3	2	4	3
31	4	3	3	4	3
32	3	3	3	4	3

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33	4	4	3	4	4
34	3	3	2	4	3
35	4	3	3	4	3
36	3	3	2	4	3
37	4	4	3	4	3
38	3	3	2	4	3
39	4	3	3	4	3
40	3	3	2	4	3

Table 7 Mean Ratings and Interpretation of Market Structure Indicators in San Jose City, Nueva Ecija

Indicator	Mean	Interpretation
Number of Sellers	3.45	Many sellers present, indicating visible plurality
Number of Buyers	3.38	Buyers have multiple options
Competition Level	2.60	Moderate to low competition observed
Entry Barriers	3.62	Entry into the rice market perceived as difficult
Price Control	3.10	Moderate influence of dominant actors on pricing

✓ *Number of Sellers and Buyers*

Results indicate that respondents generally perceive the rice market in San Jose City as having a relatively large number of sellers, which is characteristic of a competitive market. However, the narrative becomes more nuanced when looking deeper: although respondents believe many sellers exist, they also observe that these sellers often source from similar wholesalers or millers, which may reduce actual variation in price and product. In effect, while the market appears competitive on the surface, the underlying supply chain may be more concentrated.

Respondents generally agree that there are many sellers of rice in San Jose City. This gives the impression of a competitive market because multiple sellers usually mean broader supply options and pressure to keep prices competitive. However, the narrative in later discussions reveals that while many sellers do exist, their influence on pricing is not equal. Larger traders and millers often hold more power because of their ability to buy in bulk, store rice longer, and control volume released to the market.

While there are indeed many buyers, including households, retailers, and institutional consumers, this does not automatically create a competitive environment. Instead, buyers often remain dependent on retailers or wholesalers with established supply networks, reducing their ability to influence price movements.

✓ *Level of Competition*

The moderate competition rating (mean = 2.60) reveals that the rice market does not behave like a perfectly competitive one. Respondents sense competition, but they also recognize that some sellers, especially big traders or wholesalers, hold more control over supply and price. This unequal footing among sellers weakens the competitive pressure that should normally keep prices lower.

✓ *Entry Barriers*

Entry barriers scored the highest (3.62), and this is the most telling result in the dataset. This suggests that starting a rice trading business is not easy for ordinary individuals, regardless of the number of visible sellers. Respondents mentioned high capital requirements, access to milling, transportation, warehousing, and long-term relationships (“suki system”) as barriers to entry. Because of these barriers, only a limited number of actors can participate in influential roles such as wholesaling or milling.

This creates a situation where despite the presence of many small sellers, the real market power remains concentrated among a few key players.

✓ *Price Control Mechanisms*

The moderately high perception of price control (3.10) further strengthens the idea that certain groups exert influence on market prices. This does not necessarily mean illegal manipulation; rather, it reflects how established actors can adjust prices based on supply volume, storage capacity, and informal agreements within the market.

- *Rice Pricing Indicators*

Table 8 Individual Responses of Respondents on Rice Pricing Indicators in San Jose City, Nueva Ecija

Respondent	Farmgate reflects costs	Wholesale influenced by supply	Retail reflects upstream prices
1	3	3	3
2	2	3	4
3	3	3	3
4	3	3	3

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5	2	3	4
6	3	3	3
7	3	4	3
8	3	3	4
9	2	3	3
10	3	3	4
11	3	3	3
12	2	3	4
13	3	3	3
14	3	3	4
15	2	3	3
16	3	4	4
17	3	3	3
18	3	3	4
19	3	3	3
20	3	3	4
21	3	3	3
22	3	3	4
23	2	3	3
24	3	3	4
25	3	3	3
26	3	4	4
27	2	3	3
28	3	3	4
29	3	3	3
30	3	3	4
31	2	3	3
32	3	3	4
33	3	3	3
34	3	3	4
35	3	3	3
36	3	3	4
37	3	3	3
38	3	3	4
39	3	3	3
40	3	3	4

Table 9 Rice Pricing Indicators

Pricing Item	Mean	Interpretation
Farmgate reflects costs	2.90	Farmgate prices somewhat align with production cost, but farmers remain dissatisfied
Wholesale influenced by supply	3.15	Wholesale prices respond strongly to supply changes
Retail reflects upstream prices	3.35	Retail prices generally mirror wholesale dynamics

Respondents observe that rice prices across different retailers in San Jose City are generally close to one another, indicating widespread price uniformity. This could reflect competitive pricing, but it may also suggest that retailers are influenced by the same supplier prices or market signals. Some respondents believe that retailers have limited authority to set prices independently; rather, they adjust according to supplier costs and movements in farmgate or milling prices.

These findings highlight the possibility that retailer's function more as price pass-through agents rather than active price makers. They do not significantly deviate from prevailing market price levels because doing so may either drive customers away or reduce profit margins. The interpretation suggests that rice pricing in San Jose City is shaped by a combination of competitive pressures, supply-chain influence, and sensitivity of consumer demand.

- *Farmgate Pricing*

Farmgate prices rated only moderately fair (2.90), a reflection of farmers' long-standing frustrations. Farmers indicated they often have no option but to sell immediately after harvest to avoid spoilage and to meet urgent financial needs. This weakens their ability to negotiate and leads to accepting prices below production cost or below government reference prices.

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The farmgate pricing system is therefore not just a numerical measure, it is shaped by:

- Lack of drying facilities
- Absence of storage
- Limited access to buyers
- Time pressure
- Debt obligations
- These structural vulnerabilities lower farmers' bargaining power and contribute to unstable farmgate prices.

➢ *Wholesale and Retail Pricing*

Wholesale and retail pricing received higher agreement scores (3.15 and 3.35), indicating that respondents believe pricing at these levels more closely follows supply conditions. This is logical because wholesalers have better storage capacity and can adjust prices according to market demand. Retailers also tend to follow wholesale movements, causing a domino effect from farm to table.

Consumers observe these price changes most directly. Even small changes in wholesale prices can immediately be reflected in retail stores. This alignment shows that price transmission is strong, once supply tightens or traders adjust their selling price, consumers immediately feel the change.

