Factors Influencing the Intention to Adopt E-Commerce Among Craft MSMEs in the Banjarnegara Regency

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ABSTRACT

This research is based on the issue of the low level of E-Commerce usage in the Micro, Small, and Medium Enterprises (MSMEs) Craft sector in Banjarnegara Regency. To understand the causes of this issue, the researcher aims to explore the factors influencing the interest of MSME Craft practitioners in Banjarnegara to adopt E-Commerce technology. This research is grounded in the modified Unified Theory of Acceptance and Use of Technology (UTAUT), focusing on Behavior Intention as the dependent variable and three main independent variables: Performance Expectancy, Effort Expectancy, and Social Influence. The research design utilizes a survey method with a convenience sampling technique. The sample consists of 60 participants involved in the Craft Industry in Banjarnegara Regency. Hypothesis testing is conducted through regression analysis using SPSS 26 software. The research findings indicate that the Social Influence variable is the only one that significantly influences the intention to adopt E-Commerce among artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara Regency.

Keywords: E-Commerce, Intention Adoption, Craft Sectors, UTAUT, SMEs

1. Introduction

The manufacturing industry is one of the most important sectors in Banjarnegara, contributing at least 15% of the total regional gross domestic product (PDRB Banjarnegara, 2022). Within this sector, there is a subsector of craft industries that includes ceramic, batik, bamboo, and others. The majority of businesses in this sector fall under the category of Micro, Small, and Medium-sized Enterprises (MSME). These businesses face significant technological challenges (Prasanna et al., 2019).

One of the technological challenges is the growth of E-Commerce. In Indonesia, this is supported by a high penetration rate, reaching 78.19% (APJII, 2023) of which 88.1% of them are personal users who use E-Commerce for shopping purposes (Mirantika et al., 2022). However, the adoption rate of E-Commerce among businesses remains low, at only 32.23% (BPS E-Commerce Statistics,

2022). In Indonesia, nearly 99.99% of businesses fall into the MSMEs category (Kemenkopukm, 2019). Thus, it can be concluded that the adoption of E-Commerce in Indonesia is still relatively low. The statistical data presented earlier indicates that while E-Commerce usage from the consumer side is high, it is not matched by E-Commerce usage from the seller's side. This poses a threat to the sustainability of MSME businesses, which are required to adapt to changing times.

This phenomenon can be seen as a dilemma. On one hand, E-Commerce can help entrepreneurs enhance their competitiveness by expanding their marketing reach (Rehman, 2016). On the other hand, the emergence of E-Commerce technology can also threaten their business continuity if they are unable to adapt. In other words, MSMEs don't have any choices. They are forced to adopt E-Commerce to maintain their competitiveness and business existence (Rahayu & Day, 2015). The observed low level of E-Commerce adoption, especially in the MSME sector, raises questions about the factors influencing the intention to adopt E-Commerce among MSMEs, particularly in the craft subsector in Banjarnegara.

This study will use the Modified Unified Theory of Acceptance of Technology (Venkatesh et al., 2003), focusing on the intention behavior to adopt technology. In this research, we will examine three main constructs of this theory: Performance Expectancy, Effort Expectancy, and Social Influence as factors driving the intention to adopt E-Commerce technology among MSMEs craft businesses in Banjarnegara. There are several considerations for why these three factors are used in this research. The following paragraph will explain the reasons for the selection of these three primary factors from UTAUT.

The first consideration is the research's primary goal, which is to understand the Behavior Intention (intention to adopt) of MSME craft entrepreneurs in Banjarnegara. Behavior Intention is used as the dependent variable based on the research problem in the field, where the use of E-Commerce among MSME craft businesses in Banjarnegara is still relatively low. Therefore, understanding the factors that can drive the intention of MSME craft entrepreneurs in Banjarnegara to adopt E-Commerce becomes crucial.

The second consideration is that since the dependent variable that serves as the starting point of the research is Behavior Intention (intention to adopt), the variables to be used to explain this variable, based on the theory, are Performance Expectancy, Effort Expectancy, and Social Influence.

