



## Implications of price inflation of rice in Naga City

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### Abstract:

This study explores the implications of rice price inflation on consumers in Naga City, Philippines, focusing on demographic profiles, awareness levels, and effects on personal, financial, and social aspects. The research employed a descriptive-correlational design, using survey questionnaires to gather data from 100 rice consumers. The findings indicate that consumers are most aware of the environmental factors, such as natural disasters, affecting rice prices, while awareness of economic and political factors is moderate. Additionally, the study finds a disparity in awareness levels among different demographic groups, suggesting targeted educational interventions may be beneficial. The study highlights significant personal and financial stress among consumers due to rising rice prices, impacting their ability to maintain quality meals and manage budgets. Despite the awareness of inflation factors, there is no significant correlation between awareness levels and mitigation of inflation effects, suggesting that consumers struggle to adapt to rising costs. Furthermore, the research reveals a need for more community support systems to assist vulnerable populations. The collected data shows that female consumers are more aware of economic factors, emphasizing their role in household food security. The study concludes with strategic recommendations for coping with rice price inflation, including community education and support measures. This research provides valuable insights for policymakers and stakeholders to address the challenges of rice price inflation and enhance food security in Naga City.

### Keywords:

Rice, Price Inflation, Consumer Awareness, Food Security.

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## INTRODUCTION

Global food security faces challenges from climate change, population growth, and food chain disruptions. Shifting weather patterns, along with floods and droughts, hinder food production, impacting the stability, quality, and accessibility of food (Igini, 2022). Additionally, the growing demand for food due to population increases and changing diets has led to resource depletion and environmental degradation.

The COVID-19 pandemic and the ongoing conflict between Ukraine and Russia have severely affected agricultural industries. The pandemic caused business slowdowns, logistical challenges, market closures, and limited financial support for farmers (Martinho, 2022). Meanwhile, the war in Ukraine drove up the prices of energy, food, and fertilizers, exacerbating global shortages (IMF, 2022). Although global food and energy prices began to decline in mid-2022, domestic prices and risks to food production have remained high, disproportionately affecting poorer households (IMF, 2023). Furthermore, India's ban on non-basmati rice exports has caused a global surge in rice prices, impacting countries heavily dependent on Indian rice imports, such as Nigeria, Ivory Coast, Senegal, Malaysia, Vietnam, and the Philippines. As a result, rice inflation in the Philippines rose from 4.2% in July to 8.7% in August 2023, affecting multiple industries (Neelakantan, 2023).

Inflation in the Philippines is closely tied to global economic conditions. The rise in rice prices, driven by poor harvests and export restrictions, has significantly contributed to inflation. Given the Filipino population's strong preference for rice, the country saw a dramatic 22.6% rice inflation rate in January 2024, marking a 14-year high (Rivas, 2024). The Philippines' inflation rate has consistently surpassed that of its regional neighbors, shaping the economic and social landscape of places like Naga City in Camarines Sur.

In Naga City, rice price inflation poses a serious threat to food security and residents' well-being. Small-scale farms in the area struggle with low productivity, limited market access, and insecure land tenure, making financial investment in agriculture unappealing. These challenges affect nutrition and weaken the city's economic and social fabric.

Understanding inflation is critical for individuals, policymakers, and businesses in order to make informed decisions and maintain financial stability. This study aimed to explore the relationship between consumer profiles and their knowledge of the factors influencing rice price inflation and its effects in Naga City. The study surveyed 100 randomly selected rice consumers, aged 18 and above, who are residents of Naga City. Participants completed questionnaires, adapted from Google Sheets, to assess their knowledge and perspectives on rice price inflation. By targeting various demographic profiles within Naga City, this study also examined consumers' understanding of the factors driving rice inflation and its effects on their lives.

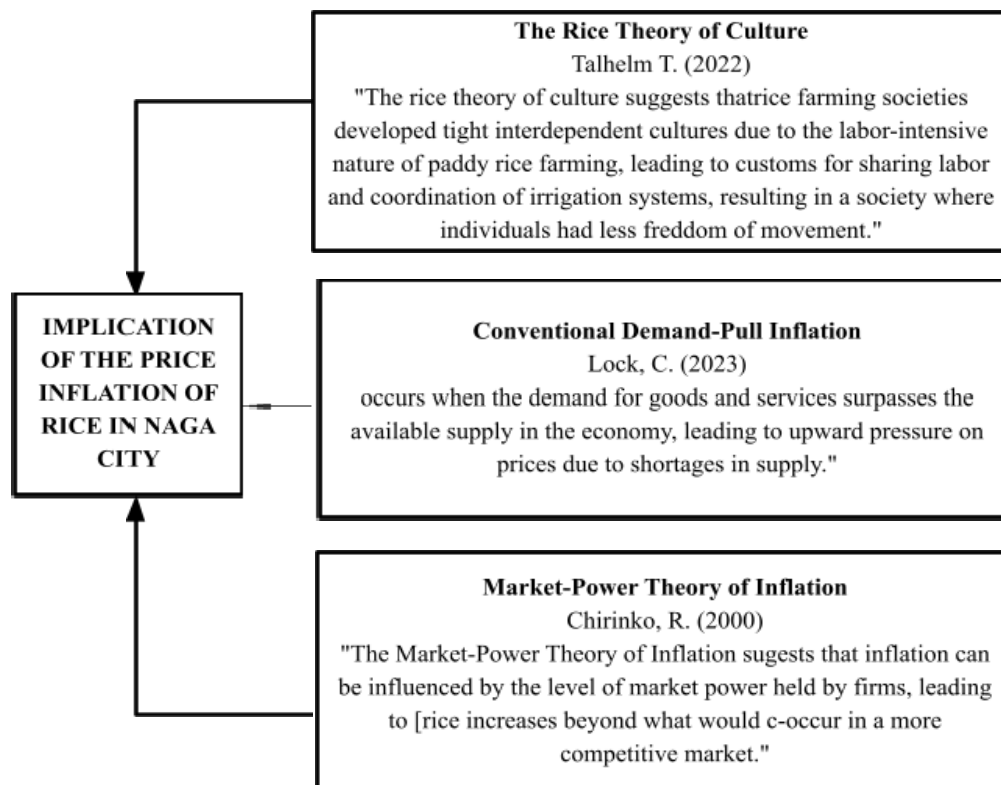
## Research Objectives

This research aimed to provide valuable insights into the implications of rice price inflation in Naga City and offer practical solutions to the community. Specifically, this aimed to achieve the following:

1. To determine the profile of the rice consumers along their age, gender, employment, and educational attainment;
2. To determine the level of awareness of the rice consumers in price inflation of rice in Naga City along economic, political, and environmental factors;
3. To determine the effects of price inflation of rice-to-rice consumers in Naga City along personal, financial, and social aspects;
4. To assess if there is a significant association between profiles and the level of awareness of rice consumers;
5. To assess if there is a significant association between the level of awareness of rice consumers and the effects of price inflation on rice consumers;
6. To develop a strategic plan on how to cope with the price inflation of rice in Naga City

## Theoretical Framework

This framework serves as a roadmap for understanding the relationships between variables and guiding the research questions by reviewing existing literature and theoretical perspectives.