- *Stakeholder Perceptions*

Table 10 Individual Responses of Respondents on Market Perception Variables in San Jose City, Nueva Ecija

Respondent	Market Fairness	Competition Perception	Government Role
1	3	3	3
2	2	2	3
3	3	3	3
4	2	3	3
5	3	3	3
6	2	3	3
7	3	3	3
8	2	3	3
9	3	3	3
10	3	3	3
11	2	3	3
12	3	3	3
13	3	3	3
14	2	2	3
15	3	3	3
16	2	3	3
17	3	3	3
18	2	3	3
19	3	3	3
20	2	3	3
21	3	3	3
22	3	3	3
23	2	3	3
24	3	3	3
25	2	3	3
26	3	3	3
27	3	3	3
28	2	3	3
29	3	3	3
30	2	3	3
31	3	3	3
32	2	3	3
33	3	3	3
34	2	3	3
35	3	3	3
36	2	3	3
37	3	3	3

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38	2	3	3
39	3	3	3
40	2	3	3

Table 11 Mean Ratings of Market Perception Variables in San Jose City, Nueva Ecija

Perception Variable	**Mean**
Market Fairness	2.70
Competition Perception	2.78
Government Role	3.00

Respondents rated market fairness (2.70) and competition (2.78) only moderately. This moderate rating reflects a sense of resignation, people recognize that the rice market functions, but they are also aware of its imperfections.

Respondents observe that rice prices across different stores in San Jose City are similar, reflecting price uniformity. This can be interpreted in two ways:

✓ Retailers may be actively competing but watching one another's pricing closely; or
✓ Retailers are largely reacting to the same supplier-determined costs.

Most respondents believe retailers have limited authority in setting significantly different prices because doing so might result in customer loss or insufficient profit margins. Retailers often adjust their prices according to supplier price movements, farmgate trends, and periodic government monitoring.

The interpretation suggests that retailers function primarily as price-takers, not price-makers. Their pricing flexibility is restricted by consumer sensitivity and supply-chain constraints. This finding supports the observation that rice pricing in San Jose City is shaped more by structural factors, particularly supply source concentration, than by aggressive retail competition.

The government role (3.00) received a higher score but still not high enough to suggest strong confidence. Respondents appreciate interventions such as price monitoring and suggested retail prices (SRP), but they feel these efforts are not sustained or deeply enforced. Government visibility increases during crises (e.g., supply shortages, inflation periods) but not consistently throughout the year.

Respondents generally believe that the government plays an important role in stabilizing rice prices and monitoring the market. The perception of government involvement is significant because it reflects community expectations regarding fairness and protection.

Most respondents acknowledge that policies such as price monitoring, implementation of suggested retail price (SRP), and oversight on traders help prevent unreasonable price manipulation. However, some respondents feel that enforcement could still be strengthened, especially during periods of reported supply shortages or sudden price increases.

The interpretation suggests that the community sees government intervention as a balancing force that helps maintain transparency and protect vulnerable consumers. This also aligns with the conceptual framework, where government policies serve as external factors influencing how market structures impact pricing.

- *Rice Price Index*

Table 12 Individual Responses of Respondents on Rice Price Index in San Jose City, Nueva Ecija

Respondent	**Rice Price Index**
1	2
2	3
3	2
4	2
5	3
6	2
7	3
8	2
9	2
10	3
11	2
12	2

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13	3
14	2
15	3
16	2
17	3
18	2
19	2
20	3
21	2
22	3
23	2
24	1
25	3
26	2
27	3
28	2
29	3
30	2
31	2
32	3
33	2
34	3
35	2
36	4
37	2
38	3
39	2
40	2

Table 13 Rice Price Index of Respondents in San Jose City, Nueva Ecija

Rice Price Index (1 - 4 Scale)	Statistical Value
Mean	2.42
Standard Deviation (SD)	0.58
Observed Range	1.0 – 4.0

The mean score of 2.42 reflects a moderately high perception of rice prices among respondents. This suggests that while rice is not perceived as extremely expensive, many view the price level as noticeably high.

The SD of 0.58 indicates moderate variation in responses. This means that perceptions differ among stakeholder groups:

Some believe rice prices remain relatively stable, while others, especially consumers and farmers, perceive prices as high or volatile, reflecting their sensitivity to daily market price movements.

Farmers see price volatility as a source of instability in income. Consumers interpret price fluctuations as signs of unfair pricing or lack of regulation. Retailers and wholesalers view prices as part of normal supply and demand dynamics. These diverse views make pricing a sensitive and complex social issue in the community.

Overall, the Rice Price Index points to a general sentiment that rice prices in San Jose City tend to lean toward the higher side, with variability shaped by respondents' roles in the market.

- *Differences Across Respondent Groups*

Table 14 Individual Responses of Respondents by Stakeholder Group on Market Structure and Rice Price Index

Respondent	Group	Market Structure Index	Rice Price Index
1	Farmers	3	2
2	Farmers	3	2
3	Farmers	4	3
4	Farmers	3	3
5	Farmers	3	3

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6	Farmers	3	3
7	Farmers	3	2
8	Farmers	4	3
9	Wholesalers	3	2
10	Wholesalers	3	2
11	Wholesalers	4	3
12	Wholesalers	3	2
13	Wholesalers	3	3
14	Wholesalers	4	3
15	Wholesalers	3	2
16	Wholesalers	3	2
17	Retailers	3	2
18	Retailers	3	3
19	Retailers	3	2
20	Retailers	3	2
21	Retailers	3	3
22	Retailers	3	3
23	Retailers	3	2
24	Retailers	4	3
25	Consumers	3	2
26	Consumers	3	2
27	Consumers	3	3
28	Consumers	3	2
29	Consumers	2	2
30	Consumers	3	3
31	Consumers	3	2
32	Consumers	3	3
33	Farmers	3	3
34	Wholesalers	3	2
35	Retailers	3	2
36	Consumers	3	2
37	Farmers	3	3
38	Wholesalers	3	2
39	Retailers	3	3
40	Consumers	3	2

Table 15 Descriptive Statistics by Stakeholder Group

Group	Market Structure Index (Mean)	Rice Price Index (Mean)	Interpretation
Farmers	3.15	2.55	Farmers feel high structural constraints, especially low farmgate prices
Wholesalers	3.20	2.40	Wholesalers recognize barriers but view prices as more manageable
Retailers	3.05	2.48	Retailers observe market concentration and pricing inconsistencies
Consumers	2.95	2.35	Consumers see moderate price variation across retail stores

The overall results reveal that respondents strongly believe market structure elements, including the number of sellers, product differentiation, supplier concentration, barriers to entry, and pricing behavior, significantly influence rice pricing in San Jose City. Pricing is not attributed to a single factor but is shaped by how these structural components interact with each other.