In this study, we have also included two moderation variables, namely age and gender. There are several considerations for why these two moderation variables were chosen. Firstly, age and gender are variables that have a direct moderating influence on the three main variables of the study: Performance Expectancy, Effort Expectancy, and Social Influence. Secondly, initial observations and interviews conducted with artisans in the MSME craft sector in Banjarnegara indicated that, on average, these businesses are predominantly led by older males. This led us to investigate how age and gender moderate the main research variables in the context of E-Commerce adoption. Thirdly, the selection of these two moderation variables was also made to maintain focus in the study and avoid excessive complexity.

2. Literature Review

2.1 Definition of Micro, Small, and Medium Enterprises (MSMEs)

MSMEs constitute a vital sector that sustains a country's economy by contributing to job creation and national income (Rahman et al., 2016). Nevertheless, there is no universal definition for MSMEs. In most cases, the definition of MSMEs is contingent on the government under which they operate. Several parameters are commonly employed to define MSME, such as asset levels, capital investment, turnover, and the number of employees (Esubalew & Ragh
Arama, 2017).

An attempt to create a global definition for MSME seems to have been made by the World Bank through the International Finance Corporation (2013). The IFC employs three parameters to define MSME, namely the number of employees, total assets, and annual sales value. Here is the definition of MSME according to the IFC:

- **Micro Enterprise** (fewer than 10 employees, assets less than $100,000, annual sales less than $100,000)
- **Small Enterprise** (10-50 employees, assets between $100,000 and $3 million, annual sales between $100,000 and $3 million)
- **Medium Enterprise** (50-300 employees, assets between $3 million and $15 million, annual sales between $3 million and $15 million).

In Indonesia, MSMEs are generally defined as part of the informal economy operated by individuals or groups (Suryati, 2021). This definition is outlined in Law No. 20 of 2008. This law defines MSME using two parameters: equity and annual sales. Notably, the number of employees is not included as a parameter. Based on this law, MSMEs can be categorized as follows:

- **Micro Enterprise** (equity less than IDR 50,000,000 and annual sales less than IDR 300,000,000)
- **Small Enterprise** (equity between IDR 50,000,000 and IDR 500,000,000 and annual sales of IDR 2,500,000,000)
- **Medium Enterprise** (equity between IDR 500,000,000 and IDR 10,000,000,000 and annual sales between IDR 2,500,000,000 and IDR 50,000,000,000).

When comparing these two definitions, there is a similarity in the parameters used. However, because the subject of this research is in Indonesia, we will primarily use the definition from Law No. 20 of 2008 as the main reference.

2.2 Definition of E-Commerce

E-commerce, as defined by the OECD (2019) in their report, is described as "*the sale or purchase of goods or services conducted via computer networks using methods specifically designed to receive or place orders*." The focal point of this definition is not on the characteristics of the products being bought, the parties involved, the payment methods, or the delivery methods but rather on the ordering method.

The use of the internet can be further detailed, such as through the use of websites, software applications, or even browsers on mobile devices for conducting business transactions (Laudon & Traver, 2019). A website refers to one of the services on the internet that provide access to web pages, an application refers to software or software that exists on mobile devices or desktop computers, while a mobile browser refers to a search application found on a mobile device (Laudon & Traver, 2019).

There is a debate among some experts regarding the definition and position of **E-Commerce**, especially when compared to other terms like **E-Business**. Schneider (2017) generally sees the terms E-Commerce and E-Business as two interchangeable terms. Furthermore, he even asserts that E-Commerce is a broader term because it encompasses business activities involving internet technology. However, other experts like Laudon & Traver (2019) view it differently; they argue that E-Commerce is a subset of E-Business, where E-Commerce involves only commercial activities, while E-Business encompasses all business activities between organizations or individuals.

