Jurnal Ilmiah Wahana Pendidikan, September 2024, 10 (18), 696-717
DOI: https://doi.org/10.5281/zenodo.13944008
p-ISSN: 2622-8327 e-ISSN: 2089-5364
Accredited by Directorate General of Strengthening for Research and Development
Available online at https://jurnal.peneliti.net/index.php/JIWP

.

Cultivating the Future: Analyzing the Adoption Extent and Adoption Factors of Technology Among Agriculture MSMEs in Pamijahan, Bogor Regency

Moreno Verli Widjanarko[1] , Fahrur Rozi Harahap[2], Frans[3], Eko Ruddy Cahyadi[4]

[1,2,3,4]Management Department, Faculty of Economics and Management, IPB University

Received: 06 September 2024
Revised: 11 September 2024
Accepted: 22 September 2024

Abstract

The rapid evolution of agricultural technology offers unique opportunities and challenges, particularly for micro, small, and medium enterprises (MSMEs) in the food crop sector. This study investigates the adoption of agricultural technology among rice farmers in Pamijahan, an area pivotal for rice production in Bogor Regency. The study's objectives are to analyze the extent and factors influencing agricultural technology adoption among rice farmers in Pamijahan. The methodological approach begins with cross-tabulation to analyze the extent of technology adoption across various processes in the agribusiness management system and followed by multiple linear regression analysis based on the simplified Technology Acceptance Model (TAM), integrating variables such as perceived usefulness, ease of use, and attitudinal tendencies. Data were gathered over a period of five months. Primary data collection involved structured questionnaires targeted at rice farmers, while secondary data was obtained from institutional reports. The results reveal a moderate adoption level, with significant use of staple seed, hand tractor, and simple grinding technologies, but a persistent reliance on manual methods for planting and harvesting. The TAM analysis shows that perceived usefulness, ease of use, and attitudes towards technology are key influencers of adoption, accounting for 67.7% of the variance in farmers' intention to use technology. These findings underscore the importance of farmers' perceptions of technology adoption and suggest that improving technology understanding and accessibility could significantly enhance adoption rates, promoting agricultural productivity and sustainability in smallholder farming.

Keywords: *Agricultural Technology, Agribusiness Management System, Micro Small Medium Enterprises (MSMEs), Rice Farming, Technology Adoption Model*

(*) Corresponding Author: moreno.vrll@gmail.com

How to Cite: Widjanarko, M., Harahap, F., Frans, F., & Cahyadi, E. (2024). Cultivating the Future: Analyzing the Adoption Extent and Adoption Factors of Technology Among Agriculture MSMEs in Pamijahan, Bogor Regency. *Jurnal Ilmiah Wahana Pendidikan*, *10*(18), 696-717. https://doi.org/10.5281/zenodo.13944008

INTRODUCTION

Micro Small and medium-sized enterprises (MSMEs) play a crucial role in bolstering national economic growth. These independent economic units, distinct from larger corporate bodies, have shown a marked increase in their contribution to the Gross Domestic Product (GDP) and the national workforce (Widjanarko et al. 2023). This is evidenced by the information in Figure 1 that the contribution of

MSMEs to GDP has continued to increase since 2019 to reach 61.9 percent in 2022 and absorb national employment up to 97 percent (Kemenkop UKM, 2023).

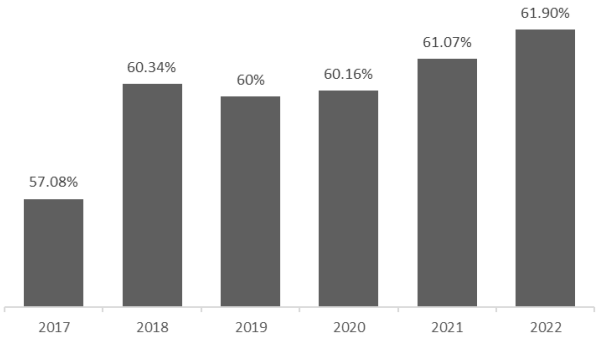

Figure 1. MSME Contribution to GDP from 2017-2022
Source: Data processed from Kemenkop UKM (2023)

Agriculture, identified by BI (2015) as a critical sector within the SME framework, significantly impacts Indonesia's economic landscape. In the third quarter of 2022, this sector contributed an impressive 12.91% to the GDP (BPS, 2022). Given that most Indonesians work in agriculture, and a large portion of the country's land is devoted to agricultural activities, it is clear that agriculture plays an important role in the country's economy (Tambunan, 2015). A graph of the population as workers in the agricultural sector in 2020 can be seen in Figure 2.

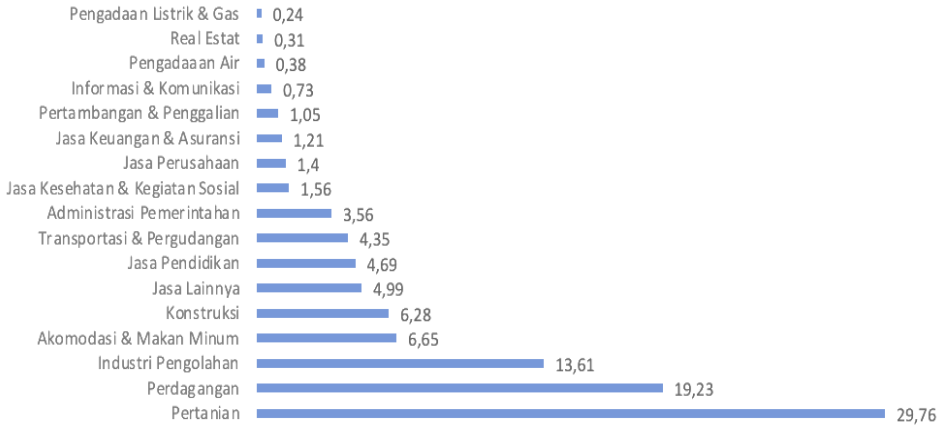

Figure 2. Percentage of Population as Workers in Various Sectors 2020 (Sepriani & Yuliawati, 2022)

Based on Figure 2, it is evident that 29.76% or 38.23 million of the population are employed in the agricultural sector. Within the four agricultural subsectors, namely food crops, horticulture, plantations, and livestock, the food crops subsector employs the most workforce, as shown in a Table 1.

Table 1. Agricultural labor absorption by subsector

Sub-sector	Labor absorption
Food crops	15.15 million
Plantation	11.83 million
Livestock	4.59 million
Horticulture	3.88 million

Source: Data Processed (2023); Kementan (2020)

Based on Table 1, food crops subsector employs 42.98% or 15.15 million people. Despite the substantial contribution to the national economy, farmers' welfare in Indonesia remains low, necessitating improvements in productivity through technology adoption and competitiveness (Maizunati 2018). Adopting new agricultural technologies and innovations is crucial not only for enhancing farmers' welfare but also for achieving food security, sustainability, and aligning with Sustainable Development Goals such as Zero Hunger, Decent Work and Economic Growth, and Industry Innovation and Infrastructure.

Agriculture, involving MSMEs, is a primary economic activity in Bogor Regency. Its proximity to Jakarta and the Jabodetabek area makes Bogor one of the most advanced regions in West Java (Asnur 2021). Bogor Regency has favorable weather, climate, and land suitability for agriculture, making it a potential agricultural area in Indonesia (Azra et al. 2014). Key food crop commodities in Bogor include paddy rice, corn, and sweet potatoes (Asnur 2021). The research investigates the full mediation of the relationship between innovation and competitiveness by technology adoption and productivity (Rambe & Khaola 2022).

