Farmer perspectives on understanding rural household behaviour in agricultural decision-making

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ABSTRACT

This study aims to provide an in-depth understanding of the agricultural decision-making processes undertaken by rural households in Nueva Ecija, Philippines. The goal is to elucidate the significance of individual perceptions, experiences, and risk attitudes in this process and to identify the key elements that influence agricultural decision-making among these households. The research employed a mixed-methods approach to data collection, incorporating both surveys and interviews to gather quantitative and qualitative data. The analysis involved the use of descriptive statistics, chi-square tests, and logistic regression for the quantitative data, while the qualitative data were assessed through thematic analysis. The research's findings showed that local knowledge and experiences, risk attitudes, and perceptions of climate change among rural households all have a significant impact on agricultural decision-making. Even though risk aversion acted as an obstacle, the prevalent use of local knowledge in decision-making presented itself as an invaluable asset for creating adaptive strategies. Based on these findings, the study recommends the integration of local knowledge into agricultural training programs, the development of efficient risk management strategies, and the promotion of climate-smart agriculture. The results also underscore the need for further exploration of decision-making complexities in future research. These recommendations and findings have substantial implications for designing interventions and policies geared towards sustainable rural development. The study thus contributes significantly to enhancing our understanding of agricultural decision-making, helping to pave the way for sustainability in rural development.

Contribution/Originality: This study examined the impact of socioeconomic factors, risk attitudes, and perceptions of the climate on agricultural decisions in Nueva Ecija, Philippines. The significance of local knowledge in the context of adaptation is underscored, and it is advised that its integration into development strategies be prioritised to enhance the resilience and sustainability of rural agricultural sectors.

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1. INTRODUCTION

Rural agriculture plays a critical role in economies worldwide, contributing significantly to food security, poverty reduction, and sustainable development. However, these agricultural landscapes and practices are undergoing rapid transformation due to globalization, demographic changes, and climate change, coupled with technological advancements. These multi-dimensional challenges profoundly impact the decision-making processes of rural households engaged in agriculture. Thus, understanding the intricacies and determinants of their decision-making is vital for formulating effective agricultural policies, sustainable rural development strategies, and ensuring optimized agricultural productivity.

Agricultural decision-making within family units, an intricate tapestry woven with threads of diverse elements such as economic factors, societal norms, individual perceptions, climate change realities, and local agro-ecological conditions, has been the subject of numerous studies. However, there's a notable lacuna in the understanding of perspectives from rural households, an element that this narrative seeks to address. At the heart of agricultural growth is the adoption of new technologies and practices. According to Adnan, Nordin, Bahruddin, and Tareq (2019), Green Fertilizer Technology (GFT) in Malaysia is seen as an instrument that can not only address environmental concerns but also significantly enhance crop yields, particularly in paddy farming. However, the uptake of GFT has been sluggish due to factors such as high production costs, leading to a lukewarm perception towards its adoption. The study, therefore, proposed an amalgamation of various theories, including the Diffusion of Innovation (DOI), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and Technology Acceptance Model (TAM), to examine the adoption decisions. The scholars concluded that these theories, combined with effective communication channels, could help address the limitations in the adoption of GFT, thereby bolstering paddy production in Malaysia.

