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ANALYSIS OF FACTORS AFFECTING THE TRANSACTION COSTS OF RICE FARMERS IN THE PERSPECTIVE OF ISLAMIC ECONOMICS

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Abstract:

This study aims to analyze the factors that influence the transaction costs of rice farmers in the perspective of Islamic economics in Gadingrejo, namely uncertainty, social networks, and frequency. The methodology used in this study is quantitative associative. The data collection technique uses a questionnaire with a SEM PLS approach using SmartPLS software. The results of this study indicate that uncertainty, social networks, and frequency among farmers in Gadingrejo have a positive and significant effect on transaction costs. This result can be concluded because the calculated F (54.5) > table F (2.77). The contribution of this study is the understanding that transaction costs in Islamic economics do not only cover financial aspects but also social aspects such as justice, trade balance, and business ethics in accordance with Islamic principles.

Keywords: *Transaction Costs, Rice Farmers, Islamic Economics*

INTRODUCTION

Indonesia is a country that has abundant natural resources (SDA).(Setiawan, 2023) Indonesia is also an agricultural country characterized by the abundance of fertile land that can be planted with various types of food crops. (Tiopan et al, 2022) Indonesia can be considered an agricultural country because the majority of its population works in the agricultural sector. Furthermore, Indonesia is also crossed by fertile mountain ranges. The fertile agricultural land in Indonesia is due to its location in a tropical climate, which allows for the perfect weathering of rocks, resulting in fertile soil.(Ayun et al., 2020)Agriculture plays a vital role in the national economy as a whole. This is reflected in the large number of people and workers who live and work in agriculture, or in the domestic products derived from agriculture.(Triatmo, 2024). Agriculture in Indonesia is tropical agriculture which is directly influenced by the equator which divides Indonesia into two parts, most of which are in the tropics. The Indonesian agricultural sector is divided into five subsectors, namely: Food Crops Subsector, Plantation Subsector, Livestock

Subsector, Forestry Subsector, Fisheries Subsector(Galitan, Duko, Hatim, Ekonomi, & Khairun, 2024)The agricultural sector plays a vital role in all aspects of life. In addition to food production, it also serves as a source of income for the majority of Indonesians, especially those living in rural areas.(Khairus Sabri M, Ayesha, & Gusvita, 2019).

Rice production affects farmers' income (Pirngadi et al., 2023). Farmers' income is also affected by limited production factors such as rice cultivation inputs such as land area, grain prices and input costs (Sukratman & Safitri, 2024). This needs to be improved so that rice needs in Indonesia can be met and farmers' income continues to increase. Areas that have the potential to grow rice are still very large in Indonesia, one of which is the province of Lampung.

Table 1. Top 7 Rice Harvest Area (ha) in Indonesia

Province	2021	2022	2023
East Java	1.747.481.20	1.693.211.00	1.698.083,31
West Java	1.604.109,31	1.662.404,00	1.583.656,28
Lampung	**489.573,23**	**518.256,10**	**530.108,09**
South Sulawesi	985.158,23	1.038.084,00	967.790,21
South Sumatra	496.241,65	513.378,20	504.143,03
Central Java	1.696.712,36	1.688.670,00	1.642.761,23
North Sumatra	385.405,00	411.462,10	406.109,49

Source: Indonesian Central Statistics Agency (2024).

Based on Table 1, it can be seen that the rice harvest area in Lampung Province is one of the rice centers in Indonesia. The rice harvest area continues to increase in the period of 2021-2023. In 2021, the rice harvest in Lampung Province experienced a fairly high increase of 530,108.09 (ha), an increase from 2021 which was 489,573.23 (ha). The increase in the area of rice harvest in Lampung Province is inseparable from the provision of production facilities by the government such as the construction and repair of irrigation canals that are useful for irrigating farmers' rice fields and increasing the use of rice seeds with superior varients which aim to develop rice commodities and increase rice production and productivity.

Lampung Province is one of the provinces in Indonesia that cultivates organic and inorganic rice. The three districts that cultivate organic rice are Tanggamus, Central Lampung, and Pringsewu Regencies with a total land area of 32.03 ha. Pringsewu Regency has the highest level of organic rice productivity in Lampung Province, which reaches 6.2 tons/ha (Lampung Provincial Agriculture Office).

Pringsewu is an area located in the province of Lampung, Indonesia, is one of the areas that has great potential in rice production. Pringsewu has a geographical location that consists mostly of lowlands to hills and has a tropical

climate with fairly high rainfall and relatively stable temperatures throughout the year, which is very suitable for rice cultivation (Setiawan et al, 2022). Pringsewu Regency is one of the rice production centers that still has great potential to be developed both in terms of technology application and other facilities and infrastructure that are able to encourage increased production. Gadingrejo District is one of the largest paddy rice producing sub-districts in Pringsewu Regency that takes part in the Upsus Padi program. The harvest area is 7,922 ha and the production is 42,866 tons (Astari et al, 2021)

Farmers in the Gadingrejo area are quite good at producing rice and the quality of the rice produced also meets food standards. However, farmers in the Gadingrejo area often face obstacles, namely market prices. The price of agricultural commodities often fluctuates based on demand and supply, and low prices during the harvest can cause farmers to have insufficient income to cover production costs. High production costs, including fertilizer prices, seed prices, pesticides, labor wages, and transportation can reduce farmers' profit margins.

This condition forces farmers to sell their crops only at low prices and sell them to farmer groups, local markets, and local residents, making them less profitable and negatively impacting their income. This condition is one type of market failure, namely. A situation where the market is unable to respond effectively to market needs due to incomplete or asymmetric information and attitudes that can incur transaction costs.