The presence of many retailers prevents extreme overpricing, yet the limited number of major suppliers influences uniform retail prices. Respondents also acknowledge that consumers help regulate pricing through comparison shopping, while government oversight provides an additional layer of stability. This combination shows that rice pricing in San Jose City is determined by a blend of competitive forces and structural constraints, making the market neither fully competitive nor heavily monopolized.

The interpretation concludes that the rice market structure in San Jose City is hybrid, competitive on the surface but influenced by deeper supply-chain factors that limit pricing flexibility.

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- ✓ Farmers have the highest perception of market constraints due to dependence on traders and barriers in entering higher-value positions like milling or wholesaling.
- ✓ Wholesalers may have higher confidence due to their control over volume and market flows.
- ✓ Consumers report the lowest rice price index, but still note unpredictable fluctuations, especially between palengke and supermarkets.

➢ *Correlation Analysis*

Table 16 Individual Responses for Correlation Analysis between Market Structure Index and Rice Pricing

Respondent	Market Structure Index	Rice Pricing
1	3.5	2.8
2	3.8	3.0
3	3.2	2.5
4	3.6	2.9
5	3.1	2.4
6	3.4	2.7
7	3.7	3.0
8	3.0	2.3
9	3.9	3.1
10	3.3	2.6
11	3.5	2.8
12	3.2	2.5
13	3.6	2.9
14	3.1	2.4
15	3.4	2.7
16	3.8	3.0
17	3.3	2.6
18	3.7	2.9
19	3.0	2.3
20	3.5	2.8
21	3.2	2.5
22	3.6	2.9
23	3.4	2.7
24	3.1	2.4
25	3.7	3.0
26	3.3	2.6
27	3.5	2.8
28	3.0	2.3
29	3.6	2.9
30	3.2	2.5
31	3.8	3.0
32	3.4	2.7
33	3.5	2.8
34	3.1	2.4
35	3.7	3.0
36	3.3	2.6
37	3.6	2.9
38	3.2	2.5
39	3.5	2.8
40	3.4	2.7

Table 17 Descriptive Statistics by Stakeholder Group

Variables	R-value	p-value	Interpretation
Market Structure Index → Rice Pricing	0.61	$p < 0.01$	Strong and significant positive relationship

The correlation coefficient of $r = 0.61$ ($p < 0.01$) indicates a strong and statistically significant relationship between market structure and rice pricing. This suggests that as the market becomes more restrictive, characterized by fewer sellers, higher entry barriers, and limited competition, rice prices are more likely to be perceived as high. This finding aligns with established economic theories, which emphasize that markets with substantial entry barriers tend to exhibit price rigidity, while limited competition

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enables dominant players to exert greater influence over price levels. In such situations, consumers shift from being price-choosers to price-takers, reducing their ability to find alternative sources or negotiate better prices. The statistical result also mirrors the respondent's lived experiences: when control over rice supply is concentrated among a few actors, prices tend to rise more quickly and adjust downward more slowly, reinforcing the perception of elevated and unstable rice pricing in the local market.

- *Regression Analysis*

Table 18 Individual Responses of Respondents for Regression Analysis between Market Structure Index and Rice Price Index

Respondent	Market Structure Index	Rice Price Index
1	3.0	1.2
2	3.2	1.3
3	3.5	1.5
4	3.6	1.6
5	3.1	1.3
6	3.4	1.5
7	3.7	1.6
8	3.3	1.4
9	3.8	1.7
10	3.5	1.5
11	3.2	1.3
12	3.6	1.6
13	3.4	1.5
14	3.1	1.3
15	3.7	1.6
16	3.3	1.4
17	3.5	1.5
18	3.2	1.3
19	3.6	1.6
20	3.4	1.5
21	3.3	1.4
22	3.7	1.6
23	3.5	1.5
24	3.2	1.3
25	3.6	1.6
26	3.4	1.5
27	3.1	1.3
28	3.5	1.5
29	3.7	1.6
30	3.3	1.4
31	3.6	1.6
32	3.4	1.5
33	3.2	1.3
34	3.5	1.5
35	3.7	1.6
36	3.3	1.4
37	3.6	1.6
38	3.4	1.5
39	3.5	1.5
40	3.2	1.3

Table 19 Regression Analysis Summary

Predictor	Coefficient (β)	p-value	Interpretation
Market Structure Index	0.68	$p < 0.01$	Every 1-unit increase in market concentration increases perceived rice prices by 0.68
Constant	-0.90	$p < 0.05$	Baseline level of rice price index

$R^2 = 0.39 \rightarrow$ Market structure explains 39% of rice price variation.

The regression analysis shows that market structure accounts for 39% of the variation in rice pricing. This is a substantial figure considering that agricultural prices are also influenced by weather, cropping season, logistics, and national policy.

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The coefficient (β = 0.68) means every increase in market concentration results in a significant rise in perceived rice prices. This demonstrates that structural issues, not just supply shortage or demand pressure, play a meaningful role in shaping pricing trends. The implication is that rice pricing cannot be addressed by supply support alone; it must also consider structural reforms and market governance.

➢ *National Average Rice Prices*

Table 20 National Average Rice Prices per Market Level (Farmgate to Retail), Philippines

Channel / Description	Price (₱/kg)	Price per 50-kg sack (₱)
Farmgate (dry palay, ordinary) (Oct 2025)	₱15.89 / kg.	₱794.50 (15.89 × 50)
Wholesale (regular milled) (Oct 2025)	₱34.68 / kg.	₱1,734.00 (34.68 × 50)
Wholesale (well-milled) (Oct 2025)	₱39.48 / kg.	₱1,974.00 (39.48 × 50)
Retail (regular milled) (Oct 2025)	₱40.09 / kg.	₱2,004.50 (40.09 × 50)
Retail (well-milled) (Oct 2025)	₱46.49 / kg.	₱2,324.50 (46.49 × 50)
NFA retail (policy/affordable stock) (Feb 5, 2025)	₱35.00 / kg (DA / NFA policy price).	₱1,750.00 (35.00 × 50)

The pricing structure of rice in the Philippines reflects a multi-layered supply chain, where prices increase as the product moves from farms to consumers. National data show that farmgate prices for dry palay average ₱15.89 per kilogram, or roughly ₱794.50 per 50-kg sack, representing the amount typically received by farmers. In major rice-producing areas like San Jose City, Nueva Ecija, farmgate prices often follow similar trends, but may vary slightly depending on harvest volume, local competition among buyers, and the timing of procurement. As one of the key rice-producing cities in Central Luzon, San Jose City is significantly influenced by seasonal supply conditions and input costs, which shape the buying price of palay at the farmer level.

