

RICE FARMING IN THE LENS OF GENERATION Z**Cabiles, Desiree Joy****Canda, Ronna Jeam****Hanggam, Jerry Jake****Monteverde, Katrina Angela****Separa, Irene****Tuco, Ryan James**

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ABSTRACT

Rice farming plays a vital role in the economy and food security of the Philippines, yet it faces numerous challenges, particularly in engaging Generation Z farmers. This study investigates the perceptions of Generation Z on rice farming, focusing on operational challenges, socioeconomic stigma, health-related risks, limited career prospects, and gender-based barriers. This quantitative research included data that were collected from 154 surveyed respondents, aged 12 to 27, residing in the Davao Region. The gathered data were analyzed using Exploratory Factor Analysis (EFA). The analysis determined four key factors, namely Challenges and Vulnerabilities in Rice Farming, Socioeconomic Stigma and Health-related Issues, Disengagement and Lack of Future Prospects in Rice Farming, and Social and Gender-Based Barriers to Engagement.

Keywords:

Generation Z, Rice Farming, Philippine Rice Farming, Filipino Farmers, Aging Farmers, Gender-based Barriers

INTRODUCTION

The agriculture sector faces a pressing challenge: an aging workforce coupled with a declining interest among younger generations in farming threatens the sustainability of food production systems worldwide. Rice farming, a cornerstone of global agriculture and a staple food for over half of the world's population, is no exception, particularly in countries where rice is a dietary staple. As the global population continues to rise, ensuring the future of rice production is critical, according to Fukagawa & Ziska (2019). Bandumula (2018) highlights that increasing rice production is a key towards achieving global food security. Beyond its role in feeding billions, rice farming also significantly impacts local economies, cultural practices, and rural livelihoods. It addresses key issues in economics, state-society relations, and environmental sustainability while reflecting personal and cultural dimensions of identity (Leach et. al., 2020). However, the sector faces mounting pressures, including technological advancement, climate change, and demographic shifts, all of which are reshaping traditional practices.

Amid these challenges, Generation Z is emerging as a potential force for transformation in agriculture. Generally defined as those born between the mid-1990s and early 2010s, this generation is poised to become a valuable asset in agricultural human resources. They bring distinct attitudes and expectations shaped by factors such as digital advancements, global awareness, and a strong interest in sustainability—qualities that set them apart from previous generations (Dolot, 2018). However, Salvago et al. (2019) revealed a problematic trend: the involvement of younger generations in agricultural production is steadily decreasing. This decline, as noted by Consentino et. al. (2023), poses a significant threat to the future of food security. These unique circumstances raise important questions about how Generation Z perceives, engages with, and will potentially transform the rice farming industry.

Globally, the agriculture industry faces a workforce crisis marked by an aging population of farmers and a declining number of young people entering this sector. Factors such as urban migration, lack of incentives, and diminishing interest in traditional agricultural practices contribute to this trend (Dupuis, 2024). In the United States, the average age of farmers is nearing 60 (*Census of Agriculture, 2022*), while in countries like Mexico,

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Peru, and Nigeria, the average household farming age is 53 years old (IFAD, 2019). This aging farming population has significant impact for agricultural productivity (Zou et. al, 2018) and presents challenges to sustaining production levels (Rigg et. al., 2020). Declining youth involvement in agriculture is a global concern, posing threats to food security and sustainable development (Mendoza & Garcia, 2023).

The same trend is observed in the Philippines, which is one of the countries heavily reliant on agriculture and rice farming. The average age of farmers has risen to 57 years (Department of Agriculture, 2024), raising concerns about the sustainability of the country's agricultural workforce. In response, Congress recently approved a bill aimed at reversing this trend by encouraging youth participation in agriculture to ensure the future of this vital sector (Iñigo, 2024).

