

DIMENSIONS OF YOUTH PARTICIPATION IN RICE FARMING AMONG AGING FARMERS IN DAVAO DEL NORTE.**Cherrelyn P. Campaña, PhD**Professor, College of Development Management, University of Southeastern Philippines,
Philippines**Mark Anthony J. Tajale**Graduate Student, College of Development Management Graduate Program, University of
Southeastern Philippines, Mintal Campus, Davao City, Philippines**ABSTRACT**

This study examined the dimensions of youth participation in rice farming as perceived by aging farmers in Davao del Norte. a total of 150 aging rice farmers from selected municipalities, who were either members of NIA-Irrigator's Association or are independent farmers, aged 50 years and above with at least 10 years of farming experience, were tapped for primary data. Factor analytic techniques yielded four dominant dimensions that shape youth engagement in rice farming, which are the following: Technological and Resource Empowerment, Institutional and Cultural Support for Continuity, Increased Participation and Engagement. These retained factors adequately reflect the diverse perspectives of aging farmers on the opportunities and constraints that shape youth involvement in rice farming both in terms of technological access, institutional support, and mitigation of perceived barriers as keys to sustaining agricultural continuity in the province.

Keywords:

Rice Farming, Aging Rice Farmers, Youth Engagement, Future Farmers

INTRODUCTION

The Philippine agricultural sector is facing crisis. According to Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA 2023), the average age of Filipino rice farmers is between 55 to 59 years old, and they are close to retirement age without any successors to inherit their agricultural practices. The younger generations are becoming less interested in farming due to financial insecurity, physical labor, and absence of modernization (Cabiles et al., 2024). This generation of aging farmers has also been referred to as a "dying breed," with some of the older farmers showing discouragement for their children to take up farming as a career. According to (Palis, 2020), that mostly of elderly farmers would want their children to pursue non-farm occupations due to hardships and poor incomes.

Youth's lack of interest in agriculture is increasingly emerging as a concern. Various youth perceptions consider agriculture to be an unrewarding and strenuous occupation, with resulting rural outmigration and absence of intergenerational transition in rice farming communities. As (Narvasa et al., 2024) emphasized, obstacles, including resistance to mechanization, training deficiencies, and small farm sizes, which further discourage youth involvement.

Davao del Norte is one of the vast rice farm areas in the Davao Region. It is essential to understand the mindset of aging rice farmers in order to guarantee the future of rice farming. Their decision to stay in cultivation is determined by economic, cultural, and social factors that in turn determine whether young generations choose to get involved in this kind of job. With these insights, this study will encourage aiding policymakers to create more effective programs to fill the generation gap and make rice farming practices sustainable. This research investigates how experienced rice farmers imagine the future and contributes to a critical discourse with regard to rural community development, agricultural production, and intergenerational collaboration.

OBJECTIVES

The study has been conducted to ascertain the perceptions of aging farmers regarding the dimensions of youth participation in rice farming in Davao del Norte. This research study will focus on attaining the following objectives, to wit: (1) identify the underlying dimensions that define youth participation in rice farming based on

the perceptions of aging farmers in Davao del Norte; (2) describe youth participation in rice farming in terms of economic, social, technological, and motivational aspects as perceived by aging farmers; and (3) develop a framework based on the findings of the study.

REVIEW OF RELATED LITERATURE

Youths' engagement in rice farming is rising concerns in the Philippines amidst demographic, socioeconomic, institutional, and cultural shifts the agriculture sector has passed through. The recent evidences record a threatening trend pertaining to the aging of Filipino farmers, weaker farm succession, and preference of youth for non-agricultural career choices (Narvasa et al., 2024). Although modern technologies and government programs were developed to fill this gap, low incomes, negative stereotypes of the occupation, and systemic constraints persistently restrict younger generations from entering rice farming (Cabiles et al., 2024). This review synthesizes available literature on aging farmers, socioeconomic aspects affecting farm succession, technological empowerment, institutional support, and multifaceted barriers that shape youth perceptions and participation in rice farming.

