

## The Influence of Farmers Characteristics on Community Interest in Cattle Farming: A Quantitative Study in Taji Village, Jabung District, Malang Regency

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**Abstract.** *Cattle farming plays a strategic role in rural economic development by generating employment, supplementary household income, and contributing to food and nutritional security. However, in Indonesia, most smallholder cattle enterprises remain traditional and small-scale, leading farmers to treat livestock farming primarily as a secondary livelihood. While previous studies have largely focused on technical adoption and production performance, limited attention has been given to farmers' psychological interest as a foundation for sustaining livestock enterprises. Therefore, this study aims to analyze the level of community interest in cattle farming and examine the influence of farmers' characteristics (age, education level, herd size, number of family dependents, farming experience, and primary income) on such interest. A quantitative survey was conducted involving 34 cattle farmers in Taji Village, Jabung District, Malang Regency, selected using total sampling. Data were collected through structured questionnaires and analyzed using multiple linear regression. The findings reveal that community interest in cattle farming is generally high, as reflected in emotional (3.93), cognitive (3.81), and conative (3.74) dimensions measured on a four-point Likert scale. Regression results indicate that age has a significant positive effect ( $p = 0.022$ ), whereas farming experience has a significant negative effect ( $p = 0.025$ ) on interest levels. Other variables show no statistically significant influence. These findings highlight that psychological engagement in cattle farming is shaped more by demographic and experiential factors than by formal education or income level. The study contributes to the literature by positioning interest as a psychological determinant of livestock sustainability. Policy implications emphasize the urgency of risk-mitigation extension programs to address farmer burnout, incentivized intergenerational knowledge transfer, and cooperative-based institutional support to ensure smallholder livestock sustainability.*

**Keywords:** *Farmer characteristics, Cattle farming, Community interest, Farmer motivation, Livestock management, Rural development, Smallholder livestock*

## INTRODUCTION

Cattle farming represents an important component of rural economic systems in many developing countries, contributing to household income diversification, employment generation, and food and nutritional security. In Indonesia, the livestock sector plays a strategic role in supporting rural livelihoods, particularly among smallholder farmers who rely on mixed farming systems (Badan Pusat Statistik [BPS], 2023; Hilmiati et al., 2023). Beyond its economic value, cattle ownership also functions as a form of household savings, risk mitigation, and social capital in rural communities.

Despite its strategic importance, cattle farming in Indonesia remains predominantly small-scale and traditional. National statistics indicate that more than 5.7 million smallholder farmers manage an average of only one to three cattle per household, with limited integration into formal market systems (BPS, 2023). This structural condition restricts productivity growth and reinforces the perception of cattle farming as a secondary livelihood rather than a primary economic enterprise. Similar patterns are observed in various rural areas, including Taji Village, Jabung District, Malang Regency, where cattle farming is largely treated as a supplementary activity despite favorable agroecological conditions.

Previous studies have primarily examined farmer characteristics in relation to technology adoption, production efficiency, and farm performance (Makatita, 2021; Baba et al., 2023; Hilmiati et al., 2023). International research has also emphasized determinants of livestock innovation adoption, institutional constraints, and behavioral intentions using frameworks such as the Theory of Planned Behavior (Li et al., 2022; Villano et al., 2023). These studies highlight the role of socio-demographic variables, access to resources, and psychological factors in shaping farming decisions. However, limited attention has been given to interest as a distinct psychological construct that underlies sustained engagement in livestock enterprises.

Interest, as conceptualized by Crow and Crow (1958), comprises *affective* (emotional attachment), *cognitive* (knowledge and awareness), and *conative* (behavioral willingness) dimensions. Within the context of cattle farming, interest reflects not only economic rationality but also psychological commitment and motivation to continue and develop livestock activities. Understanding this construct is crucial, as psychological engagement may determine whether farmers maintain, expand, or gradually withdraw

from livestock enterprises. Although several local studies in Indonesia have identified relationships between farmer characteristics and behavioral outcomes, few have explicitly positioned interest as the central dependent variable. Consequently, the psychological foundation of farmers' engagement in cattle farming remains underexplored, particularly at the community level in highland rural contexts.

Therefore, this study aims to (1) analyze the level of community interest in cattle farming based on emotional, cognitive, conative dimensions, and (2) examine the influence of farmers' characteristics (age, education level, herd size, number of family dependents, farming experience, and primary income) on such interest in Taji Village, Jabung District, Malang Regency. By integrating socio-demographic and psychological perspectives, this research seeks to contribute to a more comprehensive understanding of sustainable smallholder cattle farming development.

