DETERMINANTS OF HAPPINESS AMONG RICE FARMERS IN NIGER STATE, NIGERIA: A COMPREHENSIVE ANALYSIS

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Abstract

This paper examines the determinants of rice farmers' happiness in Niger State, Nigeria. Using a multi-stage sampling approach, the study selected a sample of 384 rice farmers from the Katcha, Shiroro, and Wushishi local government areas. The selection criteria for these areas were based on factors such as the intensity of rice farming activities and the diversity of farming practices. Data collection took place over a specified time frame (July 2024 to October 2024), utilizing a structured questionnaire. The data were analyzed using frequency distributions, mean scores, and probit regression models. Results indicate that rice farmers generally reported satisfaction with their well-being; however, key determinants like education level and farming experience were observed to be limited among the population. In contrast, attributes such as age, marital status, and household size demonstrated a significant and positive effect on well-being. To promote the happiness of rice farmers, it is recommended that government and agricultural stakeholders prioritize these impactful factors.

Keywords: Farmers, Happiness, Rice, Specialization, Well-being,

Jel Classification Codes: I3, Q12, Q18

1. Introduction

Rice (*Oryza sativa*) holds a central position as one of the world's primary staple crops, playing a crucial role in food security and economic development (Adeyanju et al., 2023). It provides half of the caloric intake for two-thirds of the global population (Achichi et al., 2023). As reported by the Food and Agriculture Organization (FAO, 2019), rice ranks as the fourth most extensively cultivated crop in terms of production and land area, following sorghum, millet, and maize. Global demand for rice is projected to increase by 28% by 2050 (Okolie et al., 2022), with over 3.5 billion people depending on rice for approximately 20% of their daily caloric intake (Gadal et al., 2019). This rising demand may necessitate changes in production methods and adjustments in food policies to ensure sustainable supply, particularly in regions heavily dependent on rice as a dietary staple. Nigeria stands as the leading producer and consumer of rice in both West Africa and Africa, yet it also ranks among the world's top rice importers (FAO, 2019). As Africa's foremost rice producer, Nigeria contributes approximately four million tonnes to the continent's annual production of 14.6 million tonnes, underscoring its dual role in meeting both domestic demand and broader African consumption needs (Promise, 2023). However, despite its significant production output, Nigeria's high consumption rates have driven continued rice importation to bridge supply gaps.

Niger State has solidified its position as Nigeria's primary rice-producing region, yielding an estimated 629,800 metric tons in 2021 (National Agricultural Extension and Research Liaison Services, 2021). This figure highlights a steady rise in production, supported by smallholder farmers who remain the backbone of rice cultivation in the region. These farmers achieve an average yield of about 2.5 metric tons per hectare (Dauda et al., 2020), a metric that has shown modest improvements in recent years. Additionally, the area under rice cultivation in Niger State expanded significantly, from 430,000 hectares in 2019 to 500,000 hectares in 2020, demonstrating a concerted effort to boost output to meet the growing national demand (National Bureau of Statistics, 2021). With Nigeria's growing population, rice production is increasingly vital for food security, job creation, and raising farmer incomes, all of which contribute to the agricultural sector's overall well-being (Omoregie et al., 2018). In studying farmer well-being, terms such as "happiness," "subjective well-being," and "quality of life" are frequently used interchangeably, yet each has nuanced meanings. "Happiness" typically refers to a person's overall emotional state and positive affect. "Subjective well-being" is a broader measure that includes individuals' cognitive evaluations of their life satisfaction and emotional experiences. "Quality of life," meanwhile, encompasses both material and non-material conditions affecting life satisfaction, including health, environment, and access to resources (Easterlin, 2001). Collectively, well-being refers to a condition where individuals realize their potential, handle life's daily challenges, work productively, and participate actively in their community (Silva et al., 2024).

Well-being is shaped by numerous factors, including safety and security, physical and mental health, personal relationships, access to goods and services, and perceptions of fairness within society (Livingston et al., 2022). These factors can vary significantly among individuals due to differences in socioeconomic characteristics, such as income, education, and occupation. For farmers, well-being is a dynamic process shaped not only by general life factors but also by occupation-specific influences. Farming introduces

unique challenges and stressors, such as physical demands, weather dependency, and market fluctuations. Thus, factors like age, marital status, education, farming experience, and household size can play a significant role in farmers' overall quality of life and well-being (Deepak et al., 2024).

