
SMALL AND MEDIUM ENTERPRISES (SMES) PERCEPTIONS OF DRIVERS AND BARRIERS TO E-COMMERCE ADOPTION

Meirani Harsasi¹⁾, Andy Mulyana²⁾, Isbandriyati Mutmainah³⁾, Aprihatiningruh Hidayati⁴⁾, Erni Ernawati⁵⁾

^{1),2)} Management, Faculty of Economics, Universitas Terbuka, Indonesia

³⁾ Management, Faculty of Economics and Business, Universitas Nusa Bangsa, Indonesia

^{4),5)} Management, PPM School of Management, Indonesia

Corresponding author: rani@ecampus.ut.ac.id

Abstract

The research aims to analyze the intention of SMEs in adopting e-commerce, the driving and inhibiting factors. The study used survey data on 344 SMEs who were collected using the convenience sampling method. Furthermore, the data were analyzed using a quantitative descriptive analysis method. The study shows that SMEs are interested in adopting e-commerce. They also agree that they face strong competitive pressures in their business operations, but they have a high level of entrepreneurial mindset. Regarding the adoption of e-commerce, respondents are aware of the benefits of adopting e-commerce in their businesses and are willing to share knowledge with fellow SMEs regarding e-commerce adoption. In terms of barrier factors for e-commerce adoption, respondents agree that factors such as cultural environment, laws and regulations related to e-commerce, consumer readiness, trust, infrastructure, technology, human resources, and financial aspects are obstacles for them in adopting e-commerce, while political and organizational factors are not seen as barriers factors. The results of this study enrich empirical studies on e-commerce adoption, the driver and the barrier factors in the context of Indonesian.

Keywords: E-commerce adoption, Drivers factors, Barriers factors, SMEs

Introduction

In today's digital era, e-commerce seems to be a trend to increase business among entrepreneurs of various scales (Sin & Sin, 2020). The digital era requires entrepreneurs to adopt technology, or they risk falling behind or losing competitiveness to other entrepreneurs (Rahayu & Day, 2017). And it is believed that in order to survive in the new era of digital marketing, companies are forced to adopt this technology, including SMEs (Hayati & Andrawina, 2019). One of the characteristics of businesses in the digital era is the escalating utilization of e-commerce platforms. The use of this e-commerce platform is not only carried out by large enterprises but also extends to micro, small, and medium-sized enterprises (MSMEs).

E-commerce is defined as an internet application used for transactions and business relationships (Awa et al., 2015). E-commerce also refers to business activities involving the buying, selling, and exchange of products, services, and information, as well as payments, supported by information and communication technology, particularly the internet (Zaied, 2012, Ajmal, 2017). MSMEs can greatly benefit from e-commerce as it eliminates barriers of time and space through internet-based platforms. Moreover, they can derive fundamental advantages from e-commerce in terms of reducing establishment and operational costs (Senarathna et al., 2014). E-commerce not only enhances the ability to access new customers and global markets, aids in gaining competitive advantage, and assists larger businesses in boosting visibility and profitability, but also contributes to economic growth, social structure, employment, as well as regional and local development (Ajmal et al., 2017; Fawzy et al., 2018); Al-Tit, 2020).

MSMEs are an important economic sector in the development of competitive economies (Nurlinda et al., 2020; Subawa & Mimaki, 2019). The contribution of MSMEs to the economy is undeniable. Even in Indonesia, the livelihood of people depend on this sector. However, on the other hand, MSMEs, with their characteristic which are often referred to as limitations, operate in competitive and uncertain conditions, influenced by macroeconomic factors (Juminawati et al., 2021). Studies regarding the adoption of e-commerce by SMEs in developed countries different results compared to the issues in developing countries. Moreover, in developing countries, the level of e-commerce adoption remains relatively low when compared to developed countries (Zaied, 2012). Until 2021, the number of MSMEs in Indonesia is approximately 65.46 million units, operating in various business sectors. Among these, the adoption of e-commerce platforms has shown a consistent increase from year to year. By 2022, around 21.8 million units had used digital platforms through e-commerce (Infobank, 2023). The Covid-19 pandemic in 2020-2021, which limited population mobility, is also believed to have contributed to the rise in the number of MSMEs adopting e-commerce. However, when observed as a

percentage, the adoption rate remains relatively low, only about 33% of the total MSMEs. This figure suggests that the intention of MSME in adopting e-commerce is still relatively low.

