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EXPLORING THE DIMENSIONS OF RICE FARMING IN GENERATION Z's

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ABSTRACT
This study aims to explore the dimensions of rice farming on Generation Z using Exploratory Factor Analysis (EFA). This study also includes to contribute a valuable insight into understanding how ardent Generation Z's in the rice farming and provide local basis on the rice farming or agricultural sustainability in the succeeding years by the Generation Z's perspective. With Filipino farmers' average age ranges from 55 to 59 years old., the goal of achieving food security and rice self-sufficiency is in threat.
This study is a quantitative research method that involves one hundred (100) respondents within the Davao Region, Philippines. The perspective of the Generation Z's on rice farming were determined using Exploratory Factor Analysis (EFA) with four identified factors namely Financial and Personal Perspective, Natural Resources and Sustainability, Basic Perception in Rice Farming, and Sensitivity of Rice Farming. The perspectives of Gen-Z on natural resources and the sustainability of rice farming are affected by a multitude of factors, including environmental concerns, rice farming uncertainties, and pest outbreaks; economic considerations such as price swings; and an openness to current agricultural technologies. Gen-Z holds a prevailing notion that rice farmers are undervalued and receive little compensation for their work. Furthermore, there is recognition of the difficulties encountered in rice cultivation due to limited resources. These findings can guide financial discussions and rice sustainability efforts among younger generations.

Keywords:
Rice Farming, Generation Z, Rice Farming, Aging Farmers, Filipino Farmers

INTRODUCTION

One of the main crops grown in the Philippines is rice. Hence, it is one of the top agricultural priorities in our country. By providing premium seeds, fertilizer discount coupons, biofertilizers, farm machinery, and equipment, the Department of Agriculture (DA) is still helping our local rice farmers grow the rice business in the nation. Moreover, the agency is also tasked with assisting in the establishment of facilities and the installation of irrigation system projects [1].
Palay production in the Philippines was recorded at 19.76 million metric tons, total rice area harvested in the Philippines was 4.80 million hectares and the average yield per hectare was 4.11 metric tons. For Davao Region, palay production was at 490,254 metric tons, total rice area harvested was at 110,573 hectares and the average yield was 4.43 metric tons per hectare [4].
Despite the effort of our government to enhance the yield of rice farming and to attain rice-sufficiency in our country, there are always factors that challenges this program. High input costs, climate change, inadequate farm machinery and equipment, unavailability of post-harvest facilities, conversion of agricultural lands to industrial and residential lands and demographics are few of the problems in rice farming.

Rice farming in the Philippines is affected by the demographics changes in the agricultural labor force. Looking back to Boomers I Generation (1946-1954), the social and economic for that years is incomparable to this day. During that

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years, local rice farmer's families always rely with each other in terms of agricultural workforce. In other perspective, children are able to lessen the labor force in agriculture by supporting their parents in farming seeing that livelihood sustainability is one of the top priority for them to make living. However, industrialization affects the perception of our local farmers. This leads to self-awareness that rice farming is not enough to sustain their life and wanted their children to have a better life and to stay away from farming. A study shown, that the majority of rice farmers do not desire for their kids to become rice farmers due to physical, psychological, and financial difficulties they might go through [2]. Moreover, in terms of poverty rates among the fundamental sectors in 2021, fishermen and farmers have the highest rates. For fisherfolks, it was registered at 30.6% while farmers at 30.0% [5]. The average age of Filipino farmers ranges from 55 to 59 years old. With this, Philippines might land into critical shortage of farmers in 15 years [6].

Generation Z

Born between 1997 and 2012, Gen Z is the demographic group that follows after millennials. For Gen Z, this generation are notable on how they are well-connected to the advancement of technology. In relation to agriculture, Gen Z's might bridge the gap between the technologies used for agriculture such as inventions and innovations of agricultural equipment to boost the agriculture sector in the Philippines.

With a view to securing the involvement of Gen Z towards agriculture, the DA offers wide variety of program to alleviate the challenge on Gen Z's not prioritizing the agriculture such as Government Internship Program (GIP), Young Farmers Challenge (YFC) Program and Rice Competitiveness Enhancement Fund (RCEF) Rice Extension Services Program.