In the same vein, Plieninger et al. (2021) studied Mediterranean agroforestry systems, specifically focusing on the impacts of land use and management practices on biodiversity. The study, which comprised an extensive review of 128 empirical studies, identified socio-cultural factors, economic dynamics, and agricultural policies as key drivers of change, ultimately leading to the intensification of livestock production and land use simplification. The researchers emphasized the need to incorporate a wider range of disciplines and perspectives, moving from single-topic to landscape-level approaches to ensure sustainable agricultural practices. Climate change, undoubtedly, has far-reaching effects on farming. Kenea and Mebratu (2020) corroborate this in their review, revealing that most farmers in Ethiopia are cognizant of climate change impacts and have consequently adopted strategies to mitigate these effects. However, there are a wide range of factors, such as agro-ecological settings, education level, landholding, and farm income, that have an impact on people's preferences for adaptation strategies. The review also pointed out the glaring lack of empirical evidence in livestock sectors, calling for further research on adaptation strategies within these sectors. According to Soubry, Sherren, and Thornton (2020), it is crucial to incorporate farmers' knowledge into discussions of land management and climate change adaptation. Unfortunately, there is a notable lack of research that encompasses farmers' perspectives. Most studies tend to focus more on the Global South, often evaluating farmers' perceptions against historical data or quantitative measurements, consequently reducing them to passive and vulnerable figures rather than active adaptors. The researchers, thus, called for a shift from these prevailing dynamics towards embracing in-depth qualitative methods that respect and value the expertise of farmers in adaptation discourses. Accoridng to Sadiq, Ramanoon, Mossadeq, Mansor, and Hussain (2019), farmer perceptions also have a significant impact on animal welfare. Focusing on lameness in dairy cows, the study identified a discrepancy in the understanding of the problem between veterinarians and dairy farmers, leading to delayed treatment and poor cattle welfare. The research underscores the importance of farmers' perceptions and attitudes towards animal health and suggests the incorporation of interventional programmes to address such challenges. These studies illustrate the intricate web of factors influencing agricultural decision-making processes and the crucial role farmers' perceptions play in these processes. Addressing these perceptions, integrating farmers' expertise, and understanding their attitudes towards new technologies and practices can, therefore, greatly enhance the sustainability and productivity of the agricultural sector.

Agricultural households contribute significantly to the economy, functioning as active decision-makers who shape their livelihoods and surrounding landscapes. While neoclassical economic theory offers a foundation by viewing these households as rational entities that make choices to maximize utility or profits (McN & Becker, 1978), it often neglects the complexities of rural households and their interactions with land and communities. Efforts to augment rural agricultural livelihoods have led researchers and practitioners down a path of various frameworks and theories. A key milestone is the Sustainable Livelihoods Approach (SLA), introduced by Scoones (1998). The SLA provides a comprehensive exploration of rural agricultural households, focusing on their resilience and adaptation to various challenges influenced by human, natural, physical, social, and financial capitals. Yet, the SLA isn't perfect. It overlooks individual perceptions, experiences, and perspectives, which are crucial in agricultural decision-making. Addressing this gap, Natarajan, Newsham, Rigg, and Suhardiman (2022) proposed an updated Sustainable Livelihoods Framework, incorporating structural, spatially-disaggregated, dynamic, and ecologically-coherent elements of rural livelihoods in the age of climate change and globalization. Simultaneously, Azadi et al. (2021) evaluated the concept of Climate-Smart Agriculture (CSA) and argued for the inclusion of small-scale farmer realities, giving birth to Vulnerable-Smart Agriculture (VSA). They insisted that effective policies should consider the voices of the farmers directly affected. Their research proposes strategies for farmers to manage tensions and disasters sustainably. In a related vein, Zhong, Zhu, Zhao, and Shen (2022) examined the effects of hydropower development on farmers' livelihoods in the Lancang-Mekong River Basin, calling for comprehensive assessments of such projects' impacts on these livelihoods. Meanwhile, Fierros-González and López-Feldman (2021) spotlighted the pressing issue of climate change. The duo acknowledged the lack of sufficient research on farmers' perceptions of climate change, particularly in the highly vulnerable region of Latin America. Their review established the need for more research in this area, asserting that understanding farmers' perceptions is crucial for effective climate change adaptation. Praveen and Sharma (2019) explored the effects of climate change on crop productivity, acknowledging agriculture's vulnerability and discussing strategies for adaptation and mitigation. From agroforestry practice and organic farming to rainwater harvesting, irrigation planning, and manure management, they delved into a variety of measures that could help alleviate the impacts of climate change. The issue of risk also made its way into the discourse, with Komarek, De Pinto, and Smith (2020) arguing that the understanding of risks in agriculture has been too narrow. They urged for a holistic approach to risk management, calling attention to the need for a comprehensive understanding of the multiple risks farmers face. Technological adoption formed another pillar in this discourse, with Takahashi, Muraoka, and Otsuka (2020) noting the persistent food insecurity in

regions like sub-Saharan Africa. They promoted the idea of integrated farm management systems and efficient farmer-to-farmer technology extension as potential pathways to increased crop yields and sustainable yield gains. Hatab, Cavinato, Lindemer, and Lagerkvist (2019) addressed the challenges of urbanization and demographic changes to food security in developing countries. They advocated for a holistic perspective on urban and rural food systems, emphasizing the need to address the disconnects within the approaches used to analyze these systems. In essence, these studies highlight the need for inclusive, comprehensive, and holistic approaches towards enhancing rural agricultural livelihoods. They underscore the importance of individual farmer perspectives, climate change adaptation, risk management, efficient technology extension, and integrative understanding of urban and rural food systems in the face of ever-evolving challenges.

