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A Community Empowerment Paradigm Model for Sustainable Welfare of Shallot Farmers in Sumenep

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ABSTRACT

This study aims to analyze the influence of Accessibility and External Access, Farmer Capacity Building, and Social and Institutional Participation on Community Empowerment Paradigm and Farmer Welfare, and to test the mediating role of Community Empowerment Paradigm in efforts to improve the welfare of shallot farmers in Sumenep. This study uses a quantitative approach with a survey method on shallot farmers, while data analysis is carried out using the Structural Equation Model (SEM) to test the direct and indirect relationships between variables. The results show that Accessibility and External Access and Farmer Capacity Building have a significant effect on Community Empowerment Paradigm, but only Farmer Capacity Building is proven to have a significant direct effect on Farmer Welfare. Conversely, Accessibility and External Access, Social and Institutional Participation, and Community Empowerment Paradigm do not have a significant effect on farmer welfare. In addition, Community Empowerment Paradigm is unable to mediate the influence of Accessibility and External Access, Farmer Capacity Building, or Social and Institutional Participation on Farmer Welfare. These findings indicate that the community empowerment that occurs is still social and institutional in nature, and has not yet transformed into economic empowerment that has a direct impact on welfare].

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1. Introduction

Positioning communities as subjects in development for effective implementation requires the development of alternative community empowerment strategies. Choosing the right strategy is expected to increase community capacity and independence [1]. Conceptually, empowerment essentially addresses how individuals, groups, or communities seek to control their own lives and shape the future according to their desires [2].

Organizing farmers into groups can help them overcome the obstacles they face. Organizing farmers into groups fosters collaboration among individual farmers within the group, where the group serves as a learning and teaching environment to enhance knowledge and skills, a production unit to achieve economies of scale, and a collaborative platform for managing farm operations, from procurement of production inputs to marketing the produce [3].

Implementing a community empowerment approach to economic development based on regional potential can provide significant benefits to communities. First, this approach can help

communities more effectively identify potential and problems in their areas. Second, this approach can increase community participation in the economic development process and provide opportunities for them to advocate for their interests. Third, this approach can strengthen social networks and collaboration between communities, thereby accelerating the economic development process [4].

Despite these potential benefits, the implementation of community empowerment initiatives often faces several practical challenges. Limited public awareness, low levels of participation, and insufficient institutional support can reduce the effectiveness of empowerment programs. In addition, conflicts within communities or between stakeholders may also hinder the development process. These conditions indicate that empowerment initiatives require strong institutional support, effective coordination, and continuous community engagement to achieve sustainable outcomes [5].

Strategic targets that can be implemented as anticipation include increasing the productivity of superior food crops, horticulture, and plantation crops, improving the quality of extension services, increasing the productive workforce in the agricultural sector, and empowering farmer-based agribusiness [6].

Sumenep is known as one of the shallot-producing regions in East Java. However, most shallot farmers in this region still face various challenges that impact their well-being, such as limited access to market information, capital, agricultural technology, and weak bargaining power in the distribution chain. Efforts to improve farmer welfare cannot rely solely on economic aspects but must be viewed within the framework of community development or community empowerment, which emphasizes capacity building, participation, and holistic farmer empowerment.

The community empowerment paradigm offers a potential framework for strengthening farmer capacity through improved social organization, access to resources, and collaboration with various stakeholders. However, despite the increasing attention given to empowerment in development discourse, its integration into structured, theory-based intervention models remains limited. Existing studies frequently focus on agricultural productivity and market performance, while relatively little attention has been given to understanding how empowerment processes influence farmer welfare in a comprehensive manner [7]. This gap is particularly evident in studies on shallot farming communities, where research that conceptualizes community empowerment as a systematic model for improving sustainable farmer welfare remains limited.

Community empowerment also involves multiple dimensions, including individual, gender, political, and social aspects. Individual empowerment focuses on enhancing skills and personal capacity, while gender empowerment emphasizes equality and specialization in economic roles. Political empowerment relates to increased influence in decision-making processes, whereas social empowerment encourages the development of networks, cooperation, and collective initiatives within communities [8]. Considering these dimensions, a community-based development model that reflects local conditions is needed to strengthen empowerment processes and improve the welfare of shallot farmers in Sumenep Regency.