**Figure 1. Theoretical Paradigm.**

## The Rice Theory of Culture

The Rice Theory of Culture suggests that rice farming societies developed into more interdependent, tight cultures due to the labor-intensive nature of rice cultivation, requiring extensive labor, irrigation systems, and farmer coordination (Talhelm, T., 2022). This led to customs that emphasized labor sharing and community interdependence, limiting individual freedom of movement. This framework helps explore how changes in rice prices affect the community's economic, cultural, and social dynamics, providing a comprehensive understanding of rice price inflation's implications beyond economic factors.

## Market-Power Theory of Inflation

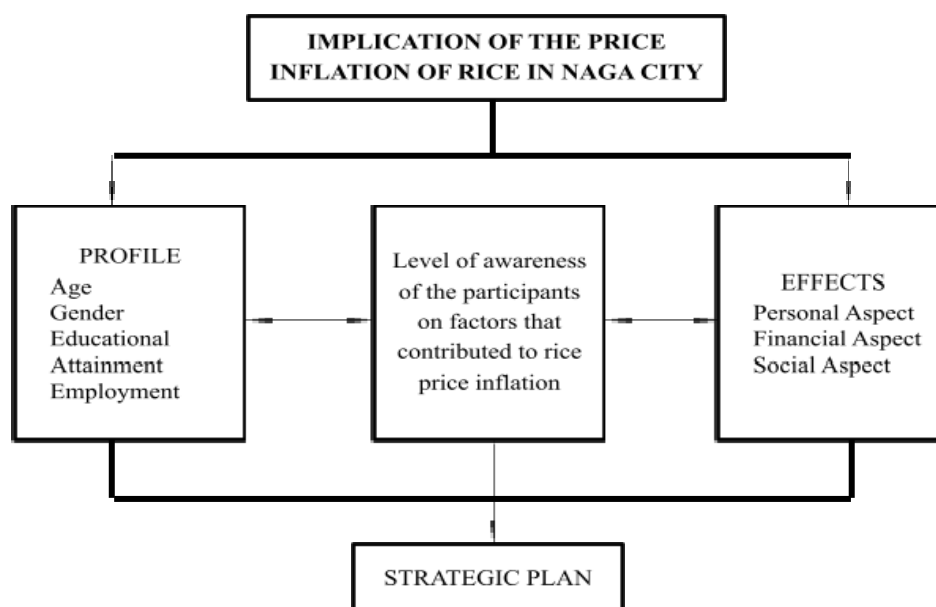
The Market Power Theory of Inflation examines how companies' ability to control prices affects inflation, suggesting that inflation can occur even with low demand when companies set prices (Chirinko et al., 2000). This theory is crucial for understanding how industry-specific pricing power impacts overall spending and economic stability. Researchers chose this theory to understand the relationship between industry power, rice prices, and consumer well-being. It helps analyze how inflation in the rice industry influences spending patterns and economic stability in Naga City.

## Conventional Demand-Pull Inflation

Demand-pull inflation occurs when demand for goods or services exceeds supply, leading to higher prices due to factors like a strong economy, supply shortages, increased money supply, and government policies (Lock C., 2023). Researchers used this theory to understand the price increases driven by high demand. By examining factors such as income levels, supply availability, and government actions, the study aims to inform policies for stabilizing prices and ensuring balanced employment. This helps predict spending behaviors and business responses to demand changes, aiding in better inflation management planning.

## Conceptual Framework

**Figure 2. Conceptual Paradigm**



The conceptual framework for this research focused on understanding rice consumers' profiles, their awareness of rice price inflation, and the effects of inflation on them in Naga City. It examined the relationships between these variables, particularly how rice price inflation impacted consumers and their coping strategies. The framework highlighted significant associations between consumer profiles and their awareness of inflation factors, as well as between their awareness levels and the effects of rice price inflation. Additionally, the study addressed the challenges consumers faced, identified potential solutions, and offered recommendations for coping with rising rice prices.

The conceptual paradigm outlined the flow of the study. First, researchers analyzed the implications of rice price inflation on consumer profiles—such as age, gender, employment status, and educational attainment—as the "independent variable." Second, they assessed consumers' awareness of the factors contributing to rice price inflation, treating this as a "dependent variable." Third, they examined the direct effects of rice price inflation on consumers, another "dependent variable." Fourth, the study evaluated the correlations between these variables to develop a strategic plan. Finally, the strategic plan offered recommendations to help rice consumers in Naga City effectively cope with the challenges posed by rice price inflation.

## **METHODOLOGY**

### **Research Methods**

This study employed a descriptive-correlational design to investigate rice price inflation in Naga City. Quantitative data was collected through surveys of rice consumers and an analysis of price trends, aiming to quantify the extent and impact of rice price inflation. Focus group discussions further explored strategies and recommendations for coping with rising rice prices. This research design offered a comprehensive understanding of the effects of rice price inflation while providing valuable insights for consumers in Naga City.

Data collection was conducted through Google Forms surveys, targeting rice consumers in Naga City. The questionnaires included demographic questions, a 5-point Likert scale, and binary questions to examine the relationship between consumers' profiles, the effects of rice inflation, and contributing factors. Survey questions were reviewed by experts before distribution to ensure clarity and relevance. Data analysis involved categorization and correlation to identify significant patterns. In-depth interviews provided qualitative data on consumer perspectives, which were analyzed using thematic analysis. The quantitative data was analyzed using frequency, percentage, weighted mean, ranking, and Chi-square tests, providing robust insights into the effects of rice price inflation.

### **Sampling Procedures**

A combination of purposive and convenience sampling was employed to select 100 rice consumers in Naga City, focusing on key demographic factors such as age, gender,

educational attainment, and employment status. Participants were asked about their ability to purchase rice, the challenges they faced in doing so, and their awareness of factors contributing to rice inflation. This approach provided a well-rounded understanding of the profiles and the effects of rice price inflation on local consumers.

