

Barriers to E-Commerce Adoption for MSMEs in LAZISMU East Java

Mochamad Mochklas^{1*}, Dwi Songgo Panggayudi², and Anggita Nurhayati³

^{1,2,3} Faculty of Economics and Business, Universitas Muhammadiyah Surabaya

Email Address:

mochamadmochklas@um-surabaya.ac.id*, dwi.songgo@um-surabaya.ac.id, anggita.nurhayati-2021@fe.um-surabaya.ac.id

*Corresponding Author

Submitted 19-09-2024

Reviewed 06-11-2024

Revised 07-11-2024

Accepted 11-11-2024

Published 19-02-2025

Abstract: The growth of e-commerce has become a rapidly growing sector in recent years, but micro, small and medium enterprises (MSMEs) are still lagging in utilising e-commerce. This study aims to analyse the influence of decision-making barriers, technological barriers, organisational barriers, environmental barriers and consumer trust barriers in e-commerce on the business performance of MSMEs fostered by LAZISMU East Java. 226 MSMEs fostered by LAZISMU East Java participated as respondents in this study, and the incoming data was processed using SmartPLS 3.0. The data analysis determined that technological and environmental barriers significantly positively affected the business performance of MSMEs fostered by LAZISMU East Java. Meanwhile, decision-making, organisational, and consumer trust barriers had a positive but insignificant effect on the business performance of MSMEs fostered by LAZISMU East Java.

Keywords: E-commerce; Performance of MSMEs; LAZISMU East Java.

Abstrak: Pertumbuhan e-commerce telah menjadi sektor yang berkembang pesat dalam beberapa tahun terakhir, namun usaha mikro, kecil, dan menengah (UMKM) masih tertinggal dalam memanfaatkan e-commerce. Penelitian ini bertujuan menganalisa pengaruh hambatan pengambilan keputusan, hambatan teknologi, hambatan organisasi, hambatan lingkungan dan hambatan kepercayaan konsumen dalam e-commerce terhadap kinerja bisnis UMKM binaan LAZISMU Jawa Timur. Sebanyak 226 pelaku UMKM binaan LAZISMU Jawa Timur berpartisipasi menjadi responden dalam penelitian ini, data yang masuk diolah menggunakan SmartPLS 3.0. Berdasarkan analisis data diperoleh bahwa hambatan teknologi dan hambatan lingkungan berpengaruh positif signifikan terhadap kinerja bisnis UMKM binaan LAZISMU Jawa Timur. Sedangkan hambatan pengambilan keputusan, hambatan organisasi, hambatan kepercayaan konsumen berpengaruh positif tidak signifikan terhadap kinerja bisnis UMKM binaan LAZISMU Jawa Timur.

Kata Kunci: E-commerce; Kinerja UMKM; LAZISMU Jawa Timur.

INTRODUCTION

The growth of electronic commerce (E-Commerce) has become a rapidly growing sector in recent years. With significant growth in internet penetration, increasing use of smartphones, and changes in consumer behaviour shifting to online shopping, there is a massive opportunity for Micro, Small, and Medium Enterprises (MSMEs) to expand their business through e-commerce platforms (Kemp, 2023b). Global digital transformation starting from the development of high-speed Internet (4G/5G), smartphones, online payment facilities, changes in consumer behaviour, and the provision of freedom in the service sector, has significantly increased e-commerce activities, resulting in a more significant increase in e-commerce transactions (Chen, 2020). Likewise, the exponential growth of Internet users and new social networking platforms (e.g. Facebook, Twitter, Instagram, blogs, and WhatsApp) have transformed the traditional offline market into a



customer market structure. The rapid growth of e-commerce has led to a surge in online transactions, reaching more than four billion transactions with an increase of around eight per cent compared to last year (Kemp, 2023a). Global businesses have responded by adopting e-commerce businesses for their tech-savvy and time-conscious customers (Driediger & Bhatiasevi, 2019). Meanwhile, e-commerce sales soared to twenty-six point seven trillion United States dollars globally in 2019, up 4 per cent from the previous year. This figure includes both business-to-business (B2B) and business-to-consumer (B2C) sales and was equivalent to 30 per cent of the global gross domestic product (GDP) that year (UNCTAD, 2021).

MSMEs' contribution and role are significant in a country's economy. Because it can create jobs, increase income, and support economic growth locally. Applying e-commerce can help MSMEs increase their power competitiveness and economic contribution. MSMEs also have great potential to develop through e-commerce. They can expand market reach and increase sales (Harmawan & Ridho, 2023). E-commerce is vital in driving economic growth in Indonesia (Hendricks & Mwapwele, 2023). In 2021, mark sales of e-commerce retail in Indonesia amounted to around 37.340 billion US dollars, an increase of almost five times compared to 2017. This value will reach around ninety-four-seven billion United States dollars in 2026.

Indonesia has the world's fastest-growing economy and the largest e-commerce market among Southeast Asian countries (Statista, 2022). This exciting investment supports the development of digital infrastructure in Indonesia. It also helps the Indonesian business world be more innovative, creating more high-income jobs across the supply chain and encouraging more skilled workers (Tiktok, 2023).

In Indonesia, the government has promoted the implementation of e-commerce for access to global markets as part of a national strategy to grow and capitalise on the digital economy in the country as a means of increasing the growth of the economy and household income (Nasution et al., 2021; Susanty et al., 2020). Consumer patterns changed along with the growth of e-commerce. So, MSMEs need to understand change. This, especially the shift to online shopping, can force MSMEs to adapt and understand how to interact with their customers in an e-commerce environment and adapt to stay relevant in a market dynamic (Venkatesh et al., 2022).

Constraints include limited internet access and knowledge. Many MSMEs face obstacles in adopting e-commerce. This includes access to adequate technological infrastructure, limitations in knowledge about how to run an online business, and a lack of capabilities to manage shopping online alone. MSMEs often have limitations in capital for developing and promoting their business online. Build site web or shop online. Effective ones can require significant investment (Bening et al., 2023a).

The Minister of Cooperatives and SMEs also noted that as many as twenty-seven six million micro, small, and medium enterprises (MSMEs) entered the digital ecosystem in the year two thousand twenty-two. This number increased by six per cent compared to last year, which was only sixteen point four million MSMEs. This means that of the sixty-four million MSME units, as many as thirty-two points, four per cent, have entered the digital ecosystem, as in Figure 1 below (KEMENKOP UKM, 2022). When comparing the number of MSMEs in Indonesia with those who have entered the digital ecosystem, the results are still quite far off, namely around thirty per cent. This still becomes a separate challenge for MSMEs in Indonesia.



