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Agriculture E-Marketplace Performance and Consumers' Trust in Its Utilization

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Abstract

Although economic growth overall has shrunk during this pandemic, Indonesian agricultural output has been growing. This positive growth has little or no impact on farmer's conditions. This low impact can be attributed to distribution systems that involve layers of middlemen who exploit farmers. To break this long, ineffective distribution system, a marketplace model is required to help farmers reach out to consumers directly. This study aims to examine consumers' perception and trust in buying agricultural products on an e-marketplace. Results show that e-marketplace performance and consumer trust have positive effects on the utilization intention of agricultural e-marketplaces.

Index Terms—Agricultural Products, E-marketplace Website Performance, Trust, Utilization Intention.

Introduction

The global coronavirus disease 2019 pandemic has changed the behavior of consumers in spending their money. Changes in consumer behavior during this pandemic include the tendency to return to a healthy lifestyle by consuming plenty of vegetables, fish, and meat. The distribution of agricultural products is still a problem that needs attention, because the length of the distribution chain causes the price of agricultural products to be expensive, whereas farmers are disadvantaged because they get extremely low prices. The use of digital platforms can be a solution to the problem of distributing these agricultural products.

The agricultural sector can take advantage of digital platforms to market and sell agricultural products, not only freshly harvested produce, but also processed agricultural products.

By utilizing the e-marketplace of agricultural products, the sales system can reduce transaction costs and break the length of the distribution chain of agricultural products [1]. However, other problems arise because of the lack of knowledge of farmers in utilizing digital technology and the unequal internet network in each region. The role of the government is important in this regard to help provide training to farmers so that they can continue to innovate and keep up with technology, take advantage of digital platforms to promote and sell agricultural products directly to consumers, and break the long distribution chain of agricultural products.

The utilization of the internet in the agribusiness sector can help improve performance through time savings because the information needed by consumers is already available [2]. Internet utilization can also create additional input and output markets [3], and increase competitiveness [4]. The e-marketplace for agricultural products allows farmers to join and sell their agricultural products through the website. This e-marketplace aims to help farmers reach consumers directly and provide information about agricultural products to consumers [5]. Several e-marketplaces exist in Indonesia that can be used by farmers to sell their agricultural products, such as Tanihub, Limakilo, Sikumis.com, Agromaret.com and others.

E-marketplaces for agricultural products are increasing; the ease of transaction and consumer confidence in using e-marketplaces are important [6], because these two factors can foster consumer intentions to use e-marketplaces to obtain the desired products. Farmers as providers of agricultural commodities must really pay attention to the quality of their products, so that consumers will be interested in buying and repurchasing agricultural products on trusted e-marketplaces.

Literature Review

The pandemic that began in 2019 has greatly changed consumer behavior in spending their money; purchases made online through digital platforms have become the consumers' choice in meeting their daily needs. Restrictions on community activities applied to Indonesia and even globally force every business actor to be able to take advantage of other alternatives in selling their products, so that they can still reach consumers. It is important for companies to be able to understand changes in consumer behavior, so that consumers do not switch to a competitor's products. The purchase decision of a product made by consumers is a consumer behavior that is influenced by environmental, cultural, personal, and psychological factors [7].

II.1 Research Framework and Hypotheses

E-marketplaces in agribusiness emerged as a form of development of information and communication technology which provided opportunities for the agricultural sector to market agricultural products through digital platforms [8]. The use of e-marketplaces for agricultural products will greatly assist the agricultural sector in breaking the long distribution chain of such products [9] [10] [11]. The goal of the agricultural sector is customers' utilization intention of agricultural e-marketplaces, so that farmers can directly reach consumers, without consumers having to pay high prices owing to the long distribution chain, which do not correspond to an increase in farmers' income.

The increase in e-marketplaces in the agribusiness sector as a form of digital marketing provides a great opportunity for the agricultural sector to be able to market their products directly to consumers [12]. Choosing the right strategy is important, for the digital marketing of agricultural products to be carried out properly; thus, the efficiency and effectiveness of the use of digital marketing, leading to an increase in farmers' income can be achieved [13]. The government's role is essential to help farmers become technologically literate by providing training to enable them to use technology as a medium to promote and sell agricultural products directly to consumers. The government's role would also help break the long distribution chain of agricultural products.

The agricultural products sold on e-marketplaces must be monitored closely, as consumers will feel satisfied making purchases online and make repeat purchases. A good e-marketplace pays attention not only to the quality of the products sold; but also to the features, content, convenience, ease, and benefits that consumers can obtain when accessing the e-marketplace.