In this study, the Sharia maqashid framework is used as the main analytical tool to evaluate empirical findings related to property management, namely halal buying and selling practices. This is in line with Surah An-Nisa verse 29, which contains a strict command not to carry out activities of eating other people's property and even their personal property in a way that is not in accordance with the sharia.

Consuming personal property in a wrongful manner, for example by conducting transactions involving one's property in an unlawful manner or through sinful means, or consuming other people's property in a wrongful manner, such as consuming it through usury, abuse, or even fraud. Furthermore, engaging in wrongful transactions involves carrying out buying and selling transactions that are not in accordance with Islamic law (Pratiwi et al, 2025)

Transaction Fees are a process in which products or services are exchanged through a technologically separable interface. In this sense, a transaction involves the exchange of goods, services, or value between two or more parties. In classical economic theory, transactions are assumed to occur in an ideal market where information is symmetrical (in other words, all parties have equal access to information) and can be carried out at no additional cost. However, in reality, the market is often inefficient due to uncertainty, information asymmetry, or other factors that make consumers have to look for additional information and monitor the transaction process to ensure that the deal is profitable. The fees incurred during this process are called transaction

fees, which include any effort and resources used to perform, manage, or complete transactions (Rosanty et al, 2024).

Based on the description above, research on rice farmers and their transaction costs is needed, a study that has not been conducted in previous studies. Therefore, the researcher is interested in identifying and analyzing the determinants of transaction costs. This case study examines rice farming in Gadingrejo District, Pringsewu Regency. In this study, transaction costs are used as the unit of analysis, while rice farmers are the object of the study.

RESEARCH METHOD

The type of research that will be used in this study is associative quantitative research, Associative quantitative research is an investigation of social problems based on the testing of a theory consisting of variables, measured by numbers, and analyzed by statistical procedures to determine whether the predictive generalization of the theory is correct (Ali et al, 2022). Associative research is research that aims to determine the influence or relationship between two or more variables (Sinung et al, 2022).

In the study, the researcher aims to determine the relationship or influence between variables, namely the relationship or influence between independent variables in the form of uncertainty (X1), social network (X2), and frequency (X3) on dependent variables in the form of transaction fees (Y).

Population

Population is a generalized area consisting of objects or subjects that have certain qualities and characteristics that are determined by the researcher to be studied and then drawn conclusions (Aziz Alimul Hidayat, 2021). Population is also the whole of the subject or object that will be the subject of the research (Setyorini, & Setyorini, 2024). This means that the population is an overall object to be studied that has certain predetermined characteristics that the researcher uses to study more deeply and will draw conclusions afterwards. The population in this study is rice farmers in Gadingrejo sub-district in the villages of South Yogyakarta, Klaten, and Kediri which totals 453 farmers.

Sample

A sample is a part of the population or a representative of the population that is researched and taken as a data source and can represent the entire population or a sample is a part of the number and characteristics possessed by the population (Practical et al, 2024). The use of samples in a study is due to time, cost and energy limitations. The conclusions of the sample study can be applied to the population (generalization). So that the sample used must be truly representative (resrepresentatis) (Scott, 2017).

In this study, sample selection was taken using purposive sampling techniques, purposive sampling is a sample taken based on certain considerations and does not provide the same opportunity for each member of the population to be selected as a sample (Kiareni & Sorisa, 2024). Samples were selected with the following sample selection criteria: Agricultural land owners who own agricultural land, reside in Gadingrejo sub-district and the main

income is from Farming, Rice farmers who rent agricultural land and live in Gadingrejo, Rice farmers who are members of farmer groups and those who do not join groups. The sample in this study is 59 farmers.

Research Objectives

To find out the uncertainty, social networks, and frequencies affect transaction costs in Gadingrejo District from an Islamic economic perspective.

Data Collection Techniques

In this study, the data collection technique used a questionnaire. A questionnaire is also referred to as a set of questions or statements used to obtain information from a person related to the research to be conducted (Rosita et al, 2021). In addition, the questionnaire is suitable to be applied if the number of respondents is large enough and spread over a large area. The questionnaire is given with questions and structured statements to the respondents for them to answer (Scott, 2017). The questionnaire uses a likert scale with 5 points, namely 1 = strongly disagree, 2 = disagree, 3 = neutral 4 = agree, 5 = strongly agree.

Data Analysis Techniques

Data analysis is a processing activity after data from all respondents collected in quantitative research. Activities in data analysis are to group data based on respondents, tabulate data based on variables and all respondents, present data for each variable studied, perform calculations to answer the formulation of the problem and perform calculations to test the hypothesis that has been proposed (Scott, 2017). The calculation will be done using SEM (*Structural equation modeling*) or structural equation models. SEM will be analyzed through Smart PLS software. The following are some of the data analysis models that will be used in this study:

Partial Least Square *(PLS)* Method

PLS-SEM is short for *Structural Equation Modeling* Based *Partial Least Square*. There are two components of understanding that can be used as a basis for SEM using PLS. The first meaning of PLS and the second meaning of SEM (Narimawati & Sarwono, 2024). PLS is a predictive technique that is an alternative to Ordinary Least Square (OLS) regression, canonical correlation, or Structural Equation Modeling (SEM) Measurement Model Planning (*Outer Model*) (Susilo et al, 2024). SEM (Structural Equation Model) or Structural Equation Model is a statistical analysis for research that requires a "simultaneously/simultaneously" analysis of all variables and their indicators (Setiabudhi et al, 2025)

Analysis *Outer model* or measurement models show how the latent variable relates to its indicators. This analysis is to ensure that the size (*Measurement*) used as a measure or *Valid* and *Reliable*. The evaluation of the measurement model through the analysis of confirmatory factors is by using the MTMM approach *(MultiTrait-MultiMethod)* with *Testing Convergent Validity* and *Discriminant validity*. Meanwhile, the reliability test is carried out in two ways, namely by *Cronbach"s Alpha* and *Composite Reliability* (Ghozali, & Latan, 2020).

