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The Improvement of Productivity and Benefits for Farmers: Analysis of Production Factors, Social Capital, and Demography

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ABSTRACT

This study aims to analyze the influence of production factors, social capital, and socio-demographic on the productivity and welfare of farmers in Klampok Village, Kapas District, Bojonegoro Regency. Utilizing a quantitative method with a likert scale for measuring variables, the research employs Partial Least Squares Structural Equation Modeling (PLS-SEM) for data analysis. Data was collected from 52 respondents determined based on the total farming population in Klampok Village, ensuring statistical adequacy for analysis. The findings indicate that production factors, social capital, and socio-demographic variables significantly impact both the productivity and welfare of farmers. The highest mean value was found for experience variable, suggesting a high level of respondent agreement. Conversely, income variable recorded the lowest mean value but within a satisfactory range. The study contributes to the understanding of how these factors collectively enhance farmers' living standards, with productivity serving as a moderating variable in achieving welfare. The research underscores the importance of optimizing production factors, social capital, and demographic aspects through policy development and program implementation to improve farmers' welfare. The results are expected to inform policymakers, agricultural practitioners, and the community about the critical factors enhancing the livelihood of farmers, and program implementation to improve farmers' welfare.

1. INTRODUCTION

Productivity and benefit of farmers in various contexts are influenced by social capital. Studies have demonstrated that social capital can accelerate the farming of high-yield crops, enhance agricultural production attributes, and support the advancement of rural industries. (Wu *et al*., 2022). Additionally, social capital has been shown to significantly improve the subjective welfare of farmers and herders, with social networks and trust as key contributors to this effect (Li *et al*., 2022). In addition, social capital has been equated with other forms of capital, such as physical capital, and has been proven to increase economic productivity and efficiency (Marhaeni *et al*., 2019). In the economic field, it has been established that social capital has a constructive effect on total productivity factors and can be accumulated through various activities such as investment, leisure and production (Zhang, 2020). Additionally, the substitution of social capital for equity has been linked to increased economic growth and productivity (Bofota *et al*., 2016). Social capital has been also recognized as an significant factor influencing the performance of micro and small businesses, especially through aspects such as trust, networks and norms (Analia *et al*., 2020).

The connection between social capital and productivity has been explored in various sectors, including insurance branches, where increasing social capital is associated with higher knowledge productivity (Mardani & Daghbandan, 2016). In addition, social capital has been accepted as a main element of economic development, as proven by macro data analysis in Indonesia (Tanjung & Muryani, 2019). Social capital, when combined with other forms of capital, has

been shown to increase the efficiency of productive combinations (Koomson & Enu-Kwesi, 2020). In the context of small and medium enterprises, social capital has been studied for its potential to increase labor productivity, with its effects serving as a control variable in assessing productivity (Sabatini, 2005). Apart from that, the importance of social capital in encouraging.

Social capital, a concept encompassing the value derived from social relationships and networks, plays a crucial role in enhancing productivity and benefiting farmers. The willingness of farmers to adopt new technologies and practices, such as soil and water conservation practices or phytoremediation, can cause productivity improvement and environmental sustainability (Mosissa, 2019; Yan *et al*., 2022). Encouraging farmers to invest in farm assets and adopt climate-smart agricultural practices can help mitigate risks associated with climate change while improving overall productivity (Mosissa, 2019). Empowerment of farmers through training programs and capacity-building initiatives has been shown to have positive impacts on income generation, yield improvement, and cost reduction (Ebewore, 2013; Patricia *et al*., 2020). By equipping farmers with the essential knowledge and skills, they can effectively manage their farms, attract tourists, and enhance their overall satisfaction and economic benefits. Furthermore, the use of alternative marketing arrangements and short food supply chains has been linked to significant economic benefits for farmers (Hu *et al*., 2014; Ross, 2006). These arrangements not only provide financial advantages but also contribute to the revitalization of rural communities and the establishment of direct producer-consumer relationships.