The study of cognitive and psychological aspects of agricultural decision-making is receiving increasing attention from researchers. Scholars such as Spence and Pidgeon (2010) have illuminated the influence of risk perceptions and attitudes towards climate change on agricultural decisions. Carlisle (2014) further emphasized the impact of farmers' belief systems and their relationship with the land on sustainable farming methods. This suggests that farmers should be better understood as human beings with social and psychological aspects in addition to their role as economic actors.. Findlater, Kandlikar, and Satterfield (2019) found that farmers' interpretations of farming practices often deviated from local experts' views, indicating a potential communication gap. They also warned that inaccurate estimations of adoption could jeopardize climate change adaptation strategies. This emphasizes the necessity of considering the psychological facets of farming, including perceptions, attitudes, and beliefs that influence decision-making. The need to understand farmers as multifaceted beings was echoed by Gregorioa and Ancog (2020), who argued for systemic changes in agricultural systems to ensure resilience and sustainability. Similarly, Santos (2023) urged for better cooperation between the government and stakeholders to encourage safe city programs. Harvey et al. (2018) highlighted the negative effects of climate change on small-scale farmers, calling for climate adaptation policies that consider the varying socioeconomic conditions, environmental contexts, and climate stresses farmers face. Dosso, Gouroubera, Idrissou, and Moumouni-Mousa (2023) reinforced this, finding that enhancing farmers' innovation adoption required a focus on their capacities and propensity to embrace new practices. These studies emphasize the need to perceive farmers as social, psychological, and economic beings. Agricultural policies and interventions should reflect their perceptions, attitudes, beliefs, and abilities. By acknowledging the holistic nature of farmers, we can foster a more resilient and productive agricultural sector and facilitate system transformation, climate change adaptation, and innovation adoption. The need for studies that combine neoclassical economics, the Sustainable Livelihoods Approach, and psychological perspectives is urgent in these regions. Agricultural decision-making, particularly within rural households, is complex due to the interplay of various factors, including economic aspects, societal norms, climate change perceptions, and local ecological conditions. Current research has explored areas like technological adoption (Adnan et al., 2019), land use and management practices (Plieninger et al., 2021), and climate change adaptation strategies (Kenea & Mebratu, 2020). However, these often focus on tangible factors while overlooking the nuanced perspectives and experiences of the farmers themselves.

A growing body of research is acknowledging the importance of integrating farmers' perspectives into the discourse on agricultural decision-making. These studies (e.g., (Sadiq et al., 2019; Soubry et al., 2020)) recognize the critical role farmers' perceptions, attitudes, and beliefs play in shaping agricultural practices. Furthermore, they assert that an understanding of these cognitive and psychological aspects can significantly enhance the effectiveness of agricultural policies and interventions.

Furthermore, even though a number of theories and frameworks have been used to analyse agricultural decision-making, an integrated approach is required due to the complex nature of the issue. It is glaringly lacking a method that incorporates concepts from neoclassical economics, the Sustainable Livelihoods method, and contemporary viewpoints on the psychological and cognitive elements of farming. By taking into consideration the various spheres of influence that shape farmers' decisions, an integrated approach like this one could offer a more comprehensive knowledge of agricultural decision-making.

Consequently, this research aims to bridge these gaps, shedding light on rural household behavior in agricultural decision-making from the farmers' perspectives, especially in the context of a developing nation. The study will not only examine the influence of economic factors, societal norms, and climate change realities but also delve into the personal perceptions, experiences, and risk attitudes of the farmers. Moreover, it will strive to synthesize insights from various theoretical standpoints, aiming to provide a more comprehensive understanding of the subject. By doing so, this research will offer valuable insights that could inform effective agricultural policies and interventions, ultimately promoting agricultural sustainability and rural development.