Socioeconomic Dimensions of Farm Succession. Succession in Philippine farms was surrounded by complex, mixed and socioeconomic factors. Unlike land transfer processes, which are relatively straightforward, succession often involves deeper issues associated with livelihood viability, family expectations, and structural constraints in the agricultural sector. (Agnazata, & Elomina, 2025) discovered that many youths reluctant to take up family farms due to limited financial returns and inadequate institutional support. The smallholder rice farming, activities are normally perceived to be economically unstable, which discourages younger generations from pursuing it as a long-term livelihood. (Cabiles et al., 2024) further observed that unstable income, limited market access, and socioeconomic stigma bar the youth from committing to agricultural careers. These all point to the bigger issue: farm succession will not improve unless rice farming becomes more profitable and stable.

Technological and Resource Empowerment. The availability of modern technologies and financial resources has been identified as a crucial factor influencing youth participation in rice farming. (Villanueva et al., 2024) discovered that for small-scale rice farmers, mechanized equipment and digital tools were fundamental features in increasing productivity and making farming more modern and appealing to the interests of a younger generation. (Lagasca et al., 2024) emphasized that empowerment programs such as specialized rice production initiatives and agricultural training boosted youth confidence and improved economic prospects. Similarly, (Sabaulan et al., 2022) showed that modern technology in harvesting helped reduce the demands of farming, making rice farming modern and attractive to the youth. These findings collectively highlight that technological adoption and resource support not only increase productivity but also help lower barriers that traditionally deter youth from entering agriculture.

Institutional and Cultural Support for Continuity. Large roles are also played by institutional structures and cultural values in sustaining rice farming across generations. (Ituriaga et al., 2024) demonstrated that the quality of government services and sustainability-oriented programs was positively influenced farmer resilience and youth engagement. These would help building agriculture interest in young people, especially when such programs are implemented via higher educational institutions and local organizations. (Gonzales, 2025) emphasized that institutional collaboration and the reinforcement of cultural practices significantly contribute to legitimizing agriculture as a respected livelihood. Their findings suggest that continuity in rice farming relies not only on technological and financial support but also on cultural transmission and institutional reinforcement that frame farming as a noble and vital profession.

Youth Participation and Perceived Barriers. Several studies show an evolving trend in the engagement of the youth in agriculture, although there are still substantial challenges faced. (Cabiles et al., 2024), in a study focusing on Generation Z in Davao, observed that while youth are increasingly engaged in cooperatives and family farms, they still perceive rice farming as physically demanding and financially unstable. (Narvasa et al., 2024) found that mechanization limitations, high input prices, and limited access to funding hinder sustained youth participation, especially those with limited capital. (Secretario, 2021) also identified cultural perceptions, noting that agriculture continues to be portrayed as "dirty work," which lowers its prestige among youth. These factors collectively demonstrate that interest in agriculture exists but is hampered by structural and cultural constraints.

The literature reveals that youth engagement in rice farming is influenced by a combination of demographic, socioeconomic, technological, institutional, and cultural factors. The aging farmer population highlights the urgency of attracting younger generations, yet socioeconomic challenges poor income stability, market constraints, and limited institutional support continue to impede effective succession. Technological innovations

and empowerment programs show promise in modernizing the sector and appealing to tech-oriented youth, but persistent cultural stereotypes and financial risks remain significant barriers. Overall, sustaining youth involvement in rice farming requires comprehensive interventions that address economic viability, modernize agricultural practices, strengthen institutional support, and reshape cultural perceptions of farming.

METHODOLOGY

The research design used in this study was quantitative and exploratory, primarily focusing on how Exploratory Factor Analysis was done with the aim of unearthing and ascertaining the underlying dimensions that influenced the views of young people's involvement in rice farming among the aging farmers in Davao del Norte. Exploratory research design was most applicable since EFA was usually most effective in situations where the theoretical structures or models behind a certain phenomenon had yet to be established or were still undiscovered.