Ethical considerations were carefully prioritized throughout the study. Informed consent was obtained from all participants, and confidentiality was strictly maintained. Participants were thoroughly briefed on the study's purpose, objectives, methodologies, potential benefits, and any associated risks. Data privacy was rigorously upheld, with identifying information removed during analysis. Research findings were presented in an anonymized format to comply with legal and ethical standards. Efforts were made to minimize any potential harm or discomfort to participants, ensuring their well-being throughout the research process.

### **Data Analysis Techniques**

The study utilized several data analysis techniques to examine the relationship between rice price inflation and its effects on the local economy. Frequency and percentage analyses were applied to demographic data, while weighted mean and ranking were used to assess the significance of rice price inflation's impact. Chi-square tests explored relationships between variables, and Pearson correlation analyzed the link between consumer awareness and the effects of rice price inflation. Additionally, thematic analysis was employed to identify key themes in qualitative data, providing a comprehensive understanding of the implications of rice price inflation in Naga City.

## **RESULTS AND DISCUSSION**

### **Demographic Profile of the Rice Consumers in Naga City**

Table 1 provides a detailed breakdown of the characteristics of 100 random rice consumers in Naga City, covering age, gender, educational attainment, and employment. The largest age group is 26-35 years old (43%), followed by 36-45 (22%), 18-25 (19%), 46-55 (10%), 56-65 (4%), and 66-75 (2%). Females make up the majority at 63%, males at 35%, and 2% identify as genderqueer or non-binary. Most consumers (64%) are college graduates, while 25% hold undergraduate degrees. 6% have master's or doctorate degrees, and 5% are high school graduates. Regarding employment, 46% work in the government sector, 34% in the private sector, 11% are self-employed, and 9% fall under "Other." This profile helps researchers understand their target audience and develop tailored strategies.

**Table 1. Rice Consumers Profile**

<b>Consumers Profile</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age</b>		
· 18-25	19	19%
· 26-35	43	43%
· 36-45	22	22%
· 46-55	10	10%
· 56-65	4	4%
· 66-75	2	2%
<b>Gender</b>		
· Female	63	63%
· Male	35	35%
· Genderqueer/non-binary	2	2%
<b>Educational Attainment</b>		
· College Graduate	64	64%
· Highschool	5	5%
· Masters/Doctorate	6	6%
· Undergraduate	25	25%
· Alternative Learning System	0	0%
· Elementary	0	0%
<b>Employment</b>		
· Private	34	34%
· Government	46	46%
· Self-Employed	11	11%
· Other	9	9%
<b>TOTAL</b>	100	100%

### **Level of Awareness on Factors Contributing to the Price Inflation of Rice**

Presented in tables 2.1 to 2.4 are the results of the survey of random rice consumers in Naga City, which aims to determine their level of awareness of economic, political, and environmental factors contributing to the price inflation of rice.

#### **Economic Factors**

Table 2.1 provides insight into the awareness levels of rice consumers in Naga City regarding various economic factors influencing the price inflation of rice. The table includes five economic factors with corresponding mean values and ranks. The average weighted mean of 3.81 is classified as “Moderately Aware”. Results show that most of the rice consumers in Naga City are moderately aware that there is an impact of fuel price increases on production and transportation costs, with a weighted mean of 3.87 classified as “Moderately Aware”. In contrast,

**Table 2.1 Level of Awareness of the Rice Consumers on Factors Contributing to the Price Inflation of Rice in Naga City – Economic Factors**

Parameter	Mean	Rank	Interpretation
An increase in fuel prices can contribute to higher production and transportation costs throughout the rice supply chain, ultimately influencing consumers in Naga City.	3.87	1	MA
Changes in exchange rates particularly in countries that import or export large amounts of rice can affect rice prices in Naga City.	3.83	3	MA
Economic growth can impact the cost of production, including labor and resources, which can also influence rice prices.	3.85	2	MA
Energy price inflation can affect the price inflation of rice by increasing the cost of production, transportation, and processing.	3.82	4	MA
Regional trade dynamics can affect the price inflation of rice by influencing the availability of rice in different markets, impacting import and export volumes.	3.66	5	MA
<b>Overall</b>	<b>3.81</b>		<b>MA</b>

**Legend:**

4.21–5.00	Fully Aware	FA
3.41–4.20	Moderately Aware	MA
2.31–3.40	Aware	A
1.81–2.60	Not Aware	NA
1.00–1.80	Fully Not Aware	FNA

regional trade dynamics affecting rice availability and import/export volumes ranked last with a weighted mean of 3.66.

The increase in crude oil and fuel prices affects the rise in prices, especially rice because fuel is a primary need of Filipinos as it is used in transporting products and production. However, consumers are moderately aware because their interest is limited in knowing the real reasons for the price increase, especially the trade dynamics that affect the rice supply and import and export volumes.

As Rosemary et al. (2015) said, rice consumers must be fully aware of economic factors contributing to inflation in rice prices because rising prices can have significant economic implications. When prices inflate, it can lead to food insecurity and poverty, primarily affecting poor households that allocate a substantial portion of their income to rice. This inflation can result in decreased real income for families, overall inflation, and adverse effects on sectoral economic performance, such as reduced output in specific sectors and increased imports. Rising rice prices can also worsen food insecurity and poverty, negatively affecting household welfare and the economy (Yanti et al., 2021).



## Political Factors

Table 2.2 provides insight into the awareness levels of rice consumers in Naga City regarding various political factors influencing the price inflation of rice. The table includes five political factors with corresponding mean values and ranks. The average weighted mean of 3.75 is classified as "Moderately Aware." Results show that most rice consumers in Naga City are moderately aware that too much rice from other countries has hurt the local rice farmers' ability to make a living, with a weighted mean of 3.92 classified as "Moderately Aware." In contrast, the Rice Tariffication Law 2019 has affected the local rice market regarding pricing and competition, ranked last with a weighted mean of 3.44.