MSMEs are challenged to develop innovative operational models to achieve sustainable performance and competitive advantage (Jalil et al. 2021). However, the adoption of digital technology among Indonesian MSMEs is still low, with only 26.5% of 65 million MSMEs recorded by the Ministry of Cooperatives and SMEs adopting digital technology (BI, 2022). The timeliness of this study is underscored by the accelerating global shift towards digitalization and sustainable farming practices. In Indonesia, where agricultural MSMEs are a dominant force, embracing technology can lead to transformative outcomes, both economically and environmentally. The insights gained from this research have the potential to inform policymakers and stakeholders, guiding strategic decisions that can facilitate a more robust integration of technology in agriculture. Such integration could improve crop yields, market access, and ultimately, the livelihoods of millions. Furthermore, as Indonesia aims to digitize 30 million MSMEs by 2024, this study's findings could contribute to the realization of this ambitious goal, ensuring that the agricultural sector is not left behind in the digital revolution. By aligning with the Sustainable Development Goals, the research also presents a pathway for sustainable growth, setting a precedent for other sectors within the economy to follow.

Micro Small and medium-sized enterprises (MSMEs), particularly within the agricultural sector, are not only the backbone of Indonesia's economy but also the primary avenue for technological progress and innovation. While these enterprises significantly contribute to the Gross Domestic Product (GDP) and provide the majority of national employment, their potential for elevating economic growth and social welfare through technology adoption remains largely untapped. This study zeroes in on this critical juncture, investigating the extent to which agricultural MSMEs in the food crop subsector are harnessing technological advancements. By mapping out the adoption landscape and identifying the catalysts and barriers within this context, the research aims to construct a comprehensive understanding that could drive economic vitality through enhanced agricultural practices.

Based on the research background that has been described, the formulation of this research is as follows:

1) What is the extent of technology adoption among rice farmers in Pamijahan?
2) What are the factors that influence the adoption technology among rice farmers in Pamijahan?

Based on the formulation of the problems that have been described, the objectives of this study are to analyze the the extent of technology adoption among rice farmers in Pamijahan and analyze the factors that influence the adoption technology among rice farmers in Pamijahan.

LITERATURE REVIEW

a. Agribusiness Management System

Agribusiness is a unit of business activity that includes part or all of the series of production, processing of products, and marketing related to agriculture as a whole (Amruddin et al., 2021). The agribusiness system at least consists of an input or upstream subsystem that includes activities related to the procurement of agricultural production facilities; a process or farming subsystem that involves primary commodity production activities or raw materials; an output or downstream subsystem that includes primary commodity processing activities and marketing of processed products; and a service or supporting subsystem such as communication and capital services that play a role in supporting, serving, and developing activities in the other three agribusiness subsystems.

b. Technology Acceptance Model

The Technology Acceptance Model (TAM) is a method to explain the acceptance of a technology/information system by a subject. This model was proposed by Davis (1989). The variables contained in this model are (a) perceived usefulness: this variable shows the benefits perceived by users of a technology; (b) perceived ease of use: shows the perceived ease of use / operation of technology; (c) attitude towards using: attitudes in the form of acceptance or rejection that arise from using technology; and (d) behavioral intention to use: shows the tendency to use technology. Perceived usefulness and perceived ease of use are cognitive responses, while attitude toward using is affective. Perceived ease of use has a causal relationship with perceived usefulness where if a technology is easy to operate, the benefits provided are greater for users.

c. Perceived Usefulness

Perceived usefulness, as conceptualized by Davis (1989), refers to the degree to which an individual believes that using a particular system would enhance their job performance (Shroff et al., 2011). It is a fundamental construct in the Technology Acceptance Model (TAM) and is directly affected by perceived ease of use, jointly determining an individual’s attitude towards using a specific technology within an organizational context (Karkouti, 2021). highlighted that perceived usefulness exhibits a stronger and more consistent relationship with usage behavior and intentions than other variables reported in the literature, including various attitude, satisfaction, and perception measures (Davis et al., 1992). This suggests that individuals' beliefs about the extent to which a technology would improve their job performance significantly influence their motivation to use the technology.

The positive influence of perceived usefulness on behavioral intention to use has been extensively studied within the context of the Technology Acceptance

Model. Research has shown that perceived usefulness has a direct positive effect on behavioral intention to use, indicating that individuals are more likely to use a technology if they perceive it to be useful in enhancing their job performance (Shroff et al., 2011). Additionally, the TAM posits that perceived usefulness, along with perceived ease of use, significantly influences user acceptance of technology (Karkouti, 2021). This implies that individuals' perceptions of the utility of a technology play a crucial role in shaping their behavioral intentions to use it. Moreover, the relationship between perceived usefulness and behavioral intention to use has been found to be stronger and more consistent compared to other variables, highlighting the significance of perceived usefulness in driving actual usage behavior (Davis et al., 1992). Overall, the literature suggests that perceived usefulness is a key determinant of individuals' behavioral intentions to use technology, emphasizing its pivotal role in technology acceptance and adoption.

d. Perceived Ease of Use

Perceived ease of use (PEOU) is a crucial concept in the field of technology acceptance and usability. It is defined as the degree to which an individual believes that using a particular system would be free of effort (Salam, 2019). PEOU is defined as the extent to which a person believes that using a particular system would enhance their job performance and be free of effort (Davis, 1989). This concept is a fundamental component of the Technology Acceptance Model (TAM), where it is suggested to have a significant influence on perceived usefulness, behavioral attitude, intention, and actual use (Salam, 2019). Furthermore, PEOU has been found to have a positive effect on perceived usefulness, which in turn influences behavioral intention to use (Mardhiah et al., 2022). This relationship is a key aspect of the TAM, where perceived ease of use and perceived usefulness are the two beliefs that determine the attitude towards using an information system (Walczuch et al., 2007).

The positive influence of perceived ease of use on behavioral intention to use has been extensively studied in the context of various technologies and systems. Research has shown that PEOU has a direct positive effect on perceived usefulness, which in turn influences behavioral intention to use (Mardhiah et al., 2022). Additionally, TAM, which includes perceived usefulness and perceived ease of use as its key constructs, is widely accepted in the information technology research community for evaluating information system applications and predicting usage (Sanjaya, 2017). Moreover, PEOU is hypothesized to be a determinant of perceived usefulness, and both beliefs are influenced by external variables such as training, support, perceived accessibility, social influence processes, and cognitive instrumental processes (Lin et al., 2005). However, it is important to note that the effects of perceived usefulness and perceived ease of use may not always be significant in certain contexts, as evidenced by empirical studies in Japanese e-mail usage (Schepers & Wetzels, 2007).

e. Attitudes Towards Using

Attitudes towards using technology have been extensively studied in the context of user behavior and intention to use. Davis (1986) introduced the Technology Acceptance Model (TAM), which is based on the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) (Tan, 2019). The TAM aims to explain how users perceive and use technology by specifying the

relationships between perceived usefulness, perceived ease of use, and attitude towards computer use (Silin & Kwok, 2016). Attitude towards using is defined as the user's evaluation of their interest in using the system (Saputra et al., 2023). It is a key determinant in the Technology Acceptance Model (TAM) and has been found to have a positive influence on behavioral intention to use technology (Shroff et al., 2011). For instance, a study by Kwak & McDaniel (2011) found that attitude towards using, perceived ease of use, perceived knowledge, and subjective norms played a significant role in explaining participants' attitudes and behavioral intentions towards using fantasy football websites (Kwak & McDaniel, 2011). Similarly, Chiang et al. (2013) contended that even when users hold negative attitudes toward using a system or perceive its operation to be difficult, they may still have a strong intention to use it (Chiang et al., 2013).