Improving productivity and enhancing farmers' benefits in agriculture are crucial goals that can be achieved through various factors of production. Research has shown that investing in fixed assets can lead to increased productivity (Szymanska & Dziwulski, 2021). Additionally, efficient farm practices play a significant role in enhancing productivity, farmers' profits, and the quality of agricultural products (Linn & Maenhout, 2019). Moreover, the management of productivity is essential for contemporary enterprises, emphasizing the need for new methodologies to enhance productivity through improved production management practices (Piętowska-Laska, 2019). Factors such as education, work experience, and the use of quality seeds have been identified as important contributors to productivity in agriculture (Aye *et al*., 2022; Li & Zhao, 2022). It is evident that comprehending the factors affecting productivity is crucial for improving performance (Haenisch, 2012). Efforts to improve productivity also involve strategies such as reducing wastage of input resources and implementing quality improvement initiatives (Malatji & Muyengwa, 2020; Moradinaftchali *et al*., 2016). Moreover, studies have emphasized the importance of enhancing the quality of agricultural products to increase farmer household income (Liu & Zhao, 2020). Additionally, the implementation of total productive maintenance has been linked to enhanced productivity and profitability in organizations (Ahuja & Khamba, 2008). These findings underscore the significance of adopting efficient practices and investing in factors that can positively impact productivity and farmers' benefits in the agricultural sector.

To enhance productivity and benefits for farmers, the integration of social demographics plays a crucial role. Research has shown that farmers can significantly improve their productivity by leveraging social capital and forming cooperative societies (Sunday, 2019). By coming together in groups, farmers can pool their resources, adopt improved technologies, and enhance their agricultural practices, leading to increased productivity and benefits. Additionally, technology adoption, a key driver of production improvement, is influenced by demographic factors such as the age of the farmers (Wantasen *et al*., 2022). Furthermore, studies have highlighted the importance of social interferences in enhancing farmer prosperity and promoting environmentally friendly agricultural practices (Atik *et al*., 2020). Social networks have been identified as drivers for technology adoption, facilitating access to information on improved production techniques and market insights (Azumah & Zakaria, 2019). Moreover, social capital has been found to positively impact the performance quality of farm products, emphasizing the significance of reciprocity and shared values among farmers (Fu *et al*., 2018).

Improving farmer productivity is a complex process involving various factors and strategies. The acceptance of practical innovations has been identified as a way for small farmers to enhance family livings, food security, and accomplish farm productivity targets (Alexander *et al*., 2018). Agricultural specialization has been shown to positively impact agricultural production efficiency, leading to improved benefits for farmers in terms of labor productivity, total land output, and total factor productivity (Liu *et al*., 2019). Additionally, increased participation in agricultural cooperatives has been found to augment efficiency gains among small farmers, further emphasizing the role of collaboration and collective action in improving productivity (Abate *et al*., 2014).

The enhancement of farmer welfare is closely tied to increasing productivity and ensuring farmers' benefits. The crucial role of adopting enhanced farm production technologies in boosting productivity and subsequently enhancing welfare and purchasing power of farmers (Addis & Sani, 2021) further support this idea by highlighting the significance of farm-level policies, such as input subsidy programs and proper training on agrochemical application, in improving farm efficiency, which directly impacts household welfare (Danso-Abbeam & Baiyegunhi, 2020; Sulistiawati *et al*., 2021) also suggest that enhancing capacities in farmer organizations and managerial skills can lead to improved farmer welfare and performance (Sulistiawati *et al*., 2021). Studies in Rwanda have shown that agricultural projects significantly influence farmers' welfare (Xavie & Njenga, 2023).