The method that was used in collecting the data was using a survey questionnaire. The instrument was created by the researcher. The questionnaires were validated in terms of content and reliability before being fully put into use. The intention was to make sure that what was actually being measured was exactly what was supposed to be measured. The appropriateness of the used data was also tested using statistical procedures such as Kaiser-Meyer Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The factorability was then determined before conducting the EFA using varimax rotation.

The technique enabled the consolidation of many survey questions into an organized set of factors which reflected the collective perspective held by aging farming communities. According to (Creswell & Creswell, 2014), that quantitative analysis could also be considered suitable in scenarios where the aim is to explore trends, patterns, or structural aspects in numerical survey data collected using structured questionnaires. Agreed upon this proposition is the use of Exploratory Factor Analysis in this study which enabled an examination in an organized way of hidden factors behind divers in relation to young people's attitudes towards rice farming.

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

In the study, exploratory factor analysis was performed to determine the factorial nature of youth involvement in rice farming. The data was collected from 150 aged rice farmers directly using a 30-item survey instrument. As the study aimed to examine the unseen constructs that can reveal the correlations among the variables, EFA was used. Before performing the factor extraction, the adequacy of the sample was tested.

Sampling Adequacy Requirement. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.919, exceeding the recommended minimum value of 0.80, indicating the sample was more than adequate for factor extraction. Additionally, Bartlett's Test of Sphericity was statistically significant, $X^2(435) = 3736$, $p < 0.001$, confirming that the correlation matrix was factorable and that the variables shared sufficient common variance. See table 1.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.919
Bartlett's Test of Sphericity	Approx. Chi-Square
	df
	Sig.
	3736
	435
	< 0.001

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

The table 2 reveals the overall result of the exploratory factor analysis, showing how the sum of the squared loading values, percentage variance explained by each factor, and cumulative percentage for each factor are presented. The result showed that factor 1 explained the largest variation (SS loadings = 6.58), explaining 21.92% of the variation, thus implying that factor 1 explained the biggest or the dominating feature with regard to youth involvement in the perception shown by the involvement of aging farmers in the production of rice. Factor 2 explained an additional variation of 16.67% (SS loadings = 5.00), contributing to the cumulative explanation of the variation by the factors at 38.60%, followed by factor 3 explaining an additional variation of 14.54% (SS loadings = 4.36), contributing to the cumulative explanation of 53.10% of the variation by the factors. Factor 4 explained an additional variation of 8.12% (SS loadings = 2.44), thus contributing to the cumulative explanation of the variation by the four factors at 61.30%. One can clearly note that the four factors

explained a large variation and thus show that the model fits perfectly well with the perception regarding the involvement of the youths by the aging farmers.

Factor	SS Loadings	% of Variance	Cumulative %
1	6.58	21.92	21.9
2	5.00	16.67	38.6
3	4.36	14.54	53.1
4	2.44	8.12	61.3

Table 2: Table of Factor Summary

Scree plot. The scree plot is analyzed for the appropriate number of factors to retire in the exploratory factor analysis for the aging farmers' perception on the engagement of the youth in rice farming. This plot shows a steep fall between Factors 1 and 2, followed by a less steep fall until Factors 3 and 4, which is followed by a clear stagnation. The evident stagnation of the plot at the fourth factor indicates that the first four factors explain the most significant variances in the data while the rest explain nothing substantially significant. Factors that are prior to the point at which the plot stabilizes are to be retained, hence reinforcing the four-factor solution. The retained factors related to technological and resource empowerment, institutional and cultural support for continuity, increased participation and engagement, and perceived barriers to engagement summed up the dominant factors encompassed in aging farmers' perception on the engagement of the youth in rice farming. See Figure 1.

