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Unveiling the Determinants of Farmer Motivation in Goat Production: Evidence from Goat Farmers in Jombang District, East Java, Indonesia

Eko Nugroho*, Priyo Sugeng Winarto, Syaiful Ibnu Khafid

Faculty of Animal Science, Universitas Brawijaya, Malang, Indonesia
***Corresponding author's email: eko_nug@ub.ac.id**

Abstract. Goat farming is an essential livelihood strategy for rural communities, providing substantial economic and social advantages. However, there remains a vague understanding of the underlying motivations driving smallholder goat farmers' engagement, particularly in contexts with diverse socio-demographics and resource limitations. This study aimed to determine the most influential factors in goat-farming decisions by conducting a cross-sectional survey of 50 smallholder goat farmers. Data collection encompassed socio-demographic variables, as well as access to capital, infrastructure, market conditions, and policy support. Results revealed that capital and infrastructure significantly outweighed age, education, and farming experience in shaping farmers' level of involvement. Local markets received favorable ratings, but inconsistent government support highlighted significant policy gaps. Larger households benefited from greater labor availability, yet did not consistently adopt best practices. These findings highlight the primacy of resource-based and socio-familial factors in shaping smallholder motivation and illustrate the need for targeted interventions. Enhanced collaboration among government agencies, cooperatives, and community groups may promote more resilient and profitable goat-farming systems.

Keywords: extension services, financial access, livestock development, rural livelihoods, sustainability.

Abstrak. Peternakan kambing merupakan strategi mata pencaharian penting bagi masyarakat pedesaan, yang memberikan keuntungan ekonomi dan sosial yang substansial. Namun, masih terdapat pemahaman yang samar tentang motivasi mendasar yang mendorong keterlibatan peternak kambing skala kecil, terutama dalam konteks dengan beragam sosiodemografi dan keterbatasan sumber daya. Studi ini bertujuan untuk menentukan faktor-faktor yang paling berpengaruh dalam keputusan beternak kambing dengan melakukan survei potong lintang terhadap 50 peternak kambing skala kecil. Pengumpulan data mencakup variabel sosiodemografi, serta akses terhadap modal, infrastruktur, kondisi pasar, dan dukungan kebijakan. Hasil penelitian menunjukkan bahwa modal dan infrastruktur secara signifikan lebih dominan daripada usia, pendidikan,dan pengalaman bertani dalam membentuk tingkat keterlibatan peternak. Pasar lokal menerima peringkat yang baik, tetapi dukungan pemerintah yang tidak konsisten menyoroti kesenjangan kebijakan yang signifikan. Rumah tangga yang lebih besar diuntungkan oleh ketersediaan tenaga kerja yang lebih besar, tetapi tidak secara konsisten mengadopsi praktik terbaik. Temuan ini menyoroti keutamaan faktor berbasis sumber daya dan sosio-keluarga dalam membentuk motivasi peternak skala kecil dan menggambarkan perlunya intervensi yang terarah. Kolaborasi yang ditingkatkan antara instansi pemerintah, koperasi, dan kelompok masyarakat dapat mendorong sistem peternakan kambing yang lebih tangguh dan menguntungkan.

Kata kunci: layanan penyuluhan, akses keuangan, pengembangan peternakan, mata pencaharian pedesaan; keberlanjutan.

Introduction

Goat production has become an increasingly important component of smallholder livelihoods across diverse geographical contexts, offering critical benefits such as income diversification, food security, and social capital (Devendra, 2016). Current trends in goat farming practices reflect various economic, social, and environmental factors, along with a greater emphasis on sustainability and integrated systems. Many regions have experienced shifts in consumption patterns and evolving government policies that foster the uptake of small ruminant enterprises (Cheteni & Mokhele, 2019; Jemberu et al., 2022). For instance, goat production in Ethiopia has exhibited considerable growth, serving both subsistence- and market-oriented objectives (Anim-Jnr, 2023). Similarly, East African settings highlight goat's adaptability to harsh environmental

conditions and their ability to enhance food security among resource-poor households (Anim-Jnr, 2023; Bahta & Myeki, 2021). In parts of the Mediterranean, researchers observe innovative approaches to feeding and breeding systems, incorporating agroecological principles that address climate volatility and resource limitations (Durmuş et al., 2019; Kaumbata et al., 2021).