Most rice consumers are moderately aware of the various parameters presented, such as the negative impact of excessive rice imports on the livelihoods of local farmers. However, this awareness is only sometimes universal. The long-standing practice of rice importation by the Philippine government, which consumers have become

**Table 2.2 Level of Awareness of the Rice Consumers on Factors Contributing to the Price Inflation of Rice in Naga City – Political Factors**

Parameter	Mean	Rank	Interpretation
The Rice Tariffication Law in 2019 has affected the local rice market in terms of pricing and competition.	3.44	5	MA
Changes in government policies and regulations have affected the stability of rice prices in the market.	3.73	4	MA
Too much rice from other countries being brought in has hurt the local rice farmers' ability to make a living.	3.92	1	MA
Mismanagement and corruption affect the distribution system, pricing, and availability of rice in the market.	3.91	2	MA
International rice prices and trade agreements impact the local price of rice in the Philippines.	3.75	3	MA
<b>Overall</b>	<b>3.75</b>		<b>MA</b>

### Legend:

Scale	Description	Abbreviation
4.21–5.00	Fully Aware	FA
3.41–4.20	Moderately Aware	MA
2.31–3.40	Aware	A
1.81–2.60	Not Aware	NA
1.00–1.80	Fully Not Aware	FNA

accustomed to, maybe one contributing factor. In recent years, the Philippines has increasingly relied on rice imports to meet the growing domestic demand for this staple food. As the country's population has grown and rice production has struggled to keep pace, the government has turned to importing more significant quantities of rice from countries like Vietnam and Thailand to supplement local supplies and ensure food security. However, this

increased reliance on imported rice has negatively impacted Filipino rice farmers, as they have faced declining prices and incomes due to the competition from cheaper imported rice. Many local farmers have struggled to keep up with the lower prices, leading some to abandon rice cultivation altogether, threatening the livelihoods of rural communities and the country's long-term rice self-sufficiency. Additionally, the rice tariffication law implemented in 2019 needs to be thoroughly explained to rice consumers, limiting their understanding of this policy change. This law aimed to liberalize the rice industry in the Philippines. It removed the quantitative restrictions on rice imports and replaced them with a tariff system. This allowed more rice to be imported, which helped stabilize domestic rice prices. However, the influx of cheaper imported rice also hurt local rice farmers, who struggled to compete with the lower-priced imports.

As per Mendoza (2008), the importation of rice into the Philippines has been a common practice since the Spanish colonial period and has continued through the American regime until today. Filipinos have grown accustomed to facing long queues and waiting times during past crises related to rice supply shortages in the country. As Jamil et al. (2022) said, Rice consumers lack comprehensive knowledge about the Rice Tariffication Law as they are not correctly oriented about its implications, leading to a lack of understanding of the policy. The inadequate orientation and lack of proper consultations by the government have resulted in a situation where farmers feel neglected and blame the government for the law's negative impacts on their economic stability. Additionally, as Sweetney et al. (2022) said, implementing the Rice Tariffication Law increased competition in the rice market. This resulted in lower sales of domestically produced rice. The availability of cheaper imported rice caused a decline in the demand for locally grown rice. Moreover, Ronel Leabres (2022) stated that the Rice Competitiveness Enhancement Fund (RCEF) is a Philippine government initiative to support rice farmers. The program provides farmers with essential resources such as high-quality seeds and agricultural inputs to help them boost their productivity and lower production costs. The goal of RCEF is to enhance the competitiveness of Filipino rice farmers and make domestic rice production more efficient and sustainable.

## **Environmental Factors**

Table 2.3 provides insight into the awareness levels of rice consumers in Naga City regarding various environmental factors influencing the price inflation of rice. The table includes five environmental factors with corresponding mean values and ranks. The average weighted mean of 3.91 is classified as "Moderately Aware."

**Table 2.3. Level of Awareness of the Rice Consumers on Factors Contributing to the Price Inflation of Rice in Naga City – Environmental Factors**

Parameter	Mean	Rank	Interpretation
The natural disasters such as typhoons and droughts have impacted rice production in the Philippines	4.07	1	MA
El Niño, La Niña, tropical cyclones and floods contribute to the price inflation of rice.	4.04	2	MA
As the population grows, the demand for rice increases, putting pressure on the existing supply that leads to price inflation of rice.	3.88	4	MA
Pollution impacts the price inflation of rice by reducing agricultural productivity and affecting the quality and quantity of rice available in the market.	3.62	5	MA
Declining land area, poor drainage, and inadequate irrigation facilities are significant factors that affect rice production in the country.	3.93	3	MA
<b>Overall</b>	<b>3.91</b>		<b>MA</b>

**Legend:**

Scale	Description	Abbreviation
4.21–5.00	Fully Aware	FA
3.41–4.20	Moderately Aware	MA
2.31–3.40	Aware	A
1.81–2.60	Not Aware	NA
1.00–1.80	Fully Not Aware	FNA

Results show that most rice consumers in Naga City are moderately aware that natural disasters such as typhoons and droughts have impacted rice production in the Philippines, with a weighted mean of 4.07 classified as "Moderately Aware." In contrast, pollution impacts rice price inflation by reducing agricultural productivity and affecting the quality and quantity of rice available in the market. Ranked last with a weighted mean of 3.62.

The data shows that most rice consumers in Naga City are moderately aware that natural disasters like typhoons and droughts have impacted rice production in the Philippines due to the region's regular exposure to such events. However, awareness is higher when understanding how pollution and other human-induced environmental factors contribute to rice price inflation.

According to Clarete et al. (2023), Naga City has a Type II climate (Naga et al. Office, 2018). Ten of the 16 most devastating typhoons in the country hit or passed within 100 kilometers of the city core. Heat stress and dryness in summer, higher rainfall during typhoon season, and increasing sea levels would affect neighboring towns in the region (Naga et al. Office, 2018). Also, Dianbao (2023) said that pollution is primarily artificial, with the vast majority of pollution on Earth caused by human activities, especially since the Industrial Revolution. Human-made pollution encompasses various forms, such as air, water, soil, and

radioactive pollution, resulting from burning fossil fuels, industrial processes, improper waste disposal, and agricultural practices.

### Reference for Level of Awareness of Rice Consumers

Table 2.4 offers an overview of the average values and rankings of the factors that impact the increasing rice costs in Naga City. Environmental Factors take the lead with an average weighted mean of 3.91, indicating their significant impact on rice prices. Following closely behind are Economic Factors, with an average weighted mean of 3.87, highlighting their importance in the price dynamics. In contrast, Political Factors trail behind with a mean of 3.75, suggesting a relatively lower perceived influence on rice prices. Despite being classified as

**Table 2.4. Level of Awareness of the Rice Consumers on Factors Contributing to the Price Inflation of Rice in Naga City – Overall**

Parameter	Mean	Rank	Interpretation
1. Economic Factors	3.81	2	MA
2. Political Factors	3.75	3	MA
3. Environmental Factors	3.91	1	MA
<b>Overall</b>	<b>3.82</b>		<b>MA</b>

#### Legend:

Scale	Description	Abbreviation
4.21–5.00	Fully Aware	FA
3.41–4.20	Moderately Aware	MA
2.31–3.40	Aware	A
1.81–2.60	Not Aware	NA
1.00–1.80	Fully Not Aware	FNA

“Moderately Aware” across the board, the varying mean scores emphasize the differing levels of significance attributed to each factor in shaping the rice market in Naga City.