OBJECTIVES

The main objective of this study is to explore the dimensions of rice farming on Generation Z using Exploratory Factor Analysis (EFA). Further, this study aims to contribute valuable insights into understanding how ardent Generation Z's in the rice farming and provide local basis on the rice farming or agricultural sustainability in the succeeding years by the Generation Z's perspective.

METHODOLOGY

Exploratory factor analysis was utilized in this study. A survey of 100 sample respondents of Generation Z aged 11 to 26 from descendants of rice farmers living in Davao Region was conducted. The study tool used to collect data was a questionnaire evaluated properly by the examiners for content validity. The perspective of the Generation Z's on rice farming were determined using Exploratory Factor Analysis (EFA). The strength of partial correlations between variables was examined using the Kaiser-Meyer-Olkin measure of sampling adequacy. Bartlett's test of sphericity was used to ascertain the correlation matrix's identification as a matrix. Using a scree plot to illustrate the number of components to keep in the analysis, the outlook of Generation Z on farming for rice was visually represented.

RESULTS AND DISCUSSION

For Gen Z, this generation are notable on how they are well-connected to the advancement of technology. Experts forecast that in 10 to 12 years, the Philippines will experience a severe scarcity of rice farmers, with Filipino farmers' average age ranges from 55 to 59 years old.. This puts food security as well as the goals of reaching rice self-sufficiency in jeopardy. [6]. This research has a random respondent's age ranges from 17 to 26 years old.

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity Measure of Sampling Adequacy: Both of these metrics are shown below. It is believed to have a good relationship between samples by the Kaiser-Meyer-Olkin Score of 0.795. The results of Bartlett's Test of Sphericity indicate a value of 1146.477, indicating a level of significance less than 0.001.

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KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.662
Bartlett's Test of Sphericity	Approx. Chi-Square	1146.477
	Df	435
	Sig.	.000

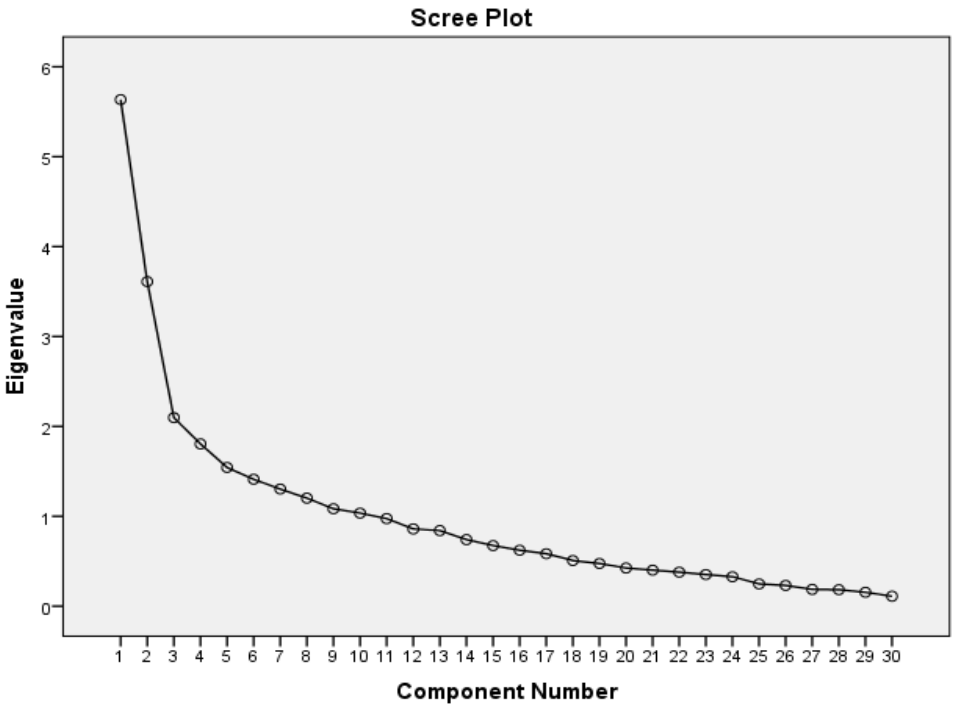

Figure 1. Scree Plot

The graph comparison between Eigenvalues and components is shown in the figure above, indicating the relevance of each component. The scree plot exhibits an ideal pattern of a straight line, a bend, and a steep curve in succession. This scree plot illustrates that after the seventeenth component, the eigenvalues begin to form a straight line. Consequently, the remaining components contribute to very little of the variability and are probably insignificant. The number of factors extracted before the curve flattens shows the significant number of factors taken from the investigation and is described in the component matrix.