## **LITERATURE REVIEW**

Cattle farming plays an important role in rural economic development, particularly in developing countries where livestock production contributes to household income, employment opportunities, and food and nutrition security (Pedi, 2020). In Indonesia, however, cattle farming is still largely dominated by smallholder systems characterized by traditional management practices and limited production scale. The average ownership of cattle is approximately three head per farmer, indicating low production efficiency and limited economies of scale (Hilmiati et al., 2023). These conditions highlight the importance of understanding factors that influence farmers' motivation and interest in developing cattle farming enterprises.

Farmer characteristics have been widely recognized as important determinants of agricultural decision-making and farm development. According to Sugiyono (2017), socio-demographic variables such as age, education level, farming experience, and socio-economic conditions can influence individuals' attitudes and decisions in managing agricultural activities. Similarly, Makatita (2021) found that education level and herd size significantly affect the behavior of beef cattle farmers in managing their livestock enterprises. These findings indicate that individual characteristics may shape farmers' perspectives, management practices, and willingness to engage in livestock production.

From a psychological perspective, interest is defined as an internal motivation that consists of affective, cognitive, and conative components (Crow & Crow, 1958). The affective component relates to feelings or emotional attachment toward an activity, the cognitive component reflects knowledge and understanding, while the conative component represents the intention or tendency to act. In the context of cattle farming, interest can therefore be reflected in an individual's willingness to participate in and sustain livestock farming activities.

Several empirical studies have examined factors influencing interest in cattle farming. Magfirah (2023) reported that age, education level, farming experience, and number of family dependents simultaneously influence farmers' interest in beef cattle farming, although only farming experience shows a significant partial effect. Likewise, Baba et al. (2023) emphasized that farmer age and farming experience play important roles in shaping farmers' interest and adoption of livestock management practices.

Overall, previous studies indicate that individual characteristics are closely related to farmers' interest in livestock farming activities. However, the extent to which these characteristics influence interest may vary across different socio-economic and regional contexts. Therefore, further research is needed to examine how farmer characteristics affect community interest in cattle farming in specific local settings.

## **RESEARCH METHODS**

### **Research Location and Time**

This study was conducted purposively in Taji Village, Jabung District, Malang Regency, in November 2024. The location was selected due to its potential for cattle farming development from both geographical and socio-institutional perspectives. The village is located at the foothills of Mount Lawangan and Mount Kukusan at an altitude of approximately 1,200 meters above sea level with high rainfall levels, which support forage availability for livestock.

Despite these favorable natural conditions, cattle farming in the village is still managed individually by smallholder farmers. Although the village has an active farmer group (Kelompok Tani Kartika), there is no specific institutional organization dedicated to livestock management. In addition, statistical data indicate a decline in cattle population in Malang Regency in 2023 (BPS Malang Regency, 2023). These conditions

motivated the selection of Taji Village as the research site to better understand community interest in cattle farming.

### **Research Design and Data Collection**

This study employed a quantitative survey design to examine the relationship between farmer characteristics and community interest in cattle farming in Taji Village, Jabung District, Malang Regency. The quantitative approach was chosen because the study aims to measure relationships between variables using numerical data and statistical analysis. Data were collected through structured questionnaires administered via face-to-face interviews with cattle farmers. The questionnaire consisted of statements designed to measure respondents' socio-economic characteristics and their level of interest in cattle farming. The interest variable was measured through three dimensions: emotional, cognitive, and conative aspects.

In addition to questionnaires, direct field observations were conducted to obtain supporting information regarding cattle farming activities, livestock management practices, and the general conditions of the farming environment. These observations helped provide contextual understanding of the respondents' farming practices.

### **Questionnaire Development and Pre-Testing**

The questionnaire used in this study was developed based on relevant theoretical and empirical studies related to farmer characteristics and psychological aspects of interest in agricultural activities (Crow & Crow, 1958; Baba et al., 2023; Magfirah, 2023). The instrument consisted of two main sections: respondent characteristics and indicators measuring interest in cattle farming.

A quantitative survey method was used to collect data on farmers' characteristics and their level of interest in cattle farming. Data collection was conducted through direct observation and structured questionnaires administered to respondents. Interest in cattle farming was measured through three dimensions: emotional, cognitive, and conative interest, each represented by several statement items. Each item in the questionnaire was rated using a four-point Likert scale ranging from strongly disagree (1) to strongly agree (4), which measured respondents' level of agreement with statements representing each variable indicator as shown in Table 1.