1. *Convergent validity*
   Unverifying Validity is one of the criteria in the analysis test using Smart PLS (Irvandel & Yunas, 2024). *Convergent validity* is an indicator that is assessed based on the correlation between items *Score/Component Score* with *construct score*, which can be seen from *Standardized Loading Factor* which describes the magnitude of the correlation between each measurement item (indicator) and the construct. An individual reflective measure is said to be high if it correlates more than 0.70 with the construct to be measured. According to (Ghozali & Latan 2020) value *Outer Loading* 0.50-0.60 is still acceptable.
2. *Discriminant validity*
   Discriminant Validity is a validity test used to see which indicators are better chosen over others outside of research that can be predicted by latent constructs (Melisa, 2024). The discriminant validity test can be assessed based on the value of the *Cross Loading* and *Fornell Larcker Criterion*. An indicator must have a greater correlation coefficient with each construct than with the value of the other correlation coefficients to be valid. Discriminant validity tests the extent to which a construct is completely different from other constructs (Rizki Syahputra et al, 2022).
3. *Composite Reliability*
   According to (Ghozali & Latan, 2020) value of *Composite reliability* must > 0.70 for research that is *confirmatory* and a score of 0.60 - 0.70 is still acceptable for research that is *exploratory.*

Structural Model Planning (Inner Model)

An internal model is a structural model based on path coefficient values, which examines how much influence latent variables have on initial calculations. The tests carried out on structural models are the *R-Square* (R2). *R-Square* PLS models can be evaluated by looking at *R-Square predictive relevance* for variable models. The next step is to evaluate the R value^2, the interpretation of the value of R^2 equal to the interpretation of R^2 linear regression, i.e. the magnitude of *variability* endogenous variables that can be explained by exogenous variables. Criterion R^2 consists of three classifications, namely the value of R^2 0.670 (good), 0.330 (medium), and 0.190 (weak) (Rizki Syahputra et al, 2022).

Hypothesis Test

1. Partial Test (t-test)
   According to Hussein, the testing of values at this stage can be seen from the t-statistical value and the probability value. In Smart PLS, these values can be seen from the results of bootstrapping. For hypothesis testing, a probability value of 5% and a t-statistical value of 1.96 were used. So that the criterion for accepting or rejecting the hypothesis is Ha is accepted if the value of $p < 0.05$ (5%). Meanwhile, to find out whether the level of significance or not is used, the t-statistical value > 1.96 is used. Similarly, Ha is rejected if the p-value is > 0.05 (5%) and is considered insignificant if the t-statistical value < 1.96 (Management, 2015).

2. Simultaneous Test (Test f)

The F test is an equation significance test used to determine how much the independent variables together affect the dependent variables. In simultaneous testing, the influence of the two independent variables together on the dependent variables will be tested. The test statistics used in simultaneous testing are the F test with the following formula:

$$\text{Fhit} = \frac{R2\ (n-k-1)}{(1-R2)\ 2}$$

Information

R2 : R- Value*Square*

N : Number of Samples

K : Number of Endogenous Variables

Simultaneous effect testing of the two independent variables on the dependent variables used the following criteria F:

- Ha: is rejected if $F_{calculates} < F_{table}$, which means that uncertainty, social networks and frequency have a negative effect on the Transaction Fee.
- Ha: is rejected if $F_{calculates} > F_{table}$, which means that uncertainty, social networks and frequency have a positive effect on transaction costs.

FINDINGS AND DISCUSSION

The overview of the research will be described descriptively including the characteristics of the respondents as follows:

Respondent Characteristics

Table 2. Respondent Data Based on Criteria Agricultural Land Owners, Renting Land, Joining Farmer Groups and Non-Members.

No	Respondent Criteria	Sum	Percentage
1.	Agricultural land owners who own agricultural land, reside in Gadingrejo sub-district and the main income from farming	18	30,51%
2.	Rice farmers who rent agricultural land and live in Gadingrejo	11	18,64%
3.	Rice farmers who are members of farmer groups	19	32,20%
4.	Rice farmers who do not join farmer groups	11	18,64%
	Total	59	100%

Data Source: Sample of Rice Farmers in Gadingrejo District

Based on the table above, the number of respondents with the criteria of agricultural land owners residing in Gadingrejo with the main income from farming was 18 people with a percentage of 30.51%, agricultural land tenants were 11 people with a percentage of 18.64%, farmers who were members of

farmer groups as many as 19 people with a percentage of 32.20%, and farmers who were not members of farmer groups as many as 11 people with a percentage of 18.64%.

Table 3. Respondents by age

No	Age	Sum	Percentage
1.	25-35	13	22,03%
2.	35-45	33	55,93%
3.	45-55	13	22,03%
Total		59	100%

Data Source: Sample of Rice Farmers in Gadingrejo District

Based on the table above, the number of respondents aged 25-35 years is 13 people with a percentage of 22.03%, for the number of respondents aged 35-45 years is 33 people with a percentage of 55.93%, and the number of respondents aged 45-55 is 13 people with a percentage of 22.03%.

