

## Technology acceptance model analysis of MSME attitudes and intentions to use digital technology

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### Abstract

This study discusses the Technology Acceptance Model (TAM) to test the MSMEs' attitudes and intentions in using digital technology. The respondents were 173 MSMEs spread throughout Indonesia, and partial least squares (PLS) were used to examine the relationship between perceived usefulness, ease of use, attitude, and intention to use. The results showed that the accessibility level of digital technology is directly proportional to the perceived usefulness, increasing positive attitudes and intentions to use.

**Keywords:** technology acceptance model, MSME, intention to use, attitude

### Introduction

#### 1. Problem statement

Information technology and the internet have overgrown in the last few decades. According to the Digital Report, 2021 by Hootsuite and We Are Social, 4.66 billion, or 59.5% of the world's 7.83 billion people, are internet users, with 316 million (+7.3 %) increase from January 2020. Information technology and the internet have developed rapidly in the last few decades. The Covid-19 pandemic, which has resulted in the government imposing restrictions on buying and selling, has undoubtedly impacted MSME actors who have been conducting their activities directly in the community. The development of information technology can provide solutions for online sales. However, 12 million or 19% of MSME actors have used digital technology in their activities, according to data from the Ministry of Cooperatives and MSMEs in 2021. This is still a small proportion of Indonesia's total MSMEs, which number up to 64 million actors.

#### 2. Theoretical framework

Theoretical framework describes the problem of how users accept and use certain technologies as a function of the causal relationship between system design features, perceived usefulness, ease of use, and attitudes. It assumes that user adoption and effectiveness are determined by the intention to use the system, influenced by perceived usefulness, ease of use, and attitudes. Consequently, perceived usefulness and ease of use are the two main predictors of technology acceptance and practical use. Zheng and Li (2020) [10] stated that Technology Acceptance Model is an information system theory to investigate the impact of external variables on users' internal beliefs, attitudes, and intention. Perceived usefulness is described by Davis (1989) [3] as a level of belief that the employment of a certain technology will increase its performance. The benefits of perceived usefulness are conceptually acceptable because of the function and easiness of using technology.

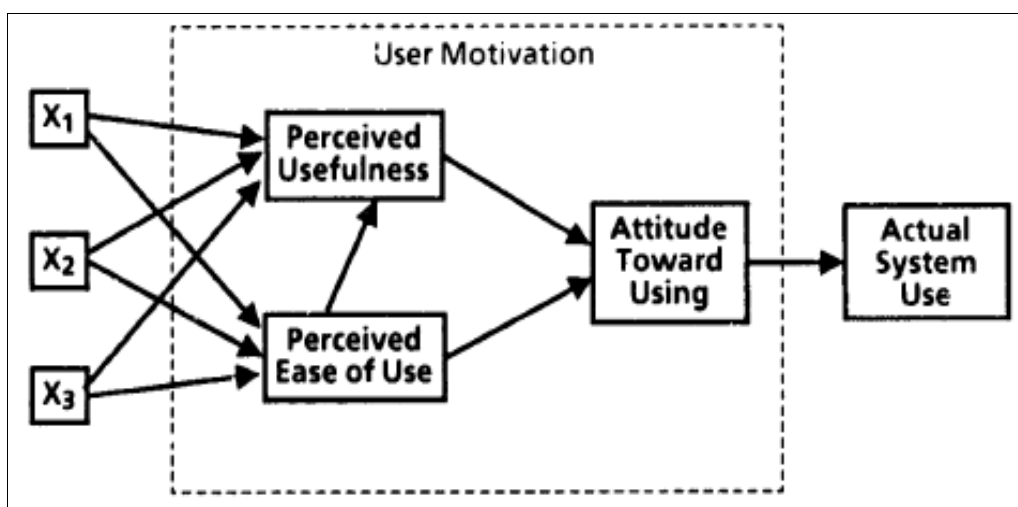


Fig 1: Technology Acceptance Model (TAM)

Hussein (2017) [4] stated that Technology Acceptance Model is built on two cognitive beliefs called perceived usefulness and perceived ease of use. The basis of the model provides other determinants to influence beliefs, attitudes, and

intention to use technology. Furthermore, it has, directly and indirectly, influenced users' behavioral intention and attitude to assess the actual use of technology.