In the Davao Region, agriculture continues to be the primary economic driver. However, data indicates that younger generations are less inclined to join the agricultural labor force (Lumen, 2020), largely due to their personal aspirations and perceptions of the constraints facing the region's agricultural development. Compounding these issues, a report from Engr. Mercado of the Department of Agriculture Regional Field Office XI (DA RFO XI) to the Regional Land Use Committee (RLUC) XI revealed a growing shift from rice production to banana plantation in the region. This shift could significantly affect the Davao Region's rice sufficiency, raising additional concerns for local food security (Yparraguirre, 2021).

While it is true that several studies have extensively examined rice farming and the perspectives of younger generations, most fail to focus on the distinct characteristics of specific generational cohorts. The lack of targeted research on Generation Z creates a critical gap in understanding how this unique group perceives and engages with rice farming. As noted by Consentino et. al (2023), understanding the views of young people on agriculture is essential to fostering their participation in the sector, particularly by identifying and addressing the unattractive factors that influence their perceptions

OBJECTIVE

The study was conducted to determine the dimensions of rice farming through the lens of generation Z. This research study focuses on achieving the following objectives: (1) identify the perceptions of Gen Z youth on agriculture, particularly in rice farming. (2) Determine the factors and dimensions that fueled such rice farming perspectives. (3) Analyze the relevance of the identified factors to generational needs to address the unattractive factors that influence Gen Z rice farming perceptions.

REVIEW OF RELATED LITERATURE

This study has practical implications for various stakeholders in the agricultural sector. Fasakin et. al. (2022) stressed that for policymakers, understanding Generation Z's perspective on rice farming can provide valuable information in the development of youth-focused policies and programs that address this generation's unique challenges and aspirations. Such policies can effectively motivate youth to participate more extensively in agriculture. Similarly, the agricultural industry, including local farmers and cooperatives, can leverage these insights to design strategies that attract young individuals to rice farming. Initiatives such as integrating modern farming techniques or improving working conditions have the potential to engage the youth in agricultural development (Manalo et. al, 2019). Ultimately, this research contributes to ensuring the continuity and sustainability of rice farming by fostering a new generation of farmers prepared to adapt and innovate within the evolving agricultural landscape.

Challenges and Vulnerabilities in Rice Farming. As Consentino et al. (2023) observed, low levels of participation by the youth in agriculture jeopardize future security in food and social stability. With the agricultural sector and rural population structures consisting of older individuals, a pattern emerges worldwide: fewer young people are pursuing agricultural careers or residing in rural areas. Such a transition threatens to have dire consequences for both the food systems and rural livelihoods. The literature shows that although young people acknowledge that agriculture has a significant impact on the economy, they still do not prioritize it as a good career choice.

In an article published by Kumar et al. (2021) in the northern Indian plains, long-term intensive rice cultivation using traditional methods has led to significant deterioration of natural resources, decreased factor productivity, nutrient deficiencies, groundwater depletion, labor shortages, and increased cultivation costs, raising concerns about agricultural sustainability. With declining factor productivity, crop response, and water table levels, along with increasing air pollution, researchers and policymakers need to intervene.

Socioeconomic Stigma and Health-related Issues. Tanjung et al. (2020) examined the income of rice farmers in District Labuhan Batu, Indonesia. The findings indicate that the farmer's net income was Rp.6,607,911 (approximately 244,671 Philippine Pesos) for a growing season with a production of 2,936kg. This amount is significantly below the minimum wage standards and insufficient to support family life or achieve prosperity for the farmers. The total income of farmers depends on the price of grain and the volume of their agricultural production. If production costs exceed the output, it results in a financial loss for the farmers. The researcher recommended that the government should continue to assist farmers by offering capital and service inputs in the form of business capital grants, subsidized production facilities, and strengthening farmer groups. Hou et al. (2020) conducted a study in Bulacan, Philippines, and examined various rice farming challenges such as inadequate capital, high labor costs, insufficient supply of farm inputs, poor marketing outlets, high costs of fertilizers, land tenure issues, lack of awareness of government rice farming programs, poor storage facilities, high transportation costs, and climate change. Moreover, the contributions of rice farming to the economic aspects of farmers' families are examined, including gross profit, savings, and family daily expenses such as food, clothing, recreation, personal items, health care, education, utilities, transportation, and house maintenance. The researcher suggested empowering the Philippines farmer's cooperative, as it can be an important avenue for farmers to finance the capital of rice farming activities every season. Loans, tools for agriculture, pesticides and fertilizers, seeds, and other important goods and services for rice farming can also be provided through these groups. On the other hand, Daghigh et al. (2019) analyzed the different occupational health risks of farming communities, and respondents identified farming as a stressful job. Farming is linked to different physical and mental health risks due to the demanding nature of the work performed especially in challenging weather conditions. The study focuses on the mental health-related difficulties of farmers. The findings of the study show the risks & mental health issues adding to the financial difficulties of farmers. Consequently, according to a survey conducted by the Food and Agriculture Organization (FAO) (2018), one of the primary reasons for the youth's disinterest in farming is the harsh working conditions, particularly the long hours spent working under the sun. The survey suggests that improving working conditions through mechanization and better infrastructure could make farming more appealing to younger generations (FAO, 2018). In support, Gonzalez et al. (2017) conducted a survey showing that the physical demands of farming, especially working long hours under the sun, are major deterrents for the youth. The study suggests that improving working conditions through mechanization and better infrastructure could help make farming more appealing (Gonzalez et al., 2017).