Data Analysis

The data processing techniques applied in this study use the Smart PLS v.4.1.0.2 application which is applied through the Measurement Model Planning (Outer Model) and Structural Model Planning (Inner Model) stages. The stages are as follows:

1. Measurement Model Planning (*Outer Model*)

   There are three criteria in the use of data analysis techniques with Smart PLS to assess *the Outer Model*, namely *Convergent Validity*, *Discriminant Validity* and *Composite Reliability*. The following is the model scheme of the Smart PLS program with *an Outer Model* assessment:

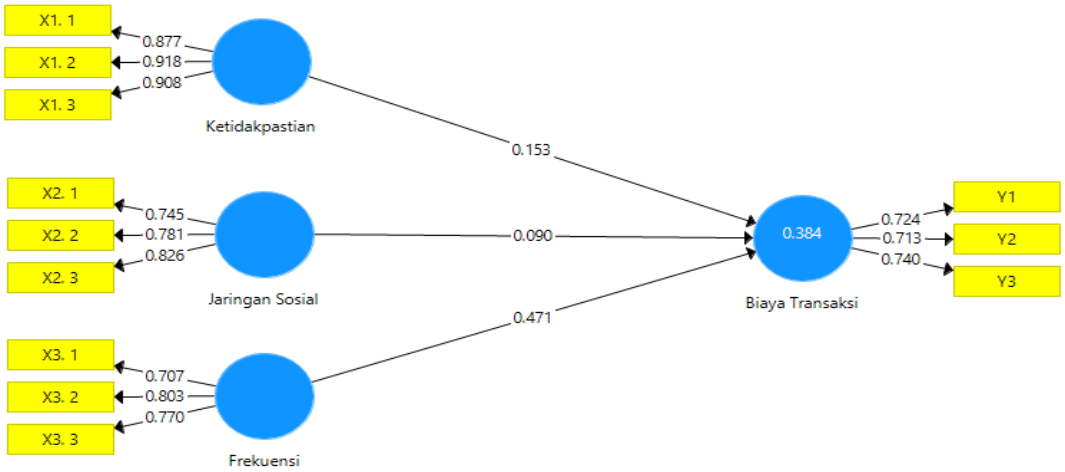

Figure 1. Outer Model Scheme

The results of the research from the Outer Model measurement were obtained as follows

Table 4. Outer Model Test Results Data

Variable	*Composite Reliability*	*Average Variance Extracted (AVE)*

Uncertainty (X1)	0.928	0.812
Social Networks (X2)	0.828	0.616
Frequency (X3)	0.805	0.579
Transaction Fee (Y)	0.769	0.527

Data Source: SmartPLS Processed Data 3, 2025

Based on table 4, the *Composite Reliability* value can be said that all variables have exceeded 0.7. Likewise, in the AVE value, all variables have exceeded 0.5 so that it can be said that the data has met the validity and reliability tests.

2. Convergent validity

The initial step taken is a measurement that functions to find out the extent to which the size is positively correlated with the alternative size in the same construct. The assessment can be carried out using data from the processing through *Outer Loading*. According to Imam Ghazali, the value of *Outer Loading* between 0.50 - 0.60 is considered sufficient to qualify *Convergent Validity* (Imam Ghozali, 2015). Smart PLS output for *Outer Loading* can be seen in Table 5 as follows.

Table 5. Convergent Validity Test Results Data Using *Outer Loading*

Variable Indicators	Uncertainty (X1)	Social Networks (X2)	Frequency (X3)	Transaction Fee (Y)
X1.1	0.877			
X1.2	0.918			
X1.3	0.908			
X2.1		0.745		
X2.2		0.781		
X2.3		0.826		
X3.1			0.707	
X3.2			0.803	
X3.3			0.770	
Y.1				0.724
Y.2				0.713
Y.3				0.740

Data Source: SmartPLS Processed Data 3, 2025

Based on table 5, it can be seen that the results of several indicators meet the significance value requirements of >0.50. Thus, the construct is said to be valid and has met the validity requirements because it has an *outer loading value* above 0.50.

The next stage is to assess the *convergent validity* through the AVE value (*Average Variance Extracted*). According to Hair, an AVE value of at least 0.50 indicates a size *convergent validity* which is good, meaning that latent variables can explain on average more than half the diversity of their indicators (Joseph F. Hair Jr. et al., 2010). The following are the results of the

AVE assessment from this study.

Table 6. Convergent Validity Test Results Data Using *Average Variance Extracted* (AVE)

Variable	(*Average Variance Extracted*)	Information
Uncertainty (X1)	0.812	Valid
Social Networks (X2)	0.616	Valid
Frequency (X3)	0.579	Valid
Transaction Fee (Y)	0.527	Valid

Data Source: SmartPLS Processed Data 3, 2025

Based on the table above, it can be concluded that the AVE (*Average Variance Extracted*) value for the uncertainty variable is 0.812, for the social network variable is 0.616, for the frequency variable is 0.579, and for the transaction fee variable is 0.527 which means that the AVE value of the three variables is above 0.50. Therefore, these results show that the data contained in this study has met the requirements for *convergent validity* or can be said to be valid. The combination of the *Outer Loading* assessment and the AVE test shows that the data in this study is valid and eligible to proceed to the next stage.

3. Discriminant validity

The discriminant validity test can be assessed based on *the cross loading* value and *the Fornell Larcker Criterion*. An indicator must have a greater correlation coefficient with each construct than with the value of the other correlation coefficients to be valid. Discriminant validity tests the extent to which a construct is completely different from other constructs. The results of *the cross loading* test using Smart PLS in this study are as follows.