Despite the essential role of rice farming in Niger State's agricultural landscape, there is a critical gap in understanding what specifically contributes to the happiness and subjective well-being of rice farmers in the region. While previous studies have predominantly focused on productivity and economic outcomes, they have often overlooked the social and personal determinants that impact rice farmers' happiness and satisfaction levels. Although studies by Enwerem and Ohajianya (2013), Bola et al. (2012), Afolami et al. (2012), and Matanmi (2011) provided foundational insights, they are now dated. More recent research, such as Babaji (2024), Omoyajowo et al. (2023), Gyong and Ahmed (2024), and Alabi et al. (2024), has not addressed the subjective well-being of rice farmers specifically. Key determinants such as social support, financial security, farming challenges, and personal health have yet to be thoroughly explored in this context. Without a comprehensive understanding of these social and personal factors, targeted interventions and support mechanisms cannot be effectively designed to enhance rice farmers' quality of life or promote sustainable agricultural practices. This research aims to address this gap by investigating the complex interplay of social factors that influence the happiness levels of rice farmers in Niger State, Nigeria. This study aims to shed light on the factors that truly impact rice farmers' well-being, with the hope that these insights will lead to policies and support systems that make a meaningful difference in their lives, bringing greater satisfaction and stability to their work and livelihoods.

2.0 Literature Review

The study is theoretically anchored in Utility Theory, particularly Jeremy Bentham's utilitarian principles (1748–1832). Bentham's philosophy centres on maximizing happiness and minimizing suffering. For Bentham, "utility" referred to an action's ability to bring pleasure or reduce pain. Actions that increase happiness are morally good, while those leading to suffering or unhappiness are morally bad. His theory relies on two core assumptions: experiences can be measured by their pleasure or pain, making utility quantifiable, and the overall societal good can be assessed by aggregating individual utilities to derive a measure of collective happiness (Read, 2004).

Aligned with this theory, the study applies Bentham's utility framework to assess the happiness of rice farmers in Niger State, Nigeria, with a focus on their productivity and well-being. Utility Theory here provides a lens to evaluate farmers' well-being, considering not only income but also factors like job satisfaction, access to resources, and social support. This comprehensive approach allows for a more holistic understanding of happiness determinants, aligning to maximize individual utility. By understanding the collective happiness of farmers, policymakers and agricultural stakeholders gain a clearer picture of how to design interventions that genuinely enhance the quality of life within the farming community.

Through Utility Theory, this study captures multiple dimensions of happiness, including economic, social, and psychological factors, offering a meaningful framework for

policies aimed at boosting not only agricultural productivity but also the subjective well-being of rice farmers in Niger State.

Over the past three decades, happiness has become a key focus in academia, politics, and everyday life (Stoia, 2016). The term "happiness" first appeared in English in the early 16th century, evolving from the late 14th-century adjective "happy," which initially conveyed luck or fortune (McMahon, 2006). This origin traces back to the Old Norse word "hap," also the root of "happenstance" (McMahon, 2006). This evolution highlights happiness's shift from a chance occurrence to a state of mental well-being—a shift that informs how we understand and value farmers' happiness today.

Research by Phillips et al. (2017) defines happiness through a threefold concept: high positive affect, low negative affect, and robust life satisfaction. In contemporary psychology, happiness involves these interrelated components of subjective well-being. Life satisfaction includes overall life evaluations and satisfaction with domains such as work, income, health, environment, and relationships. Positive affect reflects frequent positive moods, while negative affect refers to less frequent negative emotions (Ballas & Thanis, 2022).

Determinants of Happiness among Rice Farmers

The determinants of happiness are central to public policy development, driving extensive research into factors that influence well-being. Frey and Stutzer (2003) categorize these determinants into three main groups: personality and demographic factors, micro- and macro-economic factors, and institutional factors. Personality factors, such as optimism and resilience, shape how individuals perceive and respond to life events. Demographic factors, including age, gender, education, and marital status, play substantial roles in shaping subjective well-being (SWB). For instance, research indicates that married individuals often experience greater physical and psychological health than single individuals (Frey & Stutzer, 1999). Similarly, age and education are linked to variations in happiness, with older adults and those with higher education often reporting higher levels of life satisfaction.