Disengagement and Lack of Future Prospects in Rice Farming. A study by Reyes (2019) highlights the decreasing interest among the younger generation in acquiring farming skills. This disinterest is largely attributed to the perceived low financial returns and the physically demanding nature of farming (Reyes, 2019). The study points out that vocational training programs aimed at the youth are not sufficiently addressing the unique challenges and interests of this demographic. While Pascual et al. (2020) examined the declining interest among youth in farming skills, attributing it to the perceived low financial returns and physically demanding nature of farming. The authors highlighted the importance of integrating modern technology and innovative practices in agricultural education to rekindle interest among the youth (Pascual et al., 2020). Also, Caballero et al. (2021) found that many young people do not see a future in rice farming due to a combination of factors, including unstable market prices, unpredictable weather patterns, and limited access to modern farming technology. Their research suggests that without significant investment in modernization and support, the youth will continue to turn away from farming as a viable career option (Caballero et al., 2021). The same concern was mentioned by Santos and Cruz (2018) in their research. They discussed the young people's perspective on rice farming as an unattractive career due to unstable market conditions, adverse weather impacts, and the lack of modern farming technologies. The study recommends comprehensive policy reforms and investments in agricultural modernization to change the negative perceptions of the new generation (Santos & Cruz, 2018).

In terms of job security, the National Economic and Development Authority (NEDA) (2020) reports that job security is a major concern for Generation Z, who prioritize stable and well-paying jobs over traditional careers like farming. The agriculture sector's volatility, influenced by factors such as climate change and fluctuating market conditions, further exacerbates this preference (NEDA, 2020). Bautista (2019), in his report from the Philippine Statistics Authority, highlighted that Generation Z prioritizes job security and stable income, often viewing agriculture as a less secure option due to its dependence on unpredictable factors such as climate and market prices (Bautista, 2019).

Social and Gender-Based Barriers to Engagement. A study by the Philippine Institute for Development Studies (PIDS) (2019) found that many parents discourage their children from becoming farmers due to the profession's

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perceived lack of prestige and economic security. This parental influence is a significant factor in the declining interest in farming among the youth (Delos Reyes, 2018). Societal attitudes towards farming can also act as a barrier. According to Tolentino (2021), young farmers often feel that society looks down on them compared to other professionals. This stigma not only affects their self-esteem but also their willingness to remain in the farming profession. Efforts to change these perceptions through awareness campaigns and highlighting the importance of farming can help mitigate this issue (Tolentino, 2021). The research study of Luzon and Tan (2020) highlights young farmers often feeling undervalued compared to other professionals. The societal stigma attached to farming affects their self-esteem and willingness to remain in the profession. The authors call for awareness campaigns to highlight the importance of farming and change these negative perceptions (Luzon & Tan, 2020). Also, in the research of Garcia and Bautista (2020), gender significantly influences the willingness to engage in farming. Women, in particular, face societal and cultural barriers that discourage them from pursuing farming as a career. The study emphasizes the need for gender-sensitive policies that promote inclusivity and equal opportunities in the agricultural sector (Garcia & Bautista, 2020). In addition, the research study of Ramos and Fernandez (2019) found that societal and cultural norms heavily influence the willingness of young people, particularly women, to engage in rice farming. The study emphasizes the need for gender-sensitive policies that promote equal opportunities in the agricultural sector (Ramos & Fernandez, 2019).