In many rural areas of Indonesia, goats become the "living savings accounts," readily liquidated to mitigate financial shocks or address urgent expenses (Budisatria et al., 2007; Udo & Budisatria, 2011). However, these benefits can only be fully realized if market structures and transportation facilities are adequate to facilitate efficient sales, price transparency, and broader access (Cheelo & Merwe, 2021; Kangile et al., 2020). Indeed, reliable roads, communication channels, and organized market networks lower transaction costs and foster commercial engagement, ultimately empowering farmers to scale up production (Hussain & Guha, 2023; Ndlovu & Masuku, 2021). Despite this, empirical research that isolates the motivational determinants driving Indonesian smallholder participation in goat production remains scarce, with most local studies concentrating on technical efficiency or animal health rather than on farmer motivation per se.

In tandem with infrastructural and market considerations, the social-demographic attributes of farmers significantly affect livestock management strategies and the adoption of improved practices. Education, age, and prior farming experience all shape the willingness to embrace new technologies, investments, or marketing approaches (Dube, 2020; Theweli, 2023; Young et al., 2014). Younger and better-educated farmers may be more likely to adopt climate-smart measures, value chain innovations, and digital information systems (Musafiri et al., 2022; Okeyo, 2023). By contrast, older farmers, often relying on long-standing traditions, might remain less engaged with evolving market dynamics unless external support and training programs are specifically directed toward them (Dube, 2020). Household characteristics, such as family size, also influence the decisions made about goat production. Larger families may allocate more labor to livestock activities or engage in joint decision-making, though complexities arise regarding women's autonomy and control over the resulting income (Ogolla et al., 2022; Serra et al., 2022). These intra-household dynamics are key to understanding the distribution of benefits and ensuring equitable resource allocation (Adams et al., 2021).

Motivational drivers in goat farming commonly center on economic security, resilience, and social empowerment (Meena, 2022). Goats have relatively low input requirements and short reproductive cycles, which can attract farmers with limited land or capital, including those in peri-urban settings where demand for livestock products is growing (Amole et al., 2021; Cheteni & Mokhele, 2019). In these contexts, goats serve not only as meat or dairy sources but also as social assets that strengthen community ties (Gumbi, 2023; Tabe-Ojong et al., 2023). Furthermore, the local availability of feed resources and robust infrastructure remains a major determinant of production intensity (Gwaka & Dubihlela, 2020; Hashem, 2023). Adequate production facilities, such as feed mills or veterinary services, empower farmers to manage flocks more efficiently, ultimately contributing to higher yields and profitability (Jegoda et al., 2022; Martey et al., 2019). Nonetheless, where infrastructure is weak, farmers are more vulnerable to environmental shocks, disease outbreaks, and price fluctuations (Nwobodo et al., 2022; Sesay & Kallon, 2022).

Capital availability is a similarly decisive factor in sustaining goat-farming enterprises (Hegde, 2020). Farmers struggle to acquire better breeds, invest in improved

feed/implement necessary animal healthcare interventions (Martey et al., 2019; Purwanti et al., 2023) without sufficient access to credit or savings. Studies spanning diverse contexts from West Africa to Southeast Asia—corroborate the role of accessible financing in allowing smallholders to build more resilient and market-oriented herds (Das, 2024; Monau et al., 2020). The dearth of supportive financial institutions magnifies production risks and impedes farmer's ability to capitalize on profitable market opportunities (Adams et al., 2021; Wangu et al., 2020). Hence, attention to cooperative networks and microfinance programs has grown as means of bridging this gap (Cheelo & Merwe, 2021; Maltou & Bahta, 2019).