Micro- and macro-economic factors encompass economic indicators that impact daily life, including income, unemployment, and inflation. While higher income generally correlates with increased happiness, this relationship is complex; economic fluctuations can lead to both gains and losses in well-being. For instance, a sudden decrease in income can directly reduce happiness due to increased financial strain, while rising inflation may erode purchasing power, creating additional stress. For rice farmers, economic stability is essential, as market price fluctuations, income instability, and agricultural risks directly influence their well-being. Institutional factors, such as democratic governance and good governance, also impact happiness. Strong institutional systems create a sense of security and trust in public institutions, promoting higher levels of SWB (Bruni, 2004). Indicators like freedom, government trust, and public safety often measure how institutional quality affects happiness (Frey & Stutzer, 1999). When economic and institutional factors align positively, they reinforce stability and trust, supporting better well-being for farmers.

The impact of these determinants on happiness can vary widely depending on the societal and demographic context. For rice farmers, the influence of happiness determinants may be shaped by their unique socioeconomic and environmental circumstances. In conclusion, rice farmers' well-being is shaped by a complex interaction of personal, economic, and institutional factors. Understanding these determinants, as highlighted by Frey and Stutzer (2003) and Bruni (2004), provides valuable insight for creating policies that enhance their quality of life and overall satisfaction.

Empirical Review

Haitao et al. (2024) assessed the impact of agricultural technology adoption on farmers' well-being in China. Cross-sectional data analyzed using probit models showed that the adoption of improved upland rice technology had a significant positive effect on well-being by increasing productivity and income. The study concluded that technological innovation is instrumental in improving both the economic and psychological well-being of farmers.

Naomi et al. (2023) conducted a study to assess the happiness levels of farmers in TegalBedug village. Employing mixed-methods research with the Oxford Happiness Questionnaire administered to 37 participants, they found that the farmers exhibited moderate levels of happiness. Key positive factors included good health, strong family relationships, and goal achievement, whereas negative self-perception hindered happiness. The study concluded that socio-personal factors play a significant role in shaping happiness in rural communities.

Avril and Simon (2022) examined the relationship between social support, stress, and psychological well-being among Irish farmers. Using a cross-sectional survey and analyzing the data with multiple regression and probit models, they found that social support significantly reduced stress and improved psychological well-being. The study concluded that strong social networks play a critical role in buffering stress and enhancing well-being.

Pehlivan et al. (2022) conducted a systematic review of the literature on the relationship between education and happiness. The findings revealed mixed results, showing that education indirectly affects happiness through mechanisms such as income and social mobility. The study concluded that the impact of education on happiness is complex and multi-faceted.

Nunez et al. (2020) explored the role of education in shaping happiness in Spain. Using data from the European Social Survey and applying Ordinal Logit Models, they discovered that education indirectly affects happiness by enhancing social capital, self-confidence, and self-esteem. The findings indicated that higher levels of education improve social networks and personal confidence, which indirectly contribute to greater happiness.

Bilal and Kinza (2020) investigated the determinants of happiness in Indonesia. Using cross-sectional data from the Indonesia Family Life Survey (wave IV, 2007) and analyzing it with Conditional Mixed Process (CMP) estimation models, they identified income, education, health, and social capital—such as willingness to help and

tolerance—as significant contributors to happiness. The study concluded that socio-economic and community dynamics are crucial for individual well-being.

Marlina et al. (2020) examined workplace happiness among public sector employees in Lahad Datu. Based on questionnaires completed by 106 respondents, analyzed using Multiple Regression, ANOVA, and Principal Component Analysis (PCA), the study found that work status, income, social support, and job conditions significantly influenced happiness levels. The researchers concluded that economic and workplace factors are central to fostering happiness at work.

Sodeeq et al. (2019) investigated the impact of credit access on farmers' well-being in Osun State, Nigeria. Using structured questionnaires collected from 150 farmers and analyzed through logit regression, they found that credit access positively influenced farmers' well-being by improving their financial stability. The study concluded that financial access is vital for enhancing rural livelihoods. The study by Rukumnuaykita and Pholphirulb (2016) assessed happiness in relation to social capital in rural Thailand. Structured questionnaires were analyzed using logit models, revealing that marital status positively and significantly correlates with happiness. The findings concluded that social capital and family dynamics are key drivers of happiness in rural settings.