On the other hand, despite supporting Schneider's view (2017), Turban et al. (2017) also provide a different perspective. They state that E-Business and E-Commerce are distinct, with E-Business being related only to business activities outside of buying and selling through the Internet. Nevertheless, they still argue that both concepts, E-Commerce and E-Business, are essentially the same, and these terms can be used interchangeably.

2.3 Modified Unified Theory of Acceptance and Use of Technology (UTAUT)

According to Venkatesh et al. (2003), the Unified Theory of Acceptance and Use of Technology (UTAUT) is a model that consolidates eight of its predecessor models, which were previously fragmented, into a robust framework capable of capturing the essence of these eight elements. In the initial construction of this model, there are four independent variables: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. There is one mediating variable, Behavioral Intention, and one dependent variable, Usage Behavior.

However, as the focus of this research is to understand the Behavior Intention (adoption intention) of E-Commerce among small and medium-sized enterprises (SMEs) in the handicraft sector in Banjarnegara, this study will only concentrate on Behavioral Intention as the dependent variable with three independent variables: Performance Expectancy, Effort Expectancy, and Social Influence.

2.3.1 Performance Expectancy

As defined by Venkatesh et al. (2003), Performance Expectancy refers to the level of confidence an individual has in using a system, believing that its use will lead to improved performance. This is supported by research findings from Thomas (2023), which state that the primary factor facilitating the acceptance of E-Commerce by business practitioners in rural entrepreneurs is their expectation of the benefits or performance they anticipate from technology adoption in their businesses. Similar findings were also discovered in the research conducted by Li & Yuan (2021), who studied the adoption of E-Commerce technology among rural farmers in China. The

mentioned benefits include increased product visibility and enhanced consumer access (Thomas, 2023), ultimately driving higher sales and income for them (Li & Yuan, 2021).

2.3.2 Effort Expectancy

According to Venkatesh et al. (2003), Effort Expectancy refers to the level of ease in using a system, which relates to the perception of how easy it is to use. This construct is a synthesis of various constructs from earlier theories, such as perceived ease, complexity, and user-friendliness.

Research findings by Mizal & Wijayangka (2020) indicate that Effort Expectancy has a positive and significant impact on the adoption of E-Commerce among fashion SMEs in Bandung. The study shows that respondents did not face significant difficulties in adopting E-Commerce, possibly influenced by the relatively young age of the respondents, with 70% of them being young women under 40 years old.

Similar results were found in Thomas's (2023) research, which suggests that E-Commerce adoption is easier because local entrepreneurs are already familiar with social media technology, making it easier for them to adapt. However, contrasting results emerged from Li & Yuan's (2020) study, indicating that Effort Expectancy did not influence the behavioral intention to adopt E-Commerce, possibly because farmers expect greater results or benefits as E-Commerce technology becomes more complex. In reality, this is not always the case.

2.3.3 Social Influence

Social Influence as defined by Venkatesh et al. (2003), can be described as the extent to which an individual perceives that important people in their surroundings believe they should use the new system. Research findings from Dutta & Shivani (2020), who examined the impact of E-Commerce adoption among female entrepreneurs in India, indicate a positive and significant influence of the Social Influence variable on Behavior Intention. Thomas's (2023) research also yielded similar results, noting that SME entrepreneurs in the rural region tend to adopt E-Commerce because the most successful entrepreneurs in their area are doing the same. Additionally, the closeness between entrepreneurs on a social level also influences this phenomenon (Li & Yuan, 2020).

2.3.4 Behavioral Intention

In general terms, Behavioral Intention in the context of UTAUT can be defined as an individual's perception of the likelihood or desire to engage in a specific behavior related to adopting new technology in the future (Davis et al., 1989). This concept is based on the views of Fishbein and Ajzen (1975), who defined Behavioral Intention as "expectations of a person's behavior under certain conditions." This idea was further reinforced by the research findings of Ajzen (1991), who positioned Intention as a variable that can be used to predict an individual's behavior. The logic of this theory is that the stronger a person's intention, the higher the likelihood that a behavior will be performed.