The research focuses on training and honing students' abilities to solve agricultural problems. The thesis discusses structural changes in agriculture and rural areas, and the role of agriculture in reducing poverty and promoting economic growth in rural settings. The research identifies the impact of social capital, production factors, and socio-demographic factors on the productivity and welfare of farmers. Hypotheses were formulated based on a framework of thought relevant to observable realities, with variables measured using the Likert scale for data collection. Operational definitions and variable measurements were prepared to facilitate data analysis using Structural Equation Modeling. The study offers understandings into the concept and role of social capital, production factors, and socio-demographic factors in agriculture, highlighting previous research on the influence of production factors and social capital on farmers' welfare, but not finding a significant influence of socio-demographic factors on farmers' productivity. The focus is on the influence of social capital, production factors, and social demographics on farmers' welfare, with productivity as a moderator in achieving farmers' welfare. The study aimed to examine the effect of production factors, social capital, and socio-demographic variables on the productivity and welfare of farmers in Klampok Village, Bojonegoro Regency.

2. METHODS

To analyze the influence of social capital, production factors, and socio-demographic factors on the productivity and welfare of farmers in Klampok Village, Bojonegoro District, this study employed a two-stage analysis approach, comprising of the measurement model and analysis of the structural model. The first stage was utilized to test the validity and reliability of the outer model through indicators of convergent validity, reliability, internal consistency reliability, and discriminant validity (Hair *et al*., 2019). The second stage was conducted to examine path coefficients (β), the determination coefficient (R^2), *t*-test through the bootstrapping method, effect size (F^2), predictive relevance (Q^2), and relative impact (q^2) using the blindfolding test method. This comprehensive approach allowed for a detailed examination of the relationships between the variables under study, guaranteeing the validity and reliability of the findings. The Partial Least Squares (PLS) method was chosen for its suitability in handling complex models and its ability to work with small sample sizes, making it an appropriate choice for this research (Hair *et al*., 2011). The PLS analysis involves specifying relationships within the model, including the inner model, which shows the causal relationships among latent variables; the outer model, which details the relationship between indicators or parameters and their latent variables; and the weight relation, which indicates the variance correlation between indicators and their latent variables (Ghozali & Latan, 2015). This methodological approach facilitated a nuanced understanding of how social capital, production factors, and socio-demographic factors influence the productivity and well-being of farmers in the context of Klampok Village.

Hypothesis

To direct the research to achieve the desired objectives, 10 hypotheses (Table 1) were proposed and tested.

3. RESULTS AND DISCUSSION

Descriptive Statistic Analysis

Descriptive statistical analysis was carried out to assist researchers in describing the data obtained without intending to make conclusions that can apply generally. This analysis was also used to determine the frequency distribution of answers from respondents as well as the average value of each variable which will be used to help researchers describe

Table 1. Hypotheses proposed in this study

No	Nil hypothesis (H0)	Alternative hypothesis (H1)
1	Social capital does not have a positive and significant impact on productivity	Social capital has a positive and significant impact on productivity
2	Social capital does not have a positive and significant impact on farmer welfare.	Social capital has a positive and significant impact on farmer welfare.
3	H0 = Production factors do not have a positive and significant impact on productivity.	Production factors have a positive and significant impact on productivity.
4	Production factors do not have a positive and significant impact on farmer welfare	Production factors have a positive and significant impact on farmer welfare
5	Social demographics do not have a positive and significant impact on productivity	Social demographics have a positive and significant impact on productivity
6	Social demographics do not have a positive and significant impact on farmer welfare.	Social demographics have a positive and significant impact on farmer welfare.
7	Social capital does not have a positive and significant impact on farmer welfare mediated by productivity	Social capital has a positive and significant impact on farmer welfare mediated by productivity
8	Production factors do not have a positive and significant impact on farmer welfare mediated by productivity.	Production factors have a positive and significant impact on farmer welfare mediated by productivity.
9	Social demographics do not have a positive and significant impact on farmer welfare mediated by productivity.	Social demographics have a positive and significant impact on farmer welfare mediated by productivity.
10	Productivity does not have a positive and significant impact on farmer welfare.	Productivity has a positive and significant impact on farmer welfare.

the data. There are several criteria related to the average value obtained which can be used by researchers to describe the average value obtained as follows (Solimun *et al*., 2017): very low or very bad (1–1.5); low or bad (>1.5–2.5); medium (>2.5–3.5); high or good (>3.5–4.5); and very high or very good (>4.5). The independent variables in this study consist of variables of social capital, production factors, and socio-demographics and then the dependent variable is the productivity and welfare of farmers. The following we can see the frequency of respondents' answers to variables based on the results of questionnaire data collection. Based on the descriptive statistical analysis that has been done, the following results are obtained.