2. METHODOLOGY

A mixed-methods strategy was used in this study to provide comprehensive and nuanced knowledge of the agricultural decision-making processes of rural families in Nueva Ecija, Philippines. This approach used both qualitative and quantitative approaches.

2.1. Research Design

The study used an explanatory sequential design, whereby qualitative data collection came after quantitative data collection. The quantitative phase identified key factors in agricultural decision-making among rural households, with the qualitative phase elaborating on these using farmer perspectives.

2.2. Population and Sampling Respondents

The target population for this study was rural households engaged in farming activities in Nueva Ecija, Philippines. A multi-stage stratified sampling technique was employed to ensure that the sample was representative of the agricultural households across different villages and farm types. In the first stage, a random selection of ten villages from the regionnwas done. Farms were divided into three groups in the second stage: small farms (less than 2 hectares), medium farms (2-4 hectares), and big farms (greater than 4 hectares). After that, families for the research were chosen using random selection within each stratum. In total, 300 households were included in the survey - 100 from each farm category.

2.3. Research Instrument

The primary data collection tool for the quantitative phase was a structured questionnaire. It comprised questions on demographic characteristics, farming practices, socio-economic factors, perceptions about climate change, risk attitudes, and other potential influencers of agricultural decision-making. The qualitative data was collected through semi-structured interviews. An interview guide was used to ensure that all relevant aspects were covered while allowing flexibility for the participants to express their views and experiences.

2.4. Data Gathering Procedures

There were two stages to the data collection process. The questionnaires were given out in the first phase via in-person interviews with the chosen houses by the researcher. Prior to starting the survey, participants were told of the study's goals and provided with their informed permission. A selection of respondents (about 30) who displayed distinctive decision-making characteristics in the quantitative phase was chosen for in-depth interviews in the second phase. The researcher conducted the interviews personally, had them videotaped with permission, and then had the transcripts analyzed.

2.5. Statistical Tests

Data were summarized using descriptive statistics, and decision-making in agriculture was studied using inferential statistics, including logistic regression and chi-square tests. The qualitative data was analyzed using thematic analysis. This involved reading and rereading the transcripts, coding the data, identifying patterns, and generating themes that encapsulated the farmers' perspectives on agricultural decision-making. This mixed-methods approach, by combining statistical analysis with in-depth qualitative insights, allowed for a robust and comprehensive understanding of rural household behavior in agricultural decision-making in Nueva Ecija, Philippines. The quantitative phase identified significant factors influencing decision-making, while the qualitative phase provided richer context and depth to these findings, offering an intricate understanding of farmer perspectives.

3. RESULTS AND DISCUSSION

3.1. Understanding the Primary Factors Influencing the Agricultural Decision-Making Process of Rural Households

Descriptive statistics were conducted to describe the basic features of the data in this study. For instance, the average farming household size was 4.6 members, with the head of the household typically around 48.5 years old. In addition, 2.5 hectares of farmland were owned by each household, and their yearly income was, on average, 200,000 Philippine Peso (PHP). It was discovered that just 30% of farming households had a college education or above, further elaborating on the educational status of farming households. Roughly 70% of farmers only had primary or secondary education. Table 1 summarizes this distribution of educational levels.

Table 1. Distribution of educational level among farming households.

Education level	Frequency	Percentage (%)
Primary	140	47
Secondary	70	23
Tertiary or higher	90	30
Total	300	100

Table 1 illustrates the distribution of educational levels among farming households in Nueva Ecija, Philippines. Nearly half (47%) of the farmers had only attained a primary level of education. About a quarter (23%) achieved secondary education, while 30% managed to pursue tertiary or higher education. This finding suggests a relatively low level of formal education among the farmers, potentially impacting their agricultural decision-making.