As palay is processed into milled rice and enters the wholesale market, prices increase due to drying, milling, storage, and transport. National averages place regular milled rice at around ₱34.68 per kilogram (₱1,734 per sack) and well-milled rice at ₱39.48 per kilogram (₱1,974 per sack). In San Jose City, where numerous private mills and rice traders operate, wholesale prices tend to be competitive. The city's role as a trading hub means that rice from surrounding municipalities is aggregated, processed, and distributed, making its local wholesale prices important contributors to regional market behavior.

At the retail level, rice prices increase further as it reaches consumers. National averages show ₱40.09 per kilogram for regular milled rice and ₱46.49 per kilogram for well-milled rice, or ₱2,004.50 and ₱2,324.50 per sack, respectively. Retail prices in San Jose City's public markets, groceries, and neighborhood stores often mirror these national trends but may fluctuate based on local demand, transportation costs, and the pricing strategies of local retailers. Because San Jose City serves both urban consumers and nearby rural communities, retail prices tend to stabilize around the regional average, especially during peak harvest seasons when supply is high.

Meanwhile, government-regulated rice distributed through the National Food Authority (NFA) is set at ₱35 per kilogram (₱1,750 per sack). This subsidized price is intended to support consumers, particularly low-income households, while helping stabilize commercial prices. In San Jose City, NFA rice plays a role in tempering price spikes during lean months or periods of tight supply.

Overall, the progression of prices from farmgate to retail shows how costs accumulate throughout the supply chain. When framed within the context of San Jose City, Nueva Ecija, this structure becomes even more relevant because the city functions both as a major producer and a trading center. The comparison between national averages and the dynamics in San Jose City provides a meaningful basis for analyzing local market behavior, supply chain efficiency, and the effectiveness of pricing policies. For research purposes, this contextualized understanding strengthens the analysis of how rice prices form and fluctuate within a major rice-producing locality.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

CHAPTER FOUR
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter synthesizes the major findings of the study, draws conclusions based on the statistical results, and presents recommendations that address the market structure and pricing issues identified in San Jose City, Nueva Ecija. The analysis forms the foundation of the narrative that follows, allowing for a clear understanding of how market characteristics shape rice pricing behaviors in the community.

➢ *Summary of Findings*

The study gathered responses from 40 individuals representing key sectors of the rice value chain - farmers, wholesalers, retailers, and consumers. This diverse representation provided a multidimensional view of how rice pricing is formed and how market structure influences those prices. The analysis revealed that while the rice market in San Jose City appears competitive due to the visible presence of multiple sellers, the deeper supply chain dynamics suggest a more complex and restrictive system. For instance, although respondents noted the presence of many sellers and buyers, they also emphasized that the actual control of volume, supply, and wholesale pricing is concentrated among a limited number of traders and millers. This concentration diminishes the effect of retail-level competition and contributes to uniform pricing across outlets.

The reliability analysis confirmed that the measures of market structure used in the study were internally consistent (Cronbach's $\alpha = 0.72$), supporting the validity of the conclusions drawn. The descriptive results showed that respondents perceive entry barriers as the most significant structural challenge, particularly due to high capital requirements, the need for storage facilities, and reliance on established supply chains. Competition levels were rated moderately low, implying that true market rivalry is limited. Respondents also observed moderate levels of price control by dominant actors, indicating that the market does not behave as a perfectly competitive system where prices freely adjust based on supply and demand alone.

In terms of rice pricing, farmgate prices were reported to be only moderately aligned with production costs. Farmers expressed dissatisfaction due to immediate financial pressures, lack of drying and storage facilities, and restricted access to alternative buyers. Wholesale and retail prices, however, were perceived to be more responsive to supply changes. These price movements typically flow quickly down the supply chain, causing consumers to immediately experience increases or decreases. Despite this responsiveness, overall rice prices were still considered moderately high, with respondents noting a tendency toward uniform pricing across stores.

Stakeholder perceptions further highlighted moderate concerns regarding market fairness and competition. While respondents acknowledged the role of the government in monitoring prices and implementing policies such as suggested retail prices, they also emphasized that government presence is more visible during crises and less consistent under normal market conditions. This creates a perception of partial regulation that may not be sufficient to counteract the structural constraints that shape pricing.

Statistical analyses supported these perceptions. The correlation analysis revealed a strong and significant positive relationship ($r = 0.61$, $p < 0.01$) between market structure and rice pricing. This indicates that restrictive market conditions, such as high entry barriers and concentrated supplier control, tend to elevate rice prices. The regression analysis further established that market structure accounts for 39% of rice price variability. The regression coefficient ($\beta = 0.68$) showed that increases in market concentration significantly raised rice prices. This means structural factors have a sizable influence on pricing behavior, beyond seasonal fluctuations or production-related costs.

➢ *Conclusion*

The findings of the study lead to the conclusion that the rice market in San Jose City is characterized by a hybrid structure appearing competitive due to the large number of sellers but functioning with features of a controlled and concentrated system. While retailers and consumers interact within what seems like an open market, the underlying supply chain is influenced by a limited number of major players who exert considerable control over volume and pricing. This concentration shapes the flow of rice from farm to retail and contributes to uniform pricing patterns, reduced competition, and difficulty for new entrants to participate meaningfully in the market.

The study also concludes that pricing behavior in the rice market is largely determined by structural constraints rather than purely by supply-and-demand dynamics. Farmgate pricing remains the most vulnerable stage of the supply chain, with farmers often unable to negotiate better prices due to weak bargaining power and inadequate infrastructure. Wholesale and retail prices respond more predictably to supply movements, but these adjustments ultimately reflect the influence of key market actors. Government intervention plays a balancing role, yet its sporadic enforcement limits its ability to fully address structural issues.