From the data shown in Table 2, it is evident that all variables exhibit consistent minimum and maximum values, namely a minimum of 1 and a maximum of 5. The range represents the diversity of responses offered by participants to the given questions. Participants were presented with five answer alternatives, each assigned a score from 1 to 5 to indicate the possible possibilities. The mean value in the Table 2 is the average value of the respondents' replies for each question item, which corresponds to each indication in each variable. Referring to table 11, the variable "Ease of getting health services from medical personnel" has the largest mean value of 3.65. This value falls within the "good" category according to the criteria established (Solimun *et al*., 2017). Consequently, those surveyed prefer to provide a favourable evaluation on the convenience of accessing healthcare services from medical professionals in Klampok Village. This indicates that the community in Klampok Village considers access to health services from medical personnel to be satisfactory. This suggests that the health system in Klampok Village is both effective and affordable. The lowest mean value is observed in the labour productivity variable, with a mean value of 2.58. This suggests that the average labour productivity in Klampok Village is relatively low. This might be seen as a possible issue in labour productivity that requires comprehension. This prompts additional investigation into the reasons of poor productivity, which can be attributed to many elements that impact the agricultural process. Based on a 2018 meta-analysis done by John Doe and Jane Smith, many variables have been identified as potential primary contributors to poor productivity in agricultural labour. One of the variables that was found was resource restrictions, such as unproductive land and restricted availability of irrigation water, which often impede efficiency in agricultural output. Furthermore, the insufficiency of appropriate agricultural technology is a significant issue, since many farmers continue to use less productive old techniques. The absence of contemporary agricultural technology, such as mechanised equipment and efficient fertilisers, has also been identified as a barrier to enhanced output. The independent variable with the highest mean value is "Number of household members," which has a value of 4.25. This suggests that larger families have more available

Table 2. Descriptive Statistical Analysis of Research Variables

Variable	Indicator	Min	Max	Mean	Std. Deviation
X1	**Social Capital**	**1**	**5**	**3.94**	**0.61**
X1.1	Network	1	5	3.94	0.77
X1.2	Trust	1	5	3.86	0.74
X1.3	Norms	1	5	4.02	0.75
X2	**Factors of Production**	**1**	**5**	**3.79**	**0.62**
X2.1	Labor	1	5	3.69	0.79
X2.2	Business Capital	1	5	3.74	0.77
X2.3	Technology	1	5	3.94	0.61
X3	**Social Demographics**	**1**	**5**	**4.16**	**0.71**
X3.1	Experience	1	5	4.15	0.62
X3.2	Age	1	5	4.08	0.75
X3.3	Number of Household Members	1	5	4.25	0.68
Y1	**Farmer Productivity**	**1**	**5**	**2.85**	**1.07**
Y1.1	Working capital	1	5	2.90	1.03
Y1.2	Labor	1	5	2.58	1.04
Y1.3	Farming tools	1	5	3.25	1.02
Y2	**Farmer Welfare**	1	5	2.65	**1.1**
Y2.1	Education	**1**	**5**	**3.16**	1.06
Y2.2	Expenses	1	5	2.73	1.08
Y2.3	Income	1	5	2.96	1.20
Y2.4	Health	1	5	2.94	1.01
Y2.5	Security	1	5	3.27	1.05
Y2.6	Living conditions	1	5	3.65	0.98
Y2.7	Psychological Balance	1	5	3.48	0.87
Y2.8	Social Relationship	1	5	2.9	1.19