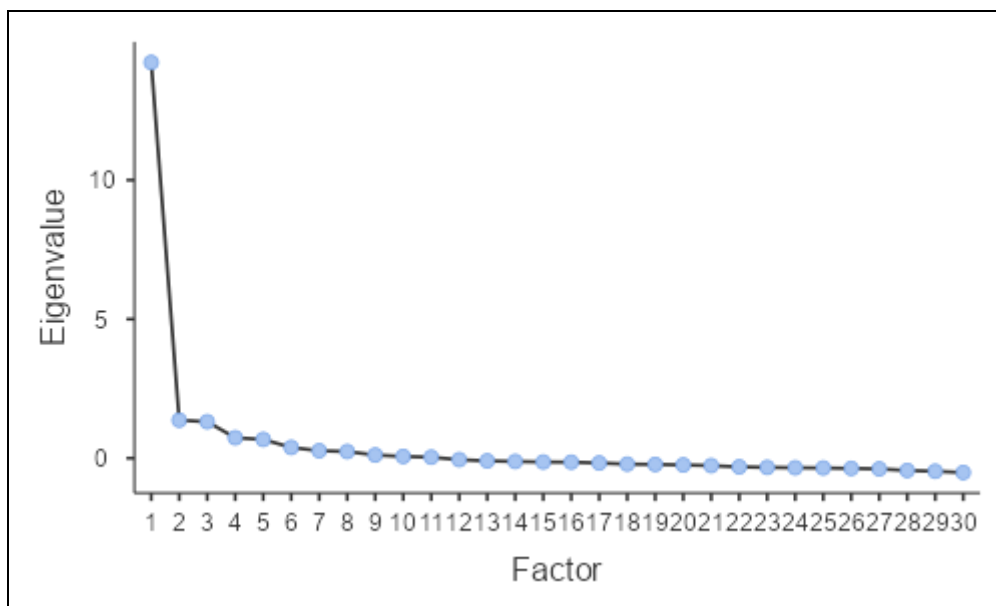


Figure 1: Scree Plot

Technological and Resource Empowerment. Table 3 indicates that youth engagement in rice farming is deeply driven by modern technological empowerment, training, and support in terms of land provision, financial support, and family support and guidance. The highest factor score indicates that training and using technology attracts and engages more youth in rice farming (Factor Score = 0.767), while the experience and knowledge exchange that older farmers can give to the younger generation is also of high value (Factor Score = 0.722). The openness of youth to modern farming machinery and equipment (Factor Score = 0.662) and their gain in technical know-how in modern rice farming (Factor Score = 0.640) again emphasize their openness and willingness to modernization. The perception that rice farming has a significant contribution to the country's food security (Factor Score = 0.640) and family and community support and encouragement (Factor Score = 0.632) and (Factor Score = 0.621) again emphasize and highlight its social aspects. Financial support in terms of agricultural credit or financial support in terms of capital is another critical driving factor (Factor Score =

0.621), while their ability and skills in modern technological tools such as mobile apps (Factor Score = 0.604) and their willingness and adaptability to modern technological innovations such as farming harvester or precision farming methods (Factor Score = 0.540) again demonstrate their willingness and preparedness to technological modernization. In conclusion, their support and access in terms of land or financial support is again one of the critical driving elements (Factor Score = 0.505). All factor scores again clearly and convincingly emphasize and reiterate that all three elements, namely technological empowerment, provision, and support, are critical in their continuous and sustained involvement in rice farming.

Dimension	Item	Attributes	Factor Loadings
Technological and Resource Empowerment	15	Training programs using technology attract more youth to rice farming.	0.767
	10	Older farmers can share their experience and knowledge with the next generation.	0.722
	11	Young people are more open to using modern farm machinery and equipment.	0.662
	13	Most youths acquire technical knowledge in modern rice farming.	0.640
	18	Youths believe that rice farming contributes significantly to national food security.	0.640
	9	Family influence is a major motivating factor that drives youths to continue rice farming.	0.632
	7	The community strongly encourages youth to take up rice farming as well.	0.621
	5	Providing the youth with agricultural credit or capital would increase their participation in rice farming.	0.621
	12	Youths have acquired the skills of using digital tools, such as mobile apps, for farming information.	0.604
	14	Innovations such as mechanized harvesting or precision farming are easily adapted by young farmers.	0.540
	3	Youths participate in rice farming when they get access to land or financial support.	0.505