Table 1. Rotated Component Matrix with Grouped Attribute Related to Financial and Personal Perspective Factors of the Generation Z's point of view in Rice Farming

Factors	Attributes	Loadings
Financial and Personal Perspective	Item 23. Need a more secure job than rice farming	.781
	Item 22. Not interested in working on rice farms under the heat of the sun	.706
	Item 21. Believe that life in cities is easier	.684
	Item 30. Rice farming is a low paying career	.678
	Item 24. Youth do not appreciate rice farming as a career	.664

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Factors	Attributes	Loadings
	Item 25. Career advancement is not possible if you are a rice farmer	.602
	Item 26. Society looks down on young rice farmers as less accomplished than other professionals	.596

The table 1 above demonstrates that Gen-Z is seriously concerned and prioritizes financial and personal perspectives. In terms of financial security, concerns and tensions among Gen-Z include employment, long-term financial stability, and major life milestones like home ownership, as well as dwindling savings.. In terms of farming activities, Gen-Z does not value rice farming as a professional path since it is stagnant in terms of job progression, and they do not see it as their future.

Table 2. Rotated Component Matrix with Grouped Attribute Related to Natural Resources and Sustainability Factors of the Generation Z's point of view in Rice Farming

Factors	Attributes	Loadings
Natural Resources and Sustainability	Item 8. Experienced a seasonal (Susceptible to Climate Risks) in your farm area like typhoons, flooding, etc. that will result in losses	.700
	Item 14. Experienced uncertainties in rice farming	.676
	Item 15. Experienced variability in prices in marketing	.639
	Item 9. Experienced a pest infestation	.638
	Item 12. Open to using modern agricultural technology in rice farming	.509

The table 2 above shows that a combination of environmental issues, such as climate risks, uncertainty and pest epidemics, economic factors with price fluctuations, openness to adopting modern agricultural technology influence Generation Z's views on natural resources and the sustainability of rice farming. Strategies to promote sustainability practices for rice farming by young farmers can be drawn up from this analysis.

Table 3. Rotated Component Matrix with Grouped Attribute Related to Basic Perception in Rice Farming Factors of the Generation Z's point of view in Rice Farming

Factors	Attributes	Loadings
Basic Perception in Rice Farming	Item 2. Underappreciated rice farmer	.840
	Item 1. Underpaid rice farmer	.830
	Item 3. Rice farmer have limited resources (ex: farm inputs, seeds & irrigation)	.567

Table 3 shows that Generation Z's basic perception in rice farming is characterized by a strong belief that rice farmers are both underappreciated and underpaid. There is also acknowledgement of the challenges faced in rice farming as a result of scarce resources. These statistics can be used to inform discussions and actions aimed at addressing this issue and improving young people's perceptions of rice farming.

Table 4. Rotated Component Matrix with Grouped Attribute Related to Sensitivity of Rice Farming Factors of the Generation Z's point of view in Rice Farming

Factors	Attributes	Loadings
Sensitivity of Rice Farming	Item 28. The use of technology in agriculture results in higher costs than profits	.655

Table 4 demonstrates that concerns about the economic elements of adopting technology, notably the idea that technology may result in higher expenses than profits, influence Generation Z's sensitivity to rice cultivation. Their