The relationship between attitudes towards using and behavioral intention to use has been a subject of interest in various studies. The role of attitude towards usage (ATU) was found to be modest in predicting technology acceptance, suggesting that users may use a technology even if they do not have a positive attitude towards it as long as it is perceived to be useful or easy to use (Shroff et al., 2011). Furthermore, the perceived ease of use, which refers to the extent to which a person expects a system to be effortless, has been identified as a significant factor influencing attitudes towards using technology (Hamad & Ahmad, 2019). This indicates that the perceived ease of use can shape users' attitudes towards technology, subsequently influencing their behavioral intention to use it. Moreover, the TAM has been used as a theoretical framework to explore the antecedents to adopting various technologies, emphasizing the importance of attitudes towards using in shaping users' behavioral intentions (Kwak & McDaniel, 2011).

f. Research Framework

Based on the theoretical studies and ideas presented earlier, we suggest the study framework depicted in Figure 3.

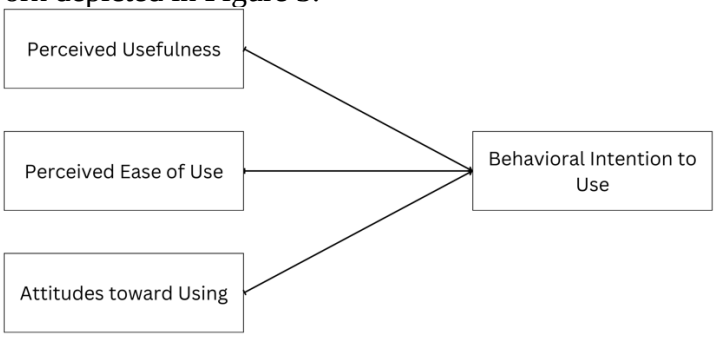

Figure 3. Research Framework
Source: Data Processed (2023); Davis (1989)

Figure 3 illustrates the positive impact of Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using variable on Behavioral Intention to Use variable.

g. Research Hypothesis

The hypothesis formulated based on the literature evaluation, the major subject of study, and the aims to be reached is as follows:

1.) H_{01}: There is no positive influence between Perceived Usefulness and Behavioral Intention to Use

H_{11}: There is a positive influence between Perceived Usefulness and Behavioral Intention to Use

2.) H_{02}: There is no positive influence between Perceived Ease of Use and Behavioral Intention to Use

H_{12}: There is a positive influence between Perceived Ease of Use and Behavioral Intention to Use

3.) H_{03}: There is no positive influence between Attitudes toward Using and Behavioral Intention to Use

H_{13}: There is a positive influence between Attitudes toward Using and Behavioral Intention to Use

4.) H_{04}: There is no simultaneously influence between Perceived Usefulness, Perceived Ease of Use, and Atiitiudes toward Using on Behavioral Intention to Use.

H_{14}: There is a simultaneously influence between Perceived Usefulness, Perceived Ease of Use, and Atiitiudes toward Using on Behavioral Intention to Use.

METHODS

This research employed multiple linear regression analysis to explore relationships among several variables in the model, specifically examining the direct influence of independent variables on dependent variables (Padilah and Adam 2019). The factors influencing technology adoption were analyzed using a simplified Technology Acceptance Model (TAM), which includes perceived usefulness, perceived ease of use, attitudes toward using, and behavioral intentions.

a. Research Location and Time

The study was conducted offline over five months, from June to November 2023. It encompassed proposal revision, data collection, data analysis, and final report writing. The research was located in Pamijahan District, considering its status as a major rice-producing area in Bogor Regency.

b. Data Types and Sources

The research used quantitative data, referring to numerical information typically obtained through standardized questions (Sekaran & Bougie 2016). It included two types of data sources: primary data, collected through questionnaires, and secondary data, obtained from scientific articles, institutional notes, websites, and annual reports from the Ministry of Agriculture and related departments.

c. Sampling Method

The study's sample was drawn using voluntary sampling and a cross-sectional method. This approach involves data collection at a single time point, typically spanning a day, week, or month, to answer specific research questions (Sekaran & Bougie 2016). The number of farmer respondents in the study was 93.

d. Variables and Measurement

For the main aim of the study, we based our variables on a simplified Technology Acceptance Model (TAM). This model includes factors such as the perceived ease of use, the usefulness perceived by users, attitudes towards usage, and the intention to engage in behavioral usage, following the framework proposed by Davis (1989). These variables were assessed across a range of activities in the agribusiness management spectrum. This assessment spanned the entire process from preparing agricultural inputs, readying the land, the act of planting, harvesting

activities, processing the rice, all the way to the marketing phase, including aspects of self-improvement and social interactions. To measure these, a semantic differential scale ranging from 1 to 3 was employed, with the scale varying for each of the different variables.

e. Data Processing and Analysis Methods

The data for this study were processed through Microsoft Excel and IBM SPSS Statistics 29 software. For the initial goal of the research, we employed cross-tabulation analysis methods. We conducted thorough examinations of the questionnaires and collected data, applying tests for validity and reliability to ensure the robustness of our findings. To explore and fulfill the second aim of the study, Multiple Linear Regression Analysis was utilized as the primary analytical tool.

RESULTS

Respondent Characteristics and Technology Adoption Level

Respondents in this study were rice farmers who were members of Gapoktan Pamijahan with a total of 93 people. The characteristics of respondents were obtained from the results of cross tabulation of respondents' identity on the questionnaire which included gender and age with the Process on Agribusiness Management System. The characteristics of respondents can be seen in Table 2 and Table 3.

Table 2. Cross tabulation of gender with Process on Agribusiness Management System

No.	Sistem Agribisnis	Karakteristik Petani	Jenis Kelamin		Persentase Adopsi (%)
			Pria	Wanita	
1	Penyiapan bahan pertanian	Benih tebar	55,56	44,44	29,03
		Benih pokok	60,61	39,39	70,97
		Benih dasar	-	-	0,00
2	Penyiapan lahan	Hewan dan tenaga manusia	71,43	28,57	7,53
		Traktor tangan	58,14	41,86	92,47
		Traktor mobil	-	-	0,00
3	Penanaman	Manual (Tangan)	59,14	40,86	100,00
		Mesin tanaman roda 2	-	-	0,00
		Mesin tanaman roda 4	-	-	0,00
4	Pemanenan	Arit manual	59,14	40,86	100,00
		Mesin harvester tangan	-	-	0,00
		Mesin combine harvester besar	-	-	0,00
5	Pengolahan padi	Manual tumbuk	50,00	50,00	4,30
		Mesin penggiling sederhana	59,55	40,45	95,70
		Mesin penggiling besar	-	-	0,00
6	Pemasaran	Konsumsi pribadi	41,67	58,33	12,90
		Word of mouth	61,73	38,27	87,10
		Media sosial dan E-Commerce	-	-	0,00
7	Pengembangan diri dan interaksi sosial	Alat komunikasi tradisional	56,96	43,04	84,95
		Komunikasi seluler	66,67	33,33	6,45
		Komunkasi digital	75,00	25,00	8,60
		Sub total	59,14	40,86	100,00
		Total	**93**		93,00