METHODOLOGY

The study is a non-experimental descriptive design using Exploratory Factor Analysis (EFA). This tool was used to analyze the primary data gathered from 154 respondents who are children of Filipino farmers belonging to Generation Z. A structured survey questionnaire was prepared by the researchers with relative statements based on the literature review, leading to the identification of Gen Z's perspectives on rice farming ultimately meeting the research objectives. The respondents were purposefully chosen as those who are ages 12 to 27 years old and are children of Filipino rice farmers in the Davao Region.

To analyze the adequacy and suitability of the data gathered, two tests were conducted: the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy and Bartlett's Test of Sphericity. A KMO value of 0.5 or greater is considered acceptable for factor analysis. Bartlett's Test of Sphericity examines the null hypothesis and ascertains the correlation matrix is significantly different from the identity matrix. Upon identification of adequacy and suitability of data, data reduction analysis or factor analysis was used to generate reduced data sets containing many variables down to one or more manageable sizes.

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This study utilized Exploratory Factor Analysis (EFA) to analyze the perspectives of generation z on rice farming. The data were gathered from 154 respondents who are children of Filipino rice farmers belonging to the generation Z, aged 12 to 27 years, and are residing within the Davao Region.

Sampling Adequacy Requirement. The data gathered from the surveys were subjected to Exploratory Factor Analysis and were validated through the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's test of Sphericity. See Table 1.0 for the test results.

The KMO measure provided a value of 0.885 which indicates that the sampling adequacy of the study is average. This value suggests a significant level of information overlap among the variables or the existence of a strong partial correlation. (Glen, S., 2009). Hence, it is reasonable to carry out the factor analysis and this also indicates that there is no need to collect more data.

In the Bartlett's Test of Sphericity with chi-square (χ^2) value of 2096.503, degrees of freedom (df) value of 435, and p-value of $p < 0.001$, indicates that the correlation matrix is significantly different from the identity matrix, supporting the presence of underlying factors, hence confirming that the data gathered from the 154 surveyed respondents are suitable for the study and that factor analysis is appropriate as the treatment to utilize as the analytical tool.

The exploratory factor analysis (EFA) conducted on the dataset identified four key factors or dimensions with corresponding eigenvalues of 9.742, 2.802, 1.620, and 1.408. Table 2.0 shows the eigenvalues which represent the total amount of variance that can be explained by the identified factors. These values provide insight into how well the factors capture the underlying patterns of variation in the data and serve as an important metric for evaluating the goodness of fit of the EFA model.

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Table 1: Table of KMO and Bartlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.885
Approx. Chi-Square	2096.503
Bartlett's Test of Sphericity	df
	435
	Sig.
	.000

Table 2: Total Variance Explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.742	32.473	32.473	9.742	32.473	32.473	5.599	18.664	18.664
2	2.802	9.339	41.811	2.802	9.339	41.811	4.731	15.768	34.433
3	1.620	5.400	47.211	1.620	5.400	47.211	3.105	10.351	44.784
4	1.408	4.692	51.903	1.408	4.692	51.903	2.136	7.119	51.903