The presence of Frequently Asked Questions (FAQs) in an e-marketplace will help consumers seeking information about products, prices, and payment methods, well as about farmers or business people who are members of the e-marketplace that sells agricultural products. The government's desire to advance the agricultural sector led to various innovations from various parties who also wanted progress for farmers. The emergence of ideas, and innovations by utilizing technological developments is expected to increase the income of the agricultural sector.

The attractive appearance of an e-marketplace with complete features, ease of access and finding the desired product, and convenience in transactions will make consumers interested in visiting the website purchasing of agricultural products. A good e-marketplace should be able to maintain confidentiality of consumer data and not provide these data to other parties. It is important for the agricultural sector to foster consumers' trust in data confidentiality, and conduct financial transactions on the e-marketplace of agricultural products. The consumers' trust buying products on the e-marketplace of agricultural products is a major consideration, so that consumers can continue to visit and make repurchases.

The research framework model and hypotheses in this study are as presented in Figure 1.

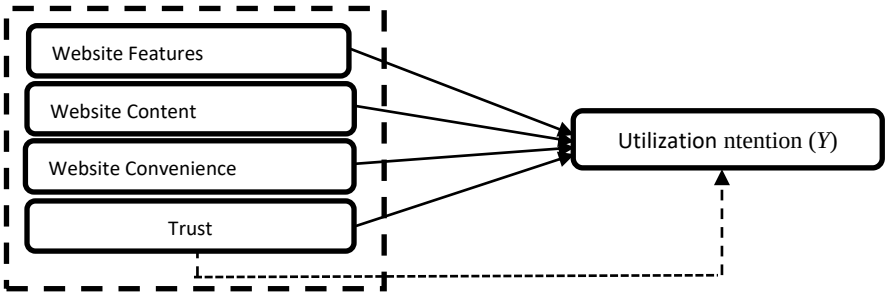

Fig. 1. *Research Model*

Hypothesis 1. Website features (X1), website content (X2), website convenience (X3), and consumers' trust (X4) are thought to have a partial effect on the utilization intention (Y) of an e-marketplace of agricultural products.
Hypothesis 2. Website features (X1), website content (X2), website convenience (X3), and

consumers' trust (X4) are thought to have a simultaneous effect on the utilization intention (Y) of an e-marketplace of agricultural products.

Methodology

The theory underlying this research is the theory of planned behavioral [14], which postulates three independent concepts that determine intentions, such as attitudes, norms, and behavioral control, as well as consumer behavior models [15] that explain that consumer decisions in purchasing goods or services are influenced by marketing stimuli, other stimuli, and consumer characteristics. The research model used refers to the technology acceptance model (TAM) which suggests that information technology begins with a perception of the benefits, and the ease of using information technology [16].

The type of research used in this study was associative research, which determines the effect or relationship between two or more variables, the form in this relationship is a causal relationship (cause and effect). The sampling technique used was the non-probability sampling in which equal opportunities or opportunities for each element or member of the population to be sampled are not provided, and the purposive sampling technique was used to determine the sample with considerations or criteria.

A quantitative descriptive approach with a survey method was used in this study. Questionnaires in Google forms were distributed online to respondents, who were judged according to the topic and met the criteria for this research, that is, respondents who have visited e-marketplaces of agricultural products. The data obtained were then tested to see the effect of variable X (website features, website content, website convenience, perceived ease of use, perceived benefits, and consumer trust) on variable Y (intention to use the e-marketplace of agricultural products).

The questionnaire consisted of two parts descriptive information or consumer demographics containing consumer information such as gender, age, education, and profession; and consumer statements related to research variables. The majority of respondents in this study were women, the age range of most respondents was 26–35 years, the majority of respondents held bachelor's degrees, and most were private employees. A Likert scale was used to measure the perceptions, opinions, and attitudes of respondents toward the phenomenon being studied [17].

Results

The Validity test is a tool used to measure the validity of data using a measuring instrument in the form of a questionnaire. Questionnaires distributed by researchers contained the independent variables, namely, website features (X1), website content (X2), website convenience (X3), and consumers' trust (X4), and the dependent variable, utilization intention (Y). Questionnaires were distributed to consumers who have used e-marketplaces for agricultural products. The results of the validity test showed that a significant value of corrected item–total correlation or r-count is more than r-table (0.1946). These results indicate that all the questions used in the questionnaire are valid and can be used in research. The reliability test was conducted by evaluating Cronbach's alpha value. The test is said to be reliable if Cronbach's alpha value is > 0.6. The results of the reliability test are 0.957, this result indicates that the data used in the questionnaire can be trusted.

The t-test was used to determine the partial effect of the variables, website features X1), website content (X2), website convenience (X3), and consumers' trust (X4) on the dependent variable, utilization intention (Y). Partial test results are presented in Table 1.