Table 3: Technological and Resource Empowerment

The finding solidifies that technology, resources, and social support are important in maintaining youth engagement in rice farming. (Villanueva et al., 2024) demonstrated that the use of mechanized technology and technology in farming increases productivity and attractiveness to the youth, which substantiates the finding in the use of technology in training and youth's receptiveness towards using modern technology in farming. Similarly, (Lagasca et al., 2024) demonstrated that empowerment efforts and agricultural training increased the youth's confidence and financial opportunities in farming, as found in the use of technology in the training programs. The need for intergenerational transfer is supported in (Palis, 2020), who demonstrated that the views and opinions of older farmers inspire the youth's views and attitudes in farming. Financial aid and availability of resources are in line with the views of (Agnazata, & Elomina, 2025), who demonstrated that the absence of financial gain and structural limitations in farms inhibit the transfer of farms from parents to the youth, especially when financial limitations are eliminated. Finally, the effects of family and social support for farming are supported in the views of (Cabiles et al., 2024), who observed the views and involvement of the social setting inspire the youth to stay in farming practices. These views demonstrate that technology empowerment, resources, and social support are important in maintaining youth engagement in rice farming.

Institutional and Cultural Support for Continuity. Table 4 emphasizes the role of having adequate structures and cultural values in facilitating the continuance of rice farming from one generation to the next. The factor with the highest loadings indicates that the collaboration between the school and the farming community could promote youth engagement with agricultural practices (Factor Score = 0.708), and that senior farmers' confidence in the next generation to continue the rice farming practices is extremely high (Factor Score = 0.708). The fact that farming as a respectable and esteemed livelihood activity is a factor that encourages youth

to engage in rice farming is also weighed highly (Factor Score = 0.700), with the need to have additional programs to engage the youth in rice farming again supporting the need for institutionalization to promote rice farming practices to the youth (Factor Score = 0.654). The display of interest in learning the traditional rice farming practices from senior farmers again emphasizes the role of the cultural aspect in facilitating continuance (Factor Score = 0.618), with the government programs to engage the youth in farming practices perceived to be effective (Factor Score = 0.550). Lastly, senior farmers' beliefs in the ability of the youth to continue rice farming practices in the next generation again supports the aspect of successful succession (Factor Score = 0.508). All these factor scores again affirm the role of collaboration, cultural emphasis, and knowledge transfer to ensure that farming becomes a valid and noble pursuit for the next generation.

Dimension	Item	Attributes	Factor Loadings
Institutional and Cultural Support for Continuity	28	School-farming community collaboration could serve as an inspiration for youth participation in agriculture.	0.708
	29	Older farmers had confidence that the next generation will be able to continue rice farming traditions.	0.708
	27	Farming as respectable and valuable livelihood motivates the youth towards its involvement.	0.700
	30	There is a need to have more programs in place to attract young people into rice farming.	0.654
	26	Youths are interested in learning traditional rice farming practices from older farmers.	0.618
	24	Government initiatives in involving youth in farming are effective.	0.550
	23	The aging farmers believe the youth can sustain rice farming in the future.	0.508

Table 4: Institutional and Cultural Support for Continuity

This finding confirms the literature that highlights institutional and cultural support for legitimizing agriculture as a decent livelihood. (Ituriaga et al., 2024) showed that government services and programs anchored on sustainability have a positive effect on farmer resilience and engagement of the youth, which is consistent with the factor on government initiatives. (Gonzales, 2025) pointed out that collaboration at the institutional level and reinforcement of cultural practices serve as a venue for legitimizing farming as a noble profession, which is consistent with the high-loading items on farming as a respectable livelihood and school-community collaboration. Furthermore, the intergenerational transmission of traditional practices is echoed by (Palis, 2020), who argued that older farmers' experiences have shaped youth perceptions of agriculture. Taken together, these studies confirm that institutional programs, cultural framing, and intergenerational knowledge transfer are vital in ensuring continuity and motivating youth to sustain rice farming across generations.