Previous research has shown that education plays a crucial role in farming practices. Higher education often equates to better knowledge and comprehension of new farming technologies and innovative practices (Adesina & Seidi, 1995). This study implies that farmers with higher education levels may not adopt innovative farming technologies. Logistic regression analysis suggests that older methods are employed more often. Additionally, inferential data show a strong correlation between agricultural techniques and household size, household head's education level, and income. This result is consistent with other studies showing that families with bigger sizes, more educated people, and better incomes have a tendency to diversify their farming operations, increasing agricultural output and resilience (Bezu, Kassie, Shiferaw, & Ricker-Gilbert, 2014; Udry, 1996). By revealing a complex interaction of factors impacting agricultural decision-making among rural families, the current study adds to this body of work. In order to improve

policy and practice and support the development of a sustainable agriculture industry, future research should continue to investigate these processes.

Next, inferential statistics were employed to understand the relationships between different factors and household agricultural decision-making. Chi-square tests revealed a significant relationship (all p 0.05) between agricultural techniques and family size, household head's educational attainment, and income. Table 2 presents the findings of the chi-square tests.

Table 2. Chi-square tests for association between farming practices and selected factors.

Variables	Chi-square value	Degrees of freedom (df)	Significance (p-value)
Household size	10.77	2	0.005
Education level	8.24	2	0.016
Annual income	12.38	2	0.002

Table 2 presents the outcomes of chi-square tests scrutinizing the relationships between farming practices and selected determinants such as household size, the household head's educational attainment, and annual income. All three of these variables demonstrate significant relationships with farming practices, confirming their substantial impact on agricultural decision-making processes. The significant association between household size and farming practices (χ^2 = 10.77, df = 2, p = 0.005) offers evidence that the number of family members plays a pivotal role in shaping agricultural decisions. This observation is in line with prior research. Pitt, Rosenzweig, and Hassan (2012) pointed out that larger families often have the advantage of more available labor. This additional workforce capacity empowers them to manage extensive farming areas, diversify their agricultural operations, and withstand risks and uncertainties more effectively, thereby bolstering the stability and resilience of their farming enterprises.

The noteworthy link between the educational level of the household head and farming practices (χ^2 = 8.24, df = 2, p = 0.016) aligns well with extensive scholarly work. Advanced educational levels are often correlated with superior comprehension and implementation of innovative farming methodologies, leading to heightened productivity and sustainability in agriculture (Abdulai & Huffman, 2005; Adesina & Seidi, 1995). A higher level of education provides the capacity to comprehend and apply complex farming techniques, which can enhance yields and promote sustainable farming practices. Similarly, the association between annual income and farming practices (χ^2 = 12.38, df = 2, p = .002) suggests that economic factors also play an integral role in farming decisions. Higher income levels can enable the adoption of progressive farming practices. As families' financial resources grow, they gain the ability to invest in advanced farming equipment and technologies. This economic flexibility can lessen their vulnerability to shocks and stresses, whether environmental or economic, and increase their propensity to experiment with novel agricultural techniques (Dercon, 1998; Dercon & Christiaensen, 2007). These findings collectively underline the multifaceted influences on agricultural decision-making, ranging from demographic factors such as family size to socioeconomic factors such as education and income. They offer valuable insights for shaping agricultural policies that aim to enhance farming practices and promote sustainability in the sector.

Table 3. Logistic regression analysis of factors influencing agricultural decision-making.

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Household size	0.680	0.211	6.320	1	0.012	1.974
Education level	-0.540	0.183	8.940	1	0.003	0.583
Annual income	0.001	0.000	7.621	1	0.006	1.001
Perceptions of climate change	1.301	0.422	9.505	1	0.002	3.673
Risk attitude	-0.931	0.311	8.994	1	0.003	0.394

Note: B = Unstandardized regression coefficient; S.E. = Standard error; Wald = Wald Chi-square; df = Degrees of freedom; Sig. = Significance level; Exp(B) = Odds ratio.

Table 3 delineates the outcomes of a logistic regression analysis performed to deepen our comprehension of the dynamics influencing agricultural decision-making in Nueva Ecija, Philippines. This analysis examines several variables, including household size, the level of education of the household head, annual income, perception of climate change, and risk attitude. The coefficient for household size (B = 0.680, SE = 0.211) is statistically significant at the .012 level, indicating that each additional family member in the household correlates with a 97.4% increase in the likelihood of adopting innovative farming practices (Exp(B) = 1.974). This result aligns with research conducted by Pitt et al. (2012) and Bezu et al. (2014), which underscores the influence of larger households on adopting innovative farming methods. Larger families, which typically possess more available labour, have the capacity to manage diversified farming operations and cope with the uncertainties associated with the adoption of novel practices better than smaller households.

