p-ISSN 1410-5659 e-ISSN 2621-5144
Published by:
Unpad Press

Jurnal Ilmu Ternak Universitas Padjadjaran, March 2026, 26(1):72-80
DOI: 10.24198/jit.v26i1.67864
Available online at http://journal.unpad.ac.id/jitunpad

THE EFFECT OF LIVELIHOOD CAPITAL ACCESSIBILITY ON THE FINANCIAL SECURITY AND FINANCIAL WELL-BEING OF SHEEP FARMING HOUSEHOLDS (SURVEY IN WANARAJA SUBDISTRICT, GARUT REGENCY)

Suhendarsyah [1, a], Unang Yunasaf[2], Sondi Kuswaryan[2]

[1]*Postgraduate Program, Faculty of Animal Husbandry, Padjadjaran University, Jln. Raya Bandung Sumedang Km 21, Jatinangor, Sumedang, West Java, Indonesia*

[2]*Faculty of Animal Husbandry, Padjadjaran University, Jln. Raya Bandung Sumedang Km 21, Jatinangor, Sumedang, West Java, Indonesia*

[a]*email:* suhe.spt@gmail.com

Abstract

This study analyzed the influence of livelihood capital on the financial security and financial well-being of sheep-farming households in Wanaraja Subdistrict, Garut Regency. A quantitative approach was conducted using structured interviews with 95 sheep farmers. The research variables include livelihood capital accessibility (X), financial security (Z), and financial well-being (Y). The livelihood capital accessibility construct was built as a Higher-Order Construct with five dimensions: human capital, natural capital, financial capital, social capital, and physical capital. Data were analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with a two-stage approach. The results show that social capital was the most influential dimension in shaping livelihood capital accessibility, while human, natural, financial, and physical capital were not significant. Structurally, livelihood capital accessibility has a significant positive effect on financial security, while its relationship with financial well-being is negative. This indicates that farmers' financial well-being is shaped not only by objective economic conditions but also by how livelihood assets influence perceived financial pressure.

Keywords: livelihood capital accessibility, financial security, financial well-being, sheep farmers, PLS-SEM.

INTRODUCTION

The livestock sector is a prominent part for component of Indonesia's rural economy. Apart from being a source of animal protein, this sector also contributes to household's economic resilience. In addition to its economic function, livestock also plays a strong social and cultural role in shaping the identity of rural communities (Bettencourt et al., 2015). Among various commodities, sheep farming is widely practiced due to its adaptability and relatively stable market value. Despite these potential, many smallholder sheep-farming households still struggle to achieve stable financial conditions. Previous studies have shown that limited access to livelihood capital, including human, social, physical, financial, and natural assets, constrains farmers' capacity to manage economic risks and sustain household income (Abbassi et al., 2020; Liu et al., 2018). Such limitations increase vulnerability to income fluctuations and financial insecurity, particularly among rural livestock producers who rely on small scale and informal production system (Bettencourt et al., 2015).

The Wanaraja Subdistrict in Garut Regency is one of the sheep farming centers with a sheep population of more than twenty-two thousand and around one thousand six hundred (1.600) sheep farming households (BPS Garut). Most farmers manage their businesses traditionally, on a small scale, and institutional social support. Physical infrastructure, such as roads and livestock markets, is relatively available but has not significantly improved literacy, making it difficult for many farmers to achieve financial security and well-being. This state of condition indicates a gap between the large economic potential and the financial well-being perceived by farmers at the household level.

Submitted 05 November 2025; accepted 26 February 2026.
Available online 31 March 2026.

Despite the economic importance of sheep farming as a livelihood strategy in Wanaraja Subdistrict, many households continue to face unstable incomes, limited access to formal financial systems, and a high reliance on informal support networks. Sheep ownership often functions as a living-saving mechanism rather than a structured economic enterprise, creating a unique paradox between financial security and perceived financial well-being. Understanding this dynamic is essential to explain why increasing livelihood assets does not always translate into improved subjective welfare among smallholder sheep farmers.