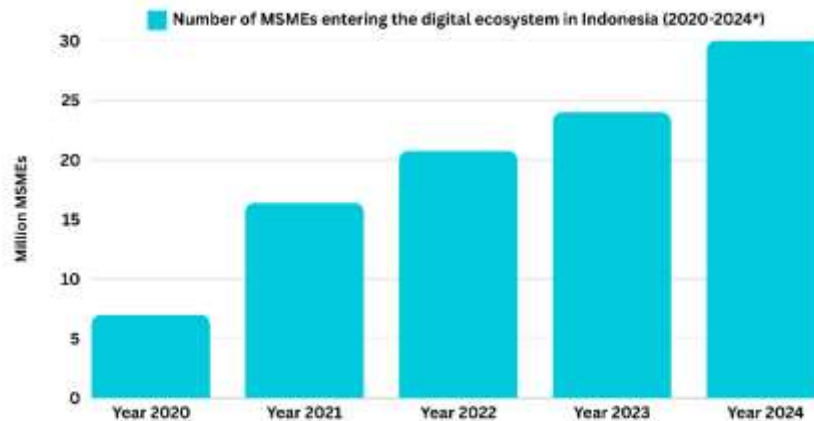


Figure 1. Number of MSMEs Entering the Digital Ecosystem in Indonesia (2020 - 2024*)

Source: (Ministry Cooperative and SMEs, 2022) *Target

In contrast to the development of global MSMEs, MSMEs in East Java still face obstacles in adopting e-commerce, including access to the necessary technology and equipment, as well as marketing knowledge and experience in managing e-commerce (Nurchahyo & Putra, 2021). Obstacles This can obstruct small and intermediate businesses (MSMEs) in East Java from using e-commerce to increase income. Regarding the utilisation of e-commerce, MSMEs in East Java are lagging in using e-business technology (Yong et al., 2021). In industry e-commerce, the problems MSMEs face are mainly caused by the use of technology, especially in digital marketing (Daud et al., 2022; Djakasaputra et al., 2021; Santoso, 2020). Most MSMEs are still lagging in the digital era, unable to take advantage of the digital economy's opportunities (Kurniawati et al., 2021). Therefore, MSMEs do not have equal access to customers and suppliers compared to big global companies.

This problem requires other institutions outside the government to help deal with it, including the partnership and community development program in East Java, namely the Zakat Infaq and Shadaqah Muhammadiyah Institute (LAZISMU). LAZISMU is a national-level non-profit institution dedicated to empowering the community through the productive use of zakat, infaq, waqf, and other philanthropic funds from individuals, institutions, companies, and other agencies. For the past few years, LAZISMU East Java has consistently developed the community by encouraging the growth of family-based MSMEs to improve the economy in the post-COVID-19 pandemic period. Apart from requiring the availability of financial capital, MSMEs also need training (intellectual capital) and mentoring (social capital).

This aligns with the government's program to empower MSMEs to improve community welfare and open access to employment opportunities in East Java. However, one of the obstacles LAZISMU faces in helping coached MSMEs is adopting E-Commerce, so it is necessary to identify which obstacles are the most dominant and urgent for guidance. Therefore, this research aims to answer the following question: What are the main obstacles and factors that can influence the utilisation of e-commerce by MSMEs that built LAZISMU in East Java? How can MSMEs increase the utilisation of e-commerce to continue business? So, the study's objective is to study how deep matter hinders SMEs and deciders from utilising e-commerce. The main obstacle to finding a solution to obstacle utilisation is that



e-commerce in MSMEs for sustainability can awake.

The novelty of this study lies in its in-depth focus on the specific challenges faced by MSMEs in East Java in adopting e-commerce and the practical approaches proposed to overcome these barriers. This study highlights a significant gap between the number of MSMEs connected to the digital ecosystem and their ability to maximise the potential of e-commerce. Unlike previous, more general studies, this article integrates first-hand experiences of MSMEs through surveys and interviews. It involves non-governmental organisations such as LAZISMU providing practical solutions such as training, mentoring, and technical support. The emphasis on local aspects and the application of solutions based on the concrete needs of MSMEs in specific regions makes it a novel contribution to the field of e-commerce research in Indonesia.

The research problem-solving approach in the context of e-commerce for MSMEs can involve a series of steps That help identify and overcome challenges MSMEs face in adopting and utilising e-commerce. Identify the challenges MSMEs face by MSMEs in adopting e-commerce. This can include resource limitations, lack of technological know-how, security concerns, or marketing challenges, next with a literature study to understand trends and related findings in e-commerce in the MSME context. This will give an understanding of the relevant issues.

Through surveys and interviews with the owner of MSMEs, we get a view of the obstacles e-commerce faces and identify their experience in utilising e-commerce. Analysis of survey and interview data, which then identifies potential solutions based on the findings to overcome the challenges MSMEs face. Solutions may include training, technical support, access to resources, or innovation in the business model. Implementation of the solutions applied in MSME business activities later, the impact is monitored, and feedback is provided by the MSMEs involved. The next step is evaluating the impact of the solutions that have been implemented. Have they succeeded in overcoming existing problems? Do they increase the performance of MSMEs in the utilisation of e-commerce? Then, dissemination results by sharing research findings and successful solutions with the rest of the MSME community. This matter can involve maintenance workshops, training, or online publication.

THEORETICAL REVIEW

Business performance of SMEs. Studies in several fields of science have presented different definitions of performance. In companies and MSMEs, performance generally reflects that an organisation is running well. Business performance is significant for the survival and achievement of a business's goals. From a quantitative perspective, performance is measured through operating income, market share, operational efficiency, and profitability. From a qualitative perspective, performance is measured through customer satisfaction, organisational and marketing innovation, and product and process innovation. It will be difficult for MSMEs to achieve the best performance if they ignore several internal and external factors that influence this aspect (Harini et al., 2023).

At the same time, performance refers to an organisation's capacity to meet stakeholder demands. Business performance has become significant globally because business activities are getting smaller, and business transactions can be carried out anywhere and anytime. Thus, higher business performance can reduce obstacles and enable MSMEs to grow and survive in the global market. Performance can also measure the



success of an organisation and determine its growth, company profitability, income, progress, development, survival, success, and competitiveness (Aremu et al., 2021; Shahadat et al., 2023). In this case, business performance results from a company's operations or financial commitments over a certain period.

Additionally, performance can be improved by taking action to integrate skills and knowledge. Many factors influence the performance of MSMEs, including changes in the business environment, adoption of e-commerce, and use of ICT (Gao et al., 2023). As seen from market expansion and sales volume growth, E-commerce adoption significantly positively affects performance. Business performance can also be seen from reduced transaction costs and profits (Ramli & Maysari, 2020).