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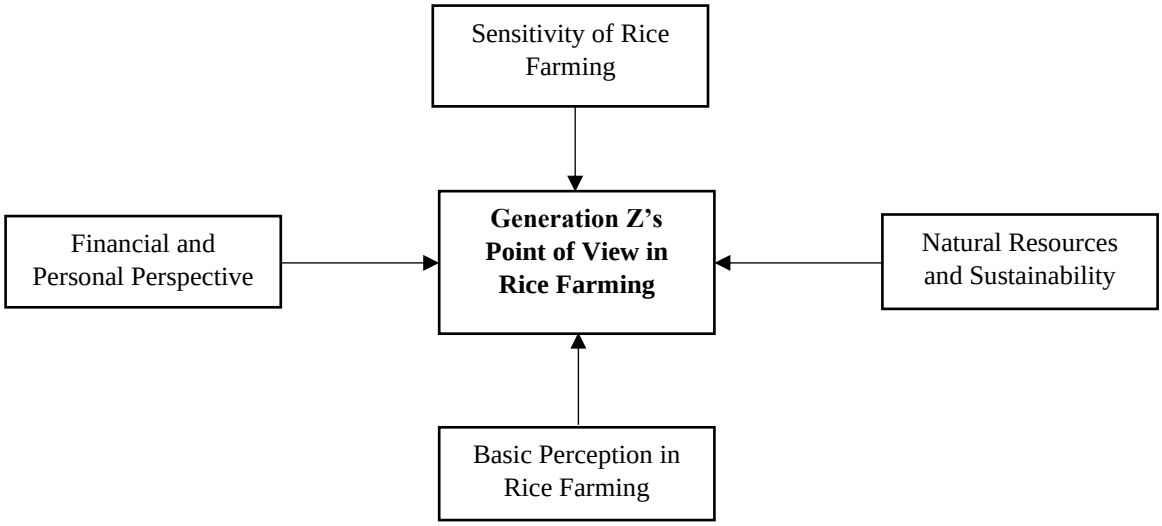
general sensitivity to rice cultivation is also influenced by their awareness that farming may not produce passive revenue. These observations can direct conversations and tactics aimed at tackling financial issues and encouraging younger generations to cultivate rice sustainably.

Study Framework



CONCLUSION

In conclusion, the study emphasized the preference of Gen-Z's for well-compensated employment above rice farming. It also emphasizes the economic and societal factors which Gen-Z's longing for financial security which rice farming can't provide. Gen-Z's drew attention to the environmental and climate risks that agriculture encounters. The study's findings stimulated reflection on the broader perspective among Gen-Z's to their personal decision and reflections. The aforementioned data can be utilized as a foundation for dialogues and endeavors aimed at rectifying this concern and enhancing the overall understanding of rice cultivation among the younger demographic. The increasing of vulnerability factors of rice farming, Gen-Z's opt to choice career paths that sustain their needs considering Philippines is a third world country. The number of Gen-Z's compelled to abandon rice farming is very alarming that policy-makers should recognize in order to address the issue in safeguarding our food security and our agriculture sector.

The research identified four (4) factors: Financial and Personal Perspective, Natural Resources and Sustainability, Basic Perception in Rice Farming, and Sensitivity of Rice Farming. This research examines the complex level of intensity associated with the involvement of Gen-Z's in the rice cultivation industry. Gen-Z exhibits substantial apprehension and unease regarding financial security, particularly in relation to employment prospects, enduring financial stability, pivotal milestones like home ownership, and a decline in savings. The perspectives of Gen-Z on natural resources and the sustainability of rice farming are impacted by numerous factors, including environmental concerns such as climate risks, uncertainties, and pest outbreaks; economic considerations such as price swings; and an openness to current agricultural technologies as demonstrated in Table 2. Gen-Z holds a prevailing notion that rice farmers are undervalued and receive little compensation for their work. Furthermore, there is recognition of the difficulties encountered in rice cultivation due to limited resources. Lastly, Gen-Z's sensitivity to rice farming is influenced by economic concerns about technology, particularly the thought that it may cost more than it makes. Their awareness that farming may not generate passive income affects their rice cultivation sensitivity. These findings can guide financial discussions and rice sustainability efforts among younger generations.

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ACKNOWLEDGEMENT

The researchers would like to acknowledge to those people who have contributed to the completion of this research. To Dr. Gaudencio G. Abellanosa, our professor in CDM 200, for his guidance, and support and for sharing his expertise in the process of research. The researchers are also grateful to the participants, our respondents who generously shared their time and insights by carefully answering our questionnaires.

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