Increasing Youth Participation and Engagement. As shown in Table 5, the positive trend in youth engagement in rice farming is ascribed to the highest factor loadings of interest in agriculture having grown over recent years, as captured by the statement "In the recent past, there has been increased interest in rice farming among the youth" with a (Factor Score = 0.747), and an increase in youths now actively farming, as indicated by "More and more youths now actively engage in rice farming " with a (Factor Score = 0.742). Participation in family farming activities through planting and harvesting was also rated high with a (Factor Score = 0.581). Involvement in farmers' associations/cooperatives, through which collective action and mutual support could be sought, was similarly valued at a high rating of (Factor Score = 0.578). Youths consider rice farming as a source of income, with a Factor Score of 0.575, while they consider rice farming "a lucrative source of livelihood" with a high Factor Score of 0.560, reflecting changing perceptions toward farming as both economically viable and socially valued

Dimension	Item	Attributes	Factor Loadings
Increasing Youth Participation and Engagement	22	In the recent past, there has been increased interest in rice farming among the youth.	0.747
	21	More and more youths now actively engage in rice farming.	0.742
	6	Youths often help their families during planting and harvesting seasons.	0.581
	8	Youths are more involved in the farmers' associations or cooperatives.	0.578
	1	Youths have expressed interest in rice farming as a possible means of income today.	0.575
	2	Most youths consider rice farming to be a lucrative livelihood.	0.560

Table 5: Increasing Youth Participation and Engagement

This discovery verifies the existence of the literary study that emphasizes steadily escalating youth engagement in agriculture despite the presence of detrimental elements. (Cabiles et al., 2024) observed that Generation Z in Davao has been steadily integrating into cooperatives and family agricultural businesses, in line with the elements of association engagement and family engagement. (Narvasa et al., 2024) stated that despite the presence of elevated input cost and a lack of capitals, the escalating youth interest in rice agriculture continues, in line with the high-loading elements of enhanced engagement and potential incomes. In addition, (Gonzales, 2025) emphasized that institutional cooperation and cultural support resulted in the legitimation of agriculture, a prestigious livelihood, in accordance with the finding that the youths today believe in the validity and profitability of rice agriculture as a prospective career path. Collectively, these literary works validate the notion that the integration of youths into rice agriculture continues to escalate in response to family engagement, incorporative engagement, and cultural beliefs about sustainable agriculture.

Perceived Barriers to Youth Engagement. Table 6 focuses on the challenges that aging farmers believe discourage youth from fully engaging in rice farming, with the factor scores highlighting two major deterrents. The physicality requirement of rice farm management (Factor Score = 0.720) remains the most discouraging factor, as aged farmers appreciate that rice farm management entails a lot of manual labor, dedication, and physical endurance, which most youths may find unappealing in comparison with other less manual-intensive vocations. The rising cost of the activities involved in rice farm management (Factor Score = 0.620) also acts as a crucial barrier, given that the rising costs of fertilizer, pesticides, machinery, and fuel, among others, make it even more difficult for most youths, who lack financial resources, to engage in and sustain rice farm management.

Dimension	Item	Attributes	Factor Loadings
Perceived Barriers to Youth Engagement	14	Physical labor involved in rice farming discourages the younger generation from entering into this field.	0.720
	15	The increasing cost of farming activities deters the youths from rice production.	0.620

Table 6: Perceived Barriers to Youth Engagement

This discovery reinforces the literature that highlights the continuum of structural and economic constraints influencing youth engagement. (Cabiles et al., 2024) observed that Generation Z in Davao believes rice farming involves physically demanding and unremunerative work, validating the high-loading component of the factor related to the physically demanding nature of the activity. (Narvasa et al., 2024) further emphasized that the financial costs associated with input escalation and the lack of access to necessary resources are related to this factor, validating the increasing production costs. (Secretario, 2021) also noted that the image of agriculture still retains the image of 'dirty work,' perpetuating the notion of labor intensiveness and the lack of appeal to the young. Taken together, the findings support the assertion that the physically demanding nature and financial costs are essential considerations to enhance young engagement with rice farming.