The relatively low number of MSMEs utilizing e-commerce platforms necessitates a deeper exploration of both the intention and also the internal and external environments that could be the drivers or barriers for MSMEs' intention. Stemming from this issue, this study aims to gain insights into MSMEs' intention in adopting e-commerce as well as the drivers or barriers factors of the intention in adopting e-commerce. Studying the perceptions of MSME regarding the drivers and barriers to their intention in adopting e-commerce is essential, as it provides a way to get an overview towards e-commerce adoption intention and the factors affecting it. As stated by Al-Somali et al. (2015), many researchers highlight that there is a lack of awareness and understanding about the benefits and risks of e-commerce among businesses and their employees in developing countries. This lack of understanding leads to negative cognitive evaluations of e-commerce.

Research Method

In this study, MSMEs are defined as business operators with a capital of less than 10 billion and sales less than 50 billion (PP No 6 tahun 2021). The research was conducted among MSME in the city and regency of Bogor. The sampling method employed is incidental sampling. Incidental sampling is a sampling method where sample selection is based on chance encounters. Any individuals who coincidentally meet the researcher can be used as samples if they are considered suitable sources of data. Data collection was carried out using questionnaires distributed to the selected respondents, who are owners and managers of MSMEs. In this section, respondents were asked about their perceptions regarding statements describing their interest in adopting e-commerce, as well as the driving and inhibiting factors, using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Likert scale is used to indicate the degree of respondents' agreement or disagreement with a series of statements regarding the stimulus object (Malhotra, 2009). The respondents in this study consisted of 433 owners or managers of MSMEs. The profiles of the MSMEs and participants are detailed in Table 1. This study employs a descriptive analysis method. Descriptive analysis is used to gain an overview of respondents' perceptions regarding the research variables. Data processing is carried out using frequency analysis and cross-tabulation.

Table 1 Profile of The MSMEs and respondents

Description	Frequency	%
Industry Type		
Fashion	50	14.53
Food & Beverage	179	52.03
Agriculture	39	11.34
Sembako	4	1.16
Handicraft	35	10.17
Shoes	9	2.62
Others	28	8.14
Time to start business		
3 years ago	86	25
Between 3-6 years ago	132	38.37
Between 7-10 years ago	83	24
10 years ago	43	12.50
Company Omzet		
< 10 million	172	50.00
10-50 million	117	34.01
60-100 million	44	12.79
> 100 million	11	3.79
Company Asset		
< 10 million	117	54.65
Between 10-50 million	188	8.72
Between 60-100 million	30	2.62
> 100 million	9	
Number of employees		
Didn't have employees	59	17.15
1- 5	250	72.67
5 - 10	25	7.56
> 10	9	2.62
Gender of respondent		
Male	142	41.28

Female	202	58.72
Age of respondent		
< 30 years old	58	16.86
30-39 years old	87	25.29
40-49 years old	116	33.72
50-59 years old	74	21.51
> 60 years old	9	2.62

Results and Discussion

Intention in Adopting E-commerce

Intention in adopting e-commerce platform refers to the awareness or desire of MSMEs to utilize e-commerce platforms for conducting business transactions. The perceptions of the MSMEs who are respondents towards the intention of using an e-commerce platform are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 2 Respondents' Perception of for E-commerce Adoption Intention

	Statement	Level of Agreement (%)
1	MSMEs interest to adopt e-commerce	86.4
2	MSMEs have plans in the near future to use e-commerce platforms	85.9
3	MSMEs have a strong commitment to use e-commerce platforms	84.3

Based on Table 2, it can be observed that respondents hold varying levels of agreement (agree and strongly agree) towards statements depicting their intent to adopt e-commerce in their businesses. However, the overall level of agreement is very high. The statement indicating that MSMEs are interested in using e-commerce platforms holds the highest agreement level at 86.4%. On the other hand, the statement suggesting that MSMEs have a strong commitment to using e-commerce platforms holds the lowest agreement level at 84.3%. Considering the entirety of MSMEs' agreement towards statements related to their intent to adopt e-commerce, it can be concluded that they are interested in using e-commerce platforms. They also have plans to use e-commerce platforms in the near future and demonstrate a strong commitment to integrating e-commerce platforms into their businesses.