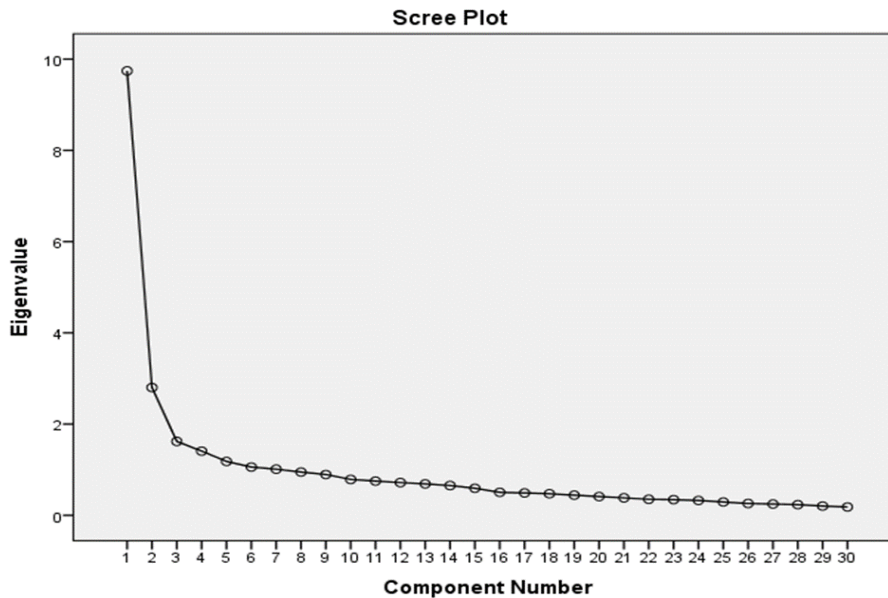
By examining the variance percentages in the Total Variance Explained Table, we can observe that the first factor explains 18.664% of the total variance, indicating that it accounts for a significant portion of the variability in the dataset. The second factor explains 15.768% of the variance, the third factor explains 10.351%, and the fourth factor explains 7.119%. Therefore, the first factor contributes the most to explaining the variance, while the fourth factor has the smallest impact.

When considering the four identified factors collectively, they account for a total variance of 51.903%, as indicated in the table. This means that these four factors capture the majority of the underlying variation in the dataset, providing a meaningful representation of the data's structure.

Rotated Component Matrix with the 23 attributes. As presented in the following tables, there are 23 items categorized into four dimensions. From the 30 items surveyed, seven items are not included in the categorization of four dimensions. These items have faced validity issues and low commonalities and were removed from the model.

Meanwhile, Figure 1 shows the scree plot used to graphically determine the number of the constructs that shaped the perspectives of Generation Z to rice farming. Eigenvalues with a coefficient of one or above indicate the presence of four (4) distinct components in this analysis.

Figure 1: Scree Plot



In relation, the second objective of this research is to determine the factors and dimensions that fueled such rice farming perspectives of Generation Z. By employing Exploratory Factor Analysis (EFA), four dimensions were extracted from the data collected through a 30-item survey questionnaire given to the respondents of the study.

Challenges and Vulnerabilities in Rice Farming. Table 3 shows the nine items that fall under the first dimension, the challenges and vulnerabilities in Rice Farming. The item *'Farmers experience higher levels of debts due to calamities'* gained the highest loading coefficient of 0.755. The item *'Experience uncertainties such as pests and diseases in rice farming'* obtained a loading coefficient of 0.748. The item *'Experienced variability in prices in marketing'* obtained a loading coefficient of 0.729. The item *'Farm work is seasonal, which means that income fluctuates accordingly'* obtained a loading coefficient of 0.684. The item *'Rice farmers lack access to capital'* obtained a loading coefficient of 0.654. The item *'Rice farmers have limited resources'* obtained a loading coefficient of 0.652. The item *'Farming can be quite challenging because of climate change'* obtained a loading coefficient of 0.585. The item *'Experienced difficulty accessing irrigation systems'* obtained a loading coefficient of 0.541. Moreover, the item *'Rice farming is a physically tiring job'* obtained a loading coefficient of 0.516.

The Generation Z perceived that rice farming often encounters a range of challenges and vulnerabilities that significantly impact their livelihoods. Resource-related constraints are a major concern, as many struggle with inadequate access to high-quality seeds, reliable irrigation systems, and necessary capital for investment. These issues are further complicated by unpredictable climate conditions and financial instability stemming from fluctuating market prices. Respondents highlighted that natural disasters and other calamities often lead to increased debt levels, underscoring the precarious nature of farming as a livelihood.