Recent research in the Indonesian context has shown that credit access provided through local cooperatives enables goat farmers to invest in feed concentrate and enhance herd management (Astuti et al., 2012), correlating with greater market participation (Ndlovu & Masuku, 2021; Uddin et al., 2019). Meanwhile, in southern Africa, structured marketing initiatives and group-based approaches allow smallholders to negotiate better prices and streamline transport logistics (Belay et al., 2021; Musara et al., 2021). Conversely, inadequate or discontinuous policy frameworks hamper smallholder productivity, as farmers remain isolated from essential services and vulnerable to middlemen-driven price distortions (Cheelo & Merwe, 2021; Okeyo, 2023).

The multifaceted nature of goat farming necessitates careful examination of the drivers behind farmers' choices to raise goats or expand herds. The literature suggests that goat production thrives when farmers can access reliable capital, supportive infrastructure, and targeted government programs (Ahmad et al., 2020; Hussain & Guha, 2023). Market signals, environmental conditions, and socio-demographic attributes further shape decision-making processes, resulting in varied intensities and scales of goat rearing (Cheteni & Mokhele, 2019; Odhiambo et al., 2019). The capacity of goats to enhance livelihoods in both subsistence and commercial spheres underscores their significance to rural economies (Hashem, 2023; Kangile et al., 2020). Nevertheless, despite an expanding international evidence base, no quantitative study has yet disentangled how personal attributes, capital, infrastructure, and policy support jointly influence farmer motivation within Indonesia's mixed crop (livestock systems), a critical empirical gap that this study seeks to fill.

We analyse cross-sectional survey data from goat keepers in Jombang District, East Java, to determine the relative importance of socio-demographic and resource-based factors in shaping engagement. Specifically, this study addresses two research questions: (1) Which socio-demographic and external-support variables most strongly predict smallholder motivation to engage in and expand goat production? (2) How do capital and infrastructure compare with personal attributes in explaining the intensity of goat-farming involvement? Addressing these barriers through holistic strategies—encompassing socio-economic empowerment, infrastructural development, and climate-resilient techniques—has the potential to amplify goat farming's contributions to sustainable livelihoods, thus meriting deeper investigation and evidence-based policy formulation in regions where smallholders depend on goats as a critical resource (Purwanti et al., 2023; Theweli, 2023).

Materials and Methods

Study Area and Context

This research was conducted in Jogoroto Sub-district, Jombang District, East Java Province, Indonesia—a predominantly rural area where smallholder goat farming becomes part of a broader agricultural livelihood system. Jogoroto was purposively selected because (i) it has one of highest small-ruminant densities in East Java

(≈ 38,000 head), (ii) the provincial government has designated the area as a pilot cluster for upgrading Peranakan Ettawa (PE) and indigenous Kacang goats, and (iii) its mosaic of rain-fed fields and peri-urban markets mirrors the heterogeneity of Indonesian goat-keeping zones, making findings analytically transferable. Farmers in this study predominantly keep PE × Kacang crosses for dual-purpose meat-and-milk production, a system that distinguishes Jogoroto from regions specialising solely in meat goats. The coexistence of traditional tethering and emerging semi-intensive housing creates a unique "living laboratory" for exploring how resource constraints and incremental innovations jointly shape farmer motivation. The region experiences seasonal rainfall patterns that affect feed availability and farming practices. Farmers commonly integrate goat production with other subsistence crops, underscoring the need for strategies tailored to local ecological and economic conditions. Prior observational visits to the area indicated varying levels of infrastructure development, credit access, and market connectivity, suggesting that these external factors could significantly influence farmer motivation.

Research Design

This study employed a quantitative approach for comprehensive data gathering. A cross-sectional design formed the quantitative component for analyzing relationships between variables at a single point in time. To structure the data collection process, we developed a conceptual framework based on the interplay among social-demographic variables, external factors (e.g., infrastructure, market access, government support), and farmer motivation (Figure 1).