Barriers to Adopting Electronic Commerce. E-commerce is an abbreviation for electronic commerce, a trading system employing electronic media. According to (Amiri et al., 2023), e-commerce includes distribution, sales, purchasing, marketing, and product service carried out in electronic systems such as the Internet or other forms of computer networks. E-commerce is not a service or goods but a combination of services and goods. Barriers to E-Commerce include understanding the use of innovation and technology, empirical studies using various theories, including the first theory, the Technology Acceptance Model (TAM), or exploring how someone gets new technological advances and what variables can influence it, which are put forward by (Kala'lembang, 2020), second theory. The Diffusion of Innovation (DOI) or the activity of communicating innovation through specific channels within a certain period as recommended (Abed, 2020; Gu, 2023) and thirdly, the technology–organisation–environment (TOE) or theory that describes how the process of adopting and implementing technological innovation is influenced by technological factors, organisational factors, and environmental factors which are explained by (Hattingh et al., 2020; Patma et al., 2021). This theory has been used in various recent studies regarding e-commerce adoption (Ballerini et al., 2023; Fonseka et al., 2022; Hendricks & Mwapwele, 2023; Li et al., 2021; Ma et al., 2024; Religia et al., 2021; Sánchez-Torres et al., 2021; Yadav et al., 2022). In addition, the theory of planned behaviour (TPB), namely attitudes, subjective norms, and perceived behavioural control, has been adopted to integrate TAM by adding subjective norms (behavioural intentions) to explain the perceived benefits and ease of use as a technology adoption process (Coşkun & Yetkin Özbük, 2020; Liu, 2020). Therefore, the TAM, DOI, TOE, and TPB frameworks are conducive to the theoretical implications of e-commerce adoption.

In the TOE framework, adopting technological innovation depends on technological, organisational, and external environmental factors. However, in TAM theory, a user's agreement to adopt technology depends on his perceived usefulness and ease of use. So, TAM is more oriented at the individual user level, but the TOE framework is more oriented at the organisational level. TAM also complements the TOE framework because it describes the company's managerial perception of technology use (Abed, 2020; Chatterjee et al., 2021). DOI theory shows how innovation can be communicated through communication channels over time among populations in a social system. A person's characteristics mainly cause innovation decisions. The influence of mass media and leaders' persuasion can encourage innovative ideas to emerge and spread. Mass media can have the most substantial impact on the diffusion of innovation because it can quickly spread knowledge about innovation to a broad audience. Persuasive leaders can be used to instil a positive attitude toward innovation (Sinaga & Larasati, 2024).

The TOE theory proposed by (Hattingh et al., 2020), consisting of three dimensions,



has experienced expansion when studying the MSME sector. Based on the extension of TOE theory, the CEO or manager, in the sense of a decision maker, makes most of the critical choices in MSMEs because their organisational structure is very centralised (Amornkitvikai et al., 2022; Bening et al., 2023b). Other variables besides technology, organisation, and environment are considered essential: decision-makers and consumer trust. Consumer trust is a crucial variable often studied in the e-commerce literature. Consumer trust is confidence in the business, product, service, or service. A lack of trust is often why consumers do not buy online (Deng et al., 2021). E-commerce, as a new form of commercial activity, carries more uncertainties and risks than traditional shopping. Consumer trust is more important in e-commerce because consumers cannot touch, feel, or smell the product. Trust plays an essential role in the relationship between consumers and electronics vendors. The consequences of consumer trust influence consumer intentions to use or continue to purchase on e-commerce sites (Wang, 2022). The framework of decision-makers, technology, organisation, environment, and consumer beliefs includes all the barriers and factors that influence the utilisation of e-commerce, as shown in the literature review.

Decision makers in several empirical studies have included the characteristics of the owner (CEO) or decision maker as a variable that can influence e-commerce adoption. These variables are age, gender, education, and IT skills of the owner or decision maker. For example, (Amornkitvikai et al., 2021a Bening et al., 2023b) show that CEO top management support is an essential factor influencing the adoption and implementation of e-commerce in several MSME cases. (Lashitew, 2023) revealed that the gender, experience, and education of e-commerce adopter owners and information technology (IT) skills can be essential factors in e-commerce adoption. The owner's age (CEO) can significantly influence MSMEs' adoption of IT and e-commerce (Amornkitvikai et al., 2022); the owner's age is critical to IT readiness and implementation. Similarly, Expósito et al. (2023) reveal that the average age of a CEO is significantly and negatively associated with IT adoption by MSMEs in the US. These results indicate that older owners (CEOs) are less likely to adopt e-commerce than younger owners due to their limitations in adopting new technologies for their businesses. (Rasaputhra et al., 2024; Sánchez-Torres et al., 2021) Use technological, environmental, and entrepreneurial variables to investigate the factors influencing e-commerce adoption by MSMEs. They found that owners or CEOs with more experience and higher education were likelier to adopt e-commerce. Based on the phenomenon That has been explained, the study uses the following research hypothesis:

H1: Barriers to decision-making in E-Commerce have a positive effect on the business performance of MSMEs.

Technology in E-commerce can include computers, smartphones, and websites, such as those commonly used in companies. Moreover, based on empirical studies, these technological tools can influence e-commerce adoption significantly (Abed, 2020). Even though online shopping provides convenience, security uncertainty remains a significant obstacle for consumers to take advantage of. The level of perceived security, or the trust customers have in a website's protective measures against unauthorised access and fraud, is critical in building trust with an online retailer. This trust in security can significantly impact customers' purchasing decisions. (Handoyo, 2024; Saoula et al., 2023).Security



issues since the inception of e-commerce have become a concern among consumers regarding misuse of personal information and fraud, which will hinder the development of e-commerce. A study found that perceived financial and product performance risk significantly influences online purchasing decisions. The impact of consumers' perceived risk on online purchase intentions. They revealed that security risks are the main issue preventing consumers from making online purchases (Mohammadi & Dickson, 2021). Some authors consider security issues, such as viruses, hacking, and data interception, a significant concern when conducting business over the Internet. That security may be an obstacle to future e-commerce adoption. Security issues are generally believed to delay an organisation's adoption of e-commerce (Abed, 2020). Based on the phenomenon That has been explained, the study uses the following research hypothesis:

H2: Technological barriers in E-Commerce have a positive effect on the business performance of MSMEs.