2. State of the Art

Studies on agricultural development highlight the importance of empowerment in improving farmers' socio-economic conditions. Farmer empowerment is often associated with strengthening institutional capacity, increasing access to resources, and enhancing farmers' ability to manage agricultural activities independently. Institutional strengthening and mentoring programs have been identified as important strategies for improving farmers' income and promoting community-based agricultural development. For instance, Windari emphasized that empowerment models focusing on institutional strengthening and locality-based mentoring can encourage the formation of independent rural communities and contribute to increased farmer income [9].

In addition to institutional strengthening, farmer groups also play a significant role as collective institutions that support empowerment processes. Farmer groups facilitate knowledge exchange, cooperation, and collective decision-making among farmers, which can enhance their economic resilience. Empirical research conducted by Indriana et al. demonstrated that the empowerment of farmer groups in coastal communities significantly contributed to the welfare level of rice farmers,

indicating that strong farmer group institutions are an important component in improving farmers' socio-economic conditions [3].

From the perspective of farmer welfare, previous studies have generally measured welfare through indicators such as income level, economic stability, and access to productive resources. Pratama et al. found that rice farmers in Kerinci Regency were categorized as non-poor based on income indicators, indicating that improvements in agricultural productivity and income can contribute to better welfare outcomes for farmers [10]. Furthermore, empowerment initiatives supported by external stakeholders, including corporate social responsibility programs and technology integration in agricultural activities, have also been shown to strengthen farmers' capacities and improve agricultural productivity [6].

Empowerment practices at the community level have also been observed in the case of shallot farmers. Harahap found that empowerment among shallot farmers was carried out through regular group meetings, mutual cooperation, access to capital, provision of production facilities, and support from relevant stakeholders [11]. These practices demonstrate that empowerment processes in agricultural communities often involve both social and institutional dimensions that influence farmers' welfare.

3. Method

This study employed a quantitative approach aimed at measuring empirical data for statistical analysis. The population of this study consisted of shallot farmers in Sumenep Regency. However, due to the absence of an exact database regarding the total number of shallot farmers, the study employed a purposive sampling technique to select respondents who met specific research criteria.

Purposeful sampling was used to ensure that the selected respondents had relevant experience and knowledge related to shallot cultivation activities [12]. The respondent selection criteria included: 1) farmers who actively farm shallots, 2) farmers who had farming experience of at least five planting seasons, and 3) farmers who were involved in local farmer groups or agricultural activities in Sumenep Regency. Based on these criteria, 97 farmers were selected as research respondents.

Data analysis was conducted using the Structural Equation Model (SEM) with the aid of Smart PLS software. Validity testing was used to ensure the research instrument accurately measured the intended construct, using the Corrected Item Total method, which compares the calculated r value with the tabulated r value. Reliability testing was then conducted to assess instrument consistency using Cronbach's Alpha, where a value ≥ 0.7 indicates good reliability.

SEM analysis using PLS was chosen because it can overcome sample size limitations, missing data, and multicollinearity issues, and can be used for both reflective and formative indicator models. The analysis was conducted by estimating the relationships between latent variables (inner model) and between indicators and their constructs (outer model) through three iterations: weight estimation, path estimation, and constant calculation. Thus, the primary focus of the analysis is on testing the validity and accuracy of the model's predictions.

This study has several limitations. First, the use of purposive sampling limits the generalizability of the findings to the broader population of shallot farmers in Sumenep Regency. Future studies are encouraged to employ probability sampling techniques with a more comprehensive farmer database to improve the representativeness of the findings.

4. Results and Discussion

Results

In this study, the number of samples distributed was 97 respondents. In the first validity test, the third indicator of the Farmer Capacity Building variable, the second indicator of the Accessibility and External Access variable, the first indicator of the Social and Institution Participation variable, and the third indicator of the Farmer Welfare variable can be said to be invalid because the Outer Loadings value is smaller than 0.7, so these indicators were removed and then tested according to the following figure:

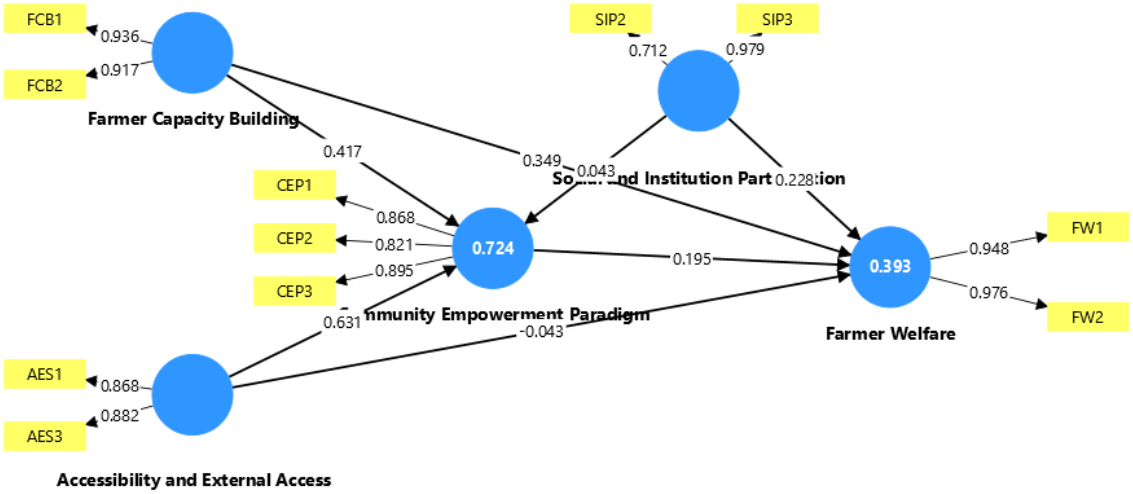

Figure 1. Validity Test

The outer loading values for all indicators exceed the recommended threshold of 0.7, demonstrating adequate convergent validity and indicating that the indicators are appropriate for inclusion in the structural model analysis.

1. Convergent Validity

Table 1. Measurement Model Evaluation: Convergent Validity

Variable	Items	*Loading Factor*	Information
Farmer Capacity Building	FCB1	0.936	Vallid
	FCB2	0.917	Vallid
Accessibility and External Access	AES1	0.868	Vallid
	AES3	0.882	Vallid
Social and Institution Participation	SIP2	0.712	Vallid
	SIP3	0.979	Vallid
Community Empowerment Paradigm	CEP1	0.868	Vallid
	CEP2	0.821	Vallid
	CEP3	0.895	Vallid
Farmer Welfare	FW1	0.948	Vallid
	FW2	0.976	Vallid

Source: SmartPLS Output (2025)

The convergent validity of the measurement model was evaluated by examining the outer loading values of each indicator. The analysis shows that all indicators have loading values above the recommended threshold of 0.70, indicating that the indicators are strongly correlated with their respective constructs. These results confirm that the measurement items adequately represent the latent variables used in this study. Therefore, all indicators were retained for further analysis in the structural model.

2. Internal Consistency Reliability Analysis

Table 2 presents the results of the reliability analysis. Cronbach's Alpha and Composite Reliability values for all constructs exceed the recommended threshold of 0.60, indicating that the measurement instruments demonstrate adequate internal consistency. This means that all indicators are reliable in measuring the study variables, including Farmer Capacity Building, Accessibility and

External Access, Social and Institutional Participation, Community Empowerment Paradigm, and Farmer Welfare.

Table 2. Results of the Internal Consistency Reliability Analysis

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)	Information
Accessibility and External Access	0.695	0.696	0.868		Reliable
Community Empowerment Paradigm	0.828	0.844	0.896		Reliable
Farmer Capacity Building	0.836	0.846	0.924		Reliable
Farmer Welfare	0.922	1.021	0.961		Reliable
Social and Institution Participation	0.711	1.574	0.842		Reliable

Source: SmartPLS Output (2025)

3. Convergent Validity

Table 3. Average Variance Extracted

Variabel	*Average Variance Extracted (AVE)*	*Cut Off*	Keterangan
Accessibility and External Access	0.766	> 0,5	Valid
Community Empowerment Paradigm	0.743	> 0,5	Valid
Farmer Capacity Building	0.859	> 0,5	Valid
Farmer Welfare	0.925	> 0,5	Valid
Social and Institution Participation	0.732	> 0,5	Valid

Source : SmartPLS Output (2025)

The AVE values shown in Table 3 exceed the recommended threshold of 0.50 for all constructs, including Farmer Capacity Building, Accessibility and External Access, Social and Institutional Participation, Community Empowerment Paradigm, and Farmer Welfare. These results indicate that the constructs exhibit adequate convergent validity and that the indicators reliably represent their respective latent variables.