Table 1. *Results of t-test (partial)*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.706	1.880		.908	.366
	Website Features	.186	.114	.162	1.641	.104
	Website Content	-.132	.102	-.115	-1.295	.199
	Website Convenience	.414	.136	.369	3.037	.003
	Consumer Trust	.355	.088	.406	4.030	.000

[a.] Dependent Variable: Utilization Intention

The F-test was used to determine the simultaneous effect of the variables, website features (X1), website content (X2), website convenience (X3), and consumers' trust (X4), on the dependent variable utilization intention (Y). The Simultaneous test results are presented in Table 2.

Table 2. *Simultaneous Test Results*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	428.094	4	107.023	36.986	.000[b]
	Residual	274.896	95	2.894		
	Total	702.990	99			

[a.] Dependent Variable: Utilization Intention
[b.] Predictors: (Constant), Consumers' Trust, Website Content, Website Features, Website Convenience

The value of the coefficient of determination is useful to predict and evaluate how much a simultaneous website performance contributes to the intention to use an e-marketplace, as presented in Table 3.

Table 3. *Results of the Coefficient of Determination*

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780[a]	.609	.592	1.701

[a.] Predictors: (Constant), Consumers' Trust, Website Content, Website Features, Website Convenience

[b.] Dependent Variable: Utilization Intention

Disscussion

This study aims to examine the performance of the e-marketplace website for agricultural products by assessing the effects of website features, website content, website convenience, and consumers' trust on the utilization intention of the e-marketplace of agricultural products. The results of the normality test conducted in this study showed a significance value of >0.05, which means that the data used in this study were normally distributed. The next stage was regression analysis, to investigate the effect of variables, website feature, website content, website convenience, and consumers' trust, on the utilization intention of the e-marketplace of agricultural products.

The partial test results in Table 1 show that the website convenience variable has an effect on the utilization intention of e the-marketplace of agricultural products. Consumers consider that e-marketplaces selling agricultural products are highly convenient, with the speed of access of finding the products and latest information needed by consumers, as well as the speed of response given to consumers. The speed of access provided by an e-marketplace adds value to the e-marketplace, because it makes it easier for consumers to find the desired product, and consumers can easily browse other products also offered by the e-marketplace, making it possible for them to be interested in buying other products on the e-marketplace that were not originally planned to be purchased.

The latest information provided by an e-marketplace is also a consideration for consumers to use the e-marketplace. The information can be in the form of products offered and available on the e-marketplace, as well as the price of each product in the e-marketplace, because the price of agricultural products may fluctuate every day. Thus, the latest information on the price of each product is important and should be conveyed on e-marketplaces that sell agricultural products; both e-marketplace managers and farmers who sell agricultural products should always update prices.

The convenience of consumers in deciding to use an e-marketplace is also judged by the speed of response provided by the e-marketplace. The speed of response provided includes answers to questions posed by consumers before making a purchase of an agricultural product, as well as post-purchase complaints that may occur because of delays in delivery or products received that do not match what is displayed on e-marketplaces. The speed of response provided by the e-marketplace will provide convenience for consumers to continue using the e-marketplace to meet their needs.

Website features and website content variables have no effect on the intention to use e-marketplaces for agricultural products; this is because consumers perceive that e-marketplaces selling agricultural products have displayed interesting website content. The e-marketplace that sells agricultural products has been equipped with a complete explanation of each product sold, the price is given, and making payments for the products purchased is easy. Consumers of agricultural products like websites with complete features where there is an FAQ section that can help consumers find the information they need. Therefore, website features and website content are no longer the main considerations for utilizing the e-marketplace of agricultural products, because consumers believe that the website features and website content of the e-marketplace of agricultural products are good enough.

The complete features of an e-marketplace will provide a special attraction for consumers. In e-marketplaces that sell agricultural products, it is essential to have a complete explanation of the agricultural products offered. Such explanations or information could include the harvest time of the products sold, product conditions, and selling price per kilogram. Information about products can also be supplemented with pictures of agricultural products being sold; the latest pictures of the products sold would be better, so that consumers can find picture of the products sold by farmers in the e-marketplace.

Another feature that consumers like in an e-marketplace are the various options offered to make payments for products purchased. The choice of payment methods offered makes it easy for consumers to pay for products purchased in accordance with the consumers' financial applications, so that they face no obstacles when making the payment. The security and confidentiality of data from every consumer who makes a payment must be maintained, so that consumers do not feel afraid to make transactions on the e-marketplace.

Advantages of e-marketplace agricultural products compared to others include the following:

(1) Cutting the value chain: If consumers usually buy vegetables in the market or supermarket, they go through several stages of the value chain. However, this e-marketplace of agricultural products cuts the value chain by providing products that can be purchased directly from the farmers. This would ensure really competitive prices, cheaper and fresher products.