Organisation refers to the internal issues of an organisation that influence the adoption and implementation of e-commerce. This study identifies several organisational barriers that hinder the adoption of e-commerce in developing countries. This includes the size and structure of the company, inadequate financial resources and skilled human resources (HR), and the absence of a website and ordering and payment facilities. This study found that the size and structure of MSMEs are significant barriers and show the ability of organisations to adopt technology standards used in e-commerce (Nazir & Roomi, 2021). In developing countries, medium-scale MSMEs can provide more specialised business resources than small-scale MSMEs. As a result, medium-scale MSMEs are more likely to adopt e-commerce. Small MSMEs have a flatter structure where decision-making power is in the hands of the owner. As stated previously, this impacts the application of this technology to support e-commerce. Small MSMEs do not have adequate management structures, resources, or ICT departments to facilitate e-commerce, positively influencing e-commerce adoption. This study reveals that the size and structure of MSMEs are a determining barrier in corporate decisions and involvement in e-commerce adoption in developing countries (Hussein et al., 2020). Based on the phenomenon That has been explained, the study uses the following research hypothesis:

H3: Organisational barriers to e-commerce have a positive effect on MSME business performance.

Social networks and online platform providers externally provide an environment. Small companies prefer social media via Facebook, Line, and Instagram because they are relatively easy to manage without cost, especially for their e-commerce. In addition, social networks can improve the sustainability of corporate networks based on environmental factors. Companies can expand their customer base and build e-commerce platforms through online social networks (McIntyre et al., 2021). MSMEs can access a larger market and obtain the information needed for exports through e-marketplaces, especially overseas trade. Therefore, e-marketplaces can be an external e-commerce platform to help companies increase their sales and market openness.

Additionally, e-marketplaces can monitor and protect against theft throughout the supply chain, thereby increasing supply chain efficiency (Khsroo et al., 2024; D. R.



Santoso et al., 2022). Environmental factors contribute to a better understanding of how macro-environmental factors influence E-commerce adoption activities (Abed, 2020). Environmental factors influence an organisation's operational dynamics, including industry, competitors, clients, suppliers, and trends (Atuahene et al., 2023). Therefore, this study proposes the following hypothesis:

H4: Obstacle environment on E-Commerce influence positive to business performance MSMEs.

Consumer trust is an essential factor influencing e-commerce, and its impact on purchase intention has been studied extensively. Trust has been defined and studied in various contexts based on trust's complex and multifaceted nature. Trust is “a strong belief in the reliability, truth, or ability of someone or something” (Khsroo et al., 2024). Previous research is consistent that trust in online shopping leads to repurchase intention (Tandon et al., 2021). Consumer trust is closely related to consumer confidence, which has been linked to the theory of reasoned action (TRA). It includes consumers' trust in e-commerce and future behaviour towards e-service providers. Both rationally and experientially, trust is essential in the relationship between sellers and buyers (Vo et al., 2023). Consumer satisfaction arises when their desires, needs, and expectations are met. In an e-commerce environment, consumer trust refers to their willingness to trust a website. If vendors can gain consumer trust, consumers' desire to buy from online businesses will increase (Khsroo et al., 2024; Zawaideh et al., 2023). Therefore, the hypothesis proposed:

H5: Obstacle trust consumers on E-Commerce influence positive to business performance MSMEs.

Research by (Hendricks & Mwapwele, 2023) explains that many MSMEs are left behind in adopting e-commerce because of obstacles to using the Internet, trust, and security issues regarding online payment facilities. This research uses a literature review methodology to identify the challenges and benefits of e-commerce adoption in developing countries. The results identified organisational, technological, environmental, and customer trust as the main challenges influencing e-commerce adoption. Furthermore, a study by (Bening et al., 2023a) explains the criteria that influence the adoption of E-commerce by SMEs in Indonesian retail by choosing the best strategy using the variables of Decision Maker, Technology, Organization, And Environment. Study This shows important variables for adopting e-commerce technology in retail SMEs.

(Nazir & Roomi, 2021) explains that this paper examines several new dynamic and contextual barriers identified in this research based on the results of a literature review, grouping them into four themes of barriers to the use of E-commerce: technology, organisation, environment, and entrepreneurial (individual) characteristics of the owner or manager. (Amornkitvikai et al., 2021a) state that MSMEs are still left behind in utilising e-commerce. This research uses variable taker decision, technology, organisation, and environment to examine the main barriers and determinants in the use of e-commerce in the MSME sector.

Examining in depth the things that hinder the use of e-commerce by SMEs and the main determinants of these barriers. After reviewing several previous studies, there are Some differences with this research, including the research methodology, because the



research is Still limited review literature Where the variable is Not yet tested in a way directly on perpetrator business. Furthermore, this study is perfect for researching factors influencing E-Commerce use in MSMEs: technological barriers, obstacle organisation, obstacle environment, obstacle taker decisions, and obstacles to trust consumers.

METHODS

The type of study study used is quantitative. Study quantitative research that focuses on hypothesis testing. Five hypotheses are proposed in the study. This is a hypothesis of study. This contains five variables: independent and one variable dependent. Data collection in this research is primary data in the form of a questionnaire. Questionnaires were distributed directly to perpetrator MSMEs built YOUR LAZIS Muhammadiyah in Java East. Drafting a questionnaire Also utilises Google form to make collecting data to reach respondents easier. Definition: Operational Variables consist of independent research variables. The first is technological barriers, which are measured by several indicators.

The first is barriers taker decisions with several indicators including lack of top management support; young age makes it easier to face uncertainty regarding the use of E-commerce; good education makes the process of learning about E-commerce transactions and markets easier; the gender of the manager determines fast management of E-commerce technology change, no Innovation Decision Makers to Adopt new technology, managers who are not experienced in IT.

The two technological barriers include a lack of customer technological knowledge, company technology infrastructure (including applications, websites, and marketplaces) that supports e-commerce, security systems for carrying out online Transactions and payments e-commerce activities (e.g., marketing, payments, logistics) are still separate, adequate security systems to prevent hacking and malware or viruses.

The three organisational barriers with several indicators include Company products or services that are not suitable for online transactions, lack of technical understanding or employee awareness of available online sales training, company size not enough to support e-commerce activities, financial/human resource constraints hindering investment in e-commerce activities, lack of a culture of continuous improvement.

The four obstacles include several indicators, including a lack of need and perceived benefits for e-commerce, most customers being still not familiar with logistics (adequate delivery of goods), pressure from competitors for similar products, assistance from the government or related agencies, electronic payments (commissions, bank fees, etc.), and logistics incurring high additional costs.