The sustainable Livelihood Framework approach asserts that household well-being is determined by how individuals have and use five livelihood assets: human, social, natural, physical, and financial capital. These assets function as basic resources to strengthen economic capacity and reduce vulnerability (Abbassi et al., 2020). Meanwhile, financial security reflects households' ability to meet basic needs, maintain economic stability, and manage future financial risks (Lee & Kim, 2016). In smallholder sheep farming systems, access to livelihood capital directly influences production capacity, market participation, and risk management, which in turn shape household financial security and financial outcomes, reflecting a clear cause and effect mechanism within rural livestock production systems that depend heavily on local resources. The relationships among livelihood assets, such as physical and social capital, are intertwined in shaping households' economic capacity (Liu et al., 2018).

Previous studies on sheep farmers in Indonesia have primarily focused on technical aspects such as productivity, feed management, and income efficiency (Kuswaryan et al., 2020; Nilamcaya et al., 2024). Studies linking the accessibility of livelihood capital to the financial well-being dimension of sheep farming households are still very limited. Access to capital influences both farmer's actual income and their perceived sense of financial security and well-being. This research fills that gap by modeling livelihood capital accessibility as a second level construct (Higher-Order Construct) and testing its effects on the financial security and financial well-being of sheep farming households using the two-stage PLS-SEM approach.

This study aims to comprehensively describe the accessibility of livelihood capital among sheep farming households in Wanaraja Subdistrict, as well as to explain the level of availability and utilization in supporting their business activities. Furthermore, this study attempts to analyze the extent of access to various types of livelihood capital, such as human, physical, social, financial and natural capital can influence households' financial security. Furthermore, this study assesses the direct and indirect relationships among livelihood capital accessibility, financial security, and financial well-being, thereby gaining a deeper understanding of these relationships within the context of livestock farming households. The finding of this study are expected to enrich the socio-economic studies of livestock while also serving as a basis for formulating policies to empower sheep based on strengthening assets and financial resilience in rural areas.

This study contributes to smallholder livestock socio-economic research by integrating the Sustainable Livelihood Framework with a higher-order construct approach to financial well-being analysis. Unlike previous studies focusing on productivity or income, this study explains how livelihood assets simultaneously influence objective financial security and subjective financial well-being. The findings provide empirical insights for designing livestock development strategies that consider both economic resilience and farmers' perceived welfare.

METHODS

This research was conduct in Wanaraja Subdistrict, Garut Regency, West Java Province, which is one of the sheep farming centers in West Java. This location was deliberately chosen owing to the high concentration of small-scale livestock farm and their substantial contribution to the rural economy. Research activities were conducted from September to October 2025, encompassing instrument preparation, field data collection, and validation of survey results.

A quantitative research design using a survey approach was employed because survey methods enable the collection of standardized numerical data from dispersed rural

households, which is essential for examining causal relationship among latent variables in socio-economic livestock studies (Hair et al., 2021). The research populations included all sheep population of 22.055 according to the Fisheries and Livestock Service in 2024. Based on Slovin's formula with a 10% error rate, 95 households were selected as a representative sample to represent the population.

The sample selection was done using multistage sampling. In the initial stage, five villages were randomly selected from the nine village in Wanaraja Subdistrict. A mini listing survey was chosen to identify sheep farming households and to construct the sampling frame. Respondents were then determined through simple random proportionally according to the number of farmers in each village.

This process was conducted to ensure that respondents were representative of various geographical and socio-economic conditions in the research area. The data collected in this study consisted of primary and secondary data. A preliminary listing survey was selected to identify active sheep-farming households and to develop the sampling frame. The direct interview method is used with pretested structured questionnaires to collect primary data. These questionnaires were designed to evaluate three core variables: livelihood capital accessibiity (X), financial security (Z), and financial well-being (Y). the instruments were developed based on the sustainable livelihood framework and the financial well-being scale proposed by the consumer financial protection bureau (CFPB, 2019), with adjustments on the socio economic context of sheep farmers in Garut. Meanwhile, secondary data were obtained from official documents from the fisheries and livestock service of Garut Regency, the Badan Pusat Statistik (BPS), and various relevant scientific publications on the research topic.