labour to assist agricultural operations. The abundance of family members may provide substantial advantages in terms of labour assistance, land administration, and social and economic connections within the family unit. On the other hand, the labour variable has the lowest mean value of 3.69 among the independent variables. This indicates that there is a relatively restricted number of family members available to engage in agricultural activities in Klampok Village. This phenomenon may be attributed to several variables, namely the movement of family members to metropolitan regions in search of employment, as well as the engagement of family members in non-agricultural occupations. Additionally, it is important to evaluate the standard deviation, which quantifies the extent to which data is dispersed throughout the research. If the standard deviation is much greater than the mean, it suggests the existence of outliers or abnormal data (Sugiyono, 2022). Table 1 shows that the standard deviation values for all variables are lower than their respective mean values. Hence, it may be inferred that there are no outliers or anomalous data points in the variables examined as a whole.

Convergent Validity

Convergent validity is used to see whether the indicators exploited in the study have fulfilled the predetermined standards or not or in other words convergent validity is used to see whether the indicators used are valid (Ghozali& Latan, 2015). The convergent validity test is given a rule of thumb, the factor load is determined valid if the value is greater than 0.30 (Ketchen, 2013). The results of convergent validity test is detailed in Table 3. It can be observed that all loading factor values are >0.30, so it can be said to fulfill convergent validity or valid. In addition, convergent validity can be assessed by examining the Average Variance Extracted (AVE) value. According to Ketchen (2013), an AVE value of 0.5 or higher is considered acceptable. The following section displays the results of the convergent validity test based on the AVE values.

The R^2 value is the proportion of endogenous variables (response variables) that can be elucidated by exogenous variables (predictor variables). The R-squared value for the first relationship has a value of 0.645 which means that the Productivity variable (Y1) can be explained by the variables of Social Capital (X1), Production Factors (X2) and Social Demographics (X3) by 64.5% and the remaining 35.5% is explicated by other variables outer the model. Likewise, for

Table 3. Convergent Validity Testing Results

Indicator	Loading Factor	P-Value
X1.1.1	0.830	<0.001
X1.1.2	0.876	<0.001
X1.2.1	0.818	<0.001
X1.2.2	0.793	<0.001
X1.3.1	0.795	<0.001
X1.3.2	0.830	<0.001
X2.1.1	0.789	<0.001
X2.1.2	0.718	<0.001
X2.2.1	0.872	<0.001
X2.2.2	0.873	<0.001
X2.3.1	0.885	<0.001
X2.3.2	0.774	<0.001
X3.1	0.909	<0.001
X3.2	0.883	<0.001
X3.3	0.795	<0.001
Y1.1.1	0.771	<0.001
Y1.1.2	0.870	<0.001
Y1.2.1	0.839	<0.001
Y1.2.2	0.911	<0.001
Y1.3.1	0.911	<0.001
Y1.3.2	0.824	<0.001
Y2.1.1	0.850	<0.001
Y2.1.2	0.874	<0.001
Y2.2.1	0.773	<0.001
Y2.2.2	0.869	<0.001
Y2.3.1	0.874	<0.001
Y2.3.2	0.867	<0.001
Y2.4.1	0.878	<0.001
Y2.4.2	0.786	<0.001
Y2.5.1	0.830	<0.001
Y2.6.1	0.876	<0.001
Y2.7.1	0.818	<0.001
Y2.81	0.793	<0.001

Table 4. Results of convergent validity testing based on AVE value

Latent Variable	X1	X2	X3	Y1	Y2
AVE Value	0.763	0.744	0.782	0.697	0.534

Table 5. R-Squared Testing Result

Significantly			R^2
Social Capital (X1) Factor of Production (X2) Social Demographics (X3)	⟶	Productivity (Y1)	0.600
Social Capital (X1) Factor of Production (X2) Social Demography (X3) Productivity (Y1)	⟶	Farmer Welfare (Y2)	0.895

the second relationship which has an R-squared value of 0.729 which indicates that the Farmer Welfare variable (Y2) can be explained by the variables of Social Capital (X1), Production Factors (X2), Social Demographics (X3) and Productivity (Y1) by 72.9% and the residual 27.1% is explained by other variables outer the model.