The five obstacles to consumer trust with several indicators include: customers cannot touch and feel the product directly, doubt about the quality of goods that do not match what is advertised, consumers find it challenging to trust sellers through e-commerce, consumers cannot trust e-commerce transactions (e.g., online purchases, sales, and payments), consumers do not feel confident when providing personal data for e-commerce.

The dependent variable of this research is MSME business performance, *which is a variable that is important in ensuring that E-commerce business barriers contribute to the development of MSMEs, whose indicator is the utilisation (intensity) of a company's e-commerce, which is determined by the proportion of e-commerce sales to total sales.* The measurement of the independent variable questions uses 5 Likert Scale points; point 1 states



very No agree (STS), and point 5 states very agree (SS) with the statement submitted in the questionnaire. The population on study This is all over MSMEs built Muhammadiyah in Java East as much 521 people. The samples selected were respondents whom LAZISMU had assisted because it also serves as monitoring assistance. The sampling technique uses *purposive sampling*. Purposive sampling is the technique of determining a sample with consideration. It means taking a sample based on consideration or criteria that have been formulated moreover formerly by the researcher. To determine a significant sample, use the formula Taro Yamane or Slovin (Sugiyono, 2020) as follows:

$$n = \frac{N}{N.d^2+1} \dots\dots\dots (1)$$

Information: n = Amount sample; N = Amount population (521 people); d² = Precision (set 5 per cent with levels trust 95 per cent); So,

$$n = \frac{N}{N.d^2+1} = \frac{521}{521.(0.05)^2+1} = \frac{521}{521.(0.05)^2+1} = \frac{521}{2.3025} = 226.276 = 226 \text{ Respondents} \dots\dots\dots (2)$$

The research data analysis method uses Structural Equation Modeling (SEM) Partial Least Squares (PLS) with data processing tools using SmartPLS 3.0 software. The advantage of using least squares is that the number of samples required for analysis is relatively small. SmartPLS can test SEM models using scale forms such as scale, Likert, and others. PLS-SEM analysis includes two models, namely the outer model and the inner model, namely the validity test, reliability test, and significance test (Ghozali, 2021). Deep analysis models study. This is as follows:

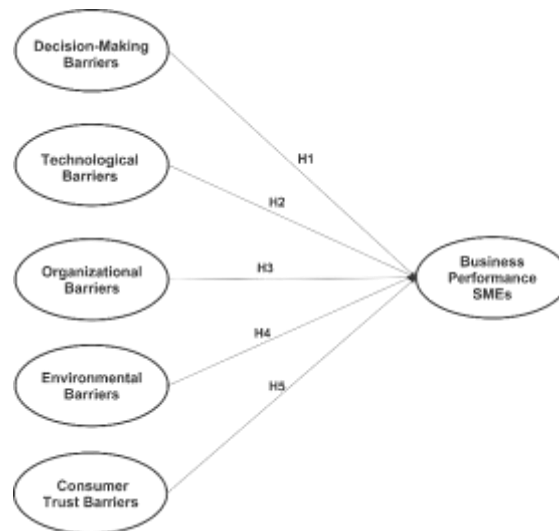


Figure 2. Analysis Model
Source: Researcher (2024)

RESULTS

Respondence Profile. A detailed description of the characteristics of LAZISMU East Java fostered MSME actors includes various important aspects that describe the



characteristics of business actors involved in this study. Respondent data of LAZISMU East Java fostered MSME actors consists of information on gender, age, education level, length of business and daily turnover, as shown in **Table 1**.

Table 1. Respondent Profil

Demographic Characteristics		Frequency	Percentage
Gender	Man	81	36
	Woman	145	64
Age	Under 20 years of age	37	16.500
	21 to 30 Years	55	24.500
	31 to 40 Years	108	47.900
	41 to 50 Years	23	9.900
	Over 50 years of age	3	1.200
Last education	Elementary school	10	4.200
	Junior High School	20	8.760
	Senior High School	186	82.200
	Diploma	7	3.300
	S1	3	1.500
Length of Business / Business	Under 2 years of age	108	48
	25 years	49	21.500
	Over 5 years of age	69	30.500
Turnover per Day	Less than 500 thousand	73	31.900
	500 Thousand to 1 Million	63	27.800
	1 Million to 2 Million	52	23
	More than 2 Million	38	17.200

Source: Data processed 2024

Table 1 shows that the respondents of MSME actors under the guidance of LAZISMU East Java are women, covering 64 per cent of the total population. This shows that the role of women in the MSME sector is quite significant, in line with the trend of increasing participation of women in the informal economy. Most business actors are in the productive age range, with 47.900 per cent of respondents aged between 31 and 40 years. The young age group (21 to 30 years) is also actively involved with a percentage of 24.500 per cent, which illustrates a more diverse dynamic in terms of age in the business world.

Regarding education, most respondents (82.200 per cent) only have a high school education, and only about one-and-a-half per cent earn a bachelor's degree. This reflects the educational challenges MSME actors face in adopting more complex managerial and digital skills. In addition, most MSMEs have only been operating for less than 2 years (48 per cent), with the majority having a daily turnover of less than 500 thousand rupiahs (31.900 per cent). This condition indicates that many MSMEs are still in the early development stage and face various obstacles in increasing the scale of their business.

Partial Least Square Analysis. In this research, hypothesis testing uses Partial Least Square (PLS) data analysis techniques with the SmartPLS 3.2 program. Outer model testing determines the specifications of the relationship between latent variables and their indicators. This test includes validity and reliability. **Figure 3** shows the schematic of the PLS program model tested on the external model.



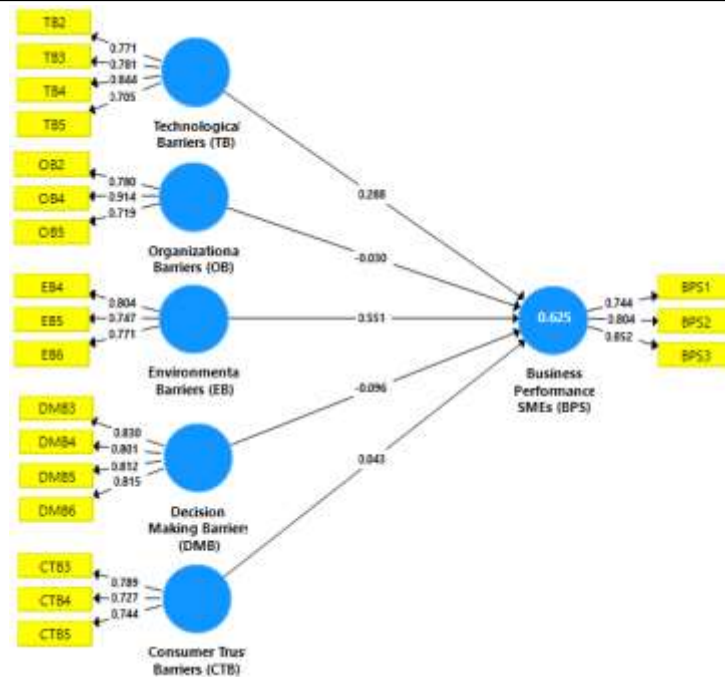


Figure 3. Outer Model

Source: Data Analysis Result by Using SmartPLS 3.0 based on data survey

Figure 2 shows that each indicator in the research variable has the most significant cross-loading value on the variable it forms compared to the cross-loading value on other variables. Based on the results obtained, the indicators used in this study have good discriminant validity when compiling their respective variables. Composite reliability is the reliability of construct measurement, which tests the reliability value of indicators on a variable. A variable can be declared to meet composite reliability if it has a composite reliability value greater than 0.700. The composite reliability value of each variable is presented in **Table 2**.