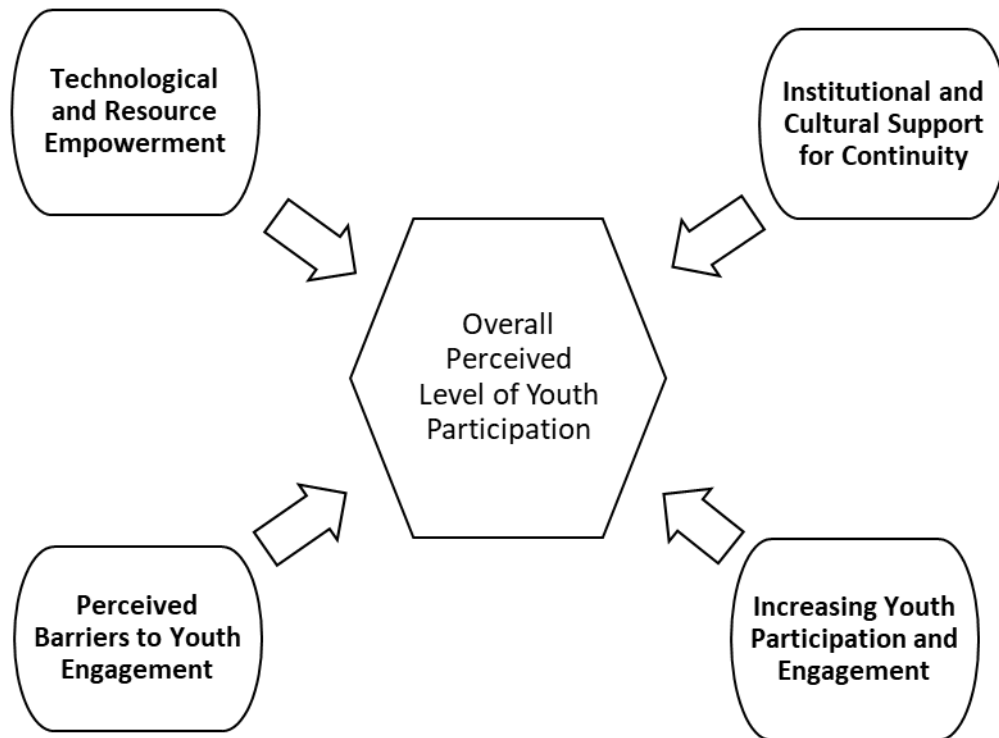


Figure 2 Conceptual Framework: Dimensions of Youth Participation in Rice Farming among Aging Farmers in Davao del Norte:

CONCLUSION

Overall, this study examined the views of aging rice agricultural practitioners in Davao del Norte regarding youth involvement in agriculture or more specifically in farming rice. The study examined factors from motivation to cultural aspects as well as support from the Philippine Government in terms of familiarity open to agricultural technology. Through Exploratory Factor Analysis from the survey study carried out and evaluated in this research, the study revealed that youth involvement in rice farming is multidimensional.

The study revealed that the perception of the older generation of farmers regards youths who are encouraged by the right motives, including the presence of capital, family, and cooperatives. Nearly all the participants pointed out the significance of youths understanding the value of rice agriculture in the food security of the country and recognizing the sector as a livelihood opportunity when the chances are made available. Finally, the study confirmed the significance of cultural continuity, through which knowledge transmission from one generation to the other, in association with the school and the community, influences the youth to continue the cultures of agricultural practices.

In addition, the project highlighted the openness of youth to technological advancements in agriculture like harvesting and precision farming, which are perceived as attracting youth to rice farming and reducing the amount of manual labor required. The project also noted that there is a lack of adequate initiatives and training to retain youth in rice farming, even though manual working and lack of financial stability are still concerns.

In general, it can be ascertained through the study that youth engagement in rice agriculture must be encouraged through a combination of motivational, cultural, institutional, and technologically empowered processes. There is also a significant need to come up with a comprehensive approach that will address the aspects of viability, agricultural renovation, as well as support structures. To be able to promote sustaining generations for rice agriculture in the country, there is a crucial need to facilitate access to resources, increase training opportunities, and transform the attitudes of people in terms of regarding agriculture as a noble profession in contributing to food security in the country.

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