Respondents' Perception of Factors Driving E-commerce Adoption Intention

a. Competitive Pressures

Competitive pressure refers to the level of competition among companies within an industry (Kalita & Chepurensko, 2020). The perception of respondents towards competitiveness pressures as the driver of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 3 Responden' Perception of Competitiveness Pressures

	Statement	Level of Agreement (%)
1.	Competition drives MSMEs to use e-commerce platform	82.7
2.	The desire to become a market leader drives MSMEs to adopt e-commerce	77.8
3.	The desire to sustain competitiveness drives MSMEs to use e-commerce platform	81.4
4.	The desire to collaborate with fellow MSMEs	90.7

Based on Table 3, it can be observed that respondents hold varying levels of agreement (agree and strongly agree) towards statements depicting the level of competition they face. However, the overall level of agreement is above 75%. The statement indicating that MSMEs have a desire to collaborate with fellow MSMEs holds a high agreement level of 90.7%. On the other hand, the statement suggesting that MSME operators must adopt e-commerce to become market leaders holds the lowest agreement level at 77.8%. Considering the entirety of MSMEs' agreement towards statements related to the competitive pressures, it can be concluded that, in order to endure and compete amid intensified competition among fellow MSMEs, they agree to collaborate with their peers and utilize e-commerce platforms in their businesses.

b. Entrepreneurial Mindset

Entrepreneurial mindset refers to the feelings and the belief of a particular ability to think out of the box (Lackeus, 2016). The perception of respondents towards entrepreneurial mindset as the driver of e-commerce

adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 4 Responden' Perception of Entrepreneurial Mindset

Statement	Level of Agreement (%)
1. MSMEs have the willingness to innovate	96.8
2. MSMEs have an entrepreneurial orientation	92.8
3. MSMEs have the courage to take risks	85.8
4. MSMEs have the ability to capitalize on market opportunities	96.2
5. MSMEs have the audacity to dominate the market	87.2
6. MSMEs have a never-give-up attitude	97.1

Based on Table 4, it can be observed that respondents hold varying levels of agreement (agree and strongly agree) towards statements depicting the entrepreneurial mindset of the MSMEs who are respondents. However, the overall level of agreement is exceedingly high. The statement indicating that MSMEs have a never-give-up attitude holds a high agreement level of 97.1%. On the other hand, the statement suggesting that MSMEs have the courage to take risks holds the lowest agreement level at 85.8%. Considering the entirety of MSMEs' agreement towards statements related to the entrepreneurial mindset, it can be concluded that MSMEs possess an entrepreneurial spirit. This is evident through their willingness to innovate, entrepreneurial orientation, risk-taking courage, ability to capitalize on opportunities, daringness to face the market, and their unwavering persistence.

c. Perceived Benefits

According to Rahayu and Day (2017), perceived benefits are the degree to which a person or organization believes that the use of a particular system would enhance the performance. The perception of respondents towards perceived benefits as the driver of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 5 Responden' Perception of Perceived Benefits

Statement	Level of Agreement (%)
1. MSMEs believe that by using e-commerce platforms, sales will increase	75.0
2. MSMEs believe that by using e-commerce platforms, profits will increase	69.1
3. MSMEs believe that by using e-commerce platforms, business operations will become more efficient	80.0

Based on Table 5, it can be observed that respondents hold varying levels of agreement (agree and strongly agree) towards statements depicting the perceived benefits of e-commerce adoption for MSMEs who are respondents. However, the overall level of agreement is quite high. The statement indicating that MSMEs believe that using e-commerce platform will enhance business efficiency holds a high agreement level of 80%. On the other hand, the statement suggesting that MSMEs believe that using e-commerce platform will lead to increased profits holds the lowest agreement level at 69.1%. Considering the entirety of MSMEs' agreement towards statements related to perceived benefits, it can be concluded that MSMEs believe that adopting e-commerce will result in increased business efficiency, enhanced sales, and increased profits.

d. Knowledge

Knowledge refers to various types of knowledge related to the e-commerce platforms owned by MSMEs (Brand & Huizingh, 2008). The perception of respondents towards knowledge as the driver of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 6 Responden' Perception of Knowledge