4. Discriminant Validity

Table 4. Results of Discriminant Validity Test

	Accessibility and External Access	Community Empowerment Paradigm	Farmer Capacity Building	Farmer Welfare	Social and Institution Participation
Accessibility and External Access	0.875				
Community Empowerment Paradigm	0.737	0.862			
Farmer Capacity Building	0.175	0.547	0.927		
Farmer Welfare	0.336	0.518	0.553	0.962	
Social and Institution Participation	0.759	0.713	0.456	0.494	0.856

Source: SmartPLS Output (2025)

Table 4 presents the discriminant validity assessment using the Fornell–Larcker criterion. The results indicate that the square root of the AVE for each construct is higher than the correlation values with other constructs in the model. Specifically, the square root of AVE for Accessibility and External Access is 0.875, Community Empowerment Paradigm is 0.862, Farmer Capacity Building is 0.927, Farmer Welfare is 0.962, and Social and Institutional Participation is 0.856. These values, which appear in the diagonal column of the matrix, are greater than the corresponding inter-construct correlations, indicating that the model demonstrates satisfactory discriminant validity.

This finding confirms that each construct represents a distinct concept and does not overlap with other variables in the model. Furthermore, the constructs of Farmer Capacity Building, Accessibility and External Access, Social and Institutional Participation, Community Empowerment Paradigm, and Farmer Welfare are measured by indicators that are both relevant and unique to their respective constructs. As a result, the measurement model can be considered reliable in distinguishing between constructs, thereby improving the accuracy of the structural model analysis.

5. Path Coefficients

Table 5. Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Accessibility and External Access -> Community Empowerment Paradigm	0.631	0.632	0.107	5.895	0.000
Accessibility and External Access -> Farmer Welfare	-0.043	-0.026	0.175	0.244	0.807
Community Empowerment Paradigm -> Farmer Welfare	0.195	0.184	0.126	1.557	0.119
Farmer Capacity Building -> Community Empowerment Paradigm	0.417	0.415	0.055	7.558	0.000
Farmer Capacity Building -> Farmer Welfare	0.349	0.361	0.139	2.516	0.012
Social and Institution Participation -> Community Empowerment Paradigm	0.043	0.043	0.126	0.345	0.730
Social and Institution Participation -> Farmer Welfare	0.228	0.212	0.118	1.938	0.053
Accessibility and External Access -> Community Empowerment Paradigm -> Farmer Welfare	0.123	0.117	0.086	1.426	0.154
Farmer Capacity Building -> Community Empowerment Paradigm -> Farmer Welfare	0.081	0.077	0.056	1.455	0.146
Social and Institution Participation -> Community Empowerment Paradigm -> Farmer Welfare	0.008	0.009	0.028	0.308	0.758

Source: SmartPLS Output (2025)

The results of the structural model analysis, as summarized in Table 5, show the path coefficients used to assess the relationships between variables and test the proposed hypotheses.

H1 (Accessibility and External Access -> Community Empowerment Paradigm)

The hypothesis testing results indicate a p-value of 0.000 (< 0.05), demonstrating that the relationship is statistically significant. This finding suggests that Accessibility and External Access have a significant effect on the Community Empowerment Paradigm.

H2 (Accessibility and External Access -> Farmer Welfare)

The results of the hypothesis test indicate a p-value of 0.807 (> 0.05), suggesting that the relationship is not statistically significant. This finding implies that Accessibility and External Access do not have a significant effect on Farmer Welfare.

H3 (Community Empowerment Paradigm -> Farmer Welfare)

The hypothesis testing results indicate a p-value of 0.119 (> 0.05), suggesting that the relationship is not statistically significant. This finding implies that the Community Empowerment Paradigm does not have a significant effect on Farmer Welfare.

H4 (Farmer Capacity Building -> Community Empowerment Paradigm)

The hypothesis testing results indicate a p-value of 0.000 (< 0.05), showing that the relationship is statistically significant. This finding suggests that Farmer Capacity Building has a significant effect on the Community Empowerment Paradigm.

H5 (Farmer Capacity Building -> Farmer Welfare)

The results of the hypothesis test indicate a p-value of 0.012 (< 0.05), demonstrating that the relationship is statistically significant. This finding suggests that Farmer Capacity Building has a significant effect on Farmer Welfare.