A systematic procedure was used to collect the data. Before the main survey, instrument pretesting was conducted with several farmers outside the research sample to assess the clarity of the questions and the reliability of the questionnaire items. Afterward, the main survey was administered by technically trained enumerator teams, with strict, directed supervision from the lead researcher to ensure consistency and accuracy of the data. All interview data were reviewed before being entered into the analysis worksheets.

Data analysis was conducted descriptively and inferentially using SmartPLS software version 4.0. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used as the main method with a two-stage approach. This approach was chosen because it is suitable for modeling the second-level construct for livelihood capital accessibility variables consisting of five dimensions: human, social, physical, financial, and natural capital.

The analysis phase included evaluating the outer (measurement) model and the inner (structural) model. In the first stage, convergent validity testing was done through outer loading values and average variance extracted (AVE), as well as discriminant validity using Fornell-Larcker criteria and Heterotrait-monotrait (HTMT). Reliability of constructs was measured by Composite Reliability (CR) and Cronbach's Alpha values. The second phase required examining the causal relationship between the latent variable by analyzing path coefficients (B) and their significance levels (t-statistics) using a bootstrapping approach with 5.000 resamples. In addition, R^2, f^2, and Q^2 values were assessed to determine the model's predictive capability.

Variable measurements were done using scoring and categorization approaches. The score for the livelihood capital accessibility variable (X) was calculated as the average across the five dimensions of livelihood capital. Three objective financial ratios: liquidity ratio, debt-to-income ratio, and solvency ratio were used to calculate the financial security variable (Z). Meanwhile, financial well-being (Y) was measured using 10 indicators from the CFPB (2019) on a scale of 0-100. The results for each variable were grouped into six categories: very low, low, fairly low, fairly high, high and very high, for descriptive interpretation purposes.

This research elaborates the model connecting livelihood capital accessibility (X) and financial well-being (Y), with financial security (Z) functioning as a mediator. Grounded in the sustainable livelihood framework and the financial well-being model (CFPB, 2019), the model assumes that households' capacity to access and influence the livelihood capital shapes to their financial

security, which subsequently determines their overall financial well-being.

RESULT AND DISCUSSION

This research involved 95 sheep farming households in Wanaraja Subdistrict, Garut Regency. Based on the research findings, most respondents were male aged 30-50 years, with education levels dominated by elementary to junior high school graduates. Most respondents managed small-scale sheep farming businesses as a side business, with their main occupation in agriculture, daily labor, or small-scale trading.

Respondents revealed an average of 8 to 15 years of farming experience, reflecting their long-term involvement in traditional agriculture. Despite this, limited financial and managerial skills have hindered many farmers from optimizing income from livestock. These circumstances reveal a gap between experience and financial ability, which in turn affects their household's economic security and well-being.

The analysis results indicate that livelihood capital accessibility varies across dimensions, with human and social capital scoring highest. This finding suggests that sheep farmers rely strongly on practical experiences and community-based networks. Collaborative efforts, knowledge sharing, and mutual support among farmer groups function as social assets that facilitate access to information, markets, and risk-sharing mechanisms in rural production systems. The dominance of class 2 farmers indicates that sheep farming in Wanaraja is largely managed by households of productive age with moderate sheep experience and small to medium herd sizes. This group tends to rely more on collective networks and informal knowledge exchange rather than formal financial resources.