Statement	Level of Agreement (%)
1. MSMEs have a desire to learn new knowledge	97.1
2. MSMEs have a desire to share knowledge with fellow business operators	92.9
3. MSMEs have a desire to apply their knowledge for business advancement	96.5

Based on Table 6, it can be observed that respondents hold varying levels of agreement (agree and strongly agree) towards statements depicting the knowledge of MSME operators about e-commerce. However, the overall level of agreement is exceptionally high. The statement indicating that MSMEs have a desire to learn new knowledge holds a high agreement level of 97.1%. On the other hand, the statement suggesting that MSMEs have a desire to share knowledge with fellow business operators holds the lowest agreement level at 92.9%. Considering the entirety of MSMEs' agreement towards statements related to knowledge, it can be concluded that MSMEs have a willingness to learn new knowledge, apply their knowledge for business advancement, and are open to sharing their knowledge with fellow business.

Respondents' Perception of Factors Inhibiting Intent to Adopt E-commerce

a. Socio-cultural Environment

Socio-cultural environment refers to the values or beliefs of the society, the demographic characteristics of the target customers, customer perceptions of innovation acceptance, and customer readiness perceptions (Li & Xie, 2012). The perception of respondents towards socio-cultural environment as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 7 Responden' Perception of Socio-cultural Environment Barriers

	Statement	Level of Agreement (%)
1	Lack of consumer knowledge about e-commerce platforms	79.4
2	Lack of consumer awareness about the benefits of online transactions	73.3
3	Lack of consumer demand for using e-commerce platforms	65.9
4	There are barriers to using foreign languages in e-commerce platform usage	63.9

Based on Table 7, it can be explained that respondents have varying levels of agreement (agree and strongly agree) towards statements describing the presence of social and cultural barriers in e-commerce adoption. However, the overall level of agreement is high. The statement indicating that consumers have limited knowledge about e-commerce platforms holds the highest agreement level at 79.4%. Conversely, the statement suggesting that, according to MSME operators, consumers do not demand that MSMEs use e-commerce platforms in their businesses holds the lowest agreement level at 65.9%. Considering the overall agreement of MSMEs towards statements related to social and cultural barriers, it can be concluded that MSMEs perceive that consumers still have insufficient knowledge about e-commerce platforms, MSMEs believe that consumers are not fully aware of the benefits of online transactions, consumers do not exert pressure on MSMEs to adopt e-commerce platforms in their businesses, and there remains a limitation in the ability to use foreign languages within e-commerce platforms.

b. Political Environment

The political environment is the legal framework in which a company operates, established by government laws and regulations that provide guidance for the operations of the respective business (Opusunju et al., 2018). The perception of respondents towards political environment as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 8 Responden' Perception of Political Environment Barriers

	Statement	Level of Agreement (%)
1	The central government's policies are still perceived as inhibiting the utilization of e-commerce platforms	47.9
2	The policies of local government are still perceived as inhibiting the utilization of e-commerce platforms	43.4
3	There is a lack of synergy among government institutions in supporting the utilization of e-commerce platforms	54.5

Based on Table 8, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing the presence of political environmental barriers in e-commerce adoption, but overall, they have a low level of agreement. The statement indicating the lack of synergy among government institutions in supporting the use of e-commerce platforms has the highest level of agreement, which is 54.5%. Meanwhile, the statement suggesting that policies of local government are perceived to hinder the use of e-commerce platforms has the lowest level of agreement (43.4%). From the overall agreement of MSMEs towards statements related to political environmental barriers, it can be conveyed that according to the MSMEs who are respondents, there is already synergy among government institutions in supporting the

use of e-commerce platforms by MSMEs. Additionally, the policies of both central and local governments are not perceived as barrier to the utilization of e-commerce platforms.

c. Organizational Factors

The organizational environment encompasses the attitudes, perspectives, behaviors, and internal conditions of SMEs in adopting e-commerce. The perception of respondents towards organizational factors as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 9 Responden' Perception of Organizational Factors Barriers