Table 3: Challenges and Vulnerabilities in Rice Farming

Item	Attributes	Factor Score	Dimension
19	Farmers experience higher levels of debt due to calamities	0.755	Challenges and Vulnerabilities in Rice Farming
14	Experience uncertainties such as pests and diseases in rice farming	0.748	
15	Experienced variability in prices in marketing	0.729	
12	Farm work is seasonal, which means that income fluctuates accordingly	0.684	
04	Rice farmers lack access to capital	0.654	

03	Rice farmers have limited resources (ex: farm inputs, seeds & irrigation)	0.652	
29	Farming can be quite challenging because of climate change	0.585	
09	Experienced difficulty accessing irrigation systems	0.541	
06	Rice farming is a physically tiring job	0.516	

This finding affirms Consentino et al. (2023) that there is a low level of participation among youth in agriculture which can endanger food security in the future. Only a few youth pursue careers in agriculture. This can be seen in both developed and developing countries. Young people perceived the agricultural sector as old-fashioned, unprofitable, and labor-intensive, lacking adequate rewards and prestige. With the advancement of technology agriculture remains less desirable compared to off-farm careers, which are linked with higher education and high paying salaries. Most parents discourage their children to pursue agricultural careers as they take it as less prestigious and more strenuous than other professions.

Socioeconomic Stigma and Health-Related Issues. Table 4 highlights the 8 items that fall under the second dimension, the socioeconomic stigma and health-related issues, along with their corresponding loading coefficients. As shown, the item 'Rice farming is regarded as having a low identity and low self-esteem way of living' obtained the highest loading coefficient of 0.738. This is followed by the item 'Engaging in farming can develop severe illnesses and negatively impact physical health,' with a loading coefficient of 0.733. Meanwhile, the attribute 'Rice farming is a job typically associated with school dropouts or uneducated people' obtained a loading score of 0.692. Additionally, the item 'lack of parental support in pursuing rice farming' obtained a loading coefficient of 0.673. The item "Working on a farm can lead to quick aging" recorded a loading coefficient of 0.595, while "Rice farming has limited access to market linkages" had a loading coefficient of 0.574. Finally, the items "Lack of interest in learning farming skills" and "Farming does not generate passive income" obtained a loading coefficient of 0.525 and 0.509, respectively.

The results emphasized the significance of socio-economic and health-related barriers deterring Generation Z from pursuing rice farming. The perception that rice farming is associated with low identity and self-esteem, coupled with concerns about severe health risks, reflects deep-seated societal stigmas and practical challenges tied to the profession. These views are further exacerbated by stereotypes linking farming to low educational attainment and the lack of parental support, underscoring the generational disconnect in agricultural engagement. Additionally, the physical toll of farming, limited access to market linkages, and the inability to generate passive income contribute to the overall lack of appeal. Together, these factors suggest that rice farming is perceived not only as an economically unviable livelihood but also as one that lacks social prestige and personal fulfillment, ultimately discouraging younger generations from engaging in this critical sector.

This finding supports Tanjung et al., (2020) who emphasized that the low income of rice farmers which falls below minimum wage standards, makes it difficult for them to sustain their families or achieve prosperity, leading to financial instability. Similarly, it aligns Hou et al. (2020) who highlighted several challenges faced by rice farmers in the Philippines, including high labor costs, limited marketing outlets, and inadequate capital, which contribute to the perception of farming as an unsustainable livelihood. Additionally, it is in parallel with Daghigh et al. (2019) who found that farming is associated with various health risks, including physical and mental stress, which are exacerbated by the demanding nature of the work.

