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Young farmer motivations for farmer regeneration in East Lombok Regency, Indonesia

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Abstract. Agriculture in Indonesia, in general, has experienced quite serious problems related to the condition of agriculture in Indonesia, which until now still uses manual performance and the reduced percentage of the younger generation who work in the agricultural sector. However, in Sembalun Lawang Village, Sembalun District, East Lombok Regency, most of the youth work in the agricultural sector. The purpose of this study was to determine the performance of young farmers working in the agricultural sector and the factors that influence the performance of young farmers working in the agricultural sector. This research was conducted in Sembalun Lawang Village, Sembalun District, East Lombok Regency, Indonesia. The number of subjects of this study was 85 young farmers. The analysis method used is Partial Least Square (PLS) analysis. Data collection techniques were carried out using interviews, documentation, questionnaires, observation, and literature studies. The results of this study indicate that the performance of youth working in the agricultural sector in Sembalun Lawang Village is classified as very good. The results of PLS analysis show that young farmers' economic, social, environmental and demographic factors have a significant positive effect on performance in working in the agricultural sector.

1 Introduction

The agricultural sector faces significant environmental challenges, with conventional practices contributing to soil degradation [1], biodiversity loss, and greenhouse gas emissions [2][3]. Regenerative agriculture emerges as a promising approach that promotes soil health [4][5][6], water quality [7], and ecosystem resilience [6], offering a potential pathway towards a more sustainable food system [8][9]. Growing concerns about environmental sustainability have fueled interest in regenerative practices, with research highlighting their potential benefits for mitigating climate change and fostering ecological wellbeing.

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However, widespread adoption remains a crucial goal to achieve a significant impact. Encouragingly, statistics show a rise in young people entering agriculture [10], signifying a potential shift towards a more sustainable future. Understanding the motivations and needs of this new generation of farmers is essential for ensuring the successful transition to regenerative practices.

Existing research has explored the motivations for adopting regenerative agriculture, demonstrating the importance of economic factors like reduced input costs and improved long-term profitability [11][12][13]. However, a comprehensive understanding of the factors influencing young farmers' decisions specifically is limited. While economic considerations are undoubtedly important, the motivations driving young farmers' adoption are likely more complex and multifaceted. This research delves deeper by exploring young farmers' unique motivations, challenges, and support needs in regenerative agriculture. This research aims to contribute valuable new insights to the field by examining these less-explored dimensions.

This research aims to shed light on the multifaceted motivations beyond just economic factors that drive young farmers to adopt regenerative agriculture practices by analyzing the factors of young farmer motivations on young farmers' performance in farming in east Lombok Regency, Indonesia. Specifically, the research seeks to answer questions like: What are the environmental, social, and economic motivations for young farmers considering regenerative agriculture? How do knowledge gaps, access to land tenure, and the presence of supportive social networks influence their decision-making processes? By investigating these questions, this research expects to provide a more nuanced understanding of young farmers' unique motivations and challenges. This knowledge will be crucial for developing targeted strategies to support their adoption of regenerative practices, ultimately leading to a more sustainable agricultural system led by the next generation of farmers.

Young farmers are not only motivated by economic considerations but also by a solid commitment to environmental well-being and social responsibility [14][15][16][17]. Their adoption of regenerative agriculture is driven by this multifaceted set of values [18], alongside the need for targeted educational programs [19], supportive social networks [20], and access to land [18] to overcome the specific challenges they face. Understanding these unique motivations and addressing the barriers they encounter is crucial for promoting the widespread adoption of regenerative practices among the next generation of agricultural leaders.

2 Methods

The research was conducted in Sembalun Lawang Village, Sembalun District, East Lombok Regency, Indonesia, using a purposive sampling technique. The number of samples in this study was obtained as many as 85 young farmers. Data collection techniques were conducted through interviews, documentation, questionnaires, observation, and literature study. This research uses a quantitative descriptive analysis method. Research calculations using the Structural Equation Modeling-Partial Least Square (SEM-PLS) method with the help of SmartPLS software. The data type used is primary data measured using a Likert Scale with a value weight of one to five.