	Statement	Level of Agreement (%)
1	Difficulties in transitioning existing work procedures (from offline transactions to e-commerce platforms)	59.8
2	Lack of support from close family members to use e-commerce platforms	37.9
3	Resistance to changes related to the use of e-commerce platforms	37.6
4	Reluctance to use banking products or services	47.2
5	Limitations in increasing production capacity (quantity)	67.5
6	Delay in receiving cash from transactions conducted through e-commerce platforms	64.6
7	There are reporting procedures to be followed in case of discrepancies in transaction outcomes conducted through e-commerce platforms	66.8

Based on Table 9, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing organizational barriers in e-commerce adoption, but overall, their agreement levels are low to moderate, below 67%. The statement indicating that MSMEs have limitations in increasing production capacity has the highest level of agreement, which is 67.5%. Meanwhile, the statement suggesting that there is resistance from employees towards changes related to the use of e-commerce platforms has the lowest level of agreement (37.6%). From the overall agreement of MSMEs towards statements related to organizational barriers, it can be conveyed that these MSMEs face organizational barriers related to limitations in increasing production capacity, the delay in receiving cash from transactions through e-commerce platforms, complexities due to reporting procedures to be followed in case of discrepancies in transaction outcomes conducted through e-commerce platforms, and difficulties in transitioning existing work procedures (from offline trading to e-commerce platforms). However, on the other hand, the responding MSMEs are less in agreement that close family members provide insufficient support for using e-commerce platforms, family members resist changes related to the use of e-commerce platforms, and in using banking products or services. In other words, family members and employees support the use of e-commerce platforms and banking services.

d. Legal and Regulatory Aspects

The legal and regulations aspects and pertain to all legal documents related to e-commerce platforms issued by both central and local governments. The perception of respondents towards legal and regulatory aspects as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 10 Responden' Perception of Legal and Regulatory Aspects Barriers

	Statement	Level of Agreement (%)
1	Insufficient legal framework concerning the use of e-commerce platforms	61.4
2	Lack of consumer knowledge regarding laws related to e-commerce platforms	68.2
3	Limited knowledge among MSMEs about the procedures for using e-commerce platforms	70.4

Based on Table 10, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing legal and regulatory barriers in e-commerce adoption, but overall, their agreement levels are quite high. The statement indicating that MSMEs have limited knowledge about the procedures for using e-commerce platforms has the highest level of agreement, which is 70.4%. Meanwhile, the statement suggesting that the legal framework concerning the use of e-commerce platforms is insufficient has the lowest level of agreement (61.4%). From the overall agreement of MSMEs towards statements related to legal and regulatory barriers, it can be conveyed that these MSMEs still possess limited knowledge about

the procedures for using e-commerce platforms, lack awareness regarding laws related to e-commerce platforms, and consider the legal framework concerning the use of e-commerce platforms to be inadequate.

e. Consumer Readiness

In this study, consumer readiness refers to respondents' perceptions of consumer readiness, encompassing knowledge, resources, and interest in using online transactions. The perception of respondents towards consumer readiness as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 11 Responden' Perception of Consumer Readiness Barriers

	Statement	Level of Agreement (%)
1.	Lack of consumer knowledge in using e-commerce platforms	67.9
2.	Lack of consumer interest in using e-commerce platforms	58.9
3.	Limited resources available to consumers for conducting online transactions	62.1

Based on Table 11, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing barriers related to consumer readiness in using e-commerce for purchasing products online, but overall, their agreement levels are quite high. The statement indicating that consumers have limited knowledge in using e-commerce platforms has the highest level of agreement, which is 67.9%. Meanwhile, the statement suggesting that consumers lack interest in using e-commerce platforms has the lowest level of agreement (58.9%). From the overall agreement of MSMEs towards statements related to barriers in consumer readiness, it can be conveyed that these MSMEs perceive that consumers have limited knowledge in using e-commerce platforms, consumers have limited resources for conducting online transactions, and consumers lack interest in using e-commerce platforms to purchase products offered by the MSMEs who are respondents.

f. Consumer Trust

In this study, consumer trust refers to respondents' perceptions of the beliefs held by consumers regarding online transactions through e-commerce, encompassing transaction security and website security, seller credibility, as well as product specifications and quality. The perception of respondents towards consumer trust as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 12 Responden' Perception of Consumer Trust Barriers