Table 7. Discriminant Validity test results data based on cross loading

Variable Indicators	Uncertainty (X1)	Social Networks (X2)	Frequency (X3)	Transaction Fee (Y)
X1.1	**0.877**	0.677	0.431	0.425
X1.2	**0.918**	0.631	0.607	0.502
X1.3	**0.908**	0.691	0.443	0.350
X2.1	0.732	**0.745**	0.281	0.259
X2.2	0.354	**0.781**	0.204	0.249
X2.3	0.628	**0.826**	0.341	0.349
X3.1	0.465	0.306	**0.707**	0.364
X3.2	0.309	0.296	**0.803**	0.452

X3.3	0.503	0.232	**0.770**	0.509
Y.1	0.350	0.329	0.404	**0.724**
Y.2	0.305	0.191	0.345	**0.713**
Y.3	0.384	0.277	0.507	**0.740**

Data Source: SmartPLS Processed Data 3, 2025

Based on the table above, *the results of cross loading* must show that the indicator of each construct has a higher value than the indicator of the other construct. The next stage is to test the research data using *fornell larcker criteria* to *obtain a good discriminant validity* of a research model, the root of AVE (*Average Variance Extracted*) in the construct must be higher than the correlation of the construct with other latent variables. The results *of the fornell larcker criteria* obtained in this study can be seen in the table below.

Table 8. Discriminant Validity Test Results Data based on *Fornell larcker criteria*

	Transaction Fees	**Frequency**	**Social Networks**	**Uncertainty**
Transaction Fees	**0.726**			
Frequency	0.589	**0.761**		
Social Networks	0.372	0.359	**0.785**	
Uncertainty	0.482	0.558	0.735	**0.901**

Data Source: SmartPLS Processed Data 3, 2025

Based on the table above, we can conclude that all variables have higher values when describing the variables themselves compared to other variables. One example can be observed in the frequency variable which has a value of 0.761 which means it is higher than 0.589. Therefore, the data model tested in this study has met the *requirements of discriminant validity.*

4. Composite Reliability

A reliability test is a tool to measure a questionnaire that is an indicator of a variable. A measuring instrument or instrument is said to be able to provide stable or constant measurement results if the measuring instrument is reliable or reliable. According to Imam Ghazali, the value of *Composite reliability* must > 0.70 for research that is *confirmatory* and a score of 0.60 - 0.70 is still acceptable for research that is *exploratory*(Imam Ghozali, 2015). The table of values *Composite reliability* are as follows.

Table 8. Composite Reliability Test Results Data

Variable	***Cronbach Alpha***	***Composite reliability***

Transaction Fees	**0.559**	0.769
Frequency	0.641	0.805
Social Networks	0.693	0.828
Uncertainty	0.885	0.928

Data Source: SmartPLS Processed Data 3, 2025

Based on table 8, it can be concluded that there are all unreliable constructs, the *Cronbach alpha* value on the Transaction Cost variable indicates a value of 0.559. This indicates that there is 1 variable in this research model that is unreliable because the *Cronbach alpha* value is less than 0.60 – 0.70. Based on several previous tables, it can be concluded that this study has *convergent validity*, *good discriminant validity* and *internal consistency reliability* which is still unreliable because there is one variable that does not reach the minimum value. The following is a table showing a summary of validity and reliability.

Table 9. Summary of Outer Model Test Results Data

Variable	Indicators	Outer Loading	Cronbach Alpha	CR	AVE	Discriminant Validity
Uncertainty	X1.1	0.877	0.885	0.928	0.812	Valid
	X1.2	0.918				
	X1.3	0.908				
Social Networks	X2.1	0.745	0.693	0.828	0.616	Valid
	X2.2	0.781				
	X2.3	0.826				
Frequency	X3.1	0.707	0.641	0.805	0.579	Valid
	X3.2	0.803				
	X3.3	0.770				
Transaction Fees	Y.1	0.724	**0.559**	0.769	0.527	Valid
	Y.2	0.713				
	Y.3	0.740				

Data Source: SmartPLS Processed Data 3, 2025

5. Structural Model Planning (*Inner Model*)

The assessment of the structural model using Smart PLS begins by looking at the R-Square value for each endogenous latent variable, namely the influence of uncertainty, social network, and frequency on transaction costs as the predictive power of the structural model.

Table 10. Data of *Inner Model* Test Results Based on *R-Square Value*

	R-Square
Transaction Fees	0.384

Data Source: SmartPLS Processed Data 3, 2025

Based on table 10, it is known that the R-Square value of the Transaction Fee is 0.384 (medium category). These results show that 38.4% of the Transaction Fee variables can be influenced by the variables of uncertainty, social networks, and frequency, while 61.6% are influenced by other variables outside of the one studied.

Hypothesis Testing

Partial Test (t-test)

The hypothesis in this study can be known from the calculation of the model using the Smart PLS *bootstrapping* technique. From the results *of the bootstrapping calculation, the* partial t value and the probability value will be obtained. The results of the calculation for the hypothesis test in this study will be described in the following table 11.