**3. Hypotheses development**

Based on the theoretical framework and previously conducted empirical studies, the hypotheses are formulated as follows:

1. The Relationship between Perceived Ease of Use toward Perceived Usefulness  
 Cho *et al.* (2020) [20] stated that the perceived ease of use of a technology application can positively influence perceived usefulness.  
 H1: Perceived ease of use positively affects the perceived usefulness of digital technology.
2. The Relationship between Ease of Use and Attitude  
 Salloum *et al.* (2019) [8] showed that perceived ease of use positively impacts students' attitudes toward using e-learning technology systems.  
 H2: Perceived ease of use positively affects attitudes toward the use of digital technology.
3. The Relationship between Perceived Usefulness and Attitude  
 Students with perceived usefulness of a technology (learning management system) also have a positive

attitude (Juhary, 2014) [5]. This is in line with Priyadarshini *et al.* (2017) [7] that perceived usefulness positively affects the attitudes of job-seeking website users.

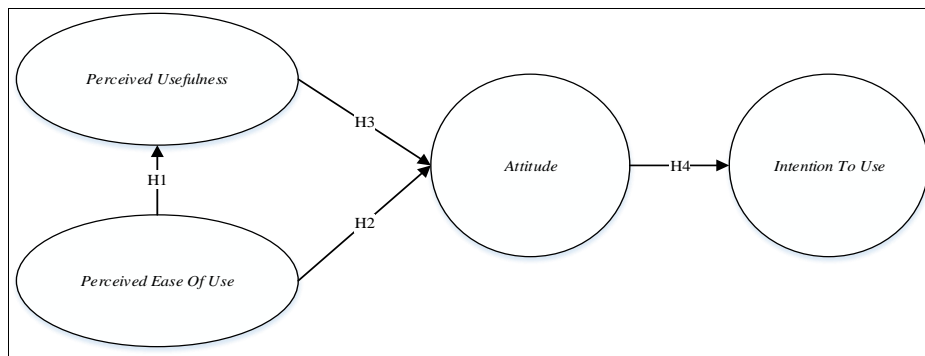
H3: Perceived usefulness positively affects attitudes toward the use of digital technology.

4. The Relationship between Attitude to Intention to Use  
 Zheng and Li (2020) [10] showed that attitudes positively affect intention to use tablet computer technology. Therefore, the level is directly proportional to the interest in technology use behavior (Mullins & Cronan, 2021) [6].

H4: Attitude has a positive effect on intention to use technology.

**Method**

The study considers empirical and theoretical elements by using the Technology Acceptance Model. Furthermore, it examines the effect of perceived usefulness and perceived ease of use for determining attitudes and intention to use technology.



**Fig 2:** Research Model

**1. Sampling Procedures**

A non-probability sampling technique that does not provide equal opportunities was used to obtain MSME actors interested in digital technology for their sales activities. The adequate sample size should be at least 5 times the number of indicators/questions, with a minimum of 100 (Chen & Chang, 2018) [1]. Therefore, the minimum number of samples fulfilled is 100 respondents since 14 indicators/questions were used.

**2. Scale**

This data collection technique is carried out by compiling several statements. The variables were measured using a Likert scale of numbers 1 (strongly disagree) to 5 (strongly agree).

**Analysis**

Under the framework developed, the data analysis tool used was Structural Equation Modeling (SEM). PLS-SEM provided concurrent analysis for measurement and structural models, resulting in more accurate estimates (Salloum *et al.*, 2019) [8]. In particular, the partial least square (PLS) analysis used the Smart PLS software.

**Results**

**1. Respondent Profile**

The respondents were MSMEs who use digital technology as a facility for marketing their products. The following table shows the simple demographic characteristics of the respondents.

**Table 1:** Distribution Respondents Profile

Measure	Item	Frequency	Percentage
Gender	Male	69	39.88%
	Female	104	60.12%
Age	≤ 20	8	4.62%
	21 - 30	95	54.91%
	31 - 40	62	35.84%
	41 - 50	7	4.05%
	51 - 60	1	0.58%
Company age	≤ 1	52	30.06%
	2 - 5	108	62.43%
	6 - 9	13	7.51%
Monthly Turnover	≤ 10.000.000	133	76.88%

	10.000.000 – 50.000.000	39	22.54%
	60.000.000 – 100.000.000	1	0.58%
Digital technology platform Used	E-commerce	14	8.09%
	Social Media	9	5.20%
	Others	2	1.16%
	E-commerce, social media, and Others	148	85.55%
Experience in using the digital technology platform (years)	≤ 1	25	14%
	1 - 5	111	64%
	≥ 5	37	21%

Source: Primary Data Analysis Result, 2022

**2. The measurement model**

The analysis of the measurement model was assessed based on item loading, construct reliability, convergent validity, and discriminant validity shown in table 2, containing perceived usefulness, ease of use, attitude, and intention to use. The reliability of the compiled questionnaire is guaranteed because it shows a value above 0.6 according to

the recommendation of (Stevens, 2002) [9] in terms of the Cronbach Alpha value. The value of convergent validity uses the extracted mean-variance (AVE) parameter above the minimum value of 0.5. The fit index fulfills the recommended criteria; hence the measurement model is satisfactory.