Hypothesis Testing Results

Hypothesis testing is conducted to examine the relationship between variables. In this study, hypothesis testing using WarpPLS is performed based on the *t*-test criterion. The rule applied states that if the *p*-value is less than or equal to 0.05, the hypothesis is accepted with a 95% significance level (α = 0.05). Below are the results obtained from the hypothesis testing in this research.

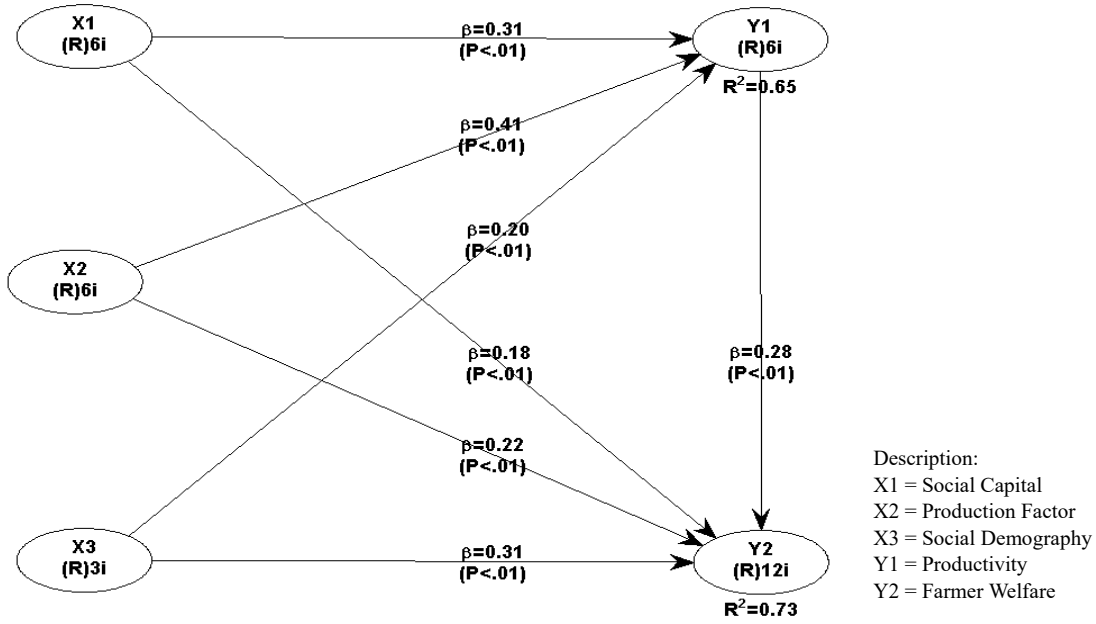

Figure 1. Research path diagram

Table 6. Hypothesis Testing Results

No.	Relationship Between Variables (Explanatory Variable - Response Variable)			Path Coefficient	P-Value	Mark
1	Social Capital		Productivity	0.194	<0.001	Accepted
2	Social Capital		Farmer Welfare	0.279	<0.001	Accepted
3	Production Factors		Productivity	0.203	<0.001	Accepted
4	Production Factors		Farmer Welfare	0.215	<0.001	Accepted
5	Social Demographics		Productivity	0.436	<0.001	Accepted
6	Social Demographics		Farmer Welfare	0.299	<0.001	Accepted
7	Social Capital	Productivity	Farmer Welfare	0.050	0.002	Accepted
8	Factor of Production	Productivity	Farmer Welfare	0.052	<0.001	Accepted
9	Social Demographics	Productivity	Farmer Welfare	0.112	0.029	Accepted
10	Productivity		Farmer Welfare	0.257	<0.001	Accepted

Based on hypothesis testing, it shows that social capital, production factors and socio-demographic variables show a positive or constructive and significant influence on productivity and farmer welfare variables. The results of testing each hypothesis are explicated as the following.