The results of Ajzen's (1991) research later became known as the Theory of Planned Behavior (TPB), which is one of the theories that make up Venkatesh's UTAUT (2003), alongside other theories such as the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975) and the Technology Acceptance Model (TAM) by Davis (1989). Research results that have applied

UTAUT, such as those by Mizal & Wijayangka (2020), also support this, where high Behavioral Intention values have an impact on the high Use Behavior variable. Similar findings were also found in the research results of Dutta & Shivani (2020) and Li & Yuan (2021).

2.3.5 Moderating Variables

According to Sugiyono (2019), a moderator variable is a variable that influences, in the sense of strengthening or weakening, the relationship between an independent variable and a dependent variable. In Venkatesh's UTAUT theory (2003), there are four moderator variables: age, gender, experience, and voluntariness of use. However, in this research, only two moderator variables, namely age and gender, will be used. There are several considerations for this choice. First, these two moderator variables have a direct impact on the three main constructs in this study. Second, initial observations and interviews conducted by the author indicated indications of the influence of these two variables. Third, it is to maintain the research focus and avoid making the study overly complex. The two moderator variables are as follows:

- **Age**
  In Venkatesh's (2003) research, the age variable had a moderating effect on the three main constructs of the theory: Performance Expectancy, Effort Expectancy, and Social Influence on the intention to adopt (Behavior Intention). Furthermore, Venkatesh (2003) mentioned that, concerning the Performance Expectancy variable, its effect would be stronger in younger individuals, especially young males. Regarding Effort Expectancy, its effect would be much stronger in younger women, while from the perspective of Social Influence, its effect would be stronger in older women. The research results from Taieh et al. (2021) related to the adoption of M-Banking in Jordan found that age had a significant influence on respondents, especially those from Lebanon. However, the research results from Dutta & Shivani (2020) did not find a significant moderating effect of age.

- **Gender**
  Similar to the age variable, the gender variable also has a moderating effect on the three main constructs of this theory (Performance Expectancy, Effort Expectancy, and Social Influence) on Behavior Intention in adopting new technology. Furthermore, Venkatesh (2003) mentioned that the Performance Expectancy effect would be stronger in males, whereas Effort Expectancy and Social Influence would have a stronger effect on females. The research results from Taieh et al. (2021) found that gender had a moderating effect, with males being more inclined to use M-banking applications compared to females.

3. Research Methodology

Based on variable control, this research can be classified as a survey study. The research focuses on understanding how the variables of Performance Expectancy, Effort Expectancy, and Social Influence impact the Behavioral Intention of artisans in Micro, Small, and Medium Enterprises (MSME) in Banjarnegara when they are adopting E-Commerce. The study will be conducted in Banjarnegara Regency. The research will involve a sample of 60 MSMEs, selected from two dominant artisan industries in Banjarnegara, namely the ceramic industry and the batik industry. Data will be collected using the convenience sampling technique, and questionnaires will be directly distributed to the respondents.