Interestingly, the education level of the household head has a negative coefficient (B = -.540, SE = .183, p = .003), signifying that each incremental increase in the level of education corresponds with a 41.7% decrease in the odds of adopting innovative farming practices (Exp(B) = .583). This somewhat paradoxical finding may suggest a higher inclination of educated farmers towards traditional methods, possibly due to their understanding and comfort with existing practices (Adesina & Seidi, 1995).

Annual income has a significant positive relationship with the adoption of innovative farming practices (B = .001, SE = 0.000, p = 0.006). This outcome suggests that for each unit increase in income, the likelihood of innovative adoption increases by approximately 0.1% (Exp(B) = 1.001). Higher income levels provide farmers with the financial

capacity to bear the risks inherent to innovative farming practices, in accordance with prior studies (Dercon, 1998). The financial flexibility facilitated by increased income may allow for the experimentation with and implementation of innovative practices, thereby potentially enhancing productivity and sustainability.

Moreover, perceptions of climate change show the strongest positive association with the adoption of innovative farming practices (B = 1.301, SE = .422, p = .002). This finding indicates that acknowledging climate change increases the likelihood of adopting innovative farming practices by approximately 267.3% (Exp(B) = 3.673). This pivotal result underscores the influential role of climate change perceptions in steering agricultural decision-making. Individuals who perceive the pressing reality of climate change may be more inclined to adopt innovative practices to ensure the sustainability of their farming operations, a finding that has been supported by prior studies such as Deressa, Hassan, Ringler, Alemu, and Yesuf (2009).

Finally, risk attitude is negatively associated with adoption (B = -.931, SE = .311, p = .003), implying that farmers who are more risk-averse are 60.6% less likely to adopt innovative farming practices (Exp(B) = .394). This corresponds with findings from Dillon and Scandizzo (1978), who established that risk aversion can act as a barrier against the uptake of new technologies and practices. Farmers who are more cautious or uncertain may resist deviating from known and reliable methods, thereby potentially hindering innovation. These findings illuminate the complex web of influences shaping agricultural decision-making, from demographic factors such as household size to socio-economic factors including education and income to psychological factors such as perceptions of climate change and risk attitudes. This nuanced understanding can inform effective policy interventions that foster sustainable and productive agricultural practices.

3.2. Elucidating the Role of Individual Perceptions, Experiences, and Risk Attitudes in Agricultural Decision-Making

The qualitative phase of the study further added depth to the understanding of decision-making processes among the farming households. A thematic analysis was conducted, and the frequency of thematic occurrences was recorded to quantify the prominence of each theme. The frequency distribution of the themes is summarized in Table 4.

Table 4. Frequency distribution of thematic occurrences in qualitative data.

Themes	Frequency
Perception of climate change	25
Risk attitudes	20
Role of local knowledge and experience	27

Table 4 demonstrates that the 'Role of Local Knowledge and Experience' was the most frequently occurring theme, appearing in 27 out of 30 interviews, followed by 'Perception of Climate Change' (25 occurrences) and 'Risk Attitudes' (20 occurrences).

Perception of Climate Change: A significant majority of farmers (83%) have observed alterations in weather patterns and seasonal shifts, which they attribute to climate change. These climate change perceptions have emerged as vital factors influencing their farming decisions, such as the choice of crops, timing for planting and harvesting, and the selection of agricultural inputs. Therefore, the farmers' observations of climatic changes have substantial implications for their agricultural practices.

Risk Attitudes: In our sample, about two-thirds of the farmers (67%) exhibited risk-averse behaviors, often favoring traditional and well-known farming practices over innovative ones. This predisposition towards familiarity and tradition manifests as a considerable impediment to the adoption of novel or sustainable farming methods. As such, risk aversion plays a pivotal role in shaping the agricultural choices of farmers and could act as a barrier to farming innovation and sustainability.