The study by Cuñado and Gracia (2012) aimed to investigate the correlation between education and happiness in Spain. Utilizing data from the European Social Survey and employing Ordinal Logit Models, the researchers found that education influences happiness both directly and indirectly. The indirect effects occur via income and employment, while the direct effects are mediated by socio-economic factors. The study concluded that education indirectly enhances happiness through economic opportunities while also exerting direct socio-economic impacts. Tenaglia (2007) investigated the link between education and life satisfaction. Using a cross-sectional survey and regression analysis, the study found a weak correlation between education and happiness, with higher education levels often raising expectations that led to dissatisfaction. The study concluded that rising aspirations associated with education could dampen life satisfaction.

Putnam (2001) explored the role of social capital in individual and community happiness. Analyzing cross-national data, the study found that higher levels of social capital, characterized by trust and community engagement, were strongly correlated with increased happiness. The findings concluded that community participation is pivotal for fostering happiness.

Methodology

This study employed a multi-stage sampling procedure to select participants. In the first stage, one Local Government Area (LGA) with high rice production was purposively selected from each of the state's three agricultural zones. Notably, Zone A includes Katcha LGA, Zone B includes Shiroro LGA, and Zone C includes Wushishi LGA. This information contextualizes the selection process by illustrating the representativeness of each selected LGA within its zone. In the second stage, three villages renowned for extensive rice cultivation were purposively chosen from each selected LGA, resulting in a total of nine villages for the study. Finally, in the third stage, 384 rice farmers were

randomly selected from these villages, representing a fraction of the total population of 515,000 rice farmers in the state. Data were collected using structured questionnaires and interview schedules and analyzed using frequencies, percentages, means, and probit regression.

The questionnaire underwent validity and reliability testing. Content validity was established through expert review, ensuring alignment with the study's constructs, while reliability was tested using Cronbach's alpha, achieving a coefficient above the acceptable threshold of 0.7. The Taro Yamane (1967) formula was applied for sample size calculation, yielding an initial sample size of 400. However, 384 responses were collected and analyzed, a number sufficient to maintain a 95% confidence level with minimal loss of statistical power. Efforts were made to address non-response bias by following up with participants where feasible.

$$n = \frac{N}{1+N\,(e)^2}$$

Where

n= Desired Sample Size

N=Total Population

e =Error limit on the basis of 95% degree of freedom

1 = constant

Thus,

$$n = \frac{515000}{1 + 515000\,(0.05)}2$$

$$n = \frac{515000}{1 + 515000 \times 0.0025}$$

$$n = \frac{515000}{1288.5}$$

$$n = 399.99$$

$$n \simeq 400$$

Hence, the entire number of registered rice farmers in Niger state is 515,000 and the number of respondents for the study using the sampling technique is 400 respondents. However, the results obtained were 384 instead of 400 as not all questionnaires were returned by the respondent.

Table 1 Summary of Sampling Procedures for the Study

Agricultural Zones	Selected LGA	Selected Villages	Sampling Size
Zone I	Katcha	Badeggi	54
		Katcha	45
		Gbakogi	32
Zone II	Shiroro	Baha	40
		Gussro	48
		Paigado	37
Zone III	Wushishi	Maito	50
		Kanko	42
		Agwa	36
TOTAL	**3**	**9**	**384**

Source: Niger State Agricultural and Mechanization Development Authority (NAMDA,2020)

Table 2 List of Independent Variables and their Measurements

Independent Variables	Empirical Measurements
Age	measured in years
household size	measured by the number of individuals
marital status	Through scoring
Education	Through scoring
Farming Experience	Through scoring

Source: Authors' Survey (2024)

The model is expressed as in equation (3.1)

$$\Pr(\text{Hpi} = 1/\text{Xi}) = \Phi\,(\beta 0 + \beta 1\text{FmrExpi} + \beta 2\text{edui} + \beta 3\text{agi} + \beta 4\text{hhzi} + \beta 5\text{msti} + \text{ut})$$

$$\Pr(Hp_i=1/X_i) = \Phi\ (\beta_0 + \beta_1 FmrExp_i + \beta_2 edu_i + \beta_3 ag_i + \beta_4 hhz_i + \beta_5 mst_i + u_t) \quad \text{……...3.1.}$$

Where Pr (Happiness = 1) is Probability of individual rice farmer being happy in rice farming, $FmrExp_i$ is to total number of years in rice farming, ag_i is age of individual rice farmer, edu_i is education level of individual rice farmer, hhz_i is household size of individual rice farmer; mst_i is marital status of individual rice farmer, u_t is the error term, β_s is the coefficients of the independent variables and Φ is the cumulative distribution function of the standard normal distribution.