3 Results and Discussion

Work behavior in the agricultural sector is critical to productivity and sustainability. Good work behaviors in the agricultural sector can help farmers achieve better yields, improve their livelihoods, and contribute to overall food security. Research by Silvia and Bowo [21] has

shown that farmers with good employability, including those who place high value on managerial tasks, experience more frequent work engagement, and have good health, tend to have higher perceived employability and are more likely to be in the good employability group.

In addition, it is essential to recognize the critical role of farmers in providing food for the global community and maintaining environmental sustainability [22]. From a macro perspective, the agricultural sector significantly influences countries' GDP, international trade dynamics, and job creation, highlighting the importance of productivity and sustainability indicators. Thus, it is essential to integrate sustainability indicators in assessing agricultural performance to help quantify the sector's output, including the damage caused by and benefits of agricultural production.

Table 1. Evaluation of Working Behavior in the Agricultural Sector in Lombok Timur Regency

Code	Indicator	Average Score
X1.1	The income the community earns through the agricultural sector is greater than that from other sectors in my village.	4.40
X1.2	One of the reasons I work in the agricultural sector is to make use of the agricultural land that I have	4.61
X1.3	While working in the agricultural sector, my family's consumption is relatively good	4.24
X1.4	So far, I have more often obtained optimal and productive production results than crop failures and crop damage.	3.61
X1.5	I work in the agricultural sector because there are limited jobs in other areas.	4.07
X2.1	I utilize social media in my agricultural activities	3.72
X2.2	Education is one of the influential factors in agricultural activities	3.99
X2.3	Marital status is one of my motivations for taking farming seriously	4.42
X2.4	For me, the age factor greatly influences labor productivity in farming.	3.75
X3.1	In my area, the agricultural sector has the potential to be utilized and developed, which is why I am motivated to work in the agricultural sector.	4.54
X3.2	I live in a community where most people are farmers, so I am also involved in farming.	4.27
X3.3	I live in a family where most people earn a living in the agricultural sector, so at least I am also involved in farming like them.	4.37
Y1.1	Before planting, I first prepare the capital and decide on the type of crop to plant	4.75
Y1.2	I plant crops by considering planting time and plant spacing	4.43
Y1.3	I carry out maintenance by irrigating, controlling pests, and determining the time interval for applying medicines and fertilizers	4.61

7

Y1.4	I harvest after seeing the fruit or plants change color, size, and shape, indicating that they are ready to be harvested	4.75
Y1.5	I sell the agricultural produce that I obtain after harvesting.	4.72

Source: Primary Data Processed, 2023

The average score of the indicators in variable Y (behavior of working in the agricultural sector) is all above 4. This means that farmers agree to implement various activities ranging from planting preparation, planting, maintenance, harvesting, and post-harvesting on an ongoing basis. These actions are intended to control the start of cultivation activities and produce high crop productivity. A total of 5 indicators are used to measure the behavioral variable of working in the agricultural sector, covering Y1.1 to Y1.5 (Table 1).

Table 1 also shows that working in the agricultural sector is seen as economically beneficial by the community, as income is seen as high, family consumption is guaranteed, and one is not unemployed (working as a farmer). This is evident in the responses of farmers where variable X1 (economic factors) has an average score of more than 3. The economic factors variable consists of 5 indicators (X1.1 to X1.5). The profitability of working in the agricultural sector cannot be separated from social factors (X2) and environmental factors (X3). This is because if there is no encouragement from the social community and the influence of the environment is so strong, it will also have a bad effect. This condition shows that so far, the activities or activities carried out by the community have been able to provide a positive stimulus for those who work in the agricultural sector. This can be seen in the average score in both variables (X2 and X3), which is stated to be more than 3, which means that the community agrees that one of the considerations for working in agriculture is influenced by social (environmental) aspects. The indicators on the social factor's variable are 4 (X2.1 to X2.4), while the environmental variables are 3 (X3.1 to X3.3).