On the other hand, financial and physical capital show the lowest values. Limited access to formal financial institutions poses a significant challenge, as many farmers lack adequate collateral or the financial records required by banks. Access to physical resources such as permanent shelters, infrastructure, and feed facilities are also inadequate. This straighten with (Abbassi et al., 2020), who found that inequality across livelihood capital dimensions increase the household's economic vulnerability in the agriculture and small livestock sectors. In the context of smallholder sheep farming, livelihood assets take the form of tangible and intangible resources such as livestock ownership, housing facilities and feeding infrastructure (physical capital), access to grazing land and water resources and feeding infrastructure (physical capital), access to grazing land and water resources (natural capital), and diversified income sources (financial capital). High ownership of these assets strengthens households capital to cope with economic shocks and reduces vulnerability to poverty.

Financial security of Household financial security of sheep farming households was analyzed using three financial ratio: liquidity ratio, debt to income ratio and solvency ratio obtained using the strict method where household is considered safe or scored 1 (one) when all three ratios are safe; if one of them is not safe, financial security is considered unsafe or scored 0 (zero). The research results show that most households have an unsafe level of financial security. Low liquidity levels indicate that households show limited ability to cover short-term needs without selling productive assets. Some households also reveal debt-to-income ratios above the ideal level, indicating considerable financial pressure. These conditions reflect a high degree of economic vulnerability. Financial insecurity often affects households with unstable incomes and limited resources, such as small farmers dependent on fluctuating commodity prices (Lee & Kim, 2016).

Based on the conversation results using CFPB standards (2019), the financial well-being of sheep farming households in Wanaraja Subdistrict generally falls into the fairly high to high categories. These findings signify that most households demonstrate adequate financial management abilities, are capable of fulfilling essential needs, and have the capability to manage sudden financial shock. Nevertheless, households with conversion scores below 50 still need support in strengthening their financial management skills and obtaining access to more stable livelihood resource.

The analysis employed PLS-SEM using two-stage approach to examine the interaction among latent constructs within the structural model. The R^2 value for financial security was

0.269, whereas that for financial well-being was 0.046. In other words, the exogenous variable explains approximately 27% and 5% of the variance in financial security and financial well-being, respectively. According to Hair et al. (2021), relatively low R^2 values are common in socio-economic studies because household behaviour is influenced by multiple contextual and unobserved factors. In smallholder livestock systems, financial outcomes are shaped not only by livelihood capital but also by social dynamics, market uncertainty, and environmental conditions, which may reduce the model's overall explanatory power.

The path analysis results using the PLS-SEM approach show that livelihood capital accessibility (X) has a positive and significant effect on financial security (Z) ($\beta = 0.334$; $p= 0.046$), financial well-being (Y) ($\beta = -0.469$; $p = 0.001$). This indicates that broader access to livelihood capital improves farmers' financial security. The greater their ability to maintain financial security, however it may also indrease financial responsibility and perceived economic pressure, which can reduce subjective financial well-being.The financial security variable (Z) has a significant effect on financial well-being (Y) ($\beta = 0{,}275$; $p=0.004$), so there is no mediating effect between livelihood capital well-being and financial well-being. The absence of mediation may indicate a suppression effect, suggesting that while access to livelihood capital improves financial security, it may simultaneously create perceived financial pressure or increased expectations that reduce subjective financial well-being.

This finding demonstrates that within the socio-economic context of sheep-farming households in Wanaraja Subdistrict, Garut Regency, physical and financial capital function as productive assets that support farmers operational capacity and production activities. Adequate livestock housing, access to feed resources, and financial liquidity enable farmers to maintain herd productivity, manage risks, and improve market participation, which contributes to household income stability. in line with previous findings, access to financial capital has been shown to enhance household welfare by strengthening economic resilience and supporting livelihood diversification. However, the negative relationship between livelihood capital accessibility and financial well-being observed in this study differs from studies that associate asset ownership with improved subjective well-being (Liu et al., 2018). this unexpected result may reflect the local livelihood strategy where sheep function as a living-saving asset that provides economic security but also increase financial responsibility and perceived pressure, thereby influencing farmers subjective financial well-being.