Source: Data Processed (2023)

Table 3. Cross tabulation of age with Process on Agribusiness Management System

No.	Sistem Agribisnis	Karakteristik Petani	Usia					Persentase Adopsi (%)
			<30	30-40	41-50	51-60	>60	
1	Penyiapan bahan pertanian	Benih tebar	3,70	11,11	37,04	25,93	22,22	29,03
		Benih pokok	9,09	15,15	30,30	19,70	25,76	70,97
		Benih dasar	-	-	-	-	-	0,00
2	Penyiapan lahan	Hewan dan tenaga manusia	0,00	0,00	42,86	42,86	14,29	7,53
		Traktor tangan	8,14	15,12	31,40	19,77	25,58	92,47
		Traktor mobil	-	-	-	-	-	0,00
3	Penanaman	Manual (Tangan)	7,53	13,98	32,26	21,51	24,73	100,00
		Mesin tanaman roda 2	-	-	-	-	-	0,00
		Mesin tanaman roda 4	-	-	-	-	-	0,00
4	Pemanenan	Arit manual	7,53	13,98	32,26	21,51	24,73	100,00
		Mesin harvester tangan	-	-	-	-	-	0,00
		Mesin combine harvester besar	-	-	-	-	-	0,00
5	Pengolahan padi	Manual tumbuk	0,00	0,00	75,00	25,00	0,00	4,30
		Mesin penggiling sederhana	7,87	14,61	30,34	21,35	25,84	95,70
		Mesin penggiling besar	-	-	-	-	-	0,00
6	Pemasaran	Konsumsi pribadi	8,33	16,67	16,67	41,67	16,67	12,90
		Word of mouth	7,41	13,58	34,57	18,52	25,93	87,10
		Media sosial dan E-Commerce	-	-	-	-	-	0,00
7	Pengembangan diri dan interaksi sosial	Alat komunikasi tradisional	3,80	10,13	31,65	25,32	29,11	84,95
		Komunikasi seluler	0,00	16,67	83,33	0,00	0,00	6,45
		Komunkasi digital	50,00	50,00	0,00	0,00	0,00	8,60
		Jumlah	7,53	13,98	32,26	21,51	24,73	100,00

Source: Data Processed (2023)

Based on Table 2 and Table 3, it is noted that 70.97% of farmers in Pamijahan Sub-district use staple seed technology in the preparation of agricultural materials. Of these, 60.6% are male, with the majority aged 41-50 years (21.51%). Furthermore, 92.47% of farmers use hand tractor technology for land preparation, with the majority of users being male (58.14%) and within the age range of 41-50 years (31.40%).

For planting activities, all farmers (100.00%) used the manual (hand) method, with 59.14% of them being male and 32.26% being within the age range of 41-50 years. In the harvesting process, 100.00% of farmers use manual sickles, with the majority of users being male (59.14%) and aged 41-50 years (32.26%).

In rice processing, 95.70% of farmers use simple grinding machines, with the majority of users being male (59.55%) and aged 41-50 years (30.34%). For marketing, 95.70% of farmers utilize the word of mouth method, where 59.55% of users are male and 34.57% are within the age range of 41-50 years. Finally, for self-development and social interaction, 84.95% of farmers use traditional communication tools, with 59.55% of users being male and 31.65% being in the 41-50 age range.

Moreover, this study will specifically examine the implementation of basic grinding machine technology in the rice processing phase of the agribusiness system, as it exhibits the highest degree of technological adoption.

Validity and Reliability

In the initial phase of the analysis, the instrument's validity and reliability were assessed by testing. The instrument's validity was assessed using a critical value of 0.3610 ($n = 30$; $\alpha = 0.05$). The comprehensive calculation results of the instruments' validity and reliability are presented in Table 4.

Table 4. Validity and Reliability Test Results

Variabel	Kode	Validity (Crucial Value)	Reliability (Cronbach's Alpha)
Perceived Usefulness	X1		0,815
	X11	0,573	
	X12	0,595	
	X13	0,744	
	X14	0,765	
	X15	0,754	
	X16	0,569	
	X17	0,796	
Perceived ease of Use	X2		0,831
	X21	0,74	
	X22	0,689	
	X23	0,654	
	X24	0,579	
	X25	0,715	
	X26	0,816	
	X27	0,758	
Attitude towards Using	X3		0,769
	X31	0,684	
	X32	0,728	
	X33	0,671	
	X34	0,719	
	X35	0,505	
	X36	0,769	
	X37	0,42	
Behavioral Intention to Use	Y		0,829
	Y11	0,87	
	Y12	0,621	
	Y13	0,621	
	Y14	0,365	
	Y15	0,847	
	Y16	0,895	
	Y17	0,621	

Source: Data Processed (2023)

Baed on Table 4, all the indicator variables exhibited correlation findings that exceeded the crucial value of 0.3610. Additionally, the Cronbach's alpha coefficients surpassed 0.60. These findings demonstrate the validity and reliability of the indicators and variables, affirming their suitability for use in the ensuing data analysis.

Multiple Linear Regression Equation

The next phase involves doing a multiple linear regression analysis to examine the proposed hypotheses in this study. This analysis aims to determine the impact of independent factors, namely Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using, on the dependent variable, Behavioral Intention to Use. The regression equation can be observed in Table 5 of the coefficient test results as presented below.

Table 5. Multiple linear regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	5.055	1.074		4.706	<.001		
	X1	.198	.058	.255	3.389	.001	.719	1.391
	X2	.340	.049	.504	6.938	<.001	.775	1.291
	X3	.187	.053	.283	3.499	<.001	.626	1.596

Referring to table 5, specifically column B, the first row displays the independent variable (a), whereas the subsequent row represents the coefficient of the independent variable (b). Therefore, the equation for multiple linear regression can be organized in the following manner:

$Y = a + \beta1X1 + \beta2X2 + \beta3X3$
$Y = 5{,}055 + 0{,}198\ X1 + 0{,}340\ X2 + 0{,}187\ X3$
Information:
Y = Behavioral Intention to Use
a = Constants
X1 = Perceived Usefulness
β1 = coefficient X1
X2 = Perceived Ease of Use
β2 = coefficient X2
X3 = Attitudes toward Using
β3 = coefficient X3
The above regression equation can be explained as follows:

1.) The constant (β0) is 5.055. This value indicates a baseline level, suggesting that if the variables Perceived Ease of Use (X1), Perceived Usefulness (X2), and Attitude Toward Using (X3) are all zero, the dependent variable — the Intention to Use — will be 5.055.
2.) The coefficient (β1) of 0.198 is positive. This implies a positive influence of the Perceived Ease of Use on the Intention to Use. An increase in the Perceived Ease of Use is associated with a corresponding rise in the Intention to Use among farmers in Pamijahan, assuming other independent variables remain constant. Conversely, a decrease in Perceived Ease of Use would lead to a decrease in the Intention to Use.
3.) The coefficient (β2) of 0.340 is also positive. It signifies a positive impact of the Perceived Usefulness on the Intention to Use. This suggests that as Perceived Usefulness increases, the Intention to Use among farmers in Pamijahan similarly increases, assuming other variables are held constant. The inverse relationship is also implied.
4.) The coefficient (β3) of 0.187 is positive, indicating a favorable effect of the Attitude Toward Using on the Intention to Use. An increase in the Attitude Toward Using is linked with an increase in the Intention to Use among the farmers in Pamijahan, assuming all other variables are constant. The reverse is also true.