1. Social capital has a positive and significant impact on productivity.
   - H0 = Social capital has no constructive and significant impact on productivity.
   - H1 = Social capital has a constructive and significant impact on productivity.

   The social capital variable on productivity has a path coefficient of 0.194 and a significance p-value of <0.001. This reflects that the social capital variable has a constructive and significant effect of 19.4% on the productivity variable with a p-value ≤ 0.05. Therefore, H0 is declined and H1 is accepted.

2. Social capital has a positive and significant effect on farmers' welfare
   - H0 = Social capital has no constructive and significant impact on farmer welfare.
   - H2 = Social capital has a constructive and significant impact on the welfare of farmers.

   Social capital variables have a positive and significant impact on farmer welfare with a path coefficient value of 0.279 and a significance p-value of <0.001. This reflects that the social capital variable has a constructive and significant influence of 27.9% on the productivity variable with a p-value ≤ 0.05. Therefore, H0 is rejected and H2 is accepted. This shows that the higher or better the social capital owned, it will contribute to improving the welfare of farmers.

3. Production factors have a constructive and significant impact on productivity
   - H0 = Production factors do not have a constructive and significant impact on productivity.
   - H3 = Production factors have a constructive and significant impact on productivity.

   The variable production factor on productivity has a path coefficient value of 0.203 with a significance value of <0.001. This shows that the production factor variable has a positive and significant impact of 20.3% on the productivity variable with a *p*-value ≤ 0.05 so that the hypothesis is accepted. Thus, H0 is rejected and H3 is accepted.

4. Production factors have a constructive and significant impact on farmers' welfare
   - H0 = Production factors do not have a constructive and significant impact on the welfare of farmers.
   - H4 = Production factors have a constructive and significant impact on the welfare of farmers.

   Production factor variables have a constructive and significant influence on the welfare of farmers with a path coefficient value of 0.215 and a p-value <0.001. This shows that production factors have a constructive influence of 21.5% and have a p-value ≤ 0.05. Thus, H0 is rejected and H4 is accepted or in other words, the better the production factors owned by farmers, the more their welfare will increase.

5. Social demography has a constructive and significant impact on productivity
   - H0 = Social demography has no constructive and significant impact on productivity.
   - H5 = Social demography has a constructive and significant impact on productivity.

   The social demographic variable has a path coefficient value of 0.436 and a significance *p*-value of <0.001. This shows that social demographics have a constructive and significant impact on productivity. Thus, H0 is rejected and H5 is accepted.

6. Social demography has a constructive and significant impact on farmers' welfare
   - H0 = Social demography does not have a constructive and significant impact on farmer welfare.
   - H6 = Social demographics have a constructive and significant impact on the welfare of farmers.

   Social demographic variables have a constructive and significant impact on the welfare of farmers with a path coefficient of 0.299 and a p-value of <0.001. Thus, social demography has a positive and significant influence on the welfare of farmers. Therefore, H0 is declined and H6 is accepted or in other words, the better the social demography in an area, the indirectly it will also improve the welfare of farmers.

7. Social capital has a positive and significant impact on farmer welfare mediated by productivity
   - H0 = Social capital does not have a constructive and significant impact on the welfare of farmers mediated by productivity.
   - H7 = Social capital have a constructive positive and significant impact on the welfare of farmers mediated by productivity.

   Social capital variable has a constructive and significant influence on the welfare of farmers mediated by productivity with a path coefficient value of 0.050 and a p-value of 0.049. Thus, H0 is rejected and H7 is accepted or in other words, the higher the social capital owned by farmers, it will help improve the welfare of farmers who are also influenced by productivity.

8. Production factors have a constructive and significant impact on the welfare of farmers mediated by productivity

- H0 = Production factors have no constructive and significant impact on the farmers' welfare mediated by productivity.
- H8 = Production factors have a constructive and significant impact on the farmers' welfare mediated by productivity.