Table 1. Characteristics of Demographics Sheep Farming Households in Wanaraja Subdistrict

Kategori	Age (%)	Duration of Farming (%)	Sheep Population (%)	Household Size (%)	Education (%)
Class 1	28.87	18.56	78.35	55.67	7.22
Class 2	35.05	49.48	17.53	43.4	47.42
Class 3	39.9	31.96	1.03	1.03	3505
Class 4	6.19	0	0	0	10.31

Table 2. Summary of Results Based on 95 Respondents Financial Ratios Criteria Safe Number

Financial Ratio	Safe Criteria	Number Safe (1) (respondents)	Number Not Safe (0) (respondents)	Percentage Safe (%)	Percentage Not Safe (%)
Liquidity Ratio	≥ 3	94	1	98.95 %	1.05 %
Debt to Income (DTI) Ratio	< 0.4	70	25	73.68 %	26.32 %
Solvency Ratio	≥ 1	95	0	100 %	0 %

Table 3. Levels of financial well-being of sheep farming households in Wanaraja

Category	Value range	Number of Respondents	Percentage
Very Low	0–29	0	0%
Low	30–37	0	0%
Moderately Low	38–49	9	9.3%
Moderately High	50–57	35	36.1%
High	58–67	40	43.3%
Very High	68–100	11	11.3%

Table 4. Results of Path Analysis (Path Coefficient) and Significance Values PLS-SEM

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Livelihood Capital Accessibility → Financial Security	0.334	0.349	0.167	1.997	0.046
Livelihood Capital Accessibility → Financial Well-being	-0.469	-0.473	0.143	3.285	0.001
Financial security -> Financial Well-being	0.275	0.276	0.095	2.897	0.004

Source: PLS-SEM analysis

Table 5. Contribution of livelihood capital dimensions to livelihood capital accessibility (Outer Weight)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 (Human Capital) -> Livelihood Capital Accessibility	0.116	0.095	0.229	0.504	0.614
X2 (Natural Capital) -> Livelihood Capital Accessibility	0.126	0.129	0.177	0.713	0.476
X3 (Financial Capital) -> Livelihood Capital Accessibility	0.235	0.219	0.266	0.885	0.376
X4 (Social Capital) -> Livelihood Capital Accessibility	0.795	0.712	0.207	3.833	0.000
X5 (Physical Capital) -> Livelihood Capital Accessibility	0.014	0.005	0.321	0.044	0.965