**Table 1.** Likert Scale

Response	Symbol	Score
<i>Strongly Agree</i>	SA	4
<i>Agree</i>	A	3
<i>Disagree</i>	D	2
<i>Strongly Disagree</i>	SD	1

Before the main survey was conducted, the questionnaire was pre-tested on several farmers outside the study sample to ensure clarity of wording, relevance of the questions, and ease of understanding for respondents. Feedback obtained during the pre-test was used to revise several items and improve the overall clarity of the questionnaire.

### **Sampling Technique**

The population consisted of all cattle farmers in Taji Village, Jabung District, totaling 34 individuals (Village Administration, 2024). Considering the relatively small population size, this study employed a total sampling technique, in which all members of the population were included as respondents (Amirullah, 2015).

The inclusion criteria were:

1. Residents of Taji Village who actively raise cattle.
2. Individuals who conduct cattle farming as a secondary livelihood or as a household savings activity.

Using total sampling ensures that the sample adequately represents the characteristics of the cattle farming population in the study area.

### **Data Types and Sources**

1. **Primary data** were obtained through face-to-face interviews using structured questionnaires; focusing on farmers' characteristics (i.e., age, education, number of livestock, family dependents, farming experience, income) and their emotional, cognitive, and conative interest levels in cattle farming; direct observation; and documentation.
2. **Secondary data** were gathered from official statistics/bureau central statistics (BPS), local government documents, journal articles, and relevant reports to contextualize and validate findings.

## Research Variables

The study involved independent (X) and dependent variables (Y) as follows:

- **Independent Variables (X):**

X<sub>1</sub>: Age

X<sub>2</sub>: Education level

X<sub>3</sub>: Number of cattle owned

X<sub>4</sub>: Number of family dependents

X<sub>5</sub>: Farming experience (years)

X<sub>6</sub>: Main income from livestock

- **Dependent Variables (Y):**

Y<sub>1</sub>: Emotional interest

Y<sub>2</sub>: Cognitive interest

Y<sub>3</sub>: Conative interest

## Data Analysis

Descriptive statistics were used to summarize the socio-economic characteristics of respondents and the average scores of interest in cattle farming. To examine the influence of farmer characteristics on interest levels, multiple linear regression analysis was employed. The statistical analysis was conducted using IBM SPSS Statistics 27. Prior to regression analysis, several classical assumption tests were performed to ensure the validity of the regression model. These included normality, multicollinearity, and heteroscedasticity tests to verify that the model met the required statistical assumptions (Ghozali, 2018; Hair et al., 2021).

## Ethical Considerations

Ethical considerations were applied throughout the research process. Participation in this study was voluntary, and respondents were informed about the purpose of the research before the interviews were conducted. Prior to completing the questionnaire, respondents provided their consent to participate. All information obtained from

respondents was treated confidentially and used solely for academic purposes. The identities of respondents were kept anonymous during data processing and analysis.

## **RESULTS AND DISCUSSION**

### **1. Farmer Profiles and Baseline Community Interest**

The characteristics of cattle farmers in Taji Village reflect a typical profile of smallholder rural livestock farming in Indonesia. The majority of the farmers are over 40 years old (38%), have a primary education background (47%), and manage small-scale herds of 3 to 5 cattle (65%). The farmers' primary incomes fall within the lower-middle tier (IDR 1,000,000 – IDR 2,000,000 per month), reinforcing the premise that cattle farming is largely positioned as a secondary livelihood or an economic safety net (savings).

These profiles align with national patterns where smallholder cattle keepers operate on a small scale, often treating livestock as a secondary or complementary livelihood (BPS, 2023). Small herd sizes and low formal education are commonly observed across Indonesian rural cattle systems and constrain the uptake of technology and formal market participation (Animbiosci review, 2018; Valerio et al., 2022).

Despite being economically positioned as a supplementary enterprise, the community's psychological interest in cattle farming remains exceptionally high. Evaluations of interest indicators reveal average scores of 3.83 for the affective aspect, 3.81 for the cognitive aspect, and 3.74 for the conative aspect. These high affective and cognitive scores indicate that personal satisfaction, cultural pride, and a desire to understand animal health form the core foundation of the community's intrinsic motivation

### **2. Level of interest in cattle farming (emotional, cognitive, conative)**

Using a 1–4 likert scale, the results show the mean scores were: Emotional = 3.93, Cognitive = 3.81, Conative = 3.74 — indicating an overall high interest in cattle farming among respondents. High affective and cognitive scores show that respondents derive emotional satisfaction from cattle keeping and have interest in learning and knowledge development. This mirrors findings from studies showing that even when livestock is a secondary activity, intrinsic motivations (pride, identity, cultural tradition) and curiosity

about improved practices drive continued involvement (Balzani, et al., 2020; Villano, et al., 2023). Positive interest is a favourable base for extension and adoption programs because attitude and perceived benefit are strong predictors of intention to engage with innovations (Li et al., 2022; Rahman et al., 2023).