4.0 Results and Discussion

Table 3 provides a descriptive analysis of the age, marital status, and educational background of surveyed farmers. The age distribution shows that the majority of farmers are relatively young, with 29.94% aged 20-29 and 52.85% aged 30-39, while smaller percentages fall into the 40-49 (10.14%) and 50-59 (7.07%) age groups. Regarding marital status, 79.95% of the respondents are married, which suggests that many farmers rely on family labour, enhancing productivity and food security.

Table 3 Demographic Profile of the Rice Farmers

Demographics		Frequency	Percentage %
Age	20 –29	115	29.94
	30 – 39	203	52.85
	40 – 49	39	10.14
	50 – 59	27	7.07
Total:		**384**	**100**
Edu level:	Non-formal	101	26.3
	Formal	283	73.73
Total:		**384**	**100**
Marital Status:	Single	77	20.05
	Married	307	79.95
Total:		**384**	**100**

Source: Field Survey, 2024

Educationally, 73.73% of the farmers have formal education, which likely aids in technology adoption and increases productivity and happiness. These findings align with previous studies by Tsoho (2024) and Yisa (2024), highlighting the role of education in managing agricultural complexities.

Table 4 Probit Estimation for the determinants of rice farmer's happiness by social factors

Farmers Happiness	**Coefficient**	**Std. Err.**	**Margins**
Age	-0.550	0.305	17.12(0.072) *
Education	-0.025	0.147	0.363(0.865)
Marital status	0.182	0.097	0.001(0.061) *
Household size	0.095	0.012	0.001(0.000) ***
Farmers Experience	-0.013	0.127	0.000(0.276)
Number of Obs	384		
LR chi2(5)	72.36		
Prob > chi2	0.000		
Pseudo R2	0.1411		

Notes: Robust standard errors are in parentheses, P values: significance *10%; **5%; ***1%.

Source: *2024 fieldwork*

The findings from Table 4 indicate a negative and statistically significant marginal effect of age on the happiness of rice farmers at the 5% significance level. Specifically, a one-unit increase in the age of farmers is associated with a 17% decrease in their level of happiness. This negative relationship can be attributed to two main factors. First, older rice farmers, due to their advanced age, tend to devote less time to agricultural operations, often delegating responsibilities to younger household members who may lack sufficient experience. This shift in management can adversely impact the productivity of the farm, which in turn affects the farmers' overall happiness. These results align with previous studies by Choukou et al. (2021) and Ahmed & Ray (2023).

In contrast, marital status shows a positive and statistically significant marginal effect at the 10% level, suggesting that an increase in the farmers' marital status is associated with a higher level of happiness. Specifically, there is a 1% increase in happiness with each unit increase in marital status. This finding may reflect the motivations associated with marriage, such as the desire to raise children and enhance family labour capacity, which can lead to greater productivity and overall happiness. However, the relatively low percentage of married rice farmers in the study area may limit the availability of affordable family labour, potentially contributing to decreased productivity. This observation corroborates the findings of Okwu and Acheneje (2020), which indicated that an increase in the number of married farmers leads to greater family labour availability, thereby enhancing crop yield and farmer happiness in the region.

Moreover, the marginal effect of household size is positive and statistically significant, indicating that a one-unit increase in household size is associated with an increase in the happiness of rice farmers. The percentage change in happiness is also at a 1% increase. This suggests that larger household sizes can enhance productivity and happiness levels, as additional household members represent a potentially exploitable labour force for rice farming. These findings are consistent with the studies of Barry et al. (2018), Sharma et al. (2020), Nkonki et al. (2019), Omotayo (2017), Omotoso et al. (2018), and Omotayo and Oladejo (2016).