Source: PLS-SEM analysis

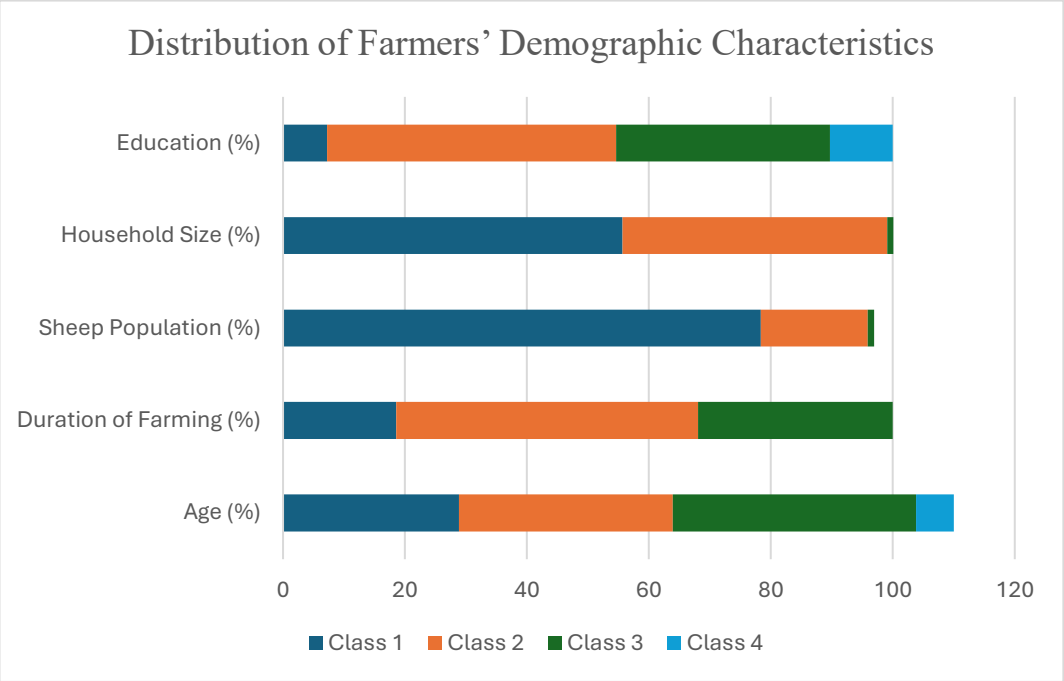

Figure 1. Distribution of farmers' demographic characteristics.

Classes were grouped as follows:

a. Class 1: young, beginner, small-scale, low dependents, uneducated,
b. Class 2: productive age, intermediate experience, medium scale, moderate dependents, primary educated,
c. Class 3: middle age, experienced, large-scale, high dependents, junior secondary educated, and
d. Class 4: elderly, senior, very large scale, very high dependents, senior secondary educated.

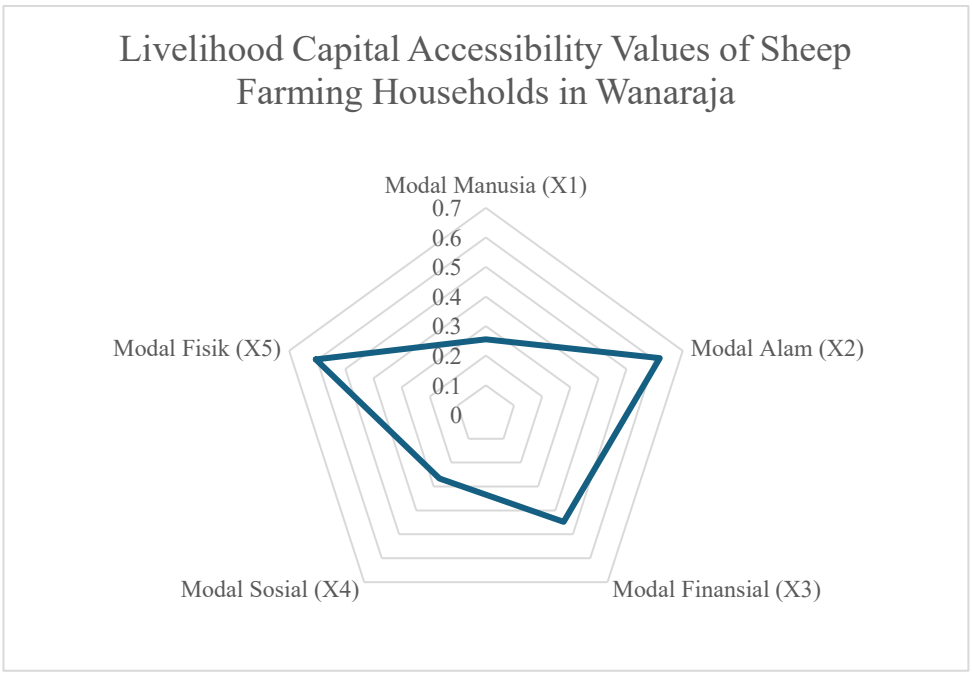

Figure 2. Visualization of livelihood capital accessibility diversity based on entropy weights