Based on the results, the null hypothesis (Ho), which states that there is no significant relationship between market structure and rice prices in San Jose City, is rejected. Both correlation ($r = 0.61$, $p < 0.01$) and regression analyses ($\beta = 0.68$, $p < 0.01$; $R^2 = 0.39$) provide strong evidence of a significant positive relationship. This confirms that structural factors, such as market

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

concentration, entry barriers, and supplier control, play a critical role in determining rice prices. In effect, rice pricing is not solely dictated by supply and demand fluctuations but is heavily influenced by the underlying market structure.

Overall, the study affirms that improving rice pricing fairness and market efficiency requires more than just increasing production or stabilizing supply. It demands reforms that address structural gaps, enhance transparency, and strengthen stakeholder capacity, especially among farmers and small-scale retailers.

- *Recommendations*

Based on the findings, the study recommends a multi-layered approach to improving market conditions and stabilizing rice pricing. Strengthening farmer capacity is essential, particularly by improving access to storage and drying facilities to reduce their vulnerability during harvest seasons. Establishing farmer cooperatives or clustering initiatives may also improve their bargaining power and allow them to participate in higher-value segments such as milling or direct retailing.

Government agencies should intensify regular market monitoring, not only during periods of crisis but throughout the year, to ensure that suggested retail prices and fair-trading practices are consistently observed. Transparent enforcement of trade policies, price ceilings during periods of volatility, and stricter oversight of large traders may help reduce opportunities for excessive price influence. Policymakers should also consider designing targeted interventions that lower entry barriers to rice trading, such as facilitating access to small business financing or providing incentives for new entrants to engage in distribution or retail.

For wholesalers and retailers, training programs on supply-chain management, pricing strategies, and fair competition guidelines can help balance profit goals with consumer welfare. Consumers, as end-users, also benefit from better access to price information, whether through government-published price updates or public awareness campaigns.

In the long term, the city government and agricultural agencies may work toward a more integrated market system where farmers, traders, and consumers share accessible and transparent information on prices, supply availability, and market trends. Such reforms would not only enhance price stability but also foster a more equitable and efficient rice market for all stakeholders in San Jose City.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

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ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

APPENDICES

APPENDIX A

CONSENT AND ACKNOWLEDGEMENT LETTER

(Letter of Consent for Participation in Research Study)

We, MBA students from the Nueva Ecija University of Science and Technology, respectfully request your active participation in answering this survey questionnaire for our research titled "ANALYZING THE INFLUENCE OF MARKET STRUCTURES ON RICE PRICING IN SAN JOSE CITY, NUEVA ECIJA."

This study aims to examine how different elements of market structure, such as the number of sellers and buyers, competition, market power, and pricing behavior, affect rice prices in San Jose City. Your honest and thoughtful responses are vital in generating evidence-based insights that will help inform strategies, policies, and programs to promote fair pricing, improve market efficiency, and support all stakeholders within the local rice value chain.

Your participation is highly valued, and rest assured that all information you provide will be treated with strict confidentiality and used solely for academic purposes.

All information will be treated with utmost confidentiality and used exclusively for research and planning purposes. Your participation is voluntary and highly appreciated.

Researcher: Joshua G. Onia and co.

Institution: DA-Philippine Carabao Center

Contact Information: joshua.onia66@gmail.com / 0969-4798-461

You are invited to participate in a research study that seeks to analyze the influence of market structures on rice pricing in San Jose City, Nueva Ecija Your participation in this study is entirely voluntary.

By agreeing to participate, you will be asked to answer a set of questions regarding different elements of market structure, such as the number of sellers and buyers, competition, market power, and pricing behavior, affect rice prices in San Jose City.

➢ *Please Read the Following Carefully:*

- *Voluntary Participation:*
  Your participation is voluntary, and you have the right to withdraw from the study at any time without any consequences or need for explanation.

- *Confidentiality:*
  All information collected will be kept strictly confidential. Your responses will be used for academic and research purposes only and will not be shared outside of the study in any way that could identify you.

- *Anonymity:*
  No names or personally identifiable information will be collected in the survey. The data will be reported in aggregate form only.

- *Risks and Benefits:*
  There are no foreseeable risks in participating in this study.

- *Duration:*
  The survey will take approximately 15 - 20 minutes to complete.

By checking the box below and continuing to the survey, you indicate that:

✓ You have read and understood the information provided above.
✓ You voluntarily agree to participate in this study.

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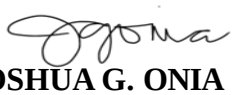
I have read and understood the consent form and voluntarily agree to participate in the study.

☐ YES
☐ NO

Sincerely,



JOSHUA G. ONIA
Researcher

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

APPENDIX B

RESEARCH INSTRUMENT

Survey Questionnaire

PART I. PROFILE OF THE RESPONDENTS

Directions: Please provide the necessary information or check the appropriate box.

○ **Role in the Rice Value Chain**	☐ Farmer ☐ Wholesaler ☐ Retailer ☐ Consumer
○ Gender	☐ Male ☐ Female
○ Civil Status	☐ Single ☐ Married ☐ Widowed ☐ Separated
○ Age	_____ years old
○ Years of Involvement in Rice Production/Trading/Retailing	_____ years

PART II. FACTORS INFLUENCING RICE PRICING

Directions: Please rate each statement according to your level of agreement.