Conclusion

This study presents a comprehensive analysis of the determinants of happiness among rice farmers in Niger State, Nigeria, shedding light on the intricate interplay between demographic factors and subjective well-being. The findings reveal that age, marital status, and household size serve as significant predictors of happiness among these farmers. Specifically, an increase in age is associated with a decline in happiness, potentially reflecting the physical and psychological challenges that come with ageing and reduced engagement in agricultural activities. In contrast, marital status emerges as a crucial factor positively influencing happiness, underscoring the critical role of social support and familial cohesion in enhancing individual well-being. Furthermore, the observation that larger household sizes contribute to increased happiness suggests that the availability of additional labour and shared responsibilities can mitigate the hardships associated with farming. These insights corroborate the assertions made in the literature by Frey and Stutzer (2003) and Okwu and Acheneje (2020), emphasizing the essential role of personal and socio-economic factors in shaping well-being. However, this study extends the existing body of knowledge by contextualizing these relationships within the unique socio-economic landscape of Niger State, thus addressing previously identified gaps in the literature regarding the happiness of agricultural practitioners.

Areas for Future Research

1. Impact of Delegation by Older Farmers: While older farmers may delegate responsibilities to younger household members, the implications for farm productivity and overall household well-being remain underexplored. Future studies could investigate whether this delegation positively or negatively affects farm outcomes and the psychological well-being of both older farmers and the younger members assuming these roles.

2. Mediators of Marital Status Effects: The study highlights a positive relationship between marital status and happiness but does not delve into potential mediating factors such as economic stability, social support systems, or shared labour contributions. Future research could disentangle these elements to better understand the pathways through which marital status influences happiness.

3. Challenges of Larger Household Sizes: Although larger households are linked to greater happiness, future studies should explore the potential downsides, such as resource competition, financial strain, or conflicts arising from increased interdependence within large families.

4. Role of Gender Dynamics: Investigating gender-specific determinants of happiness among farmers would enrich understanding, as the effects of age, marital status, and household size may differ between male and female farmers due to societal roles and expectations.

5. Broader Socioeconomic Contexts: Comparative studies in other regions or agricultural systems could provide valuable insights into whether these findings are unique to Niger State or consistent across different socio-economic and cultural landscapes.

6. Policy-Oriented Studies: Research into interventions aimed at supporting ageing farmers, such as technology adoption, capacity building for family members, or community-based support programs, could inform strategies to enhance productivity and well-being simultaneously.

By addressing these gaps, future research can build on the foundation laid by this study, contributing to a more nuanced understanding of the factors influencing the happiness of agricultural practitioners. Such inquiry will be instrumental in designing policies that promote both sustainable farming practices and improved quality of life for farmers.

Recommendations

1. Support for Younger Farmers through Targeted Programs: To counter the negative impact of ageing on happiness, future research could investigate the specific barriers preventing younger individuals from entering the agricultural sector. Studies might explore how youth-oriented programs, such as subsidized training in modern farming techniques, access to low-interest loans, and mentorship opportunities with experienced farmers, influence younger farmers' participation and happiness. Policymakers can use these insights to design tailored agricultural schemes encouraging youth engagement and innovation.

2. Detailed Exploration of Family and Community Structures: Research could delve deeper into how community networks and family structures contribute to farmers' well-being. For example, future studies might assess the effectiveness of cooperative farming models in fostering resource sharing, labour collaboration, and social support. Insights from such studies could guide the implementation of policies promoting cooperative farming or initiatives that encourage familial participation in agricultural activities.

3. Development of Comprehensive Support Services: Studies should focus on identifying the specific needs of ageing and single farmers, including their access to healthcare, social services, and mental health counselling. Research could examine how mentoring programs or structured farm management transitions impact the happiness and productivity of ageing farmers while empowering younger generations. These findings can shape social welfare policies and support services for farmers.

4. Incorporating Social Capital in Agricultural Policy Design: Future research could investigate particular aspects of social capital, such as the role of local agricultural networks, access to shared resources, and community decision-making in enhancing happiness and productivity. Policymakers can use these findings to foster inclusive policies that strengthen social networks and community engagement among farmers.

5. Longitudinal Studies on Demographic Dynamics: Conducting longitudinal studies on how changes in household size, marital status, and community structures influence farmers' happiness over time can provide valuable data. This research can help refine policy interventions aimed at sustaining long-term well-being for farming communities, particularly in dynamic socio-economic environments.

6. Informing Agricultural and Social Policies with Data-Driven Insights: Regular and detailed data collection on demographic and socio-economic factors affecting farmers' happiness is essential. Researchers could explore the relationship between education, farm income, and subjective well-being to guide the development of education campaigns, financial subsidies, and resource allocation tailored to farmers' needs.

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