Figure 1 illustrates that social-demographic factors such as age, education, family size, and years of experience inform farmers' baseline skills, labor availability, and openness to new practices. In many cases, older or more experienced farmers leverage established networks, while younger farmers may be more inclined toward innovations. External support mechanisms that cover capital and infrastructure, along with market access and government programs, shape the operational environment for goat farming. Access to credit facilitates investments in improved feed, breeds, and veterinary care. Infrastructure (e.g., roads, market facilities) reduces transaction costs. Extension services and well-designed subsidies can empower smallholders to adopt better management practices. The interplay of socio-demographic factors and external support mechanisms influences the level of farmer engagement. Where supportive policies and resources are available, farmers show higher motivation to improve herd management, adopt new technologies, and expand production. As motivation strengthens, farmers typically achieve better productivity and resilience. This, in turn, improves household livelihoods, providing both economic (income, food security) and social benefits (community ties, status).

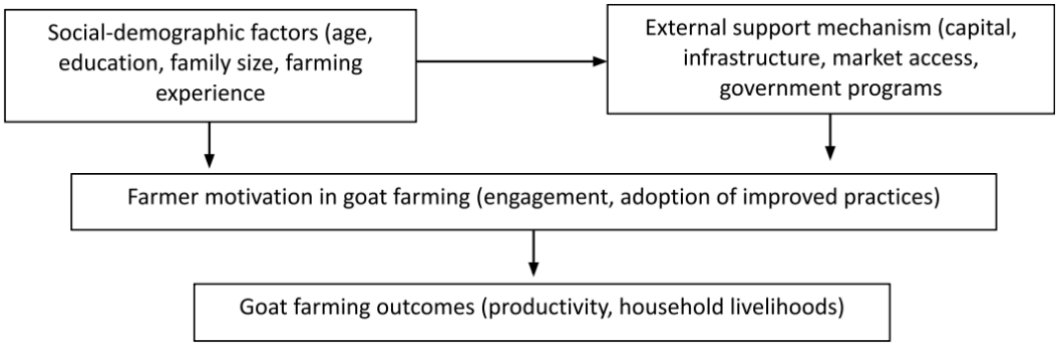

Figure 1. Conceptual framework linking socio-demographic attributes, external support mechanisms, and farmer motivation

Feedback loops may emerge if visible successes encourage policy adjustments or attract additional investment in rural goat farming. Because of data-collection and budget constraints, this study empirically tests only the first two links of the framework, predictors → motivation, and does not measure the subsequent goat-farming outcomes (e.g., productivity gains, profit margins). These downstream effects are therefore beyond the analytical boundary of the current project and are recommended for future longitudinal research.

Sampling and Data Collection

A purposive sampling strategy was initially employed to recruit farmers who had kept goats for at least one year. The research team collaborated with local livestock service officers to identify potential participants, ensuring representation from different sub-districts and household sizes. Ultimately, 50 goat farmers were selected for the quantitative survey, matching the resources and time available for data collection. Although the final sample comprised 50 respondents, a post-hoc power analysis conducted in G*Power 3.1 showed that—with eight predictors—the study retained ≥ 80 % power to detect medium-sized effects ($f^2 = 0.35$) at $\alpha = 0.05$. This supports the adequacy of the sample for multiple-regression analysis; nonetheless, the modest sample is acknowledged as a limitation and revisited in the Discussion.

A structured questionnaire was administered face-to-face. The instrument included two main sections: (1) social-demographic attributes (age, education, family size, and farming experience) and (2) external factors (infrastructure, capital, market access, and government support). Questionnaire development followed a three-step protocol: (i) item generation from validated livestock-livelihood surveys and motivation scales; (ii) expert review was conducted by three extension specialists to establish content validity; (iii) pilot testing was conducted with five goat farmers outside the study area, ensuring survey reliability and validity (Lavallee et al., 2022). After the pilot, minor revisions were introduced to clarify ambiguous phrasing. Cronbach's α values for the five motivational sub-scales ranged from 0.76 to 0.83, and the overall scale yielded $\alpha = 0.88$, indicating acceptable internal consistency. All items used a four-point Likert format (1 = Strongly Disagree, 4 = Strongly Agree) to capture varying degrees of agreement.