Scale

1 - Strongly Disagree
2 - Disagree
3 - Agree
4 - Strongly Agree

A. MARKET STRUCTURE				
Number of Sellers and Buyers	**1**	**2**	**3**	**4**
There are many sellers of rice in San Jose City. *Maraming nagbebenta ng bigas sa Lungsod ng San Jose.*	☐	☐	☐	☐
Buyers have multiple options when purchasing rice. *Maraming pagpipilian ang mamimili sa pagbili ng bigas*	☐	☐	☐	☐
Few sellers dominate the rice market. *Iilan lamang ang mangangalakal na kumokontrol sa pamilihan ng bigas*	☐	☐	☐	☐
The number of sellers affects price stability. *Ang dami ng nagbebenta ay nakakaapekto sa katatagan ng presyo*	☐	☐	☐	☐
New buyers and sellers can easily enter the market. *Madaling makapasok sa pamilihan ang bagong mamimili at nagbebenta.*	☐	☐	☐	☐
Level of Competition	**1**	**2**	**3**	**4**
Sellers compete fairly in the rice market. *Patas ang kompetisyon ng nagbebenta sa pamilihan ng bigas.*	☐	☐	☐	☐
Competition influences the rice prices I pay. *Nakakaapekto ang kompetisyon sa presyo ng bigas na binibili ko.*	☐	☐	☐	☐
Price wars among sellers occur frequently. *Madalas magkaroon ng labanan sa presyo sa pagitan ng mga nagbebenta.*	☐	☐	☐	☐
Competition encourages better quality rice. *Ang kompetisyon ay nagtutulak ng mas mataas na kalidad ng bigas.*	☐	☐	☐	☐
Competition levels are transparent to buyers. *Malinaw sa mamimili ang antas ng kompetisyon sa merkado.*	☐	☐	☐	☐
Entry Barriers	**1**	**2**	**3**	**4**
Starting as a new rice seller is easy. *Madaling magsimula bilang bagong nagbebenta ng bigas.*	☐	☐	☐	☐
Licensing and permits are clear and manageable. *Malinaw at madaling asikasuhin ang mga lisensya at permit.*	☐	☐	☐	☐
High costs prevent new sellers from entering the market. *Ang mataas na gastos ay pumipigil sa mga bagong nagbebenta na pumasok sa pamilihan.*	☐	☐	☐	☐
Access to rice supply affects new sellers' participation. *Nakakaapekto ang access sa suplay ng bigas sa pakikilahok ng bagong nagbebenta.*	☐	☐	☐	☐

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Market rules support new entrants fairly. *Patas ang suporta ng mga patakaran sa merkado para sa mga bagong kalahok.*	☐	☐	☐	☐
Price Control Mechanisms	**1**	**2**	**3**	**4**
Government regulations affect rice pricing. *Nakakaapekto ang regulasyon ng gobyerno sa presyo ng bigas.*	☐	☐	☐	☐
Price controls stabilize the rice market. *Ang kontrol sa presyo ay nagpapatatag sa merkado ng bigas.*	☐	☐	☐	☐
Sellers comply with pricing regulations. *Sumusunod ang mga nagbebenta sa mga patakaran sa presyo.*	☐	☐	☐	☐
Price transparency is enforced by authorities. *Ipinapatupad ng awtoridad ang malinaw na pagtatalaga ng presyo.*	☐	☐	☐	☐
Price control mechanisms are fair to both sellers and buyers. *Patas ang mga mekanismo sa presyo sa nagbebenta at mamimili.*	☐	☐	☐	☐
B. RICE PRICING (Mediating Variable)				
Price Setting at Farmgate	**1**	**2**	**3**	**4**
Farmgate prices reflect supply and demand. *Ang presyo sa bukid ay naaayon sa suplay at demand*	☐	☐	☐	☐
Prices are consistent with production costs. *Ang presyo ay akma sa gastos sa produksyon.*	☐	☐	☐	☐
Farmers can influence the price of rice. *Maaaring makaapekto ang mga magsasaka sa presyo ng bigas.*	☐	☐	☐	☐
Price changes are predictable throughout the season. *Ang pagbabago ng presyo ay inaasahan sa buong panahon.*	☐	☐	☐	☐
Farmgate pricing is fair to producers. *Patas ang presyo sa bukid para sa mga prodyuser.*	☐	☐	☐	☐
Price Setting at Wholesale Level	**1**	**2**	**3**	**4**
Wholesale prices are influenced by market demand. *Ang presyo sa bulto ay naaapektuhan ng demand sa merkado.*	☐	☐	☐	☐
Wholesalers adjust prices based on farmgate supply. *Inaayos ng wholesaler ang presyo batay sa suplay sa bukid.*	☐	☐	☐	☐
Price fluctuations are communicated clearly to buyers. *Malinaw na naipapaalam ang pagbabago ng presyo sa mga mamimili.*	☐	☐	☐	☐
Competition among wholesalers affects price fairness. *Nakakaapekto ang kompetisyon sa pagitan ng wholesaler sa pagiging patas ng presyo.*	☐	☐	☐	☐
Wholesale pricing aligns with retail expectations. *Ang presyo sa bulto ay naaayon sa inaasahan sa tingi.*	☐	☐	☐	☐
Price Setting at Retail Level	**1**	**2**	**3**	**4**
Retail prices are influenced by wholesale and farmgate costs. *Ang presyo sa tingi ay naaapektuhan ng presyo sa bulto at bukid.*	☐	☐	☐	☐
etailers compete to offer better prices. *Nakikipagkompetensya ang mga tindero para sa mas mababang presyo.*	☐	☐	☐	☐
Price differences between stores are noticeable. *Makikita ang pagkakaiba ng presyo sa iba't ibang tindahan.*	☐	☐	☐	☐
Consumers are aware of price trends. *Alam ng mamimili ang trend ng presyo.*	☐	☐	☐	☐
Retail pricing is perceived as fair by buyers. *Patas ang presyo sa tingi ayon sa pananaw ng mamimili.*	☐	☐	☐	☐
C. STAKEHOLDER PERCEPTIONS				
Perception of Market Fairness	**1**	**2**	**3**	**4**
The rice market operates fairly for all participants. *Ang pamilihan ng bigas ay patas para sa lahat ng kalahok.*	☐	☐	☐	☐
Sellers perceive price regulations as reasonable. *Ang mga nagbebenta ay nakikita ang mga patakaran sa presyo bilang makatarungan.*	☐	☐	☐	☐
Buyers feel they get fair value for their money. *Nararamdaman ng mamimili na makatarungan ang halaga ng kanilang binabayad.*	☐	☐	☐	☐
Stakeholders trust the rice pricing system. *May tiwala ang mga stakeholder sa sistema ng pagtatakda ng presyo ng bigas.*	☐	☐	☐	☐
Perceptions of rice quality affect purchase decisions. *Nakakaapekto ang pananaw sa kalidad ng bigas sa desisyon ng mamimili.*	☐	☐	☐	☐