### 3. Determinants of Interest in Cattle Farming: Empirical Evidence from Regression Analysis

Statistical diagnostic tests confirmed that all instruments and the model met the classical assumptions (normality, absence of multicollinearity, and homoscedasticity), thereby validating the application of multiple linear regression. The following are the results of multiple regression analysis as shown in Table 2.

**Table 2.** multiple linear regression analysis

Model	Unstandardized Coefficients		Sig.
	B	Std. Error	
(Constant)	39.886	2.948	0
X <sub>1</sub> (age)	3.287	1.355	0.022**
X <sub>2</sub> (education level)	0.776	0.848	0.369
X <sub>3</sub> (size herd)	-0.478	1.005	0.638
X <sub>4</sub> (family dependent)	1.513	0.818	0.075
X <sub>5</sub> (farming experiences)	-2.533	1.068	0.025**
X <sub>6</sub> (primary income)	-0.534	0.839	0.53

a. Dependent Variable: Total Y

Note of notation:

\*\* :  $p < 0,05 \rightarrow$  Significant

ns :  $p \geq 0,05 \rightarrow$  not significant

The regression model demonstrated that demographic and socio-economic characteristics collectively account for 35.5% of the variance in farmers' interest. Two major determinants emerged as particularly noteworthy:

#### a. The Positive Influence of Age.

The age variable exerts a positive and significant effect on farming interest ( $p = 0.022$ ). This suggests that the inclination to raise livestock strengthens as individuals grow older. For the older demographic, livestock rearing transcends mere economic utility; it is intertwined with the preservation of tradition, social status enhancement, and long-term risk mitigation. This may reflect the role of livestock as part of longstanding household strategies (cultural continuity, savings/emergency capital), meaning older household heads value and maintain livestock as a legacy or risk-coping asset (Rustinsyah, et al., 2019). Similar patterns have been reported where older farmers maintain commitment to

traditional enterprises due to experience, asset ownership and social norms (Balzani et al., 2020; Touch et al., 2024). Older farmers may also realize non-monetary benefits (status, identity, family rituals) that sustain interest. Therefore, programs seeking to increase farmer engagement should frame interventions to respect and leverage the knowledge and motivations of older farmers (e.g., farmer-to-farmer mentoring), while also creating incentives that make livestock attractive to younger cohorts. Evidence indicates that participatory, culturally sensitive extension raises acceptability among older keepers (King, et al., 2023).

#### **b. The Paradox of Farming Experience.**

The most critical finding of this study is the confirmation of a significant negative correlation between the duration of farming experience and the level of interest ( $p = 0.025$ ). Intuitively, longer experience is presumed to align with higher competence and interest. However, this negative outcome points to a phenomenon of emotional fatigue or psychological burnout. Farmers who have operated for extended periods tend to adopt conservative attitudes and lose conative enthusiasm due to repeated exposure to structural barriers. These structural impediments include market price volatility, unresolved livestock diseases, and a lack of innovation at the village level. These findings in line with Chindasombatcharoen et. al., (2024); Touch et al., (2024); Ohashi et. al., (2023) which states that negative association between experience and interest resonates with research highlighting burnout, fatigue or disillusionment, repeated exposure to shocks, and conservative attitudes among long-time smallholders which can reduce intention to innovate or expand without supportive incentives.

#### **c. Non-Significant Factors.**

Formal education level, herd size (number of cattle), number of dependents, and primary income demonstrated no significant partial effects. This finding underscores that the construct of interest is profoundly psychological. Behavior and commitment are driven more by the perceived return on benefits and local cultural values than by basic demographic backgrounds. These non-significant results emphasize that interest (psychological disposition) is not determined only by traditional socioeconomic markers; it is multidimensional and influenced by expectations, perceived return, risk perception, cultural factors and prior experiences (Li et al., 2022; Villano et al., 2023). This reinforces

the need for mixed interventions (social, technical, and market) rather than purely education-based programs.