Data Analysis

Descriptive statistics, including frequencies and percentages, were first generated to examine the distribution of demographic and motivational variables (Lavallee et al., 2022). Next, a multiple linear regression model was employed to investigate the influence of social-demographic factors and external variables on the goat-farming engagement of farmer i (Verbeek, 2017). The model took the following general form:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \ldots + \beta_8 X_{8i} + \epsilon_i$$

where β_0 is the constant, $\beta_1 \ldots \beta_8$ are the regression coefficients, and ϵ_i denotes the error term. Statistical significance was set at $p < 0.05$. Model robustness was assessed via the coefficient of determination (R^2), residual plots, and collinearity checks. All analyses were performed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). For regression, Likert-scale responses were averaged within each dimension (e.g., Capital, Infrastructure) to create continuous indices that approximated interval-scale properties. Socio-demographic variables were coded as follows: age and farming experience (years, continuous); family size (number of persons, continuous); education (years of schooling, continuous). Preliminary

Shapiro–Wilk tests confirmed approximate normality ($p > 0.05$) of these indices.

Ethical Considerations

This study adhered to the institutional guidelines approved by the Faculty of Animal Science at Universitas Brawijaya. Researchers followed the principles of informed consent, confidentiality, and protection of participants. Before data collection, each participant received an explanation of the research aims, procedures, and their right to withdraw at any stage without penalty or prejudice. In a setting where power imbalances could influence consent, particular care was taken to present information in local dialects and ensure voluntary participation. To respect privacy and avoid potential repercussions within closely knit rural communities, unique identification codes were assigned to each respondent, and all personal information (names, addresses, exact herd sizes) was removed from the publicly accessible dataset.

Results and Discussion

Results

Socio-Demographic Overview

A total of 50 goat farmers participated in the quantitative survey, with ages ranging from 24 to 64 years (see Table 1 for demographic details). More than half (54%) were in the mid-career category (38–50 years). Younger farmers (24–37 years) constituted 30% of the sample, and the remaining 16% were above 51 years of age. Regarding education, 54% had completed high school, 30% had junior-high-level education, 12% had only elementary-level schooling, and 2% had university-level attainment. Most households (66%) consisted of four to six members, while 34% had up to three members. Farming experience shows that most respondents (92%) had 2–20 years of goat-farming experience, and only 8% had over two decades in goat rearing. Although goats are kept by all surveyed households, only 8% identified goat farming as their main source of income, while 92% considered it a secondary activity.

Table 1. Socio-demographic characteristics of surveyed goat farmers (n = 50)

Characteristic	Frequency (n)	Percentage (%)
Age group (years):		
24-37	15	30
38-50	27	54
51-64	8	26
Education level:		
Elementary or below	7	14
Junior High school	15	30
High school	27	54
University	1	2
Family size (persons):		
1-3	17	34
4-6	33	66
Farming experience (years):		
2-20	46	92
21-32	4	8
Employment status:		
Goat farming = main income	4	8
Goat farming = secondary income	46	92

Table 2. Average motivational scores on five dimensions (n = 50)

Dimension	Mean Score (1-4)
Capital	3.74
Market Access	3.60
Production Infrastructure	3.58
Personal/Social Outcomes	3.24
Government Support	2.60

Notes: 4-point Likert scale: 1= Strongly Disagree, 2=Disagree, 3=Agree, 4 = Strongly Agree.

Motivational Drivers

The survey measured farmer motivation across multiple dimensions: (1) production infrastructure, (2) capital, (3) market access, (4) government support, and (5) personal/social outcomes (including knowledge-sharing, community ties, and personal growth). Table 2 summarizes mean scores for these dimensions, with capital rated highest (3.74 on a 4-point scale) and government support (2.6) as the lowest-scoring dimension.