Table 11. Hypothesis Test Results Data

	Original Sample (O)	**T-Value**	**P-Value**	**Hypothesis**
X1->Y	0.153	0.930	0.353	Accepted
X2->Y	0.090	0.659	0.510	Rejected
X3->Y	0.471	3.200	0.001	Accepted

Data Source: SmartPLS Processed Data 3, 2025

From the table above, the following hypothesis can be concluded

1. Hypothesis 1 (it is suspected that uncertainty has a positive and significant effect on transaction costs). It can be seen that the p-value is 0.353 and the partial t or t-value is 0.930. Since the partial t < 1.96 and the p-value < 0.05, H^1 is accepted. So uncertainty has a positive and insignificant effect on transaction costs.
2. Hypothesis 2 (it is suspected that social networks have a positive and significant effect on transaction costs). It can be seen that the p-value is 0.510 and the partial t or t-value is 0.659. Since the partial t < 1.96 and the p-value > 0.05, H^2 is accepted. So social networks have a negative and insignificant effect on transaction costs.
3. Hypothesis 3 (it is suspected that frequency has a positive and significant effect on transaction costs). It can be seen that the p-value is 0.001 and the partial t or t-value is 3.200. Since the partial t > 1.96 and the p-value < 0.05, H^3 is accepted. So frequency has a positive and significant effect on transaction costs.

Simultaneous Test (Test f)

To test the two independent variables against the bound variables, namely the influence of uncertainty, social networks, and frequency on transaction costs, a simultaneous test (f-test) was carried out by taking into account the R-Square value of 0.545 (54.5%), then the F-value can be obtained as follows:

$$\text{Fhit} = \frac{R2\ (n-k-1)}{(1-R2)\ 2}$$

$$\text{Fhit} = \frac{0{,}545\ (60-3-1)}{(1-0{,}545)\ 3}$$

$$\text{Fhit} = \frac{0{,}1817}{0{,}008125}$$

$$\text{Fhit} = 22.37$$

Information

R2 : R-Square Value
N : Number of Samples
K : Variable Endoglene

After knowing the value of F calculated, the next step is to find the value of F table with a significance level of α of 0.05 (5%). The following are the results of the calculation of the F table.

F_{table} = F(k; n-k-1)
Rate = 0.05 (3; 60-3-1)
Rate = 0.05 (3; 56)

The F-value of the table obtained from 3 and 56 is 2.77. Then F calculates (54.5) > F table (2.77), which means that uncertainty, social networks and frequency simultaneously have a positive and significant effect on transaction costs.

Discussion

In this section, we will describe one after another the discussion of the influence between variables whose hypothesis has been put forward in the previous section. Here is the explanation.

The Effect of Uncertainty on Transaction Fees

Uncertainty has a positive and insignificant effect on transaction costs. Uncertainty has a positive and insignificant influence on transaction costs due to several factors related to the implementation of uncertainty. First, price uncertainty in transactions. Price uncertainty in transactions makes rice farmers unable to predict the selling price of rice with certainty and makes them have to consider the risk of higher prices, so they will increase the selling price of rice to anticipate losses. This means that the higher the level of price uncertainty, the higher the transaction costs of rice farmers. In the context of economic growth, in the theory of TCE, It arises from difficulties in predicting the actions of the other party in the transaction, due to opportunism and limited rationality (Lopes Amaral & Wutun, 2022). In the dynamic and challenging world of agriculture, uncertainty is one of the most crucial factors to consider. Climate change, market price fluctuations, and the risk of crop diseases can affect

farmers' yields and incomes. Therefore, understanding and managing these uncertainties is key for farmers to increase efficiency and productivity.

Based on the results of the hypothesis test that has been carried out which states that the partial t value of 0.930 < 1.96 shows uncertainty that does not affect transaction costs and the significance value or p-value of 0.353 < 0.05, then uncertainty has a significant positive effect on the transaction costs of rice farmers in Gadingrejo District. The results of this study also support the results of previous research conducted by (Lopes Amaral & Wutun, 2022) with the conclusion that uncertainty has a positive effect on transaction costs.

The Influence of Social Networks on Transaction Fees

Social networks have a negative and insignificant effect on transaction costs. In this case, social networks do not have a significant influence on transaction costs and farmers can manage their transaction costs without having to consider social network factors which include good relationships between customers and farmers, farmer-farmer relationships. As in theory according to James Coleman, Coleman views *Social Capital* as a resource inherent in the structure of social relations that facilitates the actions of actors, both individual and collective. Social networks, in Coleman's view, allow for a more efficient flow of information and facilitate coordination and cooperation, which directly reduces the costs associated with information retrieval, negotiation, and agreement enforcement (transaction costs). In this case, Social networks are very important in marketing or buying and selling transactions. Social networks can be used as social capital or capital that is not in the form of money in buying and selling transactions because it is a social relationship that lasts relatively long and has a pattern. If social relationships occur only once between two individuals, it is not said to be a social network. Social networks are the main capital in a buying and selling or exchange transaction in the economic sector, including buying and selling crop production in rural areas (Dan, 2025).

Based on the results of the hypothesis test that has been carried out which states that the partial t-value of 0.659 < 1.96 shows that the social network has no effect on transaction costs and the significance value or p-value of 0.510 > 0.05, then the social network is not significant to the transaction costs of rice farmers in Gadingrejo District. The results of this study are not in line with previous research conducted by (Setyanto & Iskandar, 2021) In this study, it was stated that the results of his research were that social networks had a negative effect that was not significant. The difference in the results of the study is due to several factors, namely the sample used in this study and the previous research is different.

The Effect of Frequency on Transaction Fees

Frequency has a positive and significant effect on transaction costs. In this case, the frequency has a positive effect on transaction costs because there are factors related to the implementation of the frequency, frequency of sales transaction costs, the frequency of sales transaction costs, the impact of which makes farmers often disadvantaged with each transaction there is a discount or

additional administrative fee in each sales transaction, it can increase transaction costs. This is that the higher the frequency of sales, the more transaction costs of rice farmers will increase. This result is in accordance with the Economies of Scale Theory, according to this theory, transaction costs can decrease if transaction volume increases, because fixed costs can be divided over larger transaction volumes. However, if the frequency of transactions increases, then transaction fees may increase as variable costs increase. In the context of rice farmers, variable costs such as transportation costs etc. Close & Kukar-Kinney argues that the frequency of repeated transactions is one of the important dimensions to describe transactions. In internet shopping, the frequency of purchases also has an influence on the transaction costs felt by consumers and their willingness to buy the item (Lopes Amaral & Wutun, 2022).