The heightened awareness of environmental factors compared to political factors, despite the historical practice of rice importation dating back to the Spanish colonial period can be attributed to the direct and visible impact of environmental challenges on rice consumers in Naga City. The region's vulnerability to natural disasters, such as typhoons and climate-related risks, presents immediate and tangible consequences for rice production and availability. Consumers are more aware of environmental factors due to the observable effects of these events on rice.

rices and supply, which are more palpable in their day-to-day lives. In contrast, the longstanding nature of rice importation practices may have normalized this aspect among

consumers, leading to a higher acceptance and familiarity with this historical practice. The visibility and immediacy of environmental challenges, alongside their direct impact on rice production, likely contribute to the heightened awareness and concern among consumers in Naga City compared to political factors related to rice importation policies.

According to Clarete et al. (2023), Naga City is characterized by a Type II climate, as the Naga City Planning and Development Office documented in 2018. The city has been significantly impacted by natural disasters, with ten out of the country's 16 most devastating typhoons hitting or passing within a 100-kilometer radius of the city core. The region experiences heat stress and dryness during summer, coupled with higher rainfall levels during the typhoon season, posing challenges to agriculture. On the other hand, Mendoza (2008) said that rice importation has been a longstanding practice in the Philippines dating back to the Spanish colonial period and persisting through the American regime to the present day.

### **The Effects of Price Inflation of Rice-to-Rice Consumers**

Presented in tables 3.1 to 3.4 are the survey results of random rice consumers in Naga City, which aims to determine the effects of the price inflation of rice on them along personal, financial, and social aspects.

#### **Personal Aspect**

Table 3.1 provides insight into the effects of price inflation of rice-to-rice consumers along personal aspects. The table includes five personal effects with corresponding mean values and ranks. The average weighted mean of 3.32 is classified as “Affected.” Results show that most of the rice consumers in Naga City are affected by rice

**Table 3.1. Effects of Price Inflation of Rice-to-Rice Consumers in Naga City – Personal Aspect**

Parameter	Mean	Rank	Interpretation
Rice inflation has caused me personal stress and anxiety.	3.47	1	MA
My family's health is at risk which can result in nutritional deficiencies.	3.28	4	A
I choose to purchase and consume lower-quality rice that fits within my budget.	3.36	2.5	A
I can provide the needs to my family.	3.36	2.5	A
We are constrained to eat alternative cheaper food.	3.11	5	A
<b>Overall</b>	<b>3.32</b>		<b>A</b>

**Legend:**

4.21–5.00 – FULLY AFFECTED (FA)	3.41–4.20 – MODERATELY AFFECTED (MA)	2.31–3.40 – AFFECTED (A)	1.81–2.60 – NOT AFFECTED (NA)	1.00–1.80 – FULLY NOT AFFECTED (FNA)
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inflation, which causes them personal stress and anxiety, with a weighted mean of 3.47 classified as “Moderately Affected.” In contrast, being constrained to eat alternative cheaper food ranked last with a weighted mean of 3.11, classified as “Affected.”

Rice consumers experience stress and anxiety due to rice price inflation as it reduces real income and purchasing power, worsens food insecurity, and increases poverty. Therefore, most rice consumers are affected by personal stress and anxiety because of the struggle with budgeting and the fear of poverty. However, the need to alter their dietary preferences and consume less preferred foods creates a sense of deprivation and dissatisfaction beyond the financial strain.

Taznoore et al. (2015) stated that the price inflation of rice triggers stress and anxiety among consumers, as it diminishes their actual income and buying capacity, worsening food insecurity and amplifying poverty. It also undermines their earnings and spending power, intensifying food instability and elevating poverty levels. Additionally, Aguilar Jr. (2005) said rice is a dietary necessity and a cultural cornerstone in Filipino cuisine. Aside from its primary function as a food source, rice represents a complex tapestry of culinary traditions and cultural heritage, serving as the foundation for innumerable Filipino feasts.

## **Financial Aspect**

Table 3.2 provides insight into the effects of price inflation of rice-to-rice consumers along with financial aspects. The table includes five financial effects with corresponding mean values and ranks. With the average weighted mean of 3.28, it is classified as “Affected.” Results show that most rice consumers in Naga City have to make significant changes to their budget, with a weighted mean of 3.46 classified as “Affected.” In contrast, being able to afford only enough rice for a day to save ranked last with a weighted mean of 3.06.

The current price inflation has forced many consumers to change their household budgets significantly. The rising prices of this staple food item have had a moderate but noticeable impact on the purchasing power of rice consumers. With the cost of rice increasing, consumers are now finding that they can only afford to buy enough for their immediate daily needs rather than being able to stock up or purchase rice in bulk as they may have done previously. The need to allocate a more significant portion of their budgets towards rice purchases means that consumers need more financial flexibility for other expenses, leading to the requirement to make meaningful adjustments to their overall household budgets.

According to Jasaswini et al. (2011), Household budgets would be affected by food price inflation in part by characteristics including income levels, spending habits, and the price elasticity of demand for food compared to non-food items. Analyzing these processes, the model can show how high food costs impact household savings, discretionary spending, and general economic health. On the other hand, Taznoore S. et al. (2014) Implement cost-

saving strategies, which entail finding inefficiencies in resource allocation, streamlining operations, and optimizing

**Table 3.2. Effects of Price Inflation of Rice-to-Rice Consumers in Naga City – Financial Aspect**

Parameter	Mean	Rank	Interpretation
I am forced to reduce my expenditure on leisure activities, savings, and investments.	3.32	3	MA
I have to make significant changes to my budget due to the impact of rice inflation.	3.46	1	A
Our expenses keep growing and we are struggling to keep up.	3.34	2	A
I can only afford to buy enough rice for the day, so I cannot purchase extra to save.	3.06	5	A
I am having a hard time budgeting our income to cover all of our important expenditures.	3.24	4	A
<b>Overall</b>	<b>3.28</b>		<b>A</b>

**Legend:**

4.21–5.00 – *FULLY AFFECTED (FA)* 3.41–4.20 – *MODERATELY AFFECTED (MA)*  
 2.31–3.40 – *AFFECTED (A)* 1.81–2.60 – *NOT AFFECTED (NA)* 1.00–1.80 – *FULLY NOT AFFECTED (FNA)*

inflation, which causes them personal stress and anxiety, with a weighted mean of 3.47 classified as “Moderately Affected.” In contrast, being constrained to eat alternative cheaper food ranked last with a weighted mean of 3.11, classified as “Affected.”