Determinants of goat farming engagement

A multiple linear regression model was performed to identify significant predictors of goat-farming engagement (Table 3). Production infrastructure ($p = 0.001$) and capital ($p = 0.022$) were statistically significant, while socio-demographic variables such as age, education, and experience did not exhibit significant effects ($p > 0.05$). Although market access received a high mean rating (3.60 ± 0.48), its coefficient ($\beta = 0.083$, $p = 0.740$) was non-significant, suggesting that a generally favourable perception of local markets may mask important between-farmer differences that are too small to explain variations in herd size or income once other resource variables are controlled for. Government support also failed to reach statistical significance.

Discussion

Table 3 shows that production infrastructure and capital are positively and significantly associated with goat farming engagement. The prominent role of capital and infrastructure in driving goat-farming engagement aligns with conceptual models positing that financial resources and logistical support underpin smallholder success (Bassignana et al., 2022). When farmers possess access to credit, they are better positioned to acquire improved breeds, purchase quality feed, and invest in veterinary care—factors crucial for raising productivity (Belay et al., 2021; Hegde, 2020).

Table 3. Multiple linear-regression results for determinants of goat-farming engagement (Standard errors in parentheses)

Predictor	Coefficient (SE)	p-value
Age	0.004 (0.59)	0.947
Education	0.196 (0.178)	0.278
Family size	0.238 (0.321)	0.463
Farming experiences	0.048 (0.054)	0.374
Production infrastructure	0.969 (0.281)	0.001***
Capital	0.986 (0.415)	0.022**
Access to market	0.083 (0.038)	0.740
Government support	-0.001 (0.175)	0.995
Constant	7.201	
Adjusted R^2	0.574	
Number of observations	50	

Notes: *p < 0.05, **p < 0.01.

Similarly, adequate infrastructure, such as roads and market facilities, reduces transaction costs and supports timely input procurement (Fadairo et al., 2019). In this study, participants who rated infrastructure highly also reported more frequent livestock health interventions and a greater propensity to expand their herds, suggesting a direct positive correlation between resource availability and herd management decisions.

Age, education, and farming experience were not significant predictors, a result that resonates with contexts in which tacit knowledge, kinship-based labour exchanges, and informal mentoring substitute for formal human-capital indicators (Nuvey et al., 2020). Older farmers may draw on long-standing social capital, while younger producers, despite higher schooling, often lack secure land tenure or start-up capital, dampening the expected effect of education on herd expansion.

The contradiction between the favourable mean score for market access and its statistical irrelevance can be interpreted as a "ceiling effect." Most respondents operate within the same village-based trading networks, so perceived market quality varies little across households; consequently, the variable adds limited explanatory power once capital and infrastructure are entered into the model.

Informal socio-cultural mechanisms further nuance these findings. Goat sales frequently occur through trusted brokers or kin, who smooth price volatility but also limit producers' exposure to broader, potentially more lucrative markets. Such networks buffer external shocks (e.g., sudden school-fee demands, feed-price spikes) but can discourage risk-taking investments needed for commercial scaling (Hashem, 2023). The absence of formal safety nets, therefore, nudges farmers to prioritise liquidity over herd growth, explaining why capital remains the decisive motivator in our model.

From a policy perspective, these results reinforce the argument that targeted investments in rural infrastructure can substantially enhance smallholder productivity (Tackie et al., 2019). By contrast, inadequate infrastructure can isolate farmers from profitable markets and limit their ability to obtain critical resources, echoing previous research on the vulnerability of rural livestock producers (Nkomoki et al., 2019). Policy interventions that blend financial instruments, such as microcredit or cooperative savings schemes, with infrastructural upgrades, like feeder roads and veterinary clinics, may, therefore, catalyze sustained improvements in goat-farming enterprises. The significance of such measures has also been evidenced in contexts such as Ethiopia and Zimbabwe, where policy frameworks that bolster capital access and infrastructure lead to stronger livestock systems (Abay & Jensen, 2020; Musara et al., 2021).