Based on the results of the hypothesis test that has been carried out which states that the partial t-value of 3,200 > 1.96 shows that the frequency affects the transaction cost as well as the significance value or p-value of 0.001 < 0.05, then the social network is significant to the transaction costs of rice farmers in Gadingrejo District. The results of this study are in line with the research conducted by (Islam et al., 2025) In the study, the results were that the frequency had a significant positive effect on transaction costs and in the research conducted by (Setyanto & Iskandar, 2021) It also has results that are in line with this study, namely the frequency has a significant effect on transaction costs.

The Influence of Uncertainty, Social Networks, and Frequency on Transaction Fees

In the dynamic and challenging world of agriculture, uncertainty is one of the most crucial factors to consider. Climate change, market price fluctuations, and the risk of crop diseases can affect farmers' yields and incomes. Therefore, understanding and managing these uncertainties is key for farmers to increase efficiency and productivity.

In addition, social networks also play an important role in the success of agriculture. By building strong relationships with fellow farmers, suppliers, and buyers, farmers can gain access to valuable information, new technologies, and a wider market. A solid social network can also help farmers in dealing with the challenges and risks they face.

The frequency of effective agricultural activities is also an important aspect to consider. By optimizing the frequency of planting, fertilizing, and harvesting, farmers can increase yields and reduce production costs. In addition, effective frequency can also help farmers in managing natural resources better and improving product quality.

Thus, understanding uncertainty, building strong social networks, and optimizing the frequency of agricultural activities can be key to success for farmers in increasing efficiency, productivity, and income. Therefore, it is important for farmers and agricultural stakeholders to pay attention to and develop these three aspects in their agricultural strategies.

Based on the results of the simultaneous test (F test) that has been carried out, it is stated that the F value calculated (54.5) > the F value of the table (2.77) shows uncertainty, social distance and frequency in farmers in Gadingrejo have a positive and significant effect on transaction costs.

The findings of this study provide a new perspective on transaction cost theory in the context of sharia economics. Refers to QS. An-nisa verse 29 which prohibits the taking of property without a valid reason, fair and transparent practices in transactions are the key to ensuring the welfare of farmers. Transaction costs in Islamic economics not only consider financial aspects, but also focus on social aspects, namely fairness, trade balance, and business ethics.

CONCLUSION

The conclusions that the researcher can put forward are: Variable test results (X1) Uncertainty has a positive and insignificant effect on Transaction Costs. This result shows that the more often the uncertainty arises in transactions, the more losses or disappointments experienced by farmers will increase. The test results of the Social Network variable (x2) had a negative and insignificant effect on transaction costs. This result shows that the more often social networks appear or occur, the more it will affect transaction costs. The results of the variable frequency (X3) test Frequency had a positive and significant effect on transaction costs. One of the reasons for this result is that there are discounts or additional fees that occur in each transaction.

In the context of *maqashid sharia*, the results of this study emphasize the importance of fairness and transparency in transactions. Maqashid sharia, which aims to achieve the welfare of the community, is in line with the principle that every transaction must be fair and not detrimental to other parties. Surah An-Nisa verse 29 emphasizes the prohibition of taking other people's property illegally, which reflects the importance of ethics and justice in every form of economic transaction.

Therefore, the application of sharia principles in the management of transaction costs can help create a system that is not only economically efficient but also fair and sustainable. Thus, policy interventions that strengthen institutions and implement transaction models based on Islamic values, such as mudharabah and musyarakah, are needed to achieve holistic welfare for farmers.

REFERENCES

Ali, M. M., Hariyati, T., Pratiwi, M. Y., & Afifah, S. (2022). *Quantitative Research Methodology and Its Application in Research*. *2*(2).

Ayun, Q., Kurniawan, S., Saputro, W. A., Program, M., Agribusiness, S., Duta, U., ... Surakarta, B. (2020). *The development of agricultural land conversion in parts of the agrarian state*. *5*(2), 38–44.

Cuypers, I. R. P. (2021). *Transaction Cost Theory : Past Progress , Current*

Challenges , and Suggestions for the Future Transaction Cost Theory : Past Progress , Current Challenges , And Suggestions For The Future. (October 2020). https://doi.org/10.5465/annals.2019.0051

Dan, J. P. (2025). *Journal of sociological thought and research*. *2*(1), 108–118. https://doi.org/10.52423/societal.v2i1.64

Empiris, K., Company, T., Registered, M. Y., Bursa, D. I., & Jakarta, E. (1967). *Company Size And Profitability :* 81–93.

Galitan, J. H., Duko, F., Hatim, F., Economics, F., & Khairun, U. (2024). *Analysis of Rice Production in Indonesia*. *4*(3), 7281–7301.

Haris, R. (2025). *The Contribution of Chili Farmers in Improving the Community Economy in Mariorennu Village, Gantarang District, Bulukumba Regency*. *4*(1).

Hidayat, A. A. (2021). *Easy way to calculate sample size*. Health Books Publishing.

Imam Ghozali, H. L. (2015). *Partial Least Squares: Concepts, Techniques and Applications Using SmartPLS 3.0, -2/E Program.* Semarang: Publishing Agency of Diponegoro University.