	Statement	Level of Agreement (%)
1	Lack of consumer trust in the security of online transactions	66.6
2	Lack of consumer trust in online trading websites	68.1
3	Lack of consumer trust in the credibility of e-commerce companies	71.1
4	Lack of consumer trust in the specifications of products sold through e-commerce platforms	67.2
5	Lack of consumer trust in the quality of products sold through e-commerce platforms	68.8

Based on Table 12, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing barriers related to consumer trust in using e-commerce for purchasing products, but overall, their agreement levels are quite high. The statement indicating that consumers' lack of trust in the credibility of online trading company has the highest level of agreement, which is 71.1%. Meanwhile, the statement suggesting that consumers' lack of trust in the security of online transactions has the lowest level of agreement (58.9%). From the overall agreement of MSMEs towards statements related to barriers in consumer trust, it can be conveyed that these MSMEs perceive that consumers still lack trust in the credibility of the MSMEs who are respondents, the quality of products sold through e-commerce platforms, online trading websites, specifications of products sold through e-commerce platforms, and the security of online transactions.

g. Infrastructure

In this study, infrastructure refers to respondents' perceptions of the facilities and resources that SMEs need to prepare when adopting an e-commerce platform. The perception of respondents towards infrastructure as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 13 Responden' Perception of Infrastructure Barriers

	Statement	Level of Agreement (%)
1	The high cost of internet for conducting online transactions	67.9
2	Insufficient information technology devices for conducting online transactions	68.5
3	Inadequate internet connectivity for conducting online transactions	64.0

Based on Table 13, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing barriers related to e-commerce platforms infrastructure, but overall, their agreement levels are quite high. The statement indicating that information technology devices owned for conducting online transaction are inadequate has the highest level of agreement, which is 68.5%. Meanwhile, the statement suggesting that the cost of internet for conducting online transactions is high has the lowest level of agreement (58.9%). From the overall agreement of MSMEs towards statements related to infrastructure barriers, it can be conveyed that these MSMEs perceive that the information technology devices owned by MSMEs who are respondents for conducting online transactions are inadequate, the cost of internet for conducting online transactions is high, and the internet connectivity for conducting online transactions is inadequate.

h. Technology readiness

Technological readiness refers to a company's information technology capabilities, the technical competence of its employees, as well as their training and development to adopt new technologies (Lip-Sam & Hock-Eam, 2011; Chandra & Kumar, 2018). The perception of respondents towards technology as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 14 Responden' Perception of Technology readiness Barriers

	Statement	Level of Agreement (%)
1	The high cost of using technology for conducting online transactions	59.1
2	Insufficient knowledge among MSMEs regarding online transaction security	69.2
3	Limitations faced by MSMEs in accessing information technology	73.3

Based on Table 14, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing barriers related to e-commerce technology platforms, but overall, their agreement levels are quite high. The statement indicating that MSMEs who are respondents have limitations in accessing information technology for conducting online transactions has the highest level of agreement, which is 73.3%. Meanwhile, the statement suggesting that the cost of using technology for conducting online transactions is high has the lowest level of agreement (59.1%). From the overall agreement of MSMEs towards statements related to technology barriers, it can be conveyed that these MSMEs perceive that they have limitations in accessing information technology for conducting online transactions, either due to the high cost of using technology for online transactions, insufficient knowledge among MSMEs regarding online transaction security, or the capability to access information technology.

i. Human Resources Readiness

Human resources in this study refer to respondents' perceptions of the knowledge, skills, motivation, and perspectives of employees towards the adoption of e-commerce in the SMEs where they work. The perception of respondents towards human resources readiness as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 15 Responden' Perception of Human Resources Readiness Barriers

	Statement	Level of Agreement (%)
1	Limitations in employees' knowledge about using e-commerce platforms	66.6
2	Limitations in employees' skills in using e-commerce platforms	67.2
3	Lack of motivation among employees to use e-commerce platforms	64.3
4	Employees' concerns about the impact of using e-commerce platforms on the sustainability of their future employment	56.6