Table 1 shows that the value of the indicators of working behavior in the agricultural sector is more than 3. This condition illustrates that working behavior in the agricultural sector can be categorized as high. In addition to these evaluation measurements, the factors determining working behavior in the agricultural sector can be analyzed using the Structural Equation Modelling-Partial Least Square (SEM-PLS) method, including the outer model and inner model analysis. The inner model depends on the validity and reliability of the outer model. The outer model describes the relationship between latent variables and their manifest variables (indicators). Latent variables consist of variables Y (work behavior in the agricultural sector), X1 (economic factors), X2 (social factors), and X3 (environmental factors).

3.1 Outer model

Outer model evaluation is carried out through 3 criteria: convergent validity, discriminant validity, and composite reliability. All indicators on variables Y, X1, X2, and X3 are declared to meet the criteria for convergent validity with a p-value of <0.05 and a loading factor > 0.5, which means valid. Based on the cross-loading value (Table 2), it can be seen that each indicator of each latent variable already has a loading factor value more significant than the loading factor of other variables when associated with other latent variables. This condition means that each latent variable already has good discriminant validity where the discriminant validity requirements in this study have been met. The Cronbach's Alpha and Composite Reliability values on each variable are stated to be more than 0.50. This means the four latent variables used in this study are declared to meet the outer model requirements. The requirement of convergent validity is the loading factor value > 0.5; the requirement of

discriminant validity is the loading factor value on the latent variable must be higher than other latent variables, and the composite reliability value is > 0.5.

Table 2. Output Combined Loadings and Cross-Loadings

Code	X1	X2	X3	Y1
X1.1	0.634	-0.106	-0.066	-0.248
X1.2	0.365	0.132	0.127	0.230
X1.3	0.319	-0.119	-0.153	0.521
X1.4	0.735	0.365	0.024	-0.181
X1.5	0.614	-0.343	0.043	0.064
X2.1	-0.034	0.742	0.042	-0.081
X2.2	-0.056	0.702	-0.084	-0.121
X2.3	0.200	0.308	-0.079	0.019
X2.4	0.115	0.579	0.047	0.251
X3.1	0.519	-0.110	0.431	0.099
X3.2	0.065	-0.199	0.856	-0.003
X3.3	-0.347	0.271	0.804	-0.050
Y1.1	0.121	-0.396	0.101	0.579
Y1.2	0.132	0.091	0.206	0.531
Y1.3	-0.321	0.248	0.287	0.581
Y1.4	0.036	-0.090	-0.209	0.763
Y1.5	0.029	0.158	-0.263	0.667

Source: Primary Data Processed, 2023

3.2 Inner model

3.2.1 Coefficient determinant (R^2)

The R-square value is 0.18 or 18%. This value means that the variables X1, X2, and X3 simultaneously (together) can only influence variable Y by 18%. At the same time, other variables outside the equation explain the remaining 82%, such as demographic factors [23], ecological factors [24], and performance satisfaction factors [25].

3.2.2 Hypothesis test

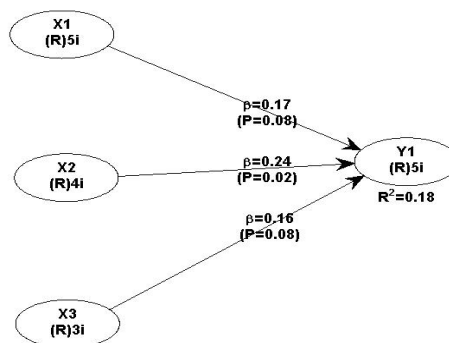


Fig. 1. SEM Structural Model of Working Behaviour in the Agricultural Sector

Table 3. Hypothesis Test using P-Value

Hypothesis	Path	Path Coefficient	P-Value	Description
H1	X1 to Y1	0.166	0.078	Significant
H2	X2 to Y1	0.236	0.020	Significant
H3	X3 to Y1	0.162	0.083	Significant