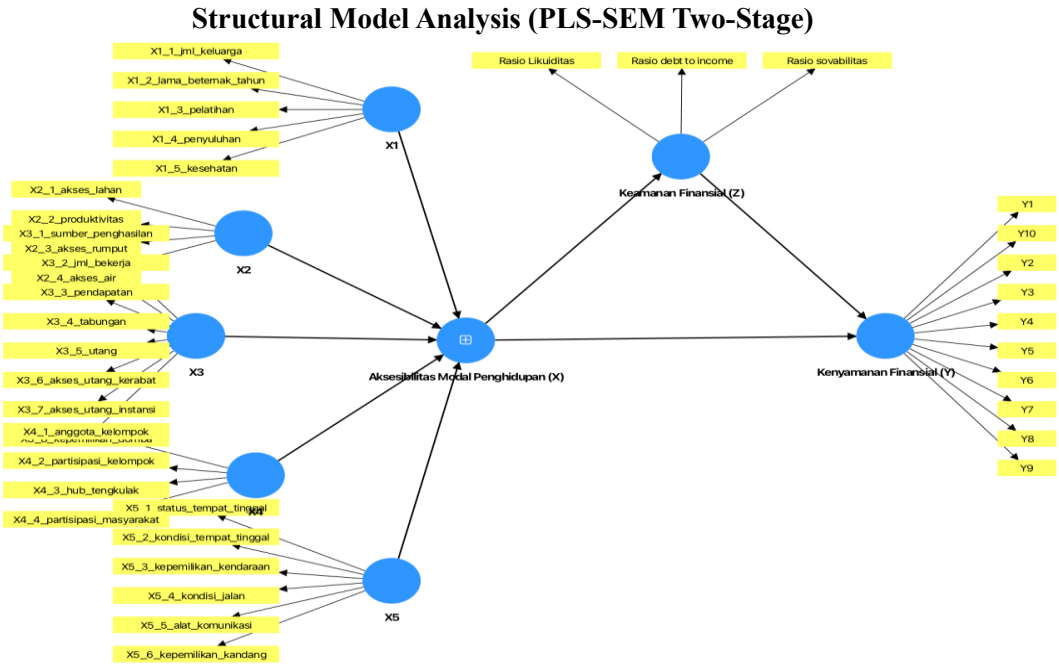

Figure 3. Conceptual Framework of the Effect of Livelihood Capital Accessibility on Financial Security and Financial Well-Being of Sheep-Farming Households

The research results show that social capital is the most dominant dimension in shaping the livelihood capital accessibility of sheep farming households in Wanaraja Subdistrict. Although physical and financial capital conceptually support farm operations, the model shows that only social capital significantly shapes the accessibility of livelihood capital. The two forms of capital are productive assets that directly engage farmers access to markets, funding source and opportunities for business expansion. Access to financial capital, in particular, has been demonstrated to enhance households' welfare. Meanwhile, social, human, and natural capital support adaptation and help maintain social and environmental stability, but they are not yet the main drivers of economic livelihood capital accessibility.

An outer weight analysis indicates that social capital is the most influential dimension shaping the accessibility of livelihood capital among sheep-farming households in Wanaraja Subdistrict ($\beta = 0.795$; $p = 0.000$). These findings are consistent with the Sustainable Livelihood Framework, which emphasizes the importance of social capital in enhancing livelihood resilience and adaptive capacity (Liu et al., 2018). In smallholder sheep farming systems, strong social networks facilitate knowledge exchange, collective action, and access to markets, thereby strengthening farmers' capacity to cope with economic risks (Bettencourt et al., 2015). The dominance of Class 2 farmers suggests that demographic characteristics, such as productive age and moderate farming experience, may encourage reliance on community-based networks rather than formal financial assets. However, this strong reliance on social capital may also limit the direct contribution of human, natural, physical, and financial capital, as many farmers continue to operate within small-scale and informal production systems.