H6 (Social and Institutional Participation -> Community Empowerment Paradigm)

The hypothesis testing results indicate a p-value of 0.730 (> 0.05), suggesting that the relationship is not statistically significant. This finding implies that Social and Institutional Participation does not have a significant effect on the Community Empowerment Paradigm.

H7 (Social and Institutional Participation -> Farmer Welfare)

The hypothesis testing results indicate a p-value of 0.053 (> 0.05), suggesting that the relationship is not statistically significant. This finding implies that Social and Institutional Participation does not have a significant effect on Farmer Welfare.

H8 (Accessibility and External Access -> Community Empowerment Paradigm -> Farmer Welfare)

The mediation test results indicate a p-value of 0.154 (> 0.05), suggesting that the indirect relationship is not statistically significant. This finding implies that the Community Empowerment Paradigm does not mediate the relationship between Accessibility and External Access and Farmer Welfare.

H9 (Farmer Capacity Building -> Community Empowerment Paradigm -> Farmer Welfare)

The mediation test results indicate a p-value of 0.146 (> 0.05), suggesting that the indirect effect is not st atistically significant. This finding implies that the Community Empowerment Paradigm does not mediate the relationship between Farmer Capacity Building and Farmer Welfare.

H10 (Social and Institution Participation -> Community Empowerment Paradigm -> Farmer Welfare)

The mediation analysis indicates a p-value of 0.758 (> 0.05), suggesting that the indirect effect is not statistically significant. This finding implies that the Community Empowerment Paradigm does not mediate the relationship between Social and Institutional Participation and Farmer Welfare.

Discussion

1. Accessibility and External Access -> Community Empowerment Paradigm

The hypothesis testing results indicate a p-value of 0.000 (< 0.05), demonstrating that the relationship is statistically significant. This finding suggests that improved access to markets, price information, agricultural inputs, technology, and external institutional support strengthens the empowerment process among shallot farmers. When farmers have better access to these resources, they are more capable of making informed decisions, coordinating collective actions, and improving their socio-economic conditions through community empowerment mechanisms. Increased access to information, markets, and external services also expands farmers' capabilities and opportunities, enabling them to strengthen their bargaining position within agricultural value chains and enhance their overall welfare 13].

Furthermore, empirical evidence confirms that direct market and information access lowers transaction costs, increases sales volume, and improves smallholder farmers' incomes, making access a crucial channel for strengthening farmers' bargaining power and collective capacity. Social capital (bonding, bridging, and linking) facilitates the flow of information and connections to external actors, including extension workers, financiers, and buyers, thus sustaining community empowerment [14]. The modern concept of empowerment, which links open innovation and the involvement of external actors, emphasizes that the integration of knowledge and external access (inbound/outbound) enhances the economic capabilities of village communities, especially when supported by local institutions such as cooperatives or village-owned enterprises (BUMDes) that actively connect farmers to markets and technology [15].

Shallot farmers in Sumenep Regency face price fluctuations, marketing margins captured by intermediaries, limited post-harvest facilities, and difficulty finding a market with consistent prices. This explains why accessibility is a key variable in this study. Without adequate access, technical training initiatives alone are unlikely to drive collective empowerment and long-term welfare improvements. Therefore, the study's findings suggest interventions that focus on improving market and information access, strengthening social capital (particularly linking social capital), and value chain integration mechanisms through instruments such as purchasing contracts, local pricing platforms, or collective institutional strengthening schemes.

2. Accessibility and External Access -> Farmer Welfare

The results of hypothesis testing indicate that Accessibility and External Access do not significantly influence Farmer Welfare, as shown by a P-value of 0.807 (>0.05). This finding suggests that access alone is insufficient to ensure farmers' economic and social well-being, particularly in agrarian contexts characterized by complex market dynamics and institutional structures. Although access to markets, information, and external support is generally considered beneficial, its impact on farmer welfare is not always automatic and often depends on various contextual conditions. Empirical studies have shown that while improved market access can enhance food security and household consumption diversity, it does not necessarily lead to sustained increases in income or overall welfare when challenges such as price volatility, transaction costs, and yield variability persist [16].