(2) Marketplace with store model: To overcome the problem of monitoring and quality standards as well as the economy of scale of sales quantity, several e-commerce agricultural products that join and position as marketplaces or provide marketplace features operate with an online store model. This means that the e-marketplace website, or the provider of e-marketplace features, acts like an online store, organizing sellers, ensuring quality and quantity, and even making purchases before selling them online.

(3) Assistance and financing: Most e-marketplaces for agricultural products also provide assistance to farmers. This is a novelty and contribution to society, because of the lack of infrastructure and knowledge of farmers in using technology. A few e-marketplace sites for agricultural products also provide financing to farmers.

Consumers like websites that make it easy to search for the desired product. Complete information about companies that are members of the e-marketplace is a consideration for consumers in choosing websites that offer agricultural products; this makes it easier for consumers to find track records of farmers who sell agricultural products. The availability of the FAQ section makes it easy for consumers to first search for the information they need or find answers to questions they may have, before asking them through live chats available on the e-marketplace.

These results are in line with those of previous research which states that the appearance and features of the e-marketplace can affect the assessment from the user's perspective [18], and become factors that consumers pay attention to when choosing an e-marketplace [5]. The results of this study are also in line with research conducted previously, showing that e-marketplace content services are a consideration for consumers in choosing them, and as a form of care and attention given by e-marketplaces to provide convenience to consumers when shopping [5].

The trust variable has an effect on the utilization intention of e-marketplaces of agricultural products. The trust given by consumers to an e-marketplace is formed because e-marketplaces can convince consumers that they are able to keep their commitments well, and always think of the best for consumers. Consumers can monitor the delivery of agricultural products that have been purchased through e-marketplaces, so that products can reach consumers quickly; and the products received are still fresh. Consumer trust also arises because of the security of transactions provided by the e-marketplace, so that consumers do not have to worry about their data being given to other parties, or the occurrence of failures in transactions. The results of this study are in line with previous research which states that trust is one of the key factors for the success of e-marketplaces [5] [12] [13].

Simultaneous test results show that website performance variables (website features, website content, website convenience), and consumers' trust have an effect on the utilization intention of e-marketplaces of agricultural products, as presented in Table 2. Efforts can be seen from website features, website content, and website convenience in ensuring the stock of goods, including following transaction patterns; and cultivation with existing patterns, increase consumer confidence and encourage the intention to use e-marketplaces for agricultural products. These functions are usually outlined in the form of agricultural e-marketplace features and services, both online stores and e-marketplaces. The uniqueness of the agricultural e-marketplace is a modification or adjustment of the characteristics of goods, the supply and availability of goods, and the characteristics of the farmers themselves.

The results of the coefficient of determination test as presented in Table 3 show a value of 0.609 or 60.9%; this value means that website performance variables (website features, website content, website convenience), and consumers' trust contribute to the utilization intention of e-marketplaces of agricultural products by 60.9%, and the rest is influenced by other variables not included in this study. These results show that the marketing of agricultural products through digital platforms is still low, so it is necessary to improve the agricultural sector to be able to take advantage of digital platforms to break the long distribution chain for agricultural products.

Conclusion

The pandemic that has occurred over the past two years has caused various sectors to experience a decline in income; worse, many industries have gone bankrupt. This decline in income did not occur in the agricultural sector, where the income curve continued to increase, although only by a small amount. The government's implementation of restrictions on community activities has helped the growth of e-marketplaces as a digital platform that sells agricultural products, so that consumers' daily needs can still be met. Various innovations were created to attract consumers to buy agricultural products offered on e-marketplaces to meet consumer needs.

It is important to provide training to farmers enable them to take advantage of digital platforms to sell agricultural products while continuing to sell conventionally in their local areas. The use of such digital platforms will help break the long distribution chain of agricultural products from farmers to consumers. The results show that consumers' trust has the greatest effect on the utilization intention of e-marketplaces of agricultural products compared to other variables. This means that consumers will make purchases through e-marketplaces if they believe that every transaction made will not harm consumers, in terms of both product quality and security in transactions.

Implication

This research is useful for farmers and businesses involved in selling agricultural products through e-marketplaces. Our results also provide information on the agricultural sector, so that consumers who have the intention of utilizing e-marketplaces that sell agricultural products can better understand the internal and external factors. For consumers, the results of this study provide information about a good e-marketplace that can be chosen to their consumer needs, especially those related to agricultural products. For academics, these results help provide an understanding of consumer behavior and the factors that influence consumers in assessing the performance of e-marketplace websites for agricultural products.

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