Implication Practical Implication and Policies

Based on the research findings, several practical implications can be identified. Given that social capital emerged as the most influential dimension shaping livelihood capital accessibility, strengthening farmer group networks, collaborative learning, and community-based support systems may enhance farmers' adaptive capacity and financial security. The positive relationship between livelihood capital accessibility and financial security also suggests that improving access to financial resources and production-related infrastructure can help stabilize incomes among sheep-farming households. However, the negative relationship with financial well-

being indicates that capacity-building programs should not only focus on asset expansion but also consider farmers' perceived financial pressure and risk management strategies. These implications highlight the importance of integrating social capital strengthening with livelihood support programs to improve the financial resilience of sheep farmers in Wanaraja Subdistrict.

CONCLUSION

The findings show that social capital is the most influential dimension contributing to the formation of livelihood capital accessibility, whereas human, physical, financial, and natural capital are not statistically significant. This indicates that sheep farmers rely heavily on social networks and collective support systems despite limited formal education, limited participation in training, and limited optimal utilization of natural resources.

Livelihood capital accessibility has a positive effect on financial security but a negative effect on financial well-being. This indicates that broader access to livelihood resources enhances farmers' ability to maintain economic stability but may simultaneously increase financial responsibilities and perceived economic pressure. Greater access to livelihood capital does not automatically lead to improved subjective financial well-being, as increased asset ownership is often accompanied by greater economic risk and social obligations.

Financial security also has a significant positive effect on financial well-being, suggesting no mediating role for livelihood capital accessibility. This finding suggests that the financial well-being of sheep farmers in Wanaraja Subdistrict, Garut Regency is strongly influenced by subjective factors, including perceived financial control, social experiences, and community support. In this local socio-cultural context, sheep function as a living-saving asset that provides psychological security and social status, allowing farmers to experience financial well-being even without relying solely on formal economic stability mechanisms

REFERENCE

Abbassi, F. A., Ullah, A., Hashmi, M. S., Hussain, K., & Akhter, N. (2020). The role of livelihood assets' endowment in adoption of rural livelihood strategies: An intra-regional comparison of district Bhimber, AJ&K. *Sarhad Journal of Agriculture*, *36*(1), 258–271. https://doi.org/10.17582/journal.sja/2020/36.1.258.271

Bettencourt, E. M. V., Tilman, M., Narciso, V., da Silva Carvalho, M. L., & de Sousa Henriques, P. D. (2015). The livestock roles in the wellbeing of rural communities of Timor-Leste. *Revista de Economia e Sociologia Rural*, *53*, S063–S080. https://doi.org/10.1590/1234-56781806-94790053s01005

CFPB. (2019). *The Bureau of Consumer Financial Protection*. 3–5. https://files.consumerfinance.gov/f/documents/bcfp_fin-well-being_full-scorecard.pdf%0Afile:///C:/JURNAL SKRIPSI/JUrnal Skripsi/bcfp_fin-well-being_full-scorecard.pdf

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Mediation Analysis*. https://doi.org/10.1007/978-3-030-80519-7_7

Kuswaryan, S., Firmansyah, C., & Hadiana, M. H. (2020). Usaha Ternak Domba sebagai Jalur Keluar dari Kemiskinan Buruh Tani di Perdesaan. *Jurnal Ilmu Dan Teknologi Peternakan Tropis*, *7*(3), 189. https://doi.org/10.33772/jitro.v7i3.11396

Lee, J. M., & Kim, K. T. (2016). Assessing Financial Security of Low-Income Households in the United States. *Journal of Poverty*, *20*(3), 296–315. https://doi.org/10.1080/10875549.2015.1094773

Liu, Z., Chen, Q., & Xie, H. (2018). Influence of the farmer's livelihood assets on livelihood strategies in the western mountainous area, China. *Sustainability (Switzerland)*, *10*(3). https://doi.org/10.3390/su10030875

Nilamcaya, M., Bastoni, B., Nurhawaeny, E., & Widyani, R. (2024). Public Policy and Community Empowerment in the Development of Sheep and Goat Farming in Indonesia. *Jurnal Polisci*, *1*(5), 237–248. https://doi.org/10.62885/polisci.v1i5.290