An indicator is declared to meet convergent validity with a good category if its outer loading value is more significant than 0.700. The following are the outer loading values of each indicator in the research variable. Based on data analysis, it was found that many research variable indicators have outer loading values greater than 0.700. The loading value measurement scale of 0.500 to 0.600 is considered sufficient to meet the requirements for convergent validity. The data above shows that there are no variable indicators whose outer loading values are below 0.500, so all indicators are declared feasible or valid for use in research and can be used for further analysis. In addition to looking at the outer loading value, convergent validity can also be assessed by looking at the Average Variance Extracted (AVE) value greater than 0.500 so that it can be said to be valid using convergent validity the AVE value of each research variable, as shown in **Table 2**.



Table 2. Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	Remarks
Business Performance SMEs (BPS)	0.721	0.734	0.843	0.642	Reliable
Consumer Trust Barriers (CTB)	0.634	0.640	0.798	0.568	Reliable
Decision Making Barriers (DMB)	0.837	0.859	0.887	0.663	Reliable
Environmental Barriers (EB)	0.666	0.667	0.818	0.600	Reliable
Organisational Barriers (OB)	0.765	0.930	0.849	0.654	Reliable
Technological Barriers (TB)	0.780	0.798	0.858	0.603	Reliable

Source: Processing output with SmartPLS 3.0

Table 2 shows that the Composite Reliability value of all research variables is greater than 0.700. The Business Performance SMEs value is 0.843, Consumer Trust Barriers (CTB) is 0.798, Decision Barriers (DMB) is 0.887, Environmental Barriers (EB) is 0.818, Organizational Barriers (OB) is 0.849 and Technological Barriers (TB) is 0.858. This shows that each variable has met the composite reliability, so it can be concluded that all variables have a high level of reliability. The construct value is reliable if Cronbach's alpha is more than 0.600. The results of this study, as shown in **Table 2**, show that Cronbach's Alpha value is more than 0.600.

Inner Model Evaluation. The following shows the evaluation image of the internal structural model in this study. From **Figure 4**, the influence of each variable from the resulting research can be explained.

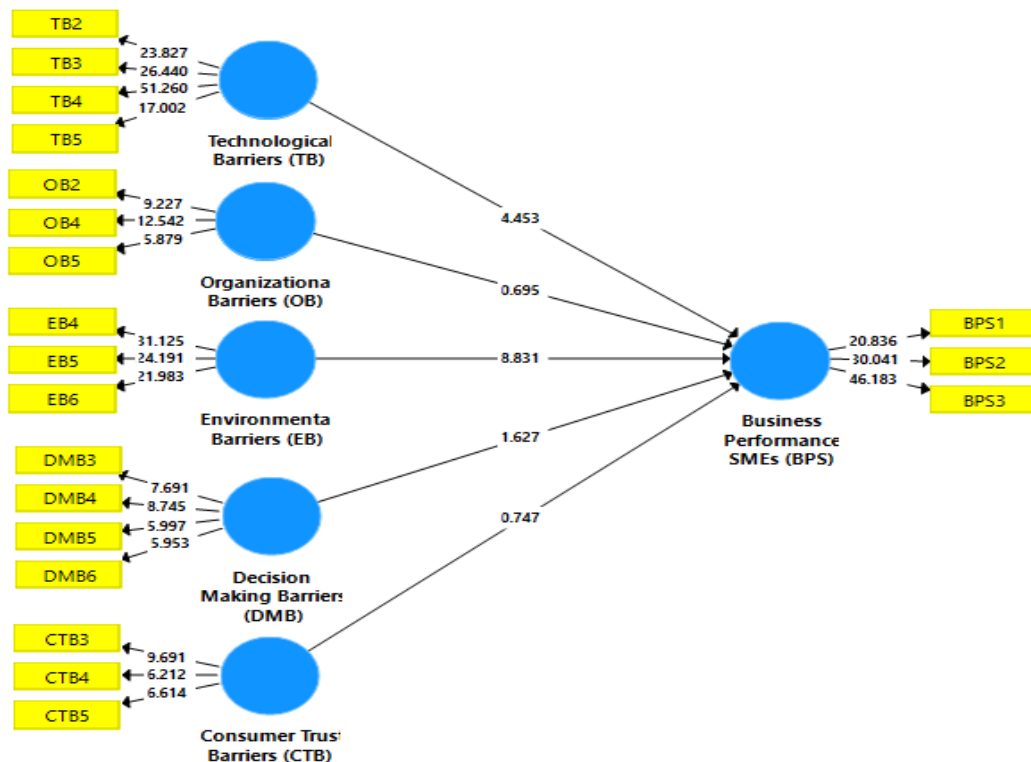


Figure 4. Inner Model Evaluation

Source: Processing output with SmartPLS 3.0



R-Square. The inner model in the analysis using the Structural Equation Modeling (SEM) method can be evaluated by looking at the R-Square (R^2) value or coefficient of determination. Using R-Square to evaluate the inner model helps determine the model's suitability and the independent variables' effectiveness in influencing the dependent variable the results of the R-Square value data analysis, as shown in **Table 3**.

Table 3. Test results R

	R Square	R Square Adjusted
Business Performance SMEs	0.549	0.540

Source: Processing output with SmartPLS 3.0

Table 3 shows the R^2 value for SMEs' Business Performance of 0.549, which indicates that the independent variables in the research model can explain 54.900 per cent of the variation in SMEs' business performance. Meanwhile, the Adjusted R Square value of 0.540 adjusts the number of variables, correcting for possible bias due to adding variables. This value indicates that the model has a moderate ability to explain the factors that influence the business performance of SMEs fostered by LAZISMU East Java.