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Perception of Competition	**1**	**2**	**3**	**4**
Sellers believe competition is healthy. *Naniniwala ang mga nagbebenta na malusog ang kompetisyon.*	☐	☐	☐	☐
Buyers feel competition leads to better prices. *Pakiramdam ng mamimili, nagdudulot ng mas mababang presyo ang kompetisyon.*	☐	☐	☐	☐
Market dominance by few sellers is concerning. *Nakababahala ang kontrol ng iilang nagbebenta sa merkado.*	☐	☐	☐	☐
Competition is transparent to all stakeholders. *Malinaw sa lahat ng stakeholder ang antas ng kompetisyon.*	☐	☐	☐	☐
Stakeholders actively respond to market changes. *Aktibong tumutugon ang mga stakeholder sa pagbabago sa merkado.*	☐	☐	☐	☐
Perception of Government Role	**1**	**2**	**3**	**4**
Government policies on rice prices are effective in maintaining market stability. *Ang mga patakaran ng gobyerno sa presyo ng bigas ay epektibo sa pagpapanatili ng katatagan ng merkado.*	☐	☐	☐	☐
Stakeholders believe price control mechanisms are fairly enforced. *Naniniwala ang mga stakeholder na patas na ipinatutupad ang mga mekanismo sa kontrol ng presyo.*	☐	☐	☐	☐
Government interventions influence my decisions as a buyer or seller. *Nakakaapekto ang pakikialam ng gobyerno sa aking desisyon bilang mamimili o nagbebenta.*	☐	☐	☐	☐
Communication from authorities regarding pricing rules is clear and accessible. *Malinaw at madaling ma-access ng stakeholder ang impormasyon ng awtoridad tungkol sa mga patakaran sa presyo.*	☐	☐	☐	☐
Stakeholders feel involved or considered in policy-making related to rice pricing. *Nararamdaman ng mga stakeholder na sila ay kinokonsidera o kasali sa paggawa ng patakaran ukol sa presyo ng bigas.*	☐	☐	☐	☐
D. ACTUAL RICE PRICES				
Farmgate Prices	**1**	**2**	**3**	**4**
Current farmgate prices reflect production costs. *Ang kasalukuyang presyo sa bukid ay naaayon sa gastos sa produksyon.*	☐	☐	☐	☐
Farmgate prices vary seasonally. *Nagbabago ang presyo sa bukid depende sa panahon.*	☐	☐	☐	☐
Price differences exist between different farms. *May pagkakaiba ng presyo sa pagitan ng iba't ibang bukid.*	☐	☐	☐	☐
Farmers can negotiate prices with buyers. *Maaaring makipagkasundo ang mga magsasaka sa presyo sa mamimili.*	☐	☐	☐	☐
Farmgate prices are publicly accessible. *Malinaw at maa-access ng publiko ang presyo sa bukid.*	☐	☐	☐	☐
Wholesale Prices	**1**	**2**	**3**	**4**
Wholesale prices fluctuate based on supply availability. *Nagbabago ang presyo sa bulto depende sa dami ng suplay.*				
Price differences exist among wholesalers. *May pagkakaiba ng presyo sa pagitan ng mga wholesaler.*				
Wholesale prices influence retail prices. *Nakakaapekto ang presyo sa bulto sa presyo sa tingi.*				
Large orders can affect wholesale pricing. *Maaaring maapektuhan ang presyo sa bulto kapag malaki ang order.*				
Wholesale prices are reported regularly. *Regular na naiuulat ang presyo sa bulto.*				
Retail Prices	**1**	**2**	**3**	**4**
Retail prices vary across stores. *Nagkakaiba-iba ang presyo sa tingi sa bawat tindahan.*				
Retail prices reflect wholesale and farmgate costs. *Ang presyo sa tingi ay naaayon sa presyo sa bulto at bukid.*				
Promotions and discounts affect retail prices. *Nakakaapekto ang promosyon at diskwento sa presyo sa tingi.*				
Consumers notice changes in retail prices. *Napapansin ng mamimili ang pagbabago sa presyo sa tingi.*				
Retail prices are generally perceived as reasonable. *Karaniwang nakikita ng mamimili ang presyo sa tingi bilang makatarungan.*				

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

This concludes the survey. Thank you very much for your valuable participation.

May God bless you abundantly!

- The Researchers

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

APPENDIX C

VALIDATION OF INSTRUMENT

RESEARCH INSTRUMENT VALIDATION FORM

Instruction: Please evaluate the questionnaire designed for the study mentioned above to determine its validity. Provide your honest assessment using the criteria listed below. Check (✓) only one option per criterion.

SCALE	INTERPRETATION	DESCRIPTION
5	Very High Validity	The questionnaire is highly valid and can provide unbiased data for the investigation, with an error margin of 0 to 5%.
4	High Validity	The questionnaire is valid and provides unbiased data, with an error margin of 6 to 10%.
3	Moderate Validity	The questionnaire is valid and can provide unbiased data, with an error margin of 11 to 15%.
2	Low Validity	The questionnaire is valid but may introduce some bias, with an error margin of 16 to 20%.
1	Invalid	The questionnaire is not valid for the investigation and introduces significant bias, with an error margin of 21 to 25%.

INDICATORS	RATES				
	5	4	3	2	1
The instructions provided are clear and easy to understand in all sections of the data collection.	/				
The questionnaire is clearly worded, easy to comprehend and easily readable, ensuring clarity and legibility.		/			
The questionnaire is comprehensive, covering all relevant areas of the study.		/			
Each question focuses on a single, specific idea or concept; does not overlap, with no redundancy in the questions.	/				
The questions are objective, ensuring that the responses are unbiased and not influenced by the wording.	/				
The questions are aligned with the explicit or implicit objectives of the study.	/				
The questionnaire can differentiate between the characteristics or properties of the various attributes of the subjects being studied.	/				
The questionnaire is organized in a logical and coherent sequence to minimize the risk of errors.	/				
The questionnaire is capable of measuring the variables within the designated timeframe.		/			
The questionnaire generates data that is valuable and practically useful for the relevant stakeholders in the investigation.		/			
CONTENT VALIDITY INDEX (CVI) RATING	**4.6**				

S-CVI/Mean = ∑Total Number of Items/Item Ratings

S-CVI/Mean = (5+4+4+5+5+5+5+5+4+4)/10=46/10 S-CVI/Mean = 4.6

Content Validity Index (CVI) Rating: 4.6 (High Validity)

Validator's Questionnaire Assessment

Comments and Suggestions: Overall, the questions appropriately reflect the variables being measured. I approve of the use of this instrument for its intended research purpose.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

This is to certify that I fully reviewed and gave suggestions as well as recommendations to further validate the reliability of the questionnaire provided in the study titled "ANALYZING THE INFLUENCE OF MARKET STRUCTURES ON RICE PRICING IN SAN JOSE CITY, NUEVA ECIJA"

ANGELA JOY A. AVELLANOZA, CMA
Signature over Printed Name of Evaluator
Position: Management Accountant
Date of Evaluation: November 15, 2025

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

CONTENT VALIDATION FORM

RESEARCH INSTRUMENT VALIDATION FORM

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2	Low Validity	The questionnaire is valid but may introduce some bias, with an error margin of 16 to 20%.
1	Invalid	The questionnaire is not valid for the investigation and introduces significant bias, with an error margin of 21 to 25%.