Based on Table 16, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing human resources barriers, but overall, their agreement levels are quite high. The statement indicating that MSMEs have employees with limited capabilities in using e-

commerce platforms has the highest level of agreement, which is 67.2%. Meanwhile, the statement suggesting that employees are concerned about the impact of using e-commerce platforms on the sustainability of their future employment has the lowest level of agreement (56.6%). From the overall agreement of MSMEs towards statements related to human resources barriers, it can be conveyed that these MSMEs believe that their employees still have limited capabilities in using e-commerce platforms, employees' knowledge about using e-commerce platforms is still limited, employee motivation is low in using online trading applications, and there are concerns among employees about the sustainability of their future employment due to the use of e-commerce platforms.

j. Financial Aspects

The financial aspect in this study refers to respondents' perceptions of funding capabilities for procurement, maintenance, development, and working capital required for adopting an e-commerce platform. The perception of respondents towards financial aspects as the barrier of e-commerce adoption intention are analyzed by observing the percentage of respondent agreement levels towards the existing statements.

Table 16 Responden' Perception of Financial Aspects Barriers

	Statement	Level of Agreement (%)
1	Limitations in the funding capacity of MSMEs to acquire e-commerce technology (laptop/smartphone/modem/internet/etc.)	73.6
2	Limitations in the funding capacity of MSMEs to maintain e-commerce technology (laptop/smartphone/modem/internet/etc.)	74.3
3	Limitations in the funding capacity of MSMEs to invest in the development of e-commerce technology (laptop/smartphone/modem/internet/etc.)	69.7
4	Greater working capital requirement for conducting online transactions compared to offline transactions	73.3

Based on Table 17, it can be explained that respondents have varying levels of agreement (agree and strongly agree) with statements describing financial barriers, but overall, their agreement levels are quite high. The statement indicating that MSMEs have limitations in the funding capacity to maintain e-commerce technology has the highest level of agreement, which is 74.3%. Meanwhile, the statement suggesting that MSMEs have limitations in the funding capacity to invest in the development of e-commerce technology has the lowest level of agreement (69.7%). From the overall agreement of MSMEs towards statements related to financial barriers, it can be said that these MSMEs have limitations in the funding capacity to maintain e-commerce technology, acquire e-commerce technology, invest in the development of e-commerce technology, and there is a greater need for working capital in conducting online transactions compared to offline transactions.

Conclusions

This research aims to analyze the intention of MSMEs in adopting e-commerce and the driver and barrier factors behind this interest, using a quantitative descriptive method. The driver factors for MSMEs' intention in adopting e-commerce in this study include competitive pressure, entrepreneurial mindset, perceived benefits, and knowledge, while barrier factors include socio-cultural environment, political environment, organizational factors, legal and regulatory aspects, consumer readiness, consumer trust, infrastructure, technology, human resources, and financial aspects. With a sample size of 340 MSMEs, the research findings indicate that MSMEs are intent in adopting e-commerce. Respondents agree that they face strong competitive pressures in their business operations and possess a high entrepreneurial mindset. In the context of e-commerce, respondents are aware of the benefits of e-commerce adoption for their businesses and are willing to share their knowledge about e-commerce with fellow MSMEs. Regarding barrier factors for e-commerce adoption, respondents agree that cultural environment, legal and regulatory aspects related to e-commerce, consumer readiness and trust, infrastructure, technology, human resources, and financial aspects hinder their e-commerce adoption. However, political and organizational factors are not considered barrier factors according to their perspectives.