Table 4: Socioeconomic Stigma and Health-Related Issues

Item	Attributes	Factor Score	Dimension
07	Rice farming is regarded as having a low identity and low self-esteem way of living.	0.738	Socioeconomic Stigma and Health-Related Issues
08	Engaging in farming can develop severe illnesses and negative impact on physical health	0.733	
05	Rice farming is a job typically associated with school dropouts for uneducated people	0.692	
20	Lack of parental support in engaging in rice farming	0.673	
11	Working on a farm can lead to quick aging	0.595	

17	Rice farming has limited access to market linkages	0.574	
21	Lack of Interest in learning farming skills	0.525	
18	Farming does not generate passive income	0.509	

Disengagement and Lack of Future Prospects in Rice Farming. Table 5 shows the four items that fall under the third dimension, the disengagement and lack of future prospects in rice farming, and their corresponding loading coefficients. As shown, the item *'I do not see a future for myself in rice farming'* obtained the highest loading of 0.737. The item *'Prefer a more secure job than rice farming'* obtained a loading coefficient of 0.725. The item *'Not interested in working on rice farms under the heat of the sun'* obtained a loading coefficient of 0.704. The item *'Lack of Interest in Learning Farming Skills'* obtained a loading coefficient of 0.515.

Table 5: Disengagement and Lack of Future Prospects in Rice Farming

Item	Attributes	Factor Score	Dimension
21	Lack of Interest in learning farming skills	0.515	Disengagement and Lack of Future Prospects in Rice Farming
02	I do not see a future for myself in rice farming	0.737	
24	Prefer a more secure job than rice farming	0.725	
23	Not interested in working on rice farms under the heat of the sun	0.704	

The disengagement of Generation Z from rice farming is notable, as many have expressed a preference for stable and modern career paths. The preference for more secure jobs over rice farming highlights the economic instability, perceived risks, and physical demands of farming such as working on rice farms under the heat of the sun. Young people are increasingly drawn to professions that offer financial stability, career advancement, and better working conditions; as a result, the lack of interest in farming skills is felt among this generation.

The findings affirm Caballero et al. (2021) who found out that many young people do not see a future in rice farming due to a combination of factors, including unstable market prices, unpredictable weather patterns, and limited access to modern farming technology. Their research suggests that without significant investment in modernization and support, the youth will continue to turn away from farming as a viable career option (Caballero et al., 2021). The same concern coincided with Santos and Cruz (2018) in their research. They discussed the young people's perspective on rice farming as an unattractive career due to unstable market conditions, adverse weather impacts, and the lack of modern farming technologies.

The findings of Table 6 reveal that social and gender-based barriers significantly impact individuals' willingness to engage in rice farming. The highest factor score of 0.726 for the item "Gender affects the willingness to work as a rice farmer" suggests that cultural expectations and societal norms disproportionately affect certain groups, particularly women (Doss et al., 2018). These norms limit women's participation in rice farming by restricting access to resources, decision-making power, and leadership roles, ultimately perpetuating inequality and reducing sector efficiency (Doss et al., 2018). Furthermore, the lack of future prospects in rice farming, as evidenced by the score of 0.684 for the item "I do not see a future for myself in rice farming," indicates that the younger generation perceives the profession as unsustainable or economically unviable (Daum et al., 2020).

Table 6: Social and Gender-Based Barriers to Engagement

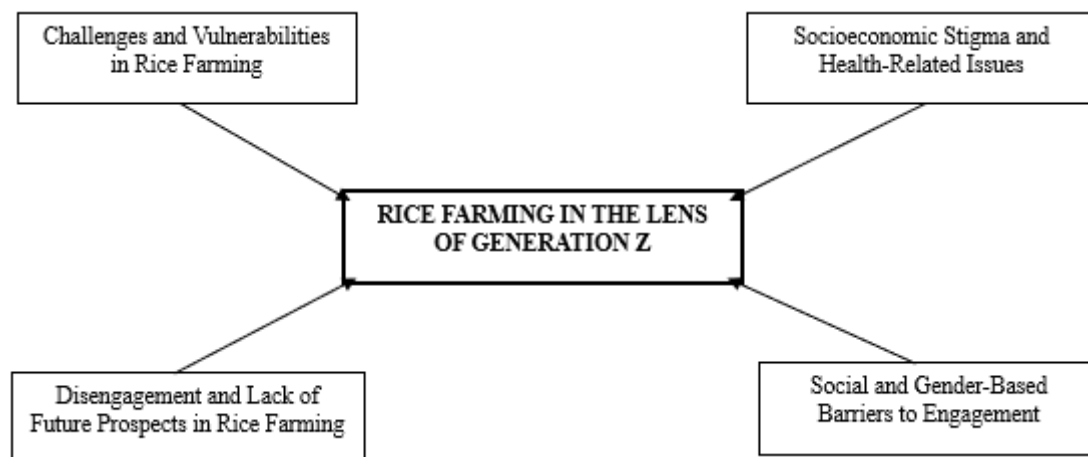
ITEM	ATTRIBUTES	FACTOR SCORE	DIMENSION
28	Gender affects the willingness to work as a rice farmer	0.726	Social and Gender-Based Barriers to Engagement
26	I do not see a future for myself in rice farming	0.684	
27	Prefer a more secure job than rice farming	0.648	