Determination Analysis

The coefficient of determination quantifies the extent to which variations in the dependent variable can be accounted for by variations in the independent variable. The outcomes are visible in the Table 6.

Table 6. Coefficient of Determination Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.830[a]	.690	.677	.542	1.872

a. Predictors: (Constant), X3, X2, X1
b. Dependent Variable: Y

Source: Data Processed (2023)

Based on Table 6, the R Square value indicates a multiple correlation, specifically the correlation among three independent variables with the dependent variable. The R Square ranges from 0 to 1, where values closer to 1 indicate a

stronger relationship between variables, and values closer to 0 suggest a weaker relationship. The computed data reveals an R Square value of 0.690, suggesting a positive correlation. This value implies that the correlation among the variables Perceived Ease of Use, Perceived Usefulness, and Attitude Toward Using with the Intention to Use is 0.690.

The Adjusted R Square value in Table 6 represents the magnitude of the coefficient of determination. Expressed as a percentage, it reflects the contribution of the independent variables to the dependent variable. An Adjusted R Square of 0.677, or 67.7%, indicates that the independent variables (Perceived Usefulness, Perceived Ease of Use, and Attitude Towards Using) explain 67.7% of the variance in the dependent variable (Intention to Use). The remaining 32.3% could be attributed to other factors not included in this study, such as environmental conditions, decision-making orientation, capital, among others.

T-Test (Partial)

A significance test, also known as a test of significance or T-test, is a statistical hypothesis test used to determine the significance of the impact of independent variables on the dependent variable in a regression model that has been partially built. The rationale for decision making in this test is as follows:

- H_0: The independent variable does not have a statistically significant impact on the dependent variable.
- H_1: the independent variable has a notable impact on the dependent variable.
- If the arithmetic value of t is less than the critical value of t from the table and the significance value is more than 0.05, then the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected.
- If the arithmetic value of t is more than the t table value and the significance value is less than 0.05, then the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted.

The outcome of the t-test hypothesis test in this study is presented in the table 7 below.

Table 7. T-test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	5.055	1.074		4.706	<.001		
	X1	.198	.058	.255	3.389	.001	.719	1.391
	X2	.340	.049	.504	6.938	<.001	.775	1.291
	X3	.187	.053	.283	3.499	<.001	.626	1.596

Source: Data Processed (2023)

Based on the t-test results presented in Table 7, the following conclusions can be drawn.

1.) Hypothesis Testing for the Influence of Perceived Ease of Use (X1) on Intention to Use (Y).

- Null Hypothesis (H_{01}): Perceived Ease of Use does not affect Intention to Use.
- Alternative Hypothesis (H_{11}): Perceived Ease of Use affects Intention to Use.

Based on Table 7, the t-test results show that the significance level of Perceived Ease of Use is 0.001, which is less than the threshold of 0.05, and the regression coefficient is positive (0.255). This indicates a rejection of the null hypothesis H_{01},

suggesting a positive influence of Perceived Ease of Use (X1) on the Intention to Use (Y) among farmers in Pamijahan.

2.) Hypothesis Testing for the Influence of Perceived Usefulness (X2) on Intention to Use (Y).

- Null Hypothesis (H_{02}): Perceived Usefulness does not influence Intention to Use.
- Alternative Hypothesis (H_{12}): Perceived Usefulness influences Intention to Use.

According to Table 7, the t-test results reveal that the significance level for Perceived Usefulness is less than 0.001, which is below the 0.05 threshold, and the regression coefficient is positive (0.504). This indicates the rejection of the null hypothesis H_{02}, meaning there is a positive effect of Perceived Usefulness (X2) on the Intention to Use (Y) among farmers in Pamijahan.

3.) Hypothesis Testing for the Influence of Attitude Toward Using (X3) on Intention to Use (Y).

- Null Hypothesis (H_{03}): Attitude Toward Using does not affect Intention to Use.
- Alternative Hypothesis (H_{13}): Attitude Toward Using affects Intention to Use.

As per Table 7, the t-test results show that the significance level for Attitude Toward Using is less than 0.001, lower than the 0.05 threshold, and the regression coefficient is also positive (0.283). This indicates a rejection of the null hypothesis H_{03}, signifying a positive impact of Attitude Toward Using (X3) on the Intention to Use (Y) among farmers in Pamijahan.

Based on the given explanation, it can be inferred that the independent variables Perceived Ease of Use (X1), Perceived Usefulness (X2), and Attitude Towards Using (X3) have a partial influence on the dependent variable Intention to Use (Y).

F-Test (Simultaneous)

This test is employed to assess the collective impact of all independent variables on the dependent variable. The F test is conducted simultaneously to validate the initial hypothesis (t test). The foundation for the decision-making process about this test is:

- H_0: The independent variable does not have a statistically significant effect on the dependent variable when considered together.
- H_1: There is a notable impact of the independent factors collectively on the dependent variable.
- If the count of value F is less than the value of F in the table and the significance value is greater than 0.05, then the null hypothesis (H_0) is accepted and the alternative hypothesis (H_1) is rejected.
- If the count of value F is greater than the F table and the significance value is less than 0.05, then the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted.

The findings of the F test for hypothesis testing in this research are presented in the Table 8.

Table 8. F-test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.568	3	16.523	56.260	<.001[b]
	Residual	22.320	76	.294		
	Total	71.888	79			

Source: Data Processed (2023)

Based on Table 8, the results of the F-test calculation reveal an F-value (F-statistic) of 56.260 with a significance level of 0.001, which is less than the threshold of 0.05. Meanwhile, the critical value of F (F-table) is 2.707, determined from the degrees of freedom DF1 = 3 and DF2 = 76 (calculated from 80 - 3 - 1 = 76) at a significance level of 0.05. This means that the calculated F-value (56.260) is greater than the critical F-value (2.707). Therefore, the null hypothesis (H0) is rejected, indicating that the variables Perceived Ease of Use, Perceived Usefulness, and Attitude Toward Using have a simultaneous or joint influence on the Intention to Use among farmers in the Pamijahan district.

DISCUSSIONS

This section will provide an explanation of the analysis results, specifically focusing on the impact of each independent variable on the dependent variable under scrutiny. This study demonstrates that all independent variables exert a substantial impact on the dependent variable. Here is the explanation:

Perceived Ease of Use Affects Behavioral Intention to Use

The Perceived Ease of Use of tractor technology emerged as another critical factor in our study. This dimension encompasses farmers' beliefs about the ease of operating tractors, the learning curve associated with their use, and the accessibility of technical support. The positive correlation we observed between ease of use and behavioral intention to use suggests that when farmers perceive technology as user-friendly and easy to integrate into their existing farming practices, they are more likely to adopt it.

The Perceived Ease of Use of tractor technology has been a critical factor in shaping farmers' behavioral intention to use, as evidenced by the positive correlation observed in the study. This dimension encompasses farmers' beliefs about the ease of operating tractors, the learning curve associated with their use, and the accessibility of technical support. The positive correlation suggests that when farmers perceive technology as user-friendly and easy to integrate into their existing farming practices, they are more likely to adopt it. This finding is consistent with the Technology Acceptance Model (TAM) and is supported by relevant research in agricultural and technology adoption contexts.

The study by Davis et al. (1989) provides insights into the user acceptance of computer technology and the comparison of two theoretical models. While the study focuses on attitudes mediating the effects of beliefs on intentions, it underscores the importance of usability and the ease of use in influencing users' intentions. This aligns with the findings of the current study, where the perceived ease of use of tractor technology significantly influenced the farmers' behavioral intention to use.