Research in South Africa also shows that market participation is indeed associated with increased economic well-being, but this effect is primarily felt by those who already meet certain conditions (e.g., production volume, access to formal value chains, market stability). Therefore, for some smallholder farmers, the benefits of market access may be much smaller or even non-existent [17]. Second, in the context of shallots in Sumenep, accessibility and external access face structural barriers that reduce their effectiveness in improving farmer welfare. For example, even when infrastructure or market access is available, fluctuations in shallot prices, dependence on middlemen or intermediaries,

demand volatility, and farmers' lack of capacity to aggregate production or negotiate prices can hinder significant income increases.

3. Community Empowerment Paradigm -> Farmer Welfare

The hypothesis testing results indicate a p-value of 0.119 (> 0.05), suggesting that the relationship is not statistically significant. This finding suggests that the empowerment processes implemented within the farming community, such as strengthening farmer group capacity, improving institutional roles, and encouraging community participation, have not yet directly translated into measurable improvements in farmer welfare. Previous studies indicate that empowerment initiatives often succeed in increasing farmers' agency, social capacity, and participation in collective activities; however, these improvements do not automatically lead to higher income or better welfare when farmers continue to face structural constraints such as limited access to capital, information, and stable market conditions [18].

This result supports earlier research, including the study by Chen et al., which indicates that social capital and empowerment efforts in rural farming communities may not significantly improve welfare outcomes when structural challenges, such as restricted market access, price competition, and reliance on middlemen, remain prevalent [19]. A study by Purwiyono et al. on salt farmers also found that empowerment does not directly impact farmer income because external factors such as production costs, environmental risks, and price volatility remain major obstacles [20]. Ali et al. (2023) also emphasized that empowerment must be integrated with supply chain support, technology adoption, and market policies to generate significant economic impact. Thus, the insignificance of these findings actually clarifies that empowerment is necessary but not sufficient to improve farmer welfare [21].

The local phenomenon of shallot farmers in Sumenep further reinforces these findings. Despite empowerment programs such as cultivation training and the formation of farmer groups, farmers continue to face structural issues such as fluctuating shallot prices, dependence on middlemen for capital and marketing, high production input costs, limited storage and post-harvest technology, and the risk of crop failure due to extreme weather and pest attacks. Under these conditions, community-level empowerment is insufficient to address external factors that directly impact income and well-being. Consequently, despite improvements in social and organizational capacity, these have not significantly improved farmers' well-being.

4. Farmer Capacity Building -> Community Empowerment Paradigm

The results of hypothesis testing indicate that Farmer Capacity Building significantly influences the Community Empowerment Paradigm, as shown by a P-value of 0.000 (<0.05). This finding suggests that strengthening farmers' capacities through training, knowledge enhancement, and skill development plays an important role in reinforcing the community empowerment framework. When farmers possess better technical, managerial, and organizational capacities, farmer groups become more capable of organizing collective actions, collaborating with stakeholders, accessing shared resources, and mobilizing social capital within the community. This finding is consistent with previous studies indicating that capacity-building initiatives not only improve individual farmers' capabilities but also strengthen community institutions, social networks, and agrarian institutional structures. Research by Ayesha et al. demonstrates that farmer training and empowerment programs significantly improve farmer productivity and income through enhanced technical and managerial capacity as well as stronger farmer group institutions [22].

This illustrates that capacity building can strengthen the structural aspects of agriculture, enabling farmer groups to better organize themselves, make collective decisions, and optimally utilize agribusiness opportunities. Within the context of an empowerment model, capacity building serves as a crucial foundation for building social capital, trust, and collective coordination. Other research also shows that training programs and capacity building for group members (including farmers) increase collective awareness, collaboration, and participation in joint ventures, key elements of the community empowerment paradigm [23].

5. Farmer Capacity Building -> Farmer Welfare

The results of hypothesis testing indicate that Farmer Capacity Building significantly influences Farmer Welfare, as shown by a P-value of 0.012 (<0.05). This finding suggests that improving farmers' knowledge, skills, and technical capacities can directly contribute to better welfare outcomes. Capacity-building initiatives enable farmers to enhance productivity, reduce post-harvest losses, improve cost efficiency, and implement more effective marketing strategies, which ultimately increase household income and economic stability. Empirical evidence supports this relationship, as a cluster-controlled trial of a fisheries training program in Ghana found that technical training significantly increased production output and household income one year after the intervention, demonstrating a positive impact of capacity building on farmer income [24]. In addition, meta-analyses of agricultural extension services show that mentoring and training programs generally have a positive effect on farmer productivity and income, although the magnitude of the impact varies depending on program design, training intensity, and local contextual conditions [25].