By linking these empirical patterns to the wider literature on small-ruminant systems, our findings underscore that resource-based drivers frequently eclipse individual socio-demographic traits, especially where informal institutions and external shocks dominate production decisions (Cheteni & Mokhele, 2019;
Gwaka & Dubihlela, 2020).

Contrary to expectations in some agricultural studies, the results in Table 3 identified neither age nor education as statistically significant determinants of goat-farming engagement. This resonates with research suggesting that environmental and structural variables can overshadow individual attributes (Anusha, 2022). Where resources are scarce and market factors fluid, the more decisive factor than formal schooling may include practical know-how, social networks, and resilience strategies. Moreover, older farmers with accumulated experiential knowledge could rival or surpass younger, formally educated producers in

adapting to local farming conditions (Batool, 2019).

These dynamics align with contexts in which older individuals leverage well-established networks, social capital, and an in-depth understanding of microclimates and feeding practices (Nuvey et al., 2020). By contrast, younger farmers, though potentially tech-savvy or more formally educated, may lack the financial stability or land tenure necessary to make transformative on-farm changes. This dual perspective reaffirms that the interplay between generational knowledge and resource constraints can diminish the predictive power of age or education on production intensity. Consequently, training programs intended to boost livestock productivity may be more effective if they integrate experiential learning and capital access rather than relying solely on formal educational attainment (Anusha, 2022).

Policy Approaches and Best Practices

Global and regional policy experiences provide lessons on how to bolster smallholder livestock production. In Indonesia, for instance, targeted interventions—such as free artificial insemination programs, feed subsidies, and disease control measures—have proven beneficial in supporting beef cattle farms (Nugroho et al., 2021). While goat farming often remains less prioritized, a similar approach could help address the gaps in veterinary support and credit access identified in this study (Sembada et al., 2019; Sholikhati, 2024).

Elsewhere, digital innovations have shown promise for connecting remote farmers to extension services, market information, and disease diagnostics (Gabriel & Gandorfer, 2022). The successful adoption of digital tools in smallholder contexts highlights the potential for bridging information gaps and offering real-time solutions to emergent problems (Hadi, 2023). Encouraging farmers to embrace technology-based interventions might spur improvements in feed management, breeding decisions, and disease control (Duncan et al., 2023). However, the effectiveness of digital technology depends on the reliability of local communication infrastructure, which again stresses the interrelation between infrastructure investment and farm-level outcomes (Suganda et al., 2022).

Implications for Research and Practice

The overarching implication of these findings is that capital and infrastructure improvements remain pivotal levers for strengthening goat-based livelihoods. More specifically, extension programs must focus on enhancing farmers' financial literacy, facilitating access to microfinance or cooperative credit, and improving veterinary infrastructure, particularly for small ruminants (Belay et al., 2021; Hegde, 2020). Interventions that integrate women's roles in livestock management could yield a more equitable distribution of benefits, especially if coupled with initiatives to promote women's decision-making power in livestock-related expenditures (Ogolla et al., 2022).

Furthermore, the insignificance of age and education as predictors of goat-farming engagement signals the need for flexible policy frameworks that address a broad spectrum of farmer profiles. Adult education programs might incorporate experiential learning and highlight how tangible access to resources, rather than formal credentials, often drives improvements in livestock systems (Anusha, 2022). By tailoring these approaches to local contexts, policymakers and development practitioners can craft strategies that elevate goat farming as a sustainable, resilient, and profitable enterprise for smallholder communities.

Conclusion

This study finds that capital access and production infrastructure are the strongest predictors of goat-farming engagement among Jombang smallholders, whereas age, education, and farming experience show no significant

effects once resources are controlled for. Perceived market access is uniformly high yet statistically non-significant, indicating a ceiling effect in village-based trading networks. Taken together, these patterns imply that resource-focused interventions—not demographic targeting—offer the clearest route to enhancing smallholder productivity and resilience

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