Furthermore, the research by Holden & Karsh (2010) delves into the Technology Acceptance Model (TAM) and its application in healthcare. Although the study focuses on health information technology, it emphasizes the variability in samples, settings, and construct operationalization in TAM-related research. However, the emphasis on the usability and operationalization of technology acceptance models is relevant to the current discussion on the perceived ease of use of tractor technology among farmers.

Additionally, the study by Massresha et al. (2021) explores the perception and determinants of agricultural technology adoption in the context of poverty and agricultural development. While the focus is on poverty alleviation, the relevance lies in the critical role of technology perception and adoption in agricultural development. This aligns with the significance of perceived ease of use in influencing farmers' adoption of tractor technology, particularly in the context of its integration into existing farming practices.

In summary, the Perceived Ease of Use of tractor technology has been a crucial factor in shaping farmers' behavioral intention to use, as supported by the Technology Acceptance Model (TAM) and relevant research in agricultural and technology adoption contexts.

Perceived Usefulness Affects Behavioral Intention to Use

In our study, the analysis of the data regarding the Perceived Usefulness of tractor technology for land preparation among Pamijahan's rice farmers indicates a significant influence on their Behavioral Intention to Use such technology. This finding is profound as it suggests that farmers' recognition of the tangible benefits, such as increased crop yield, time efficiency, and reduced physical labor, directly motivates their willingness to adopt tractor technology. The statistical significance of this factor in our study not only underscores its importance but also echoes the foundational principles of the Technology Acceptance Model (TAM).

Our findings align with those of similar studies, such as the study by Veltheim & Heise (2020) confirms that perceived usefulness is considered the main motivation for using agricultural field robots, which resonates with the significance of perceived usefulness in motivating the adoption of tractor technology among the rice farmers. Wong et al. (2021) found that perceived usefulness presents the strongest linear relationship with the adoption of e-commerce in the agricultural market. Similarly, Pillai & Sivathanu (2020) highlighted the crucial role of perceived usefulness in the adoption intention of IoT in the agriculture industry (Pillai & Sivathanu, 2020). This is further supported by (Chuang et al., 2020), who emphasized the importance of perceived usefulness in young farmers' willingness to accept innovative technology such as IoT-based smart sensor technology (Chuang et al., 2020).

Moreover, the study by Dong et al. (2022) demonstrated that perceived usefulness had a direct effect on farmers' intention to adopt ecological agricultural technology in China, indicating its significance in shaping behavioral intention (Dong et al., 2022; Gai et al., 2021). also found that perceived usefulness was a key factor influencing farmers' continuance intention in adopting crop residue retention in rural China (Gai et al., 2021). Additionally, Syan et al. (2019) emphasized the role of perceived usefulness in farmers' intention to adopt sustainable agricultural practices (Syan et al., 2019).

Furthermore, the study by Nguyen et al. (2021) highlighted the direct effect of perceived behavioral control on intentions, indicating the importance of perceived usefulness in Vietnamese farmers' intention toward organic agricultural production (Nguyen et al., 2021). Additionally, (2022) found that perceived behavior control is an essential predictor of farmers' intention to adopt climate-smart agricultural practices in rural Ghana, further emphasizing the significance of perceived usefulness in agricultural contexts (Atta-Aidoo et al., 2022). The extensive body of research on the Perceived Usefulness of technology in agriculture consistently demonstrates its crucial role in shaping farmers' behavioral intention and adoption of various agricultural practices and technologies.

Attitudes toward Using Affects Behavioral Intention to Use

The relationship between Attitudes toward Using tractor technology and the Behavioral Intention to Use it among the rice farmers of Pamijahan has been a significant focus of our research. This aspect encompasses farmers' overall sentiment towards the technology, influenced by their beliefs about its effectiveness and relevance to their farming needs. Our findings suggest that positive attitudes, possibly shaped by favorable community opinions, success stories, or personal values, significantly enhance the likelihood of technology adoption. This aligns with the Technology Acceptance Model (TAM) and is supported by relevant research in agricultural and technology adoption contexts.

The study by Curran et al. (2003) focused on the adoption of computers by employees and established the attitude-behavioral intention relationship. Although the context differs, the fundamental relationship between attitudes and behavioral intention is consistent with the findings of our study on tractor technology adoption among rice farmers. Moreover, the research by Lau et al. Cheng & Guo (2021) revealed that attitudes toward technical performance substantially impact the adoption intention of smart home technology. This aligns with our findings, as positive attitudes toward the effectiveness and relevance of tractor technology significantly influence the farmers' intention to use it.

Additionally, the study by Kazeem et al. (2017) explored the attitudes of farmers towards extension trainings in Nigeria and its implications for the adoption of improved agricultural technologies. The findings showed that only a few farmers had a favorable attitude towards extension training, which corresponded to a low level of adoption of the technologies. This supports the notion that positive attitudes play a crucial role in technology adoption, as observed in our study on tractor technology adoption among rice farmers.

In summary, the relationship between Attitudes toward Using tractor technology and the Behavioral Intention to Use it among the rice farmers of Pamijahan aligns with the Technology Acceptance Model (TAM) and is supported by relevant research in agricultural and technology adoption contexts.

Simultaneous Effect of Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using

The simultaneous effect of Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using on Behavioral Intention to Use represents a critical intersection in our study, indicating the complex decision-making process regarding tractor technology adoption among rice farmers in Pamijahan. This multifaceted effect underscores the interplay of practical evaluations and personal judgments,

providing a comprehensive perspective for understanding the farmers' decision-making processes in a holistic manner.

The study by Kwok & Silin (2017) is particularly relevant as it evaluates the intention to use ICT collaborative tools in a social constructivist environment. The study found that both Perceived Ease of Use and Perceived Usefulness significantly influenced the intention to use. This aligns with the multifaceted effect observed in our study, where the interplay of Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using influences the farmers' Behavioral Intention to Use tractor technology. This aligns with the multifaceted effect observed in our study, where the interplay of Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using influences the farmers' Behavioral Intention to Use tractor technology.

Furthermore, the research by Shao (2019) focused on the identification of driving factors of satisfaction with online learning based on the Technology Acceptance Model (TAM). The study demonstrated that Perceived Usefulness, Perceived Ease of Use, and Satisfaction had a marked impact on users' willingness to continue to use, with Perceived Usefulness affecting user satisfaction. This supports the comprehensive perspective of our study, where the simultaneous effect of Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using influences the farmers' Behavioral Intention to Use tractor technology.

Additionally, the study by Caffaro et al. (2018) proposed a method to evaluate the perceived ease of use of human-machine interface in agricultural tractors equipped with Continuously Variable Transmission (CVT). Although the focus is on the human-machine interface, the emphasis on evaluating the perceived ease of use in the context of agricultural tractors aligns with the multifaceted effect observed in our study, where the perceived ease of use of tractor technology influences the farmers' Behavioral Intention to Use.

In summary, the simultaneous effect of Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using on Behavioral Intention to Use, as observed in our study, is supported by relevant research in technology acceptance, usability, and decision-making processes, providing a comprehensive understanding of the complex dynamics involved in technology adoption.