The preference for secure jobs, with a score of 0.648, highlights the uncertainty and financial risks associated with farming careers, driven by unpredictable income and market instability (Food and Agriculture Organization, 2021). This finding is consistent with the observation that financial instability and market fluctuations are key

barriers to engagement in agriculture (Food and Agriculture Organization, 2021). The intersection of these social, economic, and environmental factors creates a complex web of challenges that dissuade individuals from engaging in rice farming. To address these barriers effectively, it is essential to target gender equity, resource access, and financial stability within agricultural policies and practices.

The alignment of these findings with existing research underscores the need for evidence-based reforms to foster a more inclusive and sustainable environment for rice farming. By addressing the cultural expectations and societal norms that limit women's participation, ensuring equal access to resources and decision-making power, and implementing policies that reduce financial risks, policymakers can promote a more equitable and sustainable agricultural sector (Doss et al., 2018; Daum et al., 2020; Food and Agriculture Organization, 2021). Ultimately, these reforms can help to attract and retain underrepresented and younger demographics in rice farming, ensuring the long-term viability of the sector.

Figure 2: Research Study Framework



CONCLUSION

Based on the outcomes of this study, challenges in engaging Generation Z in rice farming were highlighted. Four crucial dimensions were identified that affect the Generation Z's negative perceptions to rice farming, these are challenges and vulnerabilities in rice farming, socioeconomic stigma and health-related issues, disengagement and lack of future prospects in rice farming, and social and gender-based barriers to engagement. Data shows that there were existing systemic weaknesses like limited resources, insufficient capital, and exposure to climate risks. Uncertain fluctuation in market prices of goods and services and the natural calamities further intensify the financial instability among the farmers, which consequently discourage the young generation's participation. This finding supports the wider trends indicating a deteriorating appeal of farming due to the risks being physically and financially demanding nature. On the other hand, certain view of rice farming as a low-ranking occupation having substantial health risks add to its unpopularity among Generation Z. The major deterrents were cultural stigmas like bracketing farming with low educational attainment, along with physical and mental health concerns; this emphasizes the need for collective rebranding of agriculture as a viable and esteemed career. Moreover, data also show that numerous respondents favored steady, modern careers over farming. Financial volatility, adverse working environments, and limited technological innovation in agriculture were essential in influencing this outlook. Hence, without modernization and clear career direction, youth disinterest in farming will probably persist. Lastly, gender dynamics meaningfully encourage engagement, with traditional norms restricting opportunities for women and downgrading them within the agricultural sector. Addressing these predicaments necessitates inclusive policies promoting gender equity and accessibility to resources.

In conclusion, the operational, socio-economic, and cultural barriers have made the agricultural sector unattractive, which greatly influenced the disengagement of Generation Z from rice farming. A focus on integrating modern technology, ensuring financial stability, and enhancing the reputation of farming as a noble

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career is vital to addressing these issues and challenges. In addition, inclusive, gender equity, and youth empowerment policies are essential to foster sustained commitment through the Information Education Campaign (IEC), emphasizing the vital role of agriculture in food security and economic development. These can help reshape the perception while ensuring a sustainable economic future.

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