Rice consumers experience stress and anxiety due to rice price inflation as it reduces real income and purchasing power, worsens food insecurity, and increases poverty. Therefore, most rice consumers are affected by personal stress and anxiety because of the struggle with budgeting and the fear of poverty. However, the need to alter their dietary preferences and consume less preferred foods creates a sense of deprivation and dissatisfaction beyond the financial strain.

Taznoore et al. (2015) stated that the price inflation of rice triggers stress and anxiety among consumers, as it diminishes their actual income and buying capacity, worsening food insecurity and amplifying poverty. It also undermines their earnings and spending power, intensifying food instability and elevating poverty levels. Additionally, Aguilar Jr. (2005) said rice is a dietary necessity and a cultural cornerstone in Filipino cuisine. Aside from its primary function as a food source, rice represents a complex tapestry of culinary traditions and cultural heritage, serving as the foundation for innumerable Filipino feasts.

## Financial Aspect

Table 3.2 provides insight into the effects of price inflation of rice-to-rice consumers along with financial aspects. The table includes five financial effects with corresponding mean values and ranks. With the average weighted mean of 3.28, it is classified as “Affected.” Results show that most rice consumers in Naga City have to make significant changes to their budget, with a weighted mean of 3.46 classified as “Affected.” In contrast, being able to afford only enough rice for a day to save ranked last with a weighted mean of 3.06.

The current price inflation has forced many consumers to change their household budgets significantly. The rising prices of this staple food item have had a moderate but noticeable impact on the purchasing power of rice consumers. With the cost of rice increasing, consumers are now finding that they can only afford to buy enough for their immediate daily needs rather than being able to stock up or purchase rice in bulk as they may have done previously. The need to allocate a more significant portion of their budgets towards rice purchases means that consumers need more financial flexibility for other expenses, leading to the requirement to make meaningful adjustments to their overall household budgets.

According to Jasaswini et al. (2011), Household budgets would be affected by food price inflation in part by characteristics including income levels, spending habits, and the price elasticity of demand for food compared to non-food items. Analyzing these processes, the model can show how high food costs impact household savings, discretionary spending, and general economic health. On the other hand, Taznoore S. et al. (2014) Implement cost-saving strategies, which entail finding inefficiencies in resource allocation, streamlining operations, and optimizing

**Table 3.2. Effects of Price Inflation of Rice-to-Rice Consumers in Naga City – Financial Aspect**

Parameter	Mean	Rank	Interpretation
I am forced to reduce my expenditure on leisure activities, savings, and investments.	3.32	3	MA
I have to make significant changes to my budget due to the impact of rice inflation.	3.46	1	A
Our expenses keep growing and we are struggling to keep up.	3.34	2	A
I can only afford to buy enough rice for the day, so I cannot purchase extra to save.	3.06	5	A
I am having a hard time budgeting our income to cover all of our important expenditures.	3.24	4	A
<b>Overall</b>	<b>3.28</b>		<b>A</b>



**Legend:**

4.21–5.00 – *FULLY AFFECTED (FA)* 3.41–4.20 – *MODERATELY AFFECTED (MA)*  
2.31–3.40 – *AFFECTED (A)* 1.81–2.60 – *NOT AFFECTED (NA)* 1.00–1.80 – *FULLY NOT AFFECTED (FNA)*

spending while maintaining quality and necessary services. By using these strategies, businesses can improve their financial stability, enhance their operational effectiveness, and reduce the adverse effects of economic difficulties like rising food prices

**Social Aspect**

Table 3.3 presents the social impacts of rice price inflation on consumers in Naga City, with all parameters falling under the interpretation of “Affected”. The highest mean score of 3.25 corresponds to the parameter I can share good meals with family and friends. On the other hand, the lowest mean score of 2.89 is for the parameter I have traditional culinary practices and cultural norms related to food consumption and communal meals. The overall mean score for the social aspect of rice price inflation is 3.05, interpreted as “Affected.”

The most notable impact of rising rice prices is on the ability of consumers to share good meals with family and friends. As heads of their households, these consumers often prioritize providing high-quality food, including rice, to their loved ones. However, the increasing prices have made it challenging for them to maintain this practice, forcing them to compromise the quality or quantity of rice served during communal meals. While the effects on traditional culinary practices and cultural norms related to food consumption and communal meals were ranked relatively lower, these aspects are still affected. It could be because Filipinos, especially Nagueños, used to have rice in their every meal, and it saddened them to adjust. These findings underscore the need for researchers to develop comprehensive strategies to cope with the challenges rice consumers face in the face of rising prices.

According to Ben et al. (2013), inflation significantly impacts rice consumers as they spend a large portion of their income on this staple food. The rising cost of rice due to inflation constrains their ability to provide adequate nutrition to their families, as more of their limited funds must be allocated towards purchasing this essential item. On the other hand, Deepak et al. (2010) said that rice consumers are influenced by traditional culinary practices and cultural norms around rice consumption, which are deeply ingrained in their way of life. As rice prices rise due to inflation, these long-standing cultural traditions and dietary habits around rice make it challenging for consumers to quickly adapt and find substitutes, further exacerbating the impact of rising rice costs.