CONCLUSION

Based on the results of research and discussion that has been described in the previous chapter, then obtained the following conclusion:

1. **Level of Technology Adoption**: The study indicates that technology adoption among food crop subsector agricultural MSMEs is varied but generally moderate. Key technologies used include staple seed technology (70.97% adoption), hand tractor technology for land preparation (92.47%), and simple grinding machines for rice processing (95.70%). However, manual methods remain prevalent for planting and harvesting activities, with 100% of farmers using manual methods for these tasks.
2. **Factors Influencing Technology Adoption**: The study employs the Technology Acceptance Model (TAM) and identifies three key factors influencing technology adoption: Perceived Usefulness, Perceived Ease of Use, and Attitudes toward Using. These factors have a significant and positive influence on the Behavioral Intention to Use technology. The regression

analysis in the study shows that these factors explain 67.7% of the variance in the Intention to Use technology among the farmers

These conclusions indicate a significant but not complete adoption of technology in the food crop subsector, influenced by farmers' perceptions of the usefulness, ease of use, and their attitudes towards technology.

IMPLICATIONS AND RECOMMENDATIONS

Implications

This study on the adoption of agricultural technology among rice farmers in Pamijahan has several significant implications. Firstly, it suggests that government policies need to be more focused on facilitating access to agricultural technologies. This could involve subsidizing the cost of new technologies and providing targeted training programs to improve technological literacy among farmers. Additionally, enhancing rural infrastructure, particularly in terms of internet connectivity and transportation, is crucial for enabling effective technology adoption. The research also underscores the importance of education and training in agricultural practices. Agricultural extension services should be tailored to demonstrate the practical benefits of technology in rice farming, thus encouraging wider adoption. Moreover, fostering collaborative efforts between farmers, technology providers, and researchers can lead to the development of more effective and user-friendly technological solutions. From a socio-economic perspective, the adoption of appropriate technologies by small-scale farmers can lead to improved yields and economic stability, contributing to the broader economic development of the region. Furthermore, the emphasis on sustainable agricultural technologies can have long-term environmental benefits, promoting more responsible farming practices.

Recommendations

Based on these implications, several recommendations can be made. For agricultural technology developers, it is crucial to create customized solutions that cater to the specific needs and conditions of rice farmers in Pamijahan. This includes the development of technologies with user-friendly interfaces to accommodate farmers with limited technological experience. For researchers, conducting longitudinal studies to assess the long-term impact of technology adoption on productivity and socio-economic conditions is essential. Further research should also explore technology adoption in varied geographical and cultural contexts to understand broader trends and differences. Finally, for government bodies and NGOs, launching awareness campaigns to educate farmers about the benefits and usage of new technologies is vital. In addition to these campaigns, providing financial assistance and technical support can help farmers overcome initial barriers to adopting new technologies. These combined efforts can significantly enhance the rate and effectiveness of technology adoption in the agricultural sector, ultimately leading to improved yields and sustainable farming practices.

REFERENCES

Atta-Aidoo, J., Antwi-Agyei, P., Dougill, A., Ogbanje, C., Akoto-Danso, E., & Eze, S. (2022). Adoption of climate-smart agricultural practices by smallholder farmers in rural ghana: an application of the theory of planned behavior.

Plos Climate, 1(10), e0000082. https://doi.org/10.1371/journal.pclm.0000082

Amruddin, Fahmi, A., & Hikmah. 2021. Manajemen Agribisnis. CV. Media Sains Indonesia. Bandung. ID.

Asnur, P. 2021. Evaluasi kemampuan dan kesesuaian lahan pertanian di Kabupaten Bogor. UG Journal. 14(2).

Azra, A.L.Z., Arifin, H.S., Astawan, M., & HS Arifin, N. 2014. Analisis karakteristik pekarangan dalam mendukung penganekaragaman pangan keluarga di Kabupaten Bogor. Jurnal Lanskap Indonesia. 6(2).

[BI] Bank Indonesia & Lembaga Pengembangan Perbankan Indonesia. 2015. Profil Bisnis Usaha Mikro, Kecil dan Menengah (UMKM), Bank Indonesia dan LPPI. Bank Indonesia. Jakarta. ID.

[BI] Bank Indonesia & Lembaga Pengembangan Perbankan Indonesia. 2022. Konsumennya saja sudah digital, UMKM-nya juga dong!. URL: https://www.bi.go.id/id/publikasi/ruang-media/cerita-bi/Pages/Konsumennya-Saja-Sudah-Digital-UMKM-nya-Juga-Dong.aspx. Diakses tanggal 2 Februari 2023.

[BPS] Badan Pusat Statistik. 2022. Distribusi PDB triwulanan seri 2010 atas dasar harga berlaku (persen), 2022. URL: https://www.bps.go.id/indicator/11/106/1/-seri-2010-distribusi-pdb-triwulanan-seri-2010-atas-dasar-harga-berlaku.html. Diakses tanggal 1 Februari 2023.

Caffaro, F., Bisaglia, C., Cutini, M., Cremasco, M., & Cavallo, E. (2018). A method to evaluate the perceived ease of use of human-machine interface in agricultural tractors equipped with continuously variable transmission (cvt). Spanish Journal of Agricultural Research, 15(4), e0210. https://doi.org/10.5424/sjar/2017154-10726

Cheng, V. and Guo, R. (2021). The impact of consumers' attitudes towards technology on the acceptance of hotel technology-based innovation. Journal of Hospitality and Tourism Technology, 12(4), 624-640. https://doi.org/10.1108/jhtt-06-2020-0145

Chiang, C., Lin, H., & Tu, S. (2013). Analyzing behaviors influencing use of mobile coupons from the perspective of transaction utility. Social Behavior and Personality an International Journal, 41(3), 433-441. https://doi.org/10.2224/sbp.2013.41.3.433

Chuang, J., Wang, J., & Liang, C. (2020). Implementation of internet of things depends on intention: young farmers' willingness to accept innovative technology. International Food and Agribusiness Management Review, 23(2), 253-266. https://doi.org/10.22434/ifamr2019.0121

Curran, J., Meuter, M., & Surprenant, C. (2003). Intentions to use self-service technologies: a confluence of multiple attitudes. Journal of Service Research, 5(3), 209-224. https://doi.org/10.1177/1094670502238916

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. Mis Quarterly, 13(3), 319. https://doi.org/10.2307/249008

Davis, F., Bagozzi, R., & Warshaw, P. (1989). User acceptance of computer technology: a comparison of two theoretical models. Management Science, 35(8), 982-1003. https://doi.org/10.1287/mnsc.35.8.982

Davis, F., Bagozzi, R., & Warshaw, P. (1992). Extrinsic and intrinsic motivation to use computers in the workplace1. Journal of Applied Social Psychology, 22(14), 1111-1132. https://doi.org/10.1111/j.1559-1816.1992.tb00945.x

Dong, H., Wang, H., & Han, J. (2022). Understanding ecological agricultural technology adoption in china using an integrated technology acceptance model—theory of planned behavior model. Frontiers in Environmental Science, 10. https://doi.org/10.3389/fenvs.2022.927668

Gai, H., Yan, T., Anran, Z., Batchelor, W., & Tian, Y. (2021). Exploring factors influencing farmers' continuance intention to crop residue retention: evidence from rural china. International Journal of Environmental Research and Public Health, 18(14), 7412. https://doi.org/10.3390/ijerph18147412

Hamad, K. and Ahmad, A. (2019). Computerized pedagogical management among school teachers. Journal of Education and Culture Studies, 3(2), 82. https://doi.org/10.22158/jecs.v3n2p82

Holden, R. and Karsh, B. (2010). The technology acceptance model: its past and its future in health care. Journal of Biomedical Informatics, 43(1), 159-172. https://doi.org/10.1016/j.jbi.2009.07.002

Jalil, M.F., Ali, A., & Kamarulzaman, R. 2021. Does innovation capability improve SME performance in Malaysia? The mediating effect of technology adoption. The International Journal of Entrepreneurship and Innovation. 23(4): 253–267. https://doi.org/10.1177/1465750321104896.

