THE INFLUENCE OF AGRIBUSINESS PARTNERSHIPS AND ENTREPRENEURIAL STRATEGIES ON ORGANIC FERTILIZER ADOPTION AT PT NATURAL NUSANTARA

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ABSTRACT

The use of organic fertilizers is one of the efforts to achieve a sustainable agricultural system. However, the level of organic fertilizer utilization among farmers remains relatively low compared to inorganic fertilizers. Agribusiness partnerships and entrepreneurial strategies are factors that can encourage the adoption of organic fertilizers through mentoring, information provision, training, and business network development. PT Natural Nusantara is a company that implements an agribusiness partnership system in marketing organic fertilizer products to farmers. This study aimed to: (1) analyze the level of organic fertilizer adoption among partner farmers of PT Natural Nusantara, (2) examine the relationship between agribusiness partnerships and organic fertilizer adoption, and (3) analyze the influence of agribusiness partnerships and entrepreneurial strategies on organic fertilizer adoption. The study employed a quantitative research approach with purposive sampling involving 68 partner farmers of PT Natural Nusantara. Data were collected through observation, interviews, and questionnaires. The data were analyzed using descriptive analysis, Spearman Rank correlation, and multiple linear regression with the assistance of SPSS software. The results showed that the level of organic fertilizer adoption among partner farmers of PT Natural Nusantara was classified as very high, with a percentage of 85.93%. The Spearman Rank correlation analysis indicated that agribusiness partnerships had a positive and significant relationship with organic fertilizer adoption. Furthermore, the results of the multiple linear regression analysis revealed that agribusiness partnerships and entrepreneurial strategies simultaneously had a significant effect on organic fertilizer adoption. These

findings indicate that the better the implementation of agribusiness partnerships and entrepreneurial strategies by the company, the higher the level of organic fertilizer adoption among partner farmers.

KEYWORDS Agribusiness Partnership, Entrepreneurial Strategy, Organic Fertilizer Adoption, Partner Farmers, PT Natural Nusantara.

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INTRODUCTION

Organic fertilizer is one of the agricultural inputs that plays an important role in supporting sustainable agricultural systems. The use of organic fertilizer can improve soil fertility, increase organic matter content, and reduce the negative impacts of excessive chemical fertilizer use. However, the utilization of organic fertilizer among farmers in Indonesia remains relatively low compared to inorganic fertilizer. One effort to support sustainable agriculture is through the application of organic fertilizers. Organic fertilizers provide various benefits, including improving soil structure, increasing soil organic matter content, enhancing microbial activity, and reducing dependence on chemical fertilizers. In addition, organic fertilizers improve the soil's water-holding capacity and support the activity of microorganisms that contribute to nutrient availability for crops. According to Mulyani (2021), the continuous use of organic fertilizers can improve agricultural land quality that has experienced degradation due to the long-term application of chemical fertilizers.

Year	Inorganic Fertilizer (Tons)	Organic Fertilizer (Tons)
2021	±9 juta ton	518.312
2022	±9 juta ton	253.476
2023	±9 juta ton	-
2024	±9,55 juta ton	47.087
2025	±9,55 juta ton	183.356

Based on Table 1, the use of inorganic fertilizers remains substantially higher than that of organic fertilizers. This condition indicates that the adoption level of organic fertilizers among farmers is still relatively low. The low adoption rate may be influenced by several factors, including limited access to information, inadequate technical assistance, and low farmer confidence in the benefits of organic fertilizers for improving farm productivity. PT Natural Nusantara (NASA) is one of the agribusiness companies that develops and markets organic fertilizer products through agribusiness partnership programs and entrepreneurial strategies. Through training activities, mentoring programs, and business development initiatives, the company encourages farmers to adopt organic fertilizers in their farming practices. However, the level of organic fertilizer adoption among partner farmers varies, indicating the need for further investigation into the factors influencing adoption. Therefore, this study aims to: (1) analyze the level of organic fertilizer adoption among partner farmers of PT Natural Nusantara, (2) examine the relationship between agribusiness partnerships and organic fertilizer adoption, and (3) analyze the influence of agribusiness partnerships and entrepreneurial strategies on organic fertilizer adoption among partner farmers of PT Natural Nusantara.

RESEARCH METHODS

This study employed a quantitative research approach to analyze the influence of agribusiness partnerships and entrepreneurial strategies on organic fertilizer adoption among partner farmers of PT Natural Nusantara. The research was conducted in the Special Region of Yogyakarta, Indonesia, involving a population of 208 partner farmers of PT Natural Nusantara. The sample size was determined using the Slovin formula with a 10% margin of error, resulting in 68 respondents. Respondents were selected using purposive sampling based on criteria relevant to the objectives of the study. The study utilized both primary and secondary data. Primary data were collected through questionnaires, interviews, and direct observations, while secondary data were obtained from company reports, government publications, and relevant literature. Prior to data collection, the research instrument was tested using validity and reliability tests to ensure that the questionnaire was appropriate and consistent in measuring the research variables.
The multiple linear regression model used in this study was as follows:

$$Y = a + b_1X_1 + b_2X_2 + e$$

Where:
Y = Organic Fertilizer Adoption
a = Constant
b1, b2 = Regression Coefficients
X1 = Agribusiness Partnership
X2 = Entrepreneurial Strategy
e = Error Term

RESULTS AND DISCUSSION

Respondent Characteristics

Respondent characteristics provide a general description of the identities of the farmers who participated in this study. Understanding respondent characteristics is important to provide information regarding the conditions and backgrounds of respondents that may influence the acceptance and adoption of agricultural innovations. In this study, respondent characteristics include age, gender, education level, farming experience, and farm size.