Hypothesis Test. At this stage, hypothesis testing is carried out, and the hypothesis criteria are accepted if the p-value is less than 0.050 or the T-value is greater than 1.960.

Table 4. Hypothesis Testing

Hypothesis	T Statistics (O/STDEV)	P Values	Conclusion
H1: Decision Making Barriers (DMB) -> Business Performance of SMEs	1.667	0.096	Not Supported
H2: Technological Barriers (TB) -> Business Performance of SMEs	4.680	0,000	Supported
H3: Organizational Barriers (OB) -> Business Performance of SMEs	0.687	0.492	Not Supported
H4: Environmental Barriers (EB) -> Business Performance of SMEs	8.708	0,000	Supported
H5: Consumer Trust Barriers (CTB) -> Business Performance of SMEs	0.733	0.464	Not Supported

Source: Processing output with SmartPLS 3.0

From **Table 4** of the hypothesis test results, the findings of this study are:

H1 is not accepted, where Decision Making Barriers have a positive but insignificant effect on SMEs Business Performance with a t-statistic value of 1.667 smaller than 1.96 and a p-value of 0.096 greater than 0.050, which means that the results of the statistical analysis show that decision-making barriers in e-commerce do not have a significant effect on the business performance of UMKM fostered by LAZISMU East Java.

H2 is accepted, where Technological Barriers have a significant positive effect on SMEs Business Performance with a t-statistic value of 4.680 greater than 1.96 and a p-value of 0.000 less than 0.050, which means that the statistical analysis shows that technological barriers in e-commerce have a significant positive effect on the business performance of



UMKM fostered by LAZISMU East Java.

H3 is not accepted, where Organizational Barriers have a positive but insignificant effect on SMEs Business Performance with a t-statistic value of 0.687 smaller than 1.96 and a p-value of 0.492 greater than 0.050, which means that the results of the statistical analysis show that organisational barriers to e-commerce do not have a significant effect on the business performance of SMEs fostered by LAZISMU East Java.

H4 is accepted, where Environmental Barriers have a significant positive effect on SMEs Business Performance with a t-statistic value of 8.708 greater than 1.96 and a p-value of 0.000 less than 0.050, which means that the statistical analysis shows that environmental barriers to e-commerce have a significant positive effect on the business performance of SMEs fostered by LAZISMU East Java. H5 is not accepted, where Consumer Trust Barriers have a positive but insignificant effect on SMEs' Business Performance with a t-statistic value of 1.667, which is smaller than 1.96 and a p-value of 0.096 which is more significant than 0.050, which means that the statistical analysis shows that consumer trust barriers in e-commerce do not have a significant effect on the business performance of SMEs fostered by LAZISMU East Java.

DISCUSSION

The findings of this study are important because they provide in-depth insights into the factors that influence the business performance of LAZISMU-assisted MSMEs in East Java in the context of e-commerce, which can be used as a basis for strategic decision-making. By knowing that obstacles such as decision-making, organisation, and consumer trust do not significantly influence, LAZISMU can direct MSME empowerment efforts to more crucial aspects, such as strengthening technological adaptation and responding to changes in the business environment. This study helps LAZISMU focus more on providing relevant support and training for MSMEs to develop optimally in the digital era, thereby increasing their competitiveness and business sustainability in an increasingly competitive market.

The influence of decision-making barriers in E-Commerce on the business performance of MSMEs. The results of this study indicate that decision-making barriers in e-commerce do not significantly impact the business performance of MSMEs fostered by LAZISMU East Java. This may be because decision-making is not the main challenge MSMEs face in e-commerce. (Karami & Tang, 2022) state that MSMEs often face technical or operational problems, such as technology and logistics, directly impacting business success (Adiningrat et al., 2023). MSME owners, who usually also act as decision-makers, tend to focus on these challenges, while decision-making may be considered routine and does not require special attention. In addition, limited human resources in MSMEs often require owners to take on many roles, so there is not enough focus on the decision-making process.

MSMEs may also have developed ways to overcome decision-making barriers by using external assistance. Many e-commerce platforms now offer analytical tools and guidance that facilitate decision-making (Bening et al., 2023). MSMEs can use external data and advice to determine their business steps. With this support, the impact of decision-making barriers can be minimised so that they do not significantly affect MSME performance. As a result, decisions related to e-commerce adoption tend not to directly impact business performance due to the support of technology and other strategies that help



overcome these challenges.

Several solutions can be implemented to overcome decision-making barriers in e-commerce that are not significant to MSME business performance. First, MSMEs can improve the technology literacy of owners or management to make decision-making more efficient and data-based. Training and workshops on e-commerce analysis tools can help business actors better identify strategic decisions (Bening et al., 2023). MSMEs can collaborate with e-commerce experts to overcome difficulties in business decision-making. Support in the form of data analysis, product recommendations, and appropriate marketing strategies can be an effective solution (Dwivedi et al., 2021).

Second, MSMEs must optimise internal systems to be more adaptive when facing e-commerce market dynamics. By increasing integration between management and operations, business actors can be more responsive to changing trends and market conditions without too many barriers in the decision-making process. This approach can be made by implementing a more structured management system, such as inventory and transaction management software, to make the decision-making process faster and more accurate (Karami & Tang, 2022). Overcoming these barriers can improve MSME business performance in the long term.

Technological barriers in E-Commerce positively affect the business performance of MSMEs. The findings of this study indicate that technological barriers to e-commerce have a significant positive effect on the business performance of MSMEs fostered by LAZISMU East Java. These results indicate that facing technological challenges can encourage MSMEs to grow. When MSMEs face technological barriers, they are forced to innovate, adopt digital solutions, and improve their technological infrastructure. This process improves operational efficiency, market reach, and consumer experience.

MSMEs generally have more straightforward and flexible organisational structures than large companies. This lighter structure allows MSMEs to adapt to market and technological changes quickly. The ability to make decisions quickly and implement operational changes efficiently can reduce the impact of organisational barriers. For example, an MSME can quickly respond to changes in consumer trends or new technologies without going through many layers of bureaucracy. First, overcoming technological barriers to e-commerce allows MSMEs to improve operational efficiency, optimise business processes, and expand market reach. With a strong technological infrastructure and adopting sophisticated e-commerce solutions, MSMEs can attract more customers, increase the number of transactions, and create a better shopping experience for consumers (Amornkitvikai et al., 2021b).