Islam, U., Raden, N., & Lampung, I. (2025). *Construction of Transaction Costs and Islamic Economic Principles in Cocoa Agroindustry Rivana Maharani , 2 Nurlaili Nurlaili , 3 Diah Mukminatul Hasimi A . Kartika : Journal of Islamic Studies. Volume 5, Number 1, May 2025*. *5*(2), 1136–1153.

Jasmine, K. (2014). *Addition of sodium benzoate and potassium sorbate (antiinversion) and stirring speed as an effort to inhibit inversion reactions in sugarcane sap*, *19*, 97–104.

Joseph F. Hair Jr. et al. (2010). *Multivariate Data Analysis*. European Business Review.

Khairus Sabri M, Ayesha, I., & Gusvita, H. (2019). Analysis of Income of Paddy Rice Farmers with Profit Sharing System in Nagari Lubuk Pandan, 2x11 Enam Lingkung District, Padang Pariaman Regency. *UNES Journal-Agricultural Students (UJMP), 3*(1), 82–90.

Kiareni, C. L., & Sorisa, C. (2024). *Analysis of the Application of Sampling Distribution to Information Quality and Social Media User Satisfaction*. *2*(6), 560–564.

Lopes Amaral, M. A., & Wutun, M. B. M. G. (2022). The use of transaction cost theory in online purchase behavior. *Jmbi Unsrat (Scientific Journal of Business Management and Innovation, Sam Ratulangi University).*, *9*(1), 30–41. https://doi.org/10.35794/jmbi.v9i1.36605

Management, J. (2015). *Business Research and Management Using Partial Least Squares (PLS) with smartPLS 3.0*.

May, V. N., Noor, G. P., Rifai, N., Susana, N., High, S., & Economics, I. (2024). *Tpet (Where Theory , Practice , Experience , & Talent meet) Community Service Journal Training Of Amos Data Processing , Smart Pls And Spss For Students Of Stie Gici Depok 2024. Consider using 3*:1–4.

Melisa, N. (2024). *The Effect of Inflation, Tax Audits and the Number of Taxpayers on Income Tax Revenue*. *pp. 2*(01), 601–607.

Introduction, I., & Problem, L. B. (2024). *The Effect Of Competency On Performance*

Evaluation. *1*(01), 54–61.
Pirngadi, R. S., Utami, J. P., Siregar, A. F., Lubis, W., Intan, D. R., Studi, P., ... North, S. (2023). *Analysis of farmers' income and factors affecting paddy rice production in Baktinya District, North Aceh Regency*. *16*(1).
Praktis, P., Jailani, M. S., & Jeka, F. (2024). *Population and Sampling (Quantitative), as well as Selection of Key Informants of Population and Sampling (Quantitative), as well as Selection of Key Informants (Qualitative) in a Practical Approach*. (December).
Prof. Dr. Sugiyono. (2017). *Business Research Methods Quantitative, Qualitative, Combination and R&D Approaches*. Bandung: Alfabeta, Cv.
Rejo, G., Pringsewu, K., Information, U. G., & District, G. R. (2022). *Journal of Agricultural Biosystem Engineering Using Geographic Information Systems in Pringsewu District and Gading Rejo District, Pringsewu Regency*.
Rizki Syahputra, Rezzy Eko Caraka, P. U. G. (2022). *Partial Least Squares Structural Equation Modeling (PLS-SEM) with WarpPLS Software*. Ponorogo: Uwais inspiration Indonesia.
Rosita, E., Hidayat, W., & Yuliani, W. (2021). Test the validity and reliability of the prosocial behavior questionnaire. *Fokus (Guidance & Counselling Study In Education)*, *4*(4), 279. Https://Doi.Org/10.22460/fokus.v4i4.7413
Sarwono, N. & . (2024). *Structural Equation Modeling Based on Partial Least Square Using SmartPLS*. Yogyakarta: Andi Publishers.
Setiabudhi, Suwono, S. & K. (2025). *Quantitative Data Analysis with SmartPLS 4*. Balikpapan: Borneo Novelty Publishing.
Setyanto, A. R., & Iskandar, D. D. (2021). Analysis Of Transaction Cost Determinants (Case Study of Milkfish Ponds, Juwana District, Pati Regency). *Journal of Marine and Fisheries Socio-Economics*, *16*(1), 13. https://doi.org/10.15578/jsekp.v16i1.8105
Setyorini, R. & (2024). *Quantitative Research Methods with SmartPls 4.0 Approach*. Cv Budi Utama Publishing Group.
Sinung, H., Zakaria, T. R., & Upe, R. (2022). The influence of brand image and price on the purchase decision of the Toyota Avanza car (a study on consumers of auto dealers 2000 grand depok city). *Journal of Civilization Governance* , *2*(2), 133–139.
Sukratman, I. M., & Safitri, D. (2024). *The Influence of Land Area, Production and Grain Price on the Income of Paddy Rice Farming (Oryza Sativa) in Wonggeduku Village, Wonggeduku District, Konawe Regency*. *4*, 4358–4369.
Triatmo, W., & Pt, S. (2024). *Journal of E-Bus: Business Economics*. *8*(2), 507–519.
Usahatani, P., Sawah, P., Upsus, P., Di, P., & Pringsewu, G. K. (2021). *Journal of Agribusiness Science: Journal of Agribusiness Science, 9 (4), November 2021 Journal of Agribusiness Science: Journal of Agribusiness Science , 9 (4), November 2021*. *9*(November), 577–584.
Warta, J., & Vol, G. (n.d.). *Social Capital: 1*(1), 59–72.