**Table 2:** The Measurement Model

Construct	Items	Loading	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Intention to Use	IU1	0.79	0.781	0.830	0.873	0.697
	IU2	0.927				
	IU3	0.779				
Perceived Usefulness	PU1	0.805	0.849	0.850	0.898	0.689
	PU2	0.888				
	PU3	0.839				
	PU4	0.784				
Perceived Ease of Use	PEOU1	0.766	0.841	0.849	0.893	0.677
	PEOU2	0.846				
	PEOU3	0.865				
	PEOU4	0.812				
Attitude	A1	0.825	0.840	0.843	0.904	0.758
	A2	0.888				
	A3	0.898				

Measurement and structural models were used, and the outer loading showed the reliability and validity of the construct. Meanwhile, the inner model showed the relationship between all constructs.

**3. The Structural Model**

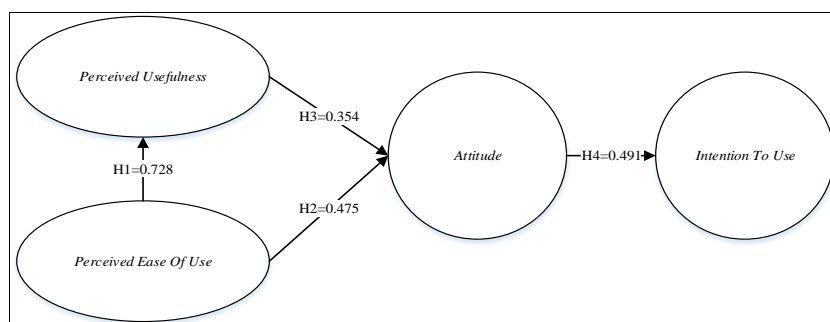
**Table 3:** Hypothesis Testing

Hypothesis		Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Value	Evaluation
Hypothesis 1	PEOU->PU	0.354	0.351	0.083	4.275	<b>0.000</b>	Hypothesis Accepted
Hypothesis 2	PEOU ->A	0.728	0.731	0.047	15.627	<b>0.000</b>	Hypothesis Accepted
Hypothesis 3	PU->A	0.475	0.479	0.085	5.602	<b>0.000</b>	Hypothesis Accepted
Hypothesis 4	A -> IU	0.491	0.490	0.067	7.292	<b>0.000</b>	Hypothesis Accepted

Source: Primary Data Analysis Result, 2022

The relationship in the Technology Acceptance Model includes relationships regarding perceived ease of use, usefulness, attitudes, and intentions to use the techniques discussed in hypotheses 1 to 4 as acceptable. This is consistent with Cho *et al.* (2020) [20] that perceived ease of

using a technology application can positively influence perceived usefulness. Furthermore, (Mullins & Cronan, 2021) [6] stated that a higher level of attitude is associated with an increased interest in technology use behavior.



**Fig 3:** Research Model Results

## Discussion

The ease-of-use term refers to how a person perceives that technology will not be complex or troublesome. The Technology Acceptance Model theory, through perceived ease of use, significantly impacts perceived usefulness, attitudes, and behavior intention to use digital platform. MSMEs' perceived usefulness, attitudes, and behavioral intentions will increase when they believe digital technology is easy to use. Besides, the results also showed that perceived usefulness have a significant positive effect on attitudes and behavior intention. Digital technology can be used and accepted when MSMEs feel an increase in performance, productivity or other benefit. The perceived benefits they got are directly proportional to MSMEs' positive attitudes then impacting their intention to use digital technology.

Ease of use and usefulness are the dominant factors in determining attitudes and intentions to use digital technology. As a result, companies providing digital technology should create systems with displays that are easy to use and understand for MSMEs. This can increase the positive attitude and intention to use the digital technology as a facility to market its products. The study explains digital platform technology initiatives and guides future studies. Moreover, qualitative studies based on interviews and digital platform service providers can show more facts and descriptions of such relationships.

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