These findings confirm that investing in comprehensive training programs (technical plus managerial and institutional) is an effective strategy to improve the welfare of shallot farmers, provided that the program is designed according to local needs, is intensive, and is accompanied by follow-up (continued mentoring) so that the adoption of new practices can be sustained and provide medium-term economic returns [24].

6. Social and Institution Participation -> Community Empowerment Paradigm

The results of hypothesis testing indicate that Social and Institutional Participation does not significantly influence the Community Empowerment Paradigm, as shown by a P-value of 0.730 (>0.05). This finding suggests that the level of farmers' participation in social and institutional activities such as involvement in farmer groups, cooperatives, or local institutional forums has not yet effectively strengthened the community empowerment paradigm. Although participation is theoretically considered a key component of empowerment because it can foster trust, social networks, and collective coordination, empirical evidence indicates that participation that is merely formalistic or procedural often fails to generate meaningful empowerment outcomes. Previous studies also show that community participation in local institutions does not automatically lead to empowerment when such involvement is passive, symbolic, or primarily driven by external agendas rather than genuine community initiatives [26][27].

Similarly, Quimby & Levine found that farmer institutional participation in local organizations had no significant effect on community empowerment when those institutions lacked decision-making capacity, economic autonomy, or control over productive resources. This confirms that participation without power tends not to impact the paradigm shift of empowerment [28].

7. Social and Institution Participation -> Farmer Welfare

The results of hypothesis testing indicate that Social and Institutional Participation does not significantly influence Farmer Welfare, as shown by a P-value of 0.053 (>0.05). This finding suggests that farmers' involvement in social and institutional activities, such as participation in farmer groups, cooperatives, or local agricultural institutions has not yet directly translated into improvements in their economic welfare. Although social participation is theoretically associated with greater access to information, stronger social solidarity, and expanded economic opportunities, empirical evidence shows that such participation does not automatically lead to improved welfare outcomes when it is not accompanied by tangible access to productive resources, financial support, or concrete economic benefits for farmers [29].

A study by Faguet et al. in the context of community-based development found that community involvement in local institutions often only increased political and social participation, but not significantly increased household income or welfare [30]. Similarly, Bachke in a study of farmer organizations in Sub-Saharan Africa, showed that membership in farmer groups had no significant

effect on farmer income when the organizations were institutionally weak and not integrated with markets. This indicates that administrative or symbolic social participation is not strong enough to influence farmers' economic well-being [31].

8. Accessibility and External Access -> Community Empowerment Paradigm -> Farmer Welfare

The results of hypothesis testing indicate that the Community Empowerment Paradigm is unable to mediate the relationship between Accessibility and External Access and Farmer Welfare, as shown by a P-value of 0.154 (>0.05). This finding suggests that although accessibility and external access such as access to markets, information, supporting institutions, and external networks have been shown to strengthen the community empowerment paradigm, this strengthening has not yet translated into measurable improvements in the welfare of shallot farmers in Sumenep. In other words, the indirect effect through community empowerment is not statistically significant, indicating that the influence of external access tends to stop at the socio-institutional level and has not been effectively transformed into tangible economic outcomes that improve farmer welfare.

The Community Empowerment Paradigm variable was unable to mediate the influence between Accessibility and External Access on Farmer Welfare. This finding indicates that although accessibility and external access (market access, information, supporting institutions, and external networks) have been proven to influence the strengthening of the community empowerment paradigm, this strengthening has not been able to translate into improved welfare for shallot farmers in Sumenep. In other words, the indirect influence through community empowerment is not effective in improving welfare, so the influence of external access is cut off at the socio-institutional level and does not reach economic outcomes.

Empirical research supports these findings. A study by Mansuri & Rao shows that many community-based development programs successfully increase collective participation and capacity, but fail to improve household well-being because they are not directly linked to productive economic mechanisms [29]. Similarly, Faguet et al. found that community access to external institutions and actors strengthens local governance, but its impact on economic well-being is weak when communities lack control over markets and the allocation of economic benefits [30]. Research by Chen et al. also confirms that access and social capital at the community level do not always impact individual farmer well-being if the structure of economic incentives and agricultural value chains is not supportive [19].