**Table 3.3. Effects of Price Inflation of Rice to Rice Consumers in Naga City – Social Aspect**

Parameter	Mean	Rank	Interpretation
I can participate in community initiatives.	3.05	3	A
I can attend some social events.	2.98	4	A
I can share good meals with family and friends.	3.25	1	A
I can spend time dining out at restaurants with friends and family.	3.09	2	A
I have traditional culinary practices and cultural norms related to food consumption and communal meals.	2.89	5	A
<b>Overall</b>	<b>3.05</b>		<b>A</b>

**Legend:**

4.21–5.00 – *FULLY AFFECTED (FA)* 3.41–4.20 – *MODERATELY AFFECTED (MA)*  
 2.31–3.40 – *AFFECTED (A)* 1.81–2.60 – *NOT AFFECTED (NA)* 1.00–1.80 – *FULLY NOT AFFECTED (FNA)*

**Reference for Effects of Price Inflation of Rice-to-Rice Consumers**

Table 3.4 Provides the insight that Personal Aspect Rice inflation causes tension and anxiety and raises health problems owing to nutritional inadequacies from poor rice quality. These issues force families to choose between food quality and price, raising concerns about their health and nutrition. To reduce these pressures, individuals must implement personal cost-saving methods to manage their budgets and eat healthily. Community networks and government assistance programs help Naga City residents cope with rice inflation, build resilience, and protect their families. On the other hand, social aspects obtain the lowest, and engaging in community efforts and attending social events can cultivate connections and relationships within the community, offering chances to enjoy quality meals with loved ones. In addition, the ability to eat at restaurants with loved ones fosters social cohesion and enhances the

**Table 3.4. Effects of Price Inflation of Rice to Rice Consumers in Naga City – Overall**

Parameter	Mean	Rank	Interpretation
1. Personal Aspects	3.32	1	A
2. Financial Aspects	3.28	2	A
3. Social Aspects	3.05	3	A
<b>Overall</b>	<b>3.21</b>		<b>A</b>

**Legend:**

4.21–5.00 – *FULLY AFFECTED (FA)* 3.41–4.20 – *MODERATELY AFFECTED (MA)*  
 2.31–3.40 – *AFFECTED (A)* 1.81–2.60 – *NOT AFFECTED (NA)* 1.00–1.80 – *FULLY NOT AFFECTED (FNA)*

pleasure derived from communal experiences centered on food. In addition, the traditional culinary practices and cultural norms associated with food consumption and communal meals enhance these experiences, providing greater meaning and importance to gatherings and strengthening the cultural identity within the group.

The intricate interplay of various personal aspects contributing to the rise in rice prices in Naga City presents many difficulties for individuals and families. The increased price of rice causes personal stress and anxiety. It raises concerns about the health implications for families, as they are forced to choose lower-quality rice due to limited budgets. The delicate balance between financial stability and ensuring the well-being of loved ones is emphasized by the necessity to resort to cheaper, potentially less nutritious food alternatives despite efforts to provide for basic needs. On the other hand, social aspects, such as the lowest rank and price inflation, significantly impact respondents' social and cultural lives. Respondents may need help in their ability to participate in community initiatives due to the rising costs of rice. This can restrict their engagement and contribution to communal welfare. Limited discretionary cash can also restrict their ability to attend social gatherings and enjoy meals with loved ones, disrupting bonding rituals and social cohesion. Budgetary constraints on dining out restrict opportunities for shared experiences and social connections. Rice inflation threatens traditional culinary practices and cultural norms associated with communal meals, thereby jeopardizing our cultural heritage.

Francisco, J., et. al., (2022) said that individual responses to inflation vary significantly based on personal circumstances, influencing choices regarding budget allocation, dietary adjustments, and participation in social activities, highlighting the diverse ways people navigate economic challenges. According to Edgardo, L. & Santoalla (2011), the inability to afford other necessities can significantly impact one's social life, constraining participation in community initiatives, attending social events, sharing meals with loved ones, and dining out, thus affecting overall well-being and community cohesion.

### **Association between Profiles and Level of Awareness of Rice Consumers**

The study analyzes the relationship between the demographic profiles of rice consumers (age, gender, educational attainment, and employment) and their level of awareness regarding the economic, political, and environmental factors contributing to rice price inflation. The researchers employed the chi-square test to determine the statistical significance of these associations. Table 4 provides insights into whether there is a significant relationship between the two variables. The result shows no "significant" relationship between the two variables except that the profile along gender depends on the economic factors as it gained a chi-square result of 8.194.

The findings from this study on the relationship between gender and awareness of economic factors contributing to rice price inflation have essential implications for understanding the broader implications of rice price inflation in the Philippines. Female rice consumers tend to be more aware of the economic drivers of rising rice prices, suggesting

that women play a critical role in navigating the challenges posed by rice price inflation at the household level. As the primary decision-makers regarding food purchases, women's heightened awareness of economic factors can enable them to make more informed choices to ensure their families' food security, even in the face of price fluctuations.

Rosa et al. (2016) affirmed that female rice consumers in the Philippines are more aware of economic factors contributing to rice inflation than men due to their significant roles in household decision-making regarding food purchases. Research indicates that women often have a more substantial influence on household purchasing

**Table 4. Chi-square test for Profiles and Level of Awareness of Rice Consumers**

Profiles	Political	Factors Economic	Environmental	Overall
Age	3.8317	2.7872	4.7537	3.6759
Gender	2.2415	8.194**	1.22	2.933
Educational Attainment	4.159	6.078	1.819	3.332
Employment	3.794	5.826	6.296	7.2

\*\*chi-square value is significant, variables are dependent

decisions, including decisions related to staple foods like rice, which gives them a more comprehensive understanding of the economic factors driving price changes. On the other hand, Khushbu, Agarwal. (2019) said that the lack of significant relationships between demographic profiles and consumers' awareness of contributing factors suggests that factors other than age, educational attainment, and employment status may play a more prominent role in shaping consumer awareness and behaviors. The varying consumer behaviors and preferences observed across different studies indicate that the relationship between demographic profiles and awareness of contributing factors is complex and may need to be more easily generalized.

#### **Association between Level of Awareness of Rice Consumers on Factors of Price Inflation of Rice and its Effects.**

This is to present and analyze the relationship between the level of awareness of the rice consumer on the economic, political, and environmental factors contributing to the price inflation of rice and its effects on the rice consumers in Naga City along personal, financial, and social aspects. The researchers employed the Pearson Correlation to determine the statistical significance of these associations. Table 5 provides insights into whether there is a significant relationship between the two variables. The result shows that there is no significance yet has a weak relationship between the two variables, as it gained an overall total of 0.103008.

The increased awareness of rice consumers on why there is inflation in rice prices is a good thing because it is one of the causes that will help them better understand that the price inflation of rice over time is expected. However, the Pearson correlation shows that

regardless of the level of consumer awareness of the factors mentioned, it does not mitigate the effects of the price inflation of rice on consumers. Most Filipinos struggle to find jobs and earn money to meet the needs of their families. Therefore, the researchers concluded that rice consumers have limited options for alternative food, need more money to afford the higher prices, and lack strategies to deal with the impacts.