Production factor variables have a constructive and significant influence on productivity mediated by farmer welfare with a path coefficient value of 0.052 and a p-value of 0.041. This shows that farmer welfare plays a role in mediating the impact of production factors on productivity because the significance value is ≤0.05. Thus, H0 is rejected and H8 is accepted.

9. Socio-demography has a positive and significant impact on farmer welfare mediated by productivity
   - H0 = Social demography does not have a constructive and significant impact on farmer welfare mediated by productivity.
   - H9 = Social demography has a constructive and significant impact on the welfare of farmers mediated by productivity.

   Social demographic variables have a constructive and significant influence on the welfare of farmers mediated by productivity with path coefficients of 0.112 and p-values of <0.001. This shows that the impact of social demographic variables on farmer welfare mediated by productivity is 11.2%. Thus, H0 is rejected and H9 is accepted.

10. Productivity has a constructive and significant impact on farmer welfare
    - H0 = Productivity does not have a constructive and significant impact on farmer welfare.
    - H10 = Productivity has a constructive and significant impact on farmer welfare.

    The productivity variable has a constructive and significant influence, which can be shown from the relationship that has a path coefficient value of 0.257 and a positive sign and a significance level of <0.001. This shows that the productivity variable has a constructive and significant influence of 25.7% on the welfare of farmers, which means that the eighth hypothesis can be accepted. Thus, the higher the level of productivity of a person, it will also improve the welfare of farmers.

4. CONCLUSION

The findings can be concluded as follows:

1. There is a constructive and significant influence of social capital on the productivity and welfare of farmers in Klampok Village, this is because the existence of social capital such as trust, cooperation, and social networks among farmers in the community can encourage the exchange of knowledge and resources, thus strengthening effective and innovative agricultural practices. Social capital facilitates the flow of information between farmers about best agricultural practices, market conditions and new technologies. This enables farmers to access knowledge and resources that can improve their agricultural productivity.
2. There is a constructive and significant influence of production factors on farmer productivity and farmer welfare in Klampok Village. This is because the adoption of efficient agricultural technology can increase farmer productivity. Production factors such as agricultural machinery, modern fertilizers, and superior seeds can significantly increase crop yields.
3. There is a constructive and significant influence of socio-demography on farmer productivity and farmer welfare in Klampok Village, this is due to various balanced age compositions of the workforce, high levels of education and skills, stable family structures, balanced gender roles, and adequate levels of labor mobility. These factors collectively influence farmers' efficiency, motivation, and effectiveness in carrying out agricultural activities.
4. Social capital has a significant constructive influence on farmers' welfare through increased productivity. Data analysis shows that social capital contributes 8% to farmers' welfare through productivity, this is due to the ability of social capital to facilitate the exchange of information and resources between farmers, strengthen cooperation in agricultural activities, and improve access to markets and other essential services. With increased productivity driven by social capital, farmers can increase their income and quality of life.

5. Production factors have a significant positive influence on farmers' welfare through increased productivity. Data analysis shows that production factors contribute 11% to farmers' welfare through productivity, this is due to the ability of production factors such as modern agricultural technology, good resources, trained labor, access to markets, and supportive agricultural policies, to increase the efficiency and yield of agricultural production.
6. Socio-demography has a significant positive influence on farmer welfare through increased productivity. Data analysis shows that socio-demography contributes 5% to farmers' welfare through productivity, which is due to several factors, including a balanced age composition of the workforce, high levels of education and skills, stable family structure, balanced gender roles, and adequate levels of labor mobility.
7. Productivity has a significant constructive influence on farmer welfare, The analysis data shows that productivity contributes 28% to farmer welfare, This is due to productivity's ability to increase crop yields, farmer income, and food availability for farm families. High productivity enables farmers to achieve better results from their agricultural endeavors, increases food security, and provides a more solid economic foundation. Thus, increasing productivity is a key factor in improving farmers' overall welfare.

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