Source: Primary Data Processed, 2023

Table 3 shows that variable X1 (economic factors) significantly influenced Y1 (agricultural work behavior) with a significance value of 0.078 and a magnitude of 16.6%. This condition illustrates that the high income, guaranteed consumption of farmers, and the availability of vast employment opportunities in the agricultural sector can significantly influence the behavior of working there. In line with changing economic conditions, access to resources and government policies significantly affect farmers' choices and strategies in working [26][27]. The income earned by the community through the agricultural sector is high and profitable compared to other regional sectors. Although farming is not a job that can be predicted [28][29][30] under certain conditions, the income of farmers for one commodity alone, for example, large red chilies, the total income can reach 60 (sixty) million or even more. This income, if averaged per month, is approximately 5 (five) million, even though it is only from one commodity, not to mention the income obtained from other commodities, such as garlic, cabbage, carrots, tomatoes, and others. This income certainly exceeds the minimum wage of West Nusa Tenggara Province, which amounts to Rp 2,012,610 this year (2019); therefore, for young people who are relatively new to the agricultural sector, it is undoubtedly a very profitable job. This condition is critical to note, considering that the role of young farmers is vital in maintaining the sustainability and progress of the agricultural sector in the future [31][32]. They act as agents of change who can bring innovations, new technologies, and sustainable agricultural practices into agriculture [33].

The behavior of working in the agricultural sector (Y1) is also stated to be significantly influenced by variable X2 (social factors) with a significance value of 0.020, and the amount of influence reaches 23.6%. This is in line with [34][35][36], who mentions that social factors such as reference groups and prominent farmer identities can influence farmers' decisions to work in the agricultural sector. This condition illustrates that apart from being individual beings, farmers also have a role in society, so social factors influence the decision to work in the agricultural sector [37][38]. The stigma that farmers are always identified with low educational status, the age of farmers who are considered unproductive, and farming because of necessity (family encouragement) is still widely found. Thus, education about the importance of sustainable agriculture and its positive impact on the environment is also critical to changing people's views on agriculture. This view has merit, considering that farmers do not have to pursue a certain level of education. However, with a high level of education, a person generally has a broader knowledge, which is a supporting factor in implementing better, more efficient, and more effective agriculture [39,40]. On the other hand, for some young farmers, education is not the main factor in choosing to work as a farmer; it is just a factor needed in agricultural activities, not a primary consideration, but some of them work in the agricultural sector because they do not continue their education, and even learning is done while farming [23,41]. The influence of education is not on their decision to choose agriculture, but its influence is a supporting factor in implementing good, effective, and efficient agriculture [40].

Environmental factors (X3) are able to influence the behavior of working in the agricultural sector (Y1), with a magnitude of influence reaching 16.2% and a significance value of 0.083. This illustrates the conditions in the field that habits or activities that are often carried out in an area indirectly stimulate a person to act. The decision of young people in Sembalun Lawang Village to work in the agricultural sector indeed cannot be separated from

environmental factors because most of the local population earns a living in the agricultural sector [42]. This is in line with [35,43], which states that a person's occupation can be influenced by the surrounding community. Even in Sembalun Lawang, various other professions, such as teachers, traders, and private employees, supplement their income from the agricultural sector. Such conditions illustrate that who I am can farm. Farming is a sector that has become a culture for the local community and is still classified as a prestigious job, meaning that although farming is considered a dirty job, it does not prevent the youth of Sembalun Lawang from farming. The behavior of young people working in the agricultural sector, of course, is also inseparable from the influence and encouragement of their parents towards them [44], especially for young people who have many lands, do not continue their education, and do not have exceptional skills in other fields. In contrast, it has been suggested that parental encouragement is not a significant factor for children to work in the agricultural sector.

4 Conclusions

Economic factors significantly influenced agricultural work behavior. This condition illustrates that the high income, guaranteed consumption of farmers, and the availability of vast employment opportunities in the agricultural sector can significantly influence the behavior of working there. The behavior of working in the agricultural sector is also stated to be significantly influenced by social factors. This condition illustrates that farmers, apart from being individual beings, also have a role in society, so social factors influence the decision to work in the agricultural sector. Environmental factors are able to influence the behavior of those working in the agricultural sector. It cannot be separated from environmental factors because most of the local population earns a living in the agricultural sector. Solutions involve enhancing youth perceptions of agriculture, providing government support, and integrating innovative agricultural strategies.

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