References

- Ajmal, F, Yasin, NM, & Norman, AA. (2017). Critical success factors influencing e-commerce adoption in SMEs: A review and model. *International Journal of Advanced and Applied Sciences*, 4(7), 159-172
- Al-Tit, AA. (2020). E-commerce drivers and barriers and their impact on e-customer loyalty in small and medium-sized enterprises (SMES). *Business: Theory and Practice*, 21(1), 146–157
- Awa, HO, Ojiabo, OU, & Emecheta, BC. (2015a). Integrating TAM, TPB and TOE frameworks and expanding their characteristic constructs for e-commerce adoption by SMEs. *Journal of Science & Technology Policy Management*, 6(1), 76–94. <https://doi.org/10.1108/JSTPM-04-2014-0012>
- Brand, MJ., & Huizingh, EKRE. (2008). Into the drivers of innovation Adoption. What is the impact of the current level of adoption? *European Journal of Innovation Management*, 11(1), 5-24. DOI 10.1108/14601060810845204
- Chandra, S, & Kumar, KN. (2019). Exploring factors influencing organizational adoption of augmented reality in e-commerce: Empirical analysis using technological-organization-environment model. *Journal of Electronic Commerce Research*, 19(3), 237-265
- Fawzy, AB., Sharahudin, SH., Rajagderan, S., & Wan Zulkifly, WS. (2018). E-commerce adoption and analysis of the popular e-commerce business sites in Malaysia. *Journal of Internet Banking and Commerce*, 23(1), 1-10
- Hayati, I. & Andrawina, L. (2019). Comprehensive framework of e-commerce adoption in Indonesian SMEs. Prosiding from IOP Conf. Series: *Materials Science and Engineering* 598 012065, 1-8. doi:10.1088/1757-899X/598/1/012065
- Juminawati, S., Hamid, A., Amalia, E., Mufraeni, MA., & Mulazid, AS. (2021). The Effect of Micro, Small and Medium Enterprises on Economic Growth. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 4(3),5697-5704. DOI: <https://doi.org/10.33258/birci.v4i3.2368>
- Kalita A, & Chepurensko A. (2020). Competitiveness of small and medium businesses and competitive pressure in the manufacturing industry. *Foresight and STI Governance*, 14(2), 36-50. DOI: 10.17323/2500-2597.2020.2.36.50
- Lackéus, M. (2016). A Value and economics grounded analysis of six value creation based entrepreneurial education initiatives. Prosiding from Conference paper for 3E ECSB: *Entrepreneurship Education Conference*, 1-13.
- Li, P & Xie, W. (2012). A strategic framework for determining e-commerce adoption. *Journal of Technology Management in China*, 7(1), 22-35
- Lip-Sam, T., & Hock-Eam, L. (2011). Estimating The Determinant of B2B e-commerce adoption among small & medium enterprises. *International Journal of Business and Society*, 12(1),15 – 30.
- Malhotra NK. 2009. *Marketing research: an applied orientation 4th ed.* New Jersey (ID): Pearson Education, Inc.
- Nurlinda, Wardayani, & Muda, I. (2018). Factors affecting e-commerce adoption on micro, small and medium enterprises in Medan City. Proceedings of the *International Conference of Science, Technology, Engineering, Environmental and Ramification Researches (ICOSTEERR 2018) - Research in Industry 4.0*,1301-1311. DOI: 10.5220/0010072313011311
- Opusunju, Isaac, M, Zwingina, Christy, T, Murat, Akyus, Jiya, & Santeli N. (2018). Effect of political environment on entrepreneurship development: A small business perspective in Abuja, FCT. *International Journal of Operational Research in Management, Social Sciences & Education*, 4(2), 90-103
- Rahayu, R. & Day, J. (2017). Determinant factors of e-commerce adoption by SMEs in developing country: Evidence from Indonesia. *Procedia - Social and Behavioral Sciences* 195: 142 – 150
- Senarathna, I, Warren, M, Yeoh, W, & Salzman, S. (2014). The influence of organisation culture on e-commerce adoption. *Industrial Management & Data Systems*, 114(7), 1007-1021. DOI 10.1108/IMDS-03-2014-0076
- Sin, K-Y. & Sin, M-C. (2020). Factors influencing e-commerce adoption: Evaluating using structural equation modelling (SEM). *International Journal of Business and Society*, 21(3), 1192-1202
- Subawa, NS, & Mimaki, CA. (2019). E-Marketplace acceptance of MSMEs in Bali based on performance expectancy and task technology fit. Proceedings from *International Conference on EBusiness, Information Management and Computer Science (EBIMCS2019)*. December, Kuala Lumpur, Malaysia. 1-4. <https://doi.org/10.1145/3377817.3377838>.
- Zaied, ANH. (2012). Barriers to e-commerce adoption in Egyptian SMEs. *International journal of Information Engineering and Electronic Business*,3, 9-18. DOI: 10.5815/ijieeb.2012.03.02
- Sebanyak 21,8 Juta UMKM Sudah Go Digital, Ini Buktinya. Retrieved from <https://infobanknews.com/sebanyak-218-juta-umkm-sudah-go-digital-ini-buktinya/> (accessed on August 11, 2023, 15:55WIB)