Role of Local Knowledge and Experience: A vast majority of the farmers (90%) heavily depended on their historical experiences and indigenous knowledge to make farming decisions. This strong reliance on experiential knowledge underscores the value they place on their personal experiences and local wisdom. Indeed, this ingrained wisdom was often found to be a more influential determinant in their decision-making process than formal education or expert advice. Thus, the role of local knowledge and lived experiences holds significant weight in guiding the farmers' decision-making, potentially overruling other sources of knowledge.

3.3. Discerning the Impact of these Decisions on Agricultural Sustainability and Rural Development

Farmers' decision-making processes bear profound implications that stretch beyond their individual farming practices and outcomes, penetrating deeper to impact agricultural sustainability and rural development on a broader scale. For instance, farmers demonstrating risk-averse attitudes tend to shy away from adopting sustainable farming practices. This behavioral pattern, while understandable in the face of uncertainty, carries far-reaching implications for environmental sustainability and the long-term vitality of the agricultural sector.

Moreover, the entrenched reliance on local knowledge and experiences highlights the paramount importance of integrating cultural sensitivity and local appropriateness into extension services. These services, designed to promote sustainable development, should acknowledge and respect the wisdom contained in years of lived experience. By doing so, they open avenues for interventions that are more likely to be accepted and acted upon, such as enhancing education and awareness surrounding sustainable farming practices and the realities of climate change.

The findings presented in this study resonate with the tenets of the Sustainable Livelihoods Approach, which underscores the complex interplay of various forms of capital in shaping rural livelihoods and the decision-making processes therein (Scoones, 1998). The observations also dovetail with the insights put forth by Spence and Pidgeon

(2010) and Carlisle (2014) regarding the influential role perceptions and belief structures play in guiding agricultural decision-making.

However, this study goes a step further, adding a unique perspective to the expanding scholarly conversation on the intricacies of agricultural decision-making among rural families. The novelty lies in its exploration of these dynamics within the context of a developing nation, a setting often fraught with its own unique challenges and opportunities. This facet of the study enhances its contribution to the literature, inviting future research to delve deeper into these complexities and devise effective strategies to promote sustainable agricultural practices.

4. CONCLUSIONS AND RECOMMENDATIONS

The study provides insight into how rural households in Nueva Ecija, the Philippines, make agricultural decisions. The study demonstrates that risk attitudes, individual experiences and beliefs, and domestic circumstances all complicate decision-making. The results show that while making agricultural decisions, farming families value local knowledge and experience. This result complements the Sustainable Livelihoods Framework and highlights the value of local knowledge as a vital component of human capital. Additionally, the study demonstrates that a key consideration in agricultural decision-making is risk aversion. This suggests that programmes aimed at promoting the use of innovative farming methods should consider strategies to lower perceived risks and uncertainties, like providing farmers with reliable information, support, and training. Furthermore, it became clear that farming decisions were significantly influenced by views of climate change. The need for climate-smart agricultural treatments that take into account farmers' experiences and perceptions of climate change is highlighted by this finding.

The findings of this research provide valuable insights and call for several strategic recommendations. Training and capacity-building programmes in agriculture should take a more inclusive approach that encapsulates local knowledge and wisdom. Recognising the value of farmers' lived experiences can enhance their capacity to adapt to changing circumstances, ultimately fostering a resilient farming community. Risk aversion was prominent among the farmers, suggesting the need for structured risk management strategies. Such strategies could involve offering crop insurance, improving access to credit, and promoting diversified farming systems. These approaches may stimulate innovation and sustainable farming by reducing risk. The study found that farmers' views on climate change strongly influenced their agricultural decisions. Policymakers and practitioners should take heed of this, promoting climate-smart agricultural practices that resonate with these perceptions. Such practices could contribute to improving farm productivity, bolstering resilience, and mitigating the release of greenhouse gases. Future research could provide further valuable insights. One possible area of exploration could be how local knowledge and wisdom can be effectively integrated into the design and implementation of agricultural interventions. Additionally, the role of gender and age in agricultural decision-making could be investigated to provide a more comprehensive understanding of farming households' dynamics. This study has illuminated the influential roles of local knowledge, risk attitudes, and climate change perceptions on the decision-making processes of rural households in Nueva Ecija, Philippines. A deeper understanding of these nuanced factors is vital in crafting effective agricultural interventions and policies, ultimately contributing to the sustainability and resilience of the farming sector.

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