According to Agustina et al (2019), Consumers' preferences and purchasing decisions are influenced by a variety of personal and external factors. On a personal level, factors like an individual's income, budget, lifestyle, and values will shape their preferences and willingness to spend. From a financial perspective, awareness of price inflation and economic conditions can impact how consumers prioritize their spending, but these macro factors do not eliminate the more micro, individual influences. Social factors such as peer pressure, cultural norms, and marketing also significantly shape consumer preferences. Ultimately, consumer behavior arises from the complex interplay of personal, financial, and social elements that collectively drive the diverse preferences seen in the marketplace.

**Table 5. Pearson Correlation Coefficient p-value**

Factors	Effects			Overall
	Personal Aspect	Financial Aspect	Social Aspect	
Economic Factors	0.520543	0.250432	0.177279	
Political Factors	0.378556	0.174085	0.063908	
Environmental Factors	0.092789	0.096776	0.088933	
<b>Overall</b>				<b>0.13008</b>

**\*\*p value is significant if it is <0.05**

## Strategies and Procedure Infographics for rice consumers in Naga City

Figure 3. Infographics



This infographic presents strategies to help consumers manage rice price inflation effectively. This will be distributed to 27 barangays in Naga City, detailing inputs, processes, and outputs.

**Inputs:**

1. Primary Resources: Data collected via Google Form survey questionnaires from rice consumers in different barangays of Naga City, focusing on their level of awareness.
2. Secondary Resources: Infographics, journals, and research from sources like eric.ed.gov, scispace.com, Google Scholar, and doaj.org. Various electronic instruments were used to enhance quality.

**Process:**

Step 1: Reflective dialogue to share perspectives and recommendations, ensuring a well-informed plan. Step 2: Survey questionnaires chosen as the basis for brainstorming the most efficient plan.

Step 3: Survey distributed via Google Forms to respondents throughout Naga City, with results tallied and analyzed.

Step 4: Highest and lowest averages identified to conclude that information dissemination through infographics is most effective.

Step 5: Tour 27 barangays to educate people and present ways to lessen the effects of high rice costs.

**Output:**

The infographic empowers consumers to manage inflation impacts, prioritize health, and become intelligent consumers.

**Two-page Infographic Overview:**

Page 1: "Mga dahilan na mataas na presyo ng bigas": Outlines economic, political, and environmental factors influencing rice price inflation, including production costs, supply chain disruptions, global trade policies, government policies, and natural disasters.

Page 2: "Paano harapin ang mataas na presyo ng bigas?": Focuses on personal dimensions, examining impacts on dietary patterns, financial concerns, and social implications, highlighting personal, financial, and social challenges due to rising rice prices.

These infographics provide a comprehensive understanding of rice price inflation in the Philippines, identifying systemic factors and acknowledging household-level challenges, empowering consumers and guiding policymakers to develop targeted interventions.



## CONCLUSION

### Demographics of Rice-Dependent Community

The survey respondents falling predominantly within the 26-35 age group could be attributed to various factors, including being among the primary providers for their families. Individuals in this age range often have stable jobs and incomes, making them critical decision-makers regarding household purchases like food. Additionally, this age group may be more actively involved in grocery shopping and meal planning, influencing their participation in surveys related to food consumption habits. Their stage in life, balancing work and family responsibilities, could also make them more attentive to the quality and affordability of food products like rice, prompting their interest in participating in such surveys.

### Level of Awareness

1. **Economic Factors.** Among the parameters, rice consumers are most aware that there is an impact of fuel price increases on production and transportation costs in rice because fuel is a primary need of Filipinos as it is used in transporting products and production. However, consumers need to be more highly aware because their interest is limited in knowing the real reasons for the price increase, especially the trade dynamics that affect the rice supply and import and export volumes.
2. **Political Factors.** Most rice consumers are moderately aware of the various parameters presented, such as the negative impact of excessive rice imports on the livelihoods of local farmers. However, this awareness is only sometimes universal. The long-standing practice of rice importation by the Philippine government, which consumers have become accustomed to, may be one contributing factor. Additionally, the rice tariffication law implemented in 2019 needs to be thoroughly explained to rice consumers, limiting their understanding of this policy change. Addressing these gaps in consumer awareness is crucial for developing more effective policies and regulations that meet the needs of both rice producers and consumers.
3. **Environmental Factors.** The data shows that most rice consumers in Naga City are moderately aware that natural disasters like typhoons and droughts have impacted rice production in the Philippines due to the region's regular exposure to such events. However, awareness appears lower when understanding how pollution and other human-induced environmental factors contribute to rice price inflation.

### Effects of Rice Price Inflation to Rice Consumers

1. **Personal Aspect.** As the results show, the rise in rice prices significantly impacts rice consumers, causing stress and anxiety as it lowers real income and purchasing power, exacerbates food insecurity, and raises concerns about poverty. This situation leads to personal stress and anxiety for many consumers due to difficulties in budgeting and worries about financial stability.
2. **Financial Aspect.** The results indicate that many rice consumers are impacted by



the necessity to make significant budget adjustments due to increasing rice prices, which is often driven by the need to ensure sufficient income to cover daily expenses, leading to constraints on purchasing additional rice for savings. Limited financial resources and other essential expenses like rent, utilities, and healthcare costs result in a stretched budget that prioritizes immediate consumption needs over saving for the future.

3. **Social Aspect.** The results highlight that the primary impact of increasing rice prices on consumers is their ability to share quality meals with family and friends, particularly as household heads prioritize providing high-quality food, including rice. However, rising prices have made it difficult to sustain this practice, compromising the quality or quantity of rice served during communal meals.

### **Association between Profiles and Level of Awareness of Rice Consumers.**

The findings of this study on the relationship between gender and awareness of economic factors contributing to rice price inflation in the Philippines have significant implications. The study found that female rice consumers tend to be more aware of the economic drivers of rising rice prices. This indicates that women play a critical role in navigating the challenges posed by rice price inflation at the household level. As the primary decision-makers regarding food purchases, women's heightened awareness can enable them to make more informed choices to ensure their families' food security, even in the face of price fluctuations.

### **Association between Level of Awareness of Rice Consumers on Factors of Price Inflation of Rice and its Effects.**

The increased awareness of rice consumers on the factors contributing to rice price inflation is a positive development, as it helps them better understand the normal dynamics of price fluctuations. However, the Pearson correlation analysis shows that the level of consumer awareness has no significant effect on mitigating the impacts of rice price inflation. This is particularly concerning, as most Filipinos need help finding employment and earning enough income to meet their families' needs. With limited options for alternative food sources and a lack of strategies to cope with the rising prices, rice consumers are left with limited choices in the face of this ongoing challenge.

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