Table 2. Respondent Characteristics

Characteristics	Dominant Category	Percentage (%)
Age	41–50 years	32,35
Gender	Male	73,53
Education	Senior High School	38,24
Farming Experience	11–20 years	36,76
Farm Size	0,5–1,0 ha	41,18

Based on Table 2, the majority of respondents were aged 41–50 years (32.35%). Farmers within the productive age group generally have a greater ability to understand new technologies and adapt to changes compared to those in non-productive age groups (Budiman et al., 2022). Most respondents were male (73.53%), had completed senior high school education (38.24%), possessed 11–20 years of farming experience (36.76%), and cultivated land areas ranging from 0.5 to 1.0 hectares (41.18%). These characteristics indicate that most respondents were within a productive age range and had considerable

farming experience, which may support the acceptance and adoption of agricultural innovations, including the use of organic fertilizers.

The Influence of Agribusiness Partnerships and Entrepreneurial Strategies on Organic Fertilizer Adoption

The influence of Agribusiness Partnerships and Entrepreneurial Strategies on Organic Fertilizer Adoption was analyzed using multiple linear regression. This analysis aimed to determine the extent to which Agribusiness Partnerships (X_1) and Entrepreneurial Strategies (X_2) affect Organic Fertilizer Adoption (Y) among partner farmers of PT Natural Nusantara.

Results of Multiple Linear Regression Analysis

Table 3. t-Test Results

Variable	Coefficient (B)	t-value	Sig
X1	0,591	2,216	0,030
X2	1,200	4,718	0,000

Based on the results of the multiple linear regression analysis presented in Table 4.14, the calculated F-value was 73.110 with a significance value of 0.000. Since the significance value is lower than 0.05, H_0 is rejected and H_1 is accepted. This result indicates that Agribusiness Partnerships and Entrepreneurial Strategies simultaneously have a significant effect on Organic Fertilizer Adoption among partner farmers of PT Natural Nusantara. According to Rogers (2003), innovation adoption is a process through which individuals progress from the stages of knowledge, persuasion, and decision to the implementation of an innovation.

Table 4. F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1184,765	2	592,382	73,110	0,000
Residual	526,470	65	8,099		
Total	1711,235	67			

Based on the analysis results presented in Table 4.13, the calculated F-value was 73.110 with a significance level of 0.000. The decision criterion for the F-test is that if the significance value is less than 0.05, H_0 is rejected and H_a is accepted. The results of this study show that the significance value of 0.000 is lower than 0.05. Therefore, H_0 is rejected and H_a is accepted. This indicates that Agribusiness Partnerships and Entrepreneurial Strategies simultaneously have a significant effect on Organic Fertilizer Adoption among partner farmers of PT Natural Nusantara. This finding is consistent with the study conducted by Nugroho et al. (2021), which reported that agribusiness partnerships can enhance farmers' capacity to adopt and implement agricultural technologies.

Table 5. Coefficient of Determination (R^2)

Model	R	R Square	Adjusted R Square	Error
1	0,832	0,692	0,683	2,846

on the results of the multiple linear regression analysis presented in Table 4.12, the R Square value was 0.692. This value indicates that the Agribusiness Partnership (X_1) and Entrepreneurial Strategy (X_2) variables are able to explain 69.2% of the variation in Organic Fertilizer Adoption (Y). The remaining 30.8% is explained by other factors outside the research model that were not examined in this study. The coefficient of determination

of 69.2% suggests that the research model has a relatively strong ability to explain changes in the level of organic fertilizer adoption. Therefore, Agribusiness Partnerships and Entrepreneurial Strategies are important factors that contribute to increasing the adoption of organic fertilizers among partner farmers of PT Natural Nusantara.

Multiple Linear Regression Equation

Based on the results of the multiple linear regression analysis, the following regression equation was obtained:

$$Y = 53{,}208 + 0{,}591X_1 + 1{,}200X_2$$

The regression equation indicates that the constant value is 53.208. This means that when Agribusiness Partnerships and Entrepreneurial Strategies are assumed to remain constant, the Organic Fertilizer Adoption score is 53.208.

The regression coefficient of Entrepreneurial Strategy was 1.200, indicating that a one-unit increase in Entrepreneurial Strategy would increase Organic Fertilizer Adoption by 1.200 units, assuming that all other variables remain constant. The larger regression coefficient of Entrepreneurial Strategy suggests that this variable has a stronger influence than Agribusiness Partnerships in enhancing Organic Fertilizer Adoption among partner farmers of PT Natural Nusantara.

Based on the results of the multiple linear regression analysis, Agribusiness Partnerships (X_1) and Entrepreneurial Strategies (X_2) were found to have a significant simultaneous effect on Organic Fertilizer Adoption (Y) among partner farmers of PT Natural Nusantara. This finding is supported by the calculated F-value of 73.110 and a significance level of 0.000, which is lower than the 0.05 significance threshold. Partially, Agribusiness Partnerships had a significant effect on Organic Fertilizer Adoption, with a significance value of 0.030. Likewise, Entrepreneurial Strategies also had a significant effect on Organic Fertilizer Adoption, as indicated by a significance value of 0.000.

CONCLUSION

The results of the multiple linear regression analysis demonstrate that agribusiness partnerships and entrepreneurial strategies significantly influence organic fertilizer adoption among partner farmers of PT Natural Nusantara. The better the implementation of agribusiness partnerships and entrepreneurial strategies carried out by the company, the higher the level of organic fertilizer adoption among partner farmers. These findings highlight the importance of strengthening partnership programs, farmer assistance, entrepreneurial development, and business networking activities to enhance the adoption of sustainable agricultural innovations, particularly organic fertilizers.

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