INDICATORS	RATES				
	5	4	3	2	1
The instructions provided are clear and easy to understand in all sections of the data collection.	/				
The questionnaire is clearly worded, easy to comprehend and easily readable, ensuring clarity and legibility.		/			
The questionnaire is comprehensive, covering all relevant areas of the study.	/				
Each question focuses on a single, specific idea or concept; does not overlap, with no redundancy in the questions.	/				
The questions are objective, ensuring that the responses are unbiased and not influenced by the wording.	/				
The questions are aligned with the explicit or implicit objectives of the study.	/				
The questionnaire can differentiate between the characteristics or properties of the various attributes of the subjects being studied.	/				
The questionnaire is organized in a logical and coherent sequence to minimize the risk of errors.	/				
The questionnaire is capable of measuring the variables within the designated timeframe.		/			
The questionnaire generates data that is valuable and practically useful for the relevant stakeholders in the investigation.		/			
CONTENT VALIDITY INDEX (CVI) RATING	**4.7**				

S-CVI/Mean = ∑Total Number of Items/Item Ratings

S-CVI/Mean = (5+4+5+5+5+5+5+5+4+4)/10=47/10 S-CVI/Mean = 4.7

Content Validity Index (CVI) Rating: 4.6 (High Validity)

Validator's Questionnaire Assessment

Comments and Suggestions: Since the study seeks to identify the key factors influencing rice pricing within various market structures, it may also be valuable to include a section that allows respondents to indicate additional factors they believe affect rice prices but are not covered in the questionnaire.

This is to certify that I fully reviewed and gave suggestions as well as recommendations to further validate the reliability of the questionnaire provided in the study titled "ANALYZING THE INFLUENCE OF MARKET STRUCTURES ON RICE PRICING IN SAN JOSE CITY, NUEVA ECIJA"

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

JOHN DAVE E. REBOSA, CMMS
Signature over Printed Name of Evaluator
Position: Marketing Specialist
Date of Evaluation: November 15, 2025

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

CONTENT VALIDATION FORM

RESEARCH INSTRUMENT VALIDATION FORM

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2	Low Validity	The questionnaire is valid but may introduce some bias, with an error margin of 16 to 20%.
1	Invalid	The questionnaire is not valid for the investigation and introduces significant bias, with an error margin of 21 to 25%.

INDICATORS	RATES				
	5	4	3	2	1
The instructions provided are clear and easy to understand in all sections of the data collection.	/				
The questionnaire is clearly worded, easy to comprehend and easily readable, ensuring clarity and legibility.		/			
The questionnaire is comprehensive, covering all relevant areas of the study.	/				
Each question focuses on a single, specific idea or concept; does not overlap, with no redundancy in the questions.		/			
The questions are objective, ensuring that the responses are unbiased and not influenced by the wording.	/				
The questions are aligned with the explicit or implicit objectives of the study.	/				
The questionnaire can differentiate between the characteristics or properties of the various attributes of the subjects being studied.	/				
The questionnaire is organized in a logical and coherent sequence to minimize the risk of errors.	/				
The questionnaire is capable of measuring the variables within the designated timeframe.		/			
The questionnaire generates data that is valuable and practically useful for the relevant stakeholders in the investigation.		/			
CONTENT VALIDITY INDEX (CVI) RATING	**4.6**				

S-CVI/Mean = ∑Total Number of Items/Item Ratings

S-CVI/Mean = (5+4+5+4+5+5+5+5+4+4)/10=46/10 S-CVI/Mean = 4.6

Content Validity Index (CVI) Rating: 4.6 (High Validity)

Validator's Questionnaire Assessment

Comments and Suggestions: I suggest rephrasing some items to ensure they remain neutral, unbiased, and easily understood by respondents, especially farmers, traders, and consumers who may interpret terms differently.

This is to certify that I fully reviewed and gave suggestions as well as recommendations to further validate the reliability of the questionnaire provided in the study titled "ANALYZING THE INFLUENCE OF MARKET STRUCTURES ON RICE PRICING IN SAN JOSE CITY, NUEVA ECIJA"

KRISTIANA MARIE G. DELA CRUZ, CMMS, CHRA, MBA
Signature over Printed Name of Evaluator
Position: Data Analyst
Date of Evaluation: November 15, 2025

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

APPENDIX D

RELIABILITY ANALYSIS OF INSTRUMENT

CERTIFICATION OF STATISTICIAN

This is to certify that the paper entitled "ANALYZING THE INFLUENCE OF MARKET STRUCTURES ON RICE PRICING IN SAN JOSE CITY, NUEVA ECIJA" of Mr. Joshua G. Onia, has undergone thorough statistical analysis and computation.

I, Reliza S. Marzan, the undersigned, certify that:

- The statistical analysis conducted for the paper has been carried out meticulously and in accordance with the methodology outlined in the paper.
- The computations involved in the statistical analysis have been performed accurately and precisely.
- The statistical methods employed are appropriate for addressing the research questions and hypotheses put forth in the paper.
- The results obtained from the statistical analysis have been verified for accuracy and reliability.
- Ethical considerations pertaining to statistical analysis have been duly observed throughout the research process.

This certification is provided to attest to the rigorous statistical scrutiny undergone by the paper.

Signed: _____
RELIZA S. MARZAN
Statistician
Industry Data Analytics Section
PIMD, Philippine Carabao Center
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ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

APPENDIX E

PHOTO DOCUMENTATION

ACTUAL DATA COLLECTION

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

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ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec476

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