9. Farmer Capacity Building -> Community Empowerment Paradigm -> Farmer Welfare

The results of hypothesis testing indicate that the Community Empowerment Paradigm does not mediate the relationship between Farmer Capacity Building and Farmer Welfare, as shown by a P-value of 0.146 (>0.05). This finding suggests that although Farmer Capacity Building has a significant direct effect on farmer welfare, the empowerment paradigm does not function as an effective intermediary mechanism in this relationship. In practical terms, improvements in farmers' technical skills, managerial abilities, and business knowledge tend to directly enhance productivity, income generation, and household welfare without necessarily passing through collective community empowerment processes. This indicates that farmers can convert increased individual capacity into economic benefits independently, while the strengthening of the community empowerment paradigm has not yet become an effective channel for translating these capacity improvements into broader welfare outcomes.

Previous research also supports these findings. A study by Ragasa et al. showed that training and technical capacity building for farmers significantly increased household income, while the indirect effect through farmer organizations or institutions was relatively weak [24]. Similarly, Maake & Antwi found that extension services and training improved farmer welfare through increased individual productivity, not through strengthening community institutions [32]. Research by Bachke emphasized that farmer organizations often fail to mediate welfare due to weak institutional economic functions and limited control over the agricultural value chain. Thus, although capacity building strengthens

farmers' capabilities, community empowerment has not been an effective bridge to improving collective welfare [31].

10. Social and Institution Participation -> Community Empowerment Paradigm -> Farmer Welfare

The results of hypothesis testing indicate that the Community Empowerment Paradigm does not mediate the relationship between Social and Institutional Participation and Farmer Welfare, as shown by a P-value of 0.758 (>0.05). This finding suggests that although farmers' participation in social and institutional activities contributes to the development of community social structures and the strengthening of institutional relationships, this contribution is not sufficiently strong to translate into measurable improvements in farmer welfare, either directly or through community empowerment mechanisms. In other words, social and institutional participation among shallot farmers in Sumenep has not yet generated sufficient economic leverage to influence welfare outcomes.

Empirical research supports these findings. A study by Bachke showed that farmer membership in agricultural organizations or institutions does not significantly impact well-being when these organizations are economically weak and do not play a strategic role in the value chain [31]. Similarly, Faguet et al. found that increased institutional participation does strengthen local governance and social cohesion, but its impact on household income is relatively limited [30]. Research by Quimby & Levine also confirms that participation without power only produces symbolic empowerment and is not strong enough to mediate improvements in well-being [28].

5. Conclusions

Based on the results of the Structural Equation Model (SEM) analysis, this study found that Accessibility and External Access as well as Farmer Capacity Building play a role in shaping the Community Empowerment Paradigm among shallot farmers in Sumenep. However, only Farmer Capacity Building was found to have a statistically significant direct effect on Farmer Welfare. Meanwhile, Accessibility and External Access, Community Empowerment Paradigm, and Social and Institutional Participation did not show a statistically significant influence on farmer welfare, either directly or through mediation mechanisms. These findings indicate that empowerment processes occurring within the farming community are still largely social and institutional in nature and have not yet been fully translated into economic empowerment that directly improves farmer welfare.

The results suggest that improvements in farmers' individual capacities such as technical skills, farm management, and business knowledge are closely associated with better welfare outcomes. Nevertheless, the absence of significant effects from other variables should be interpreted cautiously, as the relatively limited sample size (n = 97) and margin of error may reduce the statistical power of the analysis and potentially increase the risk of Type II error. Therefore, the findings do not necessarily imply that external access or institutional participation are unimportant, but rather that their effects were not detected within the scope of this study.

Based on these findings, agricultural development policies in Sumenep should prioritize strengthening Farmer Capacity Building, particularly in areas such as cultivation techniques, farm management, financial literacy, and marketing strategies, as these factors show a direct association with farmer welfare. At the same time, improvements in access and institutional development should be integrated with concrete economic empowerment strategies so that community empowerment initiatives go beyond social participation and contribute to strengthening farmers' bargaining positions within the shallot value chain. Future research is recommended to develop empowerment models that integrate economic capacity development with value chain governance and to employ larger samples and longitudinal approaches to better capture the long-term impact of empowerment on farmer welfare.

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