Karkouti, I. (2021). Integrating technology in qatar's higher education settings: what helps faculty accomplish the job. Technology Knowledge and Learning. https://doi.org/10.1007/s10758-021-09553-y

Kazeem, A., Akerele, D., Oyekunle, O., Abiodun, E., & Komolafe, L. (2017). Attitudes of farmers to extension trainings in nigeria: implications for adoption of improved agricultural technologies in ogun state southwest region. Journal of Agricultural Sciences Belgrade, 62(4), 423-443. https://doi.org/10.2298/jas1704423k

[Kemenkop UKM] Kementerian Koperasi dan UKM. 2023. KUMKM dalam angka. URL: https://kemenkopukm.go.id/kumkm-dalam-angka. Diakses tanggal 1 Februari 2023.

[Kementan] Kementerian Pertanian. 2020. Statistik ketenagakerjaan sektor pertanian. URL: https://satudata.pertanian.go.id/assets/docs/publikasi. Diakses tanggal 1 Februari 2023.

Kwak, D. and McDaniel, S. (2011). Using an extended technology acceptance model in exploring antecedents to adopting fantasy sports league websites. International Journal of Sports Marketing and Sponsorship, 12(3), 43-56. https://doi.org/10.1108/ijsms-12-03-2011-b005

Kwok, D. and Silin, Y. (2017). Evaluating the intention to use ict collaborative tools in a social constructivist environment. International Journal of Educational Technology in Higher Education, 14(1). https://doi.org/10.1186/s41239-017-0070-1

Lin, C., Shih, H., Sher, P., & Wang, Y. (2005). Consumer adoption of e-service: integrating technology readiness with the technology acceptance model.. https://doi.org/10.1109/picmet.2005.1509728

Mardhiah, A., Farisha, N., Yuan, W., & Tony, F. (2022). Investigating the influence of perceived ease of use and perceived usefulness on housekeeping technology intention to use. International Journal of Academic Research in Business and Social Sciences, 12(11). https://doi.org/10.6007/ijarbss/v12-i11/15657

Massresha, S., Lema, T., Neway, M., & Degu, W. (2021). Perception and determinants of agricultural technology adoption in north shoa zone, amhara regional state, ethiopia. Cogent Economics & Finance, 9(1). https://doi.org/10.1080/23322039.2021.1956774

Neville, K. and Fitzgerald, B. (2002). An innovative training model for an organization embracing technology. Journal of Information Technology Education Research, 1, 193-200. https://doi.org/10.28945/355

Nguyen, T., Doan, X., Nguyen, T., & Nguyen, T. (2021). Factors affecting vietnamese farmers' intention toward organic agricultural production. International Journal of Social Economics, 48(8), 1213-1228. https://doi.org/10.1108/ijse-08-2020-0554

Pillai, R. and Sivathanu, B. (2020). Adoption of internet of things (iot) in the agriculture industry deploying the brt framework. Benchmarking an International Journal, 27(4), 1341-1368. https://doi.org/10.1108/bij-08-2019-0361

Rambe, P., & Khaola, P. 2021. The impact of innovation on agribusiness competitiveness: the mediating role of technology transfer and productivity. European Journal of Innovation Management. 25(3): 741–773. https://doi.org/10.1108/ejim-05-2020-0180.

Salam, M. (2019). Inclusion of perceived risk with tam in measuring attitude toward online banking. EJBM. https://doi.org/10.7176/ejbm/11-2-08

Sanjaya, I. (2017). Pengaruh rasa manfaat dan kemudahan terhadap minat berperilaku (behavioral intention) para mahasiswa dan mahasiswi dalam penggunaan internet. Kinerja, 9(2), 113-122. https://doi.org/10.24002/kinerja.v9i2.909

Saputra, F., Makhrian, A., & Grahatama, B. (2023). Online learning acceptance model of indonesian students during the covid-19 pandemic. Kne Social Sciences. https://doi.org/10.18502/kss.v8i2.12764

Schepers, J. and Wetzels, M. (2007). A meta-analysis of the technology acceptance model: investigating subjective norm and moderation effects. Information & Management, 44(1), 90-103. https://doi.org/10.1016/j.im.2006.10.007

Sepriani, W. & Yuliawati, 2022. Penyerapan tenaga kerja oleh sektor pertanian tahun 2016-2021. Jurnal Samudra Ekonomika, 6(1).

Shao, C. (2019). An empirical study on the identification of driving factors of satisfaction with online learning based on tam*.. https://doi.org/10.2991/aebmr.k.191225.205

Shroff, R., Deneen, C., & Ng, E. (2011). Analysis of the technology acceptance model in examining students' behavioural intention to use an e-portfolio

system. Australasian Journal of Educational Technology, 27(4). https://doi.org/10.14742/ajet.940

Silin, Y. and Kwok, D. (2016). A study of students' attitudes towards using ict in a social constructivist environment. Australasian Journal of Educational Technology. https://doi.org/10.14742/ajet.2890

Syan, A., Kumar, V., Sandhu, V., & Hundal, B. (2019). Empirical analysis of farmers' intention to adopt sustainable agricultural practices. Asia-Pacific Journal of Management Research and Innovation, 15(1-2), 39-52. https://doi.org/10.1177/2319510x19848857

T. N. Padilah and R. I. Adam, "Analisis Regresi Linier Berganda Dalam Estimasi Produktivitas Tanaman Padi Di Kabupaten Karawang," FIBONACCI J. Pendidik. Mat. dan Mat., vol. 5, no. 2, p. 117, 2019, doi: 10.24853/fbc.5.2.117-128

Tan, P. (2019). An empirical study of how the learning attitudes of college students toward english e-tutoring websites affect site sustainability. Sustainability, 11(6), 1748. https://doi.org/10.3390/su11061748

Veltheim, F. and Heise, H. (2020). The agtech startup perspective to farmers ex ante acceptance process of autonomous field robots. Sustainability, 12(24), 10570. https://doi.org/10.3390/su122410570

Veltheim, F. R. v. and Heise, H. (2020). The agtech startup perspective to farmers ex ante acceptance process of autonomous field robots. Sustainability, 12(24), 10570. https://doi.org/10.3390/su122410570

Venkatesh, V. and Davis, F. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. Management Science, 46(2), 186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

Walczuch, R., Lemmink, J., & Streukens, S. (2007). The effect of service employees' technology readiness on technology acceptance. Information & Management, 44(2), 206-215. https://doi.org/10.1016/j.im.2006.12.005

Widjanarko, M., Harahap, F., Latief, V., Brillianda, I., & Kartika, L. (2023). Designing a Salary Structure for SME XYZ in the Bogor Regency Using a Regression-Based Approach Based on Job Value. Jurnal Ilmiah Wahana Pendidikan, 9(14), 450-466. https://doi.org/10.5281/zenodo.8176189

Wong, C., An, P., Wong, F., & Subramaniam, K. (2021). Factors influencing the consumers adoption of e-commerce in the agricultural market. International Journal of Academic Research in Business and Social Sciences, 11(7). https://doi.org/10.6007/ijarbss/v11-i7/10383