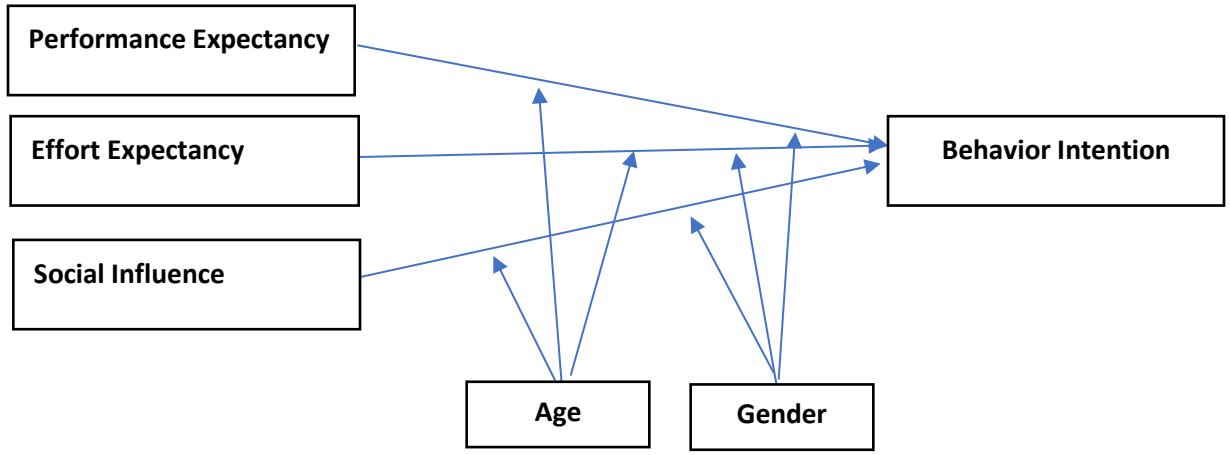

Figure 1. Research Methodology

4. Results

4.1 General Description of Respondents

This research utilized a sample of 60 individuals engaged in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara Regency. Table 1 presents an overview of the respondents' characteristics based on age, gender, and educational level.

Table 1. General Description of Respondents

Gender	**Frequency**	**Percentage**
Male	43	71.7
Female	17	28.3
Total	60	100.00
Age	**Frequency**	**Percentage**
20-35	12	20.0
36-50	20	33.3
51-65	26	43.3
66-80	2	3.3
Total	60	100.00
Education Level	**Frequency**	**Percentage**
Elementary School	16	26.7
Junior High School	17	28.3
Senior High School	11	18.3
College / University	16	26.7
Total	60	100.00

Based on the table, 80% of SME artisans in Banjarnegara are aged above 35, with the largest proportion falling between 51-65 years, making up 43.3% of respondents. This aligns with the researcher's initial expectations regarding regeneration issues among SME artisans, identified during key respondent interviews.

In terms of gender, 71.7% of respondents are male, possibly influenced by the small-scale nature of the craftsmanship sector, often requiring business owners to double as artisans. Simplicity in production technology also attracts more male participation.

Regarding education, 73.3% completed education up to high school, while 26.7% are college graduates. Interestingly, educational levels are relatively evenly distributed from elementary to college graduates, contrary to the researcher's initial assumptions, possibly indicating changing characteristics among SME artisans in Banjarnegara.

4.2 Partial Test (t-test) of Variables X1, X2, X3 on Variable Y

The partial test in this context will examine the regression coefficients of each independent variable separately using a t-test. In this initial examination, we will observe how the variables X1 (*Performance Expectation*), X2 (*Effort Expectation*), and X3 (*Social Influence*) individually influence the dependent variable Y (*Behavior Intention*) among artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara Regency when adopting E-Commerce.

Table 2. Partial Test X1, X2, X3 on Variable Y

Coefficients					
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig
1 (Constant)	2.351	1.838		1.279	.206
Performance Expectation	.043	.113	.045	.382	.704
Effort Expectation	-.037	0.109	-.041	-.337	.737
Social Influence	.625	.115	.655	5.424	.000
a. Dependent Variable: Behavior Intention					

The significance value for the Performance Expectation variable is 0.704, which is greater than 0.05. This indicates that there is no significant influence of Performance Expectation on the Behavior Intention of artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship when adopting E-Commerce.

The significance value for the Effort Expectation variable is 0.737, which is also greater than 0.05. This suggests that there is no significant influence of Effort Expectation on the Behavior Intention of artisans in the SME sector of craftsmanship when adopting E-Commerce.
However, the significance value for the Social Influence variable is 0.000, which is smaller than 0.05. This indicates a significant influence of Social Influence on the Behavior Intention of artisans in the SME sector of craftsmanship when adopting E-Commerce. Based on the table, we can conclude that Social Influence is the only variable that has a significant influence on the intention to adopt E-Commerce among artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara. Next, let's look at the model summary for the results of these t-tests.