#### **d. Integration of Theoretical Perspectives and Rural Development Implications**

Viewed through the lens of Interest Theory (Crow & Crow, 1958), these findings reveal a disjunction between emotional and cognitive drives and the reality of execution. While the community's affective attachment is exceptionally strong, the growing conative reluctance among experienced farmers highlights an underlying crisis in the broader trajectory of rural livestock development. In a macro context, the burnout experienced by rural smallholders threatens the sustainability of food security and the national beef supply, particularly if these farmers choose to exit the sector or resist modernization

#### **e. Model diagnostics and explained variance**

Diagnostic tests including normality, multicollinearity, and heteroskedasticity test, indicate the regression model is statistically valid (VIFs < 10; normal P-P plot; no heteroscedasticity). The value of adjusted  $R^2 = 0.355$  suggests *moderate explanatory power*: a substantial share of variance ( $\approx 64.5\%$ ) remains unexplained, indicating important omitted variables (e.g., access to extension, market connectivity, risk perception, social capital, institutional support, credit access, and psychological constructs: attitude, perceived behavioral control) that literature identifies as strong determinants of agricultural intentions (Li et al., 2022; Rahman et al., 2023; Villano et al., 2023)

### **4. Policy Implication**

The findings of this study offer practical implications for local governments, agricultural extension workers, and relevant stakeholders in formulating sustainability strategies for smallholder cattle farming. Future policies should focus on three main pillars, as follows:

**1. Intergenerational Knowledge Transfer Mechanisms.** Considering that interest in cattle farming increases significantly with age, village governments need to facilitate mentorship programs between senior farmers—who possess strong emotional attachments and deep local wisdom—and the younger generation. To attract youth, who are often reluctant to enter this sector, local governments should provide

incentives such as start-up grants or facilitated access to microcredit specifically designed for young farmers.

- 2. Transformation towards Risk-Mitigation Extension Programs.** The negative effect of prolonged farming experience indicates the presence of psychological fatigue (burnout) caused by recurrent structural barriers. Therefore, extension programs must no longer focus solely on technical cultivation aspects (such as feeding methods or pen cleaning). Extension services should be expanded to include risk mitigation strategies, such as facilitating livestock insurance, providing proactive and responsive veterinary services, and offering crisis management training. This comprehensive approach will help experienced farmers regain their optimism and comfort in running their businesses.
- 3. Strengthening Institutional Support Systems.** The high affective and cognitive interest among farmers often does not align with the economic realities of small-scale (smallholder) farming. The government needs to encourage institutional strengthening at the village level, such as optimizing existing Farmers' Groups into fully functional Livestock Cooperatives. These cooperatives can subsequently take on strategic roles within the supply chain, including the provision of subsidized concentrate feed, collective negotiation of selling prices, and bypassing the middlemen networks that have frequently disadvantaged farmers.

## **CONCLUSION**

Based on the survey of 34 cattle farmers in Taji Village, it can be concluded that:

1. Community interest in cattle farming is high across emotional (3.93), cognitive (3.81), and conative (3.74) dimensions, indicating positive attitudes and readiness to engage.
2. Farmer characteristics collectively explain 35.5% of the variance in interest. Age variable positively and significantly predicts interest of cattle farming, with older farmers show greater interest. However, farming experience negatively and significantly predicts interest ( $p = 0.025$ ), suggesting that longer involvement may coincide with lower stated interest, potentially due to fatigue, disillusionment or conservatism. Furthermore, education level, herd size, number of family

dependents, and primary income were not significantly effect of cattle farming interest

3. These findings show that while intrinsic interest exists, converting interest into sustainable improvements requires addressing structural and psychological constraints that are not captured solely by basic socioeconomic indicators.

## **RESEARCH RECOMMENDATIONS**

1. Leverage the high interest among older farmers by formalizing knowledge transfer (elder to youth mentorship), establishing farmer groups/cooperatives, and documenting indigenous practices that can be scaled. Programs should include incentives for youth engagement (training, start-up grants) to ensure generational continuity.
2. Due to experience correlates negatively with interest, therefore interventions should concentrate on the pain points experienced farmers face: market stabilization measures (contracting, collective marketing), disease control programs (vaccination, veterinary outreach), and predictable input supply. Increase demonstration plots and peer success stories to restimulate engagement.
3. More focus on psychological and institutional determinants factor because many explanatory factors likely lie outside basic demographics, measure attitudes, perceived behavioural control, and perceived policy effectiveness in future programs.
4. Promote value-chain integration and services, such as: facilitate access to credit, veterinary services, feed supply, and market information via cooperatives or public–private partnerships.
5. Further research is recommended to use a qualitative approach to explore in depth the causes of burnout among experienced livestock farmers. Additionally, applied research is needed to evaluate the effectiveness of intergenerational knowledge transfer, as well as the development of an advanced quantitative model that incorporates variables such as risk perception and the role of institutional support (cooperatives) in shaping the resilience of small-scale farmers

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