Table 3. Model Summary of X1,X2,X3 on Variable Y

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655	.430	.399	1.640
a. Predictors : (Constant), Social Influence, Performance Expectation, Effort Expectation				

Based on the R Square value of 0.430, it can be inferred that the influence of the variables Performance Expectation, Effort Expectation, and Social Influence collectively accounts for 43% of the variance in Behavior Intention among artisans in the Small and Medium-sized Enterprises (SMEs) sector when adopting E-Commerce technology.

4.3 Partial Test (t-test) of Variables X_1, X_2, X_3 on Variable Y Mediated by Variable M_1

In this section, we will examine how variables X_1 (*Performance Expectation*), X_2 (*Effort Expectation*), and X_3 (*Social Influence*) influence variable Y (*Behavior Intention*) while moderated by variable M_1 (Gender).

Table 4. *Partial Test (t-test) of Variables X_1, X_2, X_3 on Variable Y Mediated by Variable M_1*

Coefficients					
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	sig
1. (Constant)	4.222	6.495		.650	.519
Performance Expectation	0.290	.396	.305	.733	.467
Effort Expectation	-.379	.357	-.426	-1.060	.294
Social Influence	0.583	.391	.611	1.493	.142
Gender	-1.624	5.196	-.349	-.313	.756
X1M	-.223	.330	-.937	-.677	.501
X2M	.288	.279	1.153	1.031	.307
X3M	.054	.310	.218	.173	.864
a. Dependent Variable: Behavior Intention					

Based on the table, it is evident that the significance values of the interaction variables between Performance Expectation (0.501), Effort Expectation (0.307), and Social Influence (0.864) are greater than 0.05. Therefore, it can be concluded that gender as a variable is unable to moderate the relationship between these three variables and the Behavior Intention of artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara when adopting E-Commerce.

4.4 Partial Test (t-test) of Variables X_1, X_2, X_3 on Variable Y Mediated by Variable M_2

In this section, we will examine how variables X_1 (*Performance Expectation*), X_2 (*Effort Expectation*), and X_3 (*Social Influence*) influence variable Y (*Behavior Intention*) while moderated by variable M_2 (Age).

Table 5. *Partial Test (t-test) of Variables X_1, X_2, X_3 on Variable Y Mediated by Variable M_2*

Coefficients					
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	sig
2. (Constant)	.966	6.021		.160	.873
Performance Expectation	-.456	.479	-.479	-.953	.345
Effort Expectation	.484	.385	-.544	1.258	.214
Social Influence	.740	.381	.775	1.940	.058
Gender	.808	2.421	.317	.334	.740
X1M2	.205	.191	1.345	1.072	.299
X2M2	-.199	.134	-1.135	-1.479	.145
X3M2	-.080	.159	-.509	-.503	.617
b. Dependent Variable: Behavior Intention					

Based on the table, it is evident that the significance values of the interaction variables between Performance Expectation (0.289), Effort Expectation (0.145), and Social Influence (0.617) are greater than 0.05. Therefore, it can be concluded that age as a variable is unable to moderate the relationship between these three variables and the Behavior Intention of artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara when adopting E-Commerce.

5. Discussion

Several factors contribute to the high resistance to E-Commerce adoption among artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara Regency. Firstly, the characteristics of the craftsmanship industry make E-Commerce adoption more challenging. Goods in this industry are susceptible to damage and often have large volumes, leading SME operators to hesitate to sell their products online. However, it is also worth noting how the influence of social factors has a significant impact on their intention to adopt E-Commerce.

6. Conclusion

In general, we can conclude that the only variable that directly influences the intention to adopt E-Commerce among artisans in the Small and Medium-sized Enterprises (SMEs) sector of craftsmanship in Banjarnegara Regency is the Social Influence variable. Meanwhile, the Performance Expectancy and Effort Expectancy variables, as well as both moderation variables, do not have a significant impact on the intention to adopt E-Commerce. Initial interviews conducted by the researcher indicated that SME operators often perceive E-Commerce as complex and burdensome.

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