The e-commerce environment provides various solutions and services to help MSMEs overcome organisational barriers. E-commerce platforms often offer tools and features that support business process management, such as inventory management systems, sales analytics, and digital marketing tools. These tools can help MSMEs manage their operations more effectively, reduce administrative burdens, and overcome possible challenges. In addition, overcoming technological barriers to e-commerce can also provide MSMEs with a competitive advantage in an increasingly digital market (Elia et al., 2021). In an era where technology plays a key role in business processes, MSMEs that can adapt and utilise technology effectively are more successful in achieving better business performance (Bening et al., 2023b; Khsroo et al., 2024).

MSMEs are quicker to adopt new technologies and implement innovations than larger companies. In the world of e-commerce, the ability to innovate and adapt quickly can be a



competitive advantage. MSMEs that are proactive in using the latest technology or taking advantage of digital trends can mitigate the impact of organisational barriers and improve their business performance. Therefore, reducing technological barriers in e-commerce can be an effective strategy for improving the competitiveness and success of MSME businesses in a competitive market.

Organisational barriers may become less relevant as the focus shifts to factors such as digital marketing strategies, customer service, and user experience. MSMEs that can capitalise on opportunities in this dynamic e-commerce environment can overcome organisational barriers more effectively. With technology continuing to advance, overcoming technological barriers can provide MSMEs with significant advantages in terms of operational efficiency and competitiveness in the global market.

Organisational Barriers to E-Commerce on the business performance of MSMEs. The results of this study indicate that organisational barriers in e-commerce do not significantly impact MSME business performance. This finding indicates that in the context of e-commerce, organisational barriers may not be the main factor affecting MSME business performance. MSMEs often have more straightforward and flexible structures than large companies with complex organisational structures and strict hierarchies. This flexibility allows MSMEs to adapt to changes more quickly and overcome organisational barriers more efficiently, which can mitigate potential negative impacts on their business performance.

In the highly dynamic e-commerce environment, MSMEs can access various solutions and services to help them overcome organisational barriers (Yani et al., 2023). E-commerce platforms often offer advanced features such as inventory management systems, analytical tools, and marketing integrations, enabling MSMEs to manage their business processes better (Hendrawan et al., 2024). For example, these features can help MSMEs optimise stock management, analyse sales data, and design more effective marketing campaigns, reducing organisational barriers' impact and improving business performance.

In addition, MSMEs' ability to innovate and adapt quickly in e-commerce gives them a significant competitive advantage. MSMEs are often more agile in adopting new technologies and leveraging digital trends, which allows them to face challenges more proactively (Noerchoidah et al., 2022). By leveraging the latest technologies and responding quickly to market changes, MSMEs can improve operational efficiency and expand their market reach, which can help overcome organisational barriers and improve their performance in the long run.

Thus, while organisational barriers exist in e-commerce, their impact on MSME business performance may not be significant in the long run (Mochklas et al., 2023). The flexibility of MSME organisational structures, access to supportive technology solutions, and the ability to adapt quickly are key factors that enable MSMEs to manage organisational barriers better and achieve better results in the competitive e-commerce environment.

The influence of environmental barriers in E-Commerce on the business performance of MSMEs. The results of this study indicate that environmental barriers in e-commerce significantly positively affect the business performance of MSMEs. This positive effect can be explained through several interrelated factors. First, facing environmental barriers, such as regulatory changes, market conditions, or new industry trends, encourages MSMEs to seek innovative and creative solutions to overcome these challenges (Hussain et al., 2020). This process often triggers the development of new strategies, application advanced technologies, or collaboration with strategic partners. In this way, MSMEs can overcome obstacles, improve operational efficiency, expand market



share, and increase their competitive advantage (Nazir & Roomi, 2021).

Overcoming environmental barriers in e-commerce allows MSMEs to develop adaptive capacity and resilience in complex market dynamics. When MSMEs strive to respond to change quickly and effectively, they learn to operate more efficiently in a changing environment. For example, MSMEs may need to adapt their business models, modify their product offerings, or change their marketing strategies to stay relevant and competitive (Bening et al., 2023c; Cassia & Magno, 2022). This process helps them overcome barriers and prepares them for new opportunities that arise from these changes.

Addressing environmental barriers can improve operational efficiency and competitive advantage and strengthen MSMEs' market position in the long term. MSMEs that actively address environmental challenges can often capitalise on opportunities arising from these changes to develop new products or services that better suit evolving market needs. By proactively responding to regulatory changes or industry trends, MSMEs can create significant differentiation in the market and build a reputation as pioneers in their industry (Du, 2024).

Thus, addressing environmental barriers in e-commerce can be a very effective strategy to strengthen MSMEs' business performance and enable them to compete more effectively in a changing market. MSMEs can turn challenges into opportunities, increase competitiveness, and ensure long-term growth and success through an innovative and adaptive approach.

The influence of consumer trust barriers in e-commerce on the business performance of MSMEs. The findings of this study indicate that consumer trust barriers in e-commerce do not significantly affect the business performance of MSMEs fostered by LAZISMU East Java. This finding suggests that in the context of e-commerce, other factors significantly impact consumer purchasing decisions and MSME business performance. Although consumer trust is an important element in building long-term relationships with customers, in many cases, factors such as product quality, competitive prices, and good service can be more dominant in influencing consumer purchasing decisions (Ji et al., 2020; Wu & Huang, 2023). Therefore, although consumer trust is important, these factors may have a more direct impact on MSME business performance.

In addition, MSMEs may have other strategies or mechanisms to overcome consumer trust barriers in e-commerce. MSMEs often focus on building strong personal relationships with their customers, which can help gradually address consumer concerns and build trust. Direct customer communication, responsive customer service, and product quality assurance can help address concerns and build a positive reputation. In this way, MSMEs can mitigate the negative impact of consumer trust barriers without relying entirely on them (Ji et al., 2020).

MSMEs can also leverage the power of their brand presence to enhance consumer trust. Strengthening brand image through effective marketing, customer testimonials, and product certification can enhance consumer trust. Brands for consistent quality and reliability often overcome consumer trust barriers better than those not well-known. By building a strong brand image, MSMEs can alleviate consumer concerns and improve business performance (Wu & Huang, 2023).

Thus, although consumer trust barriers exist, their impact on MSME business performance may be limited in the long run. MSMEs can overcome these barriers through various strategies, including strengthening customer relationships, offering product quality assurance, and building a strong brand presence. Although consumer trust is important,



other factors such as product quality, price, and service may significantly impact MSME business performance in the long run.

CONCLUSION

Based on the data analysis and discussion of this study, it can be concluded: (1) Decision-making barriers in e-commerce do not significantly influence the business performance of MSMEs fostered by LAZISMU East Java. (2) Technological barriers in e-commerce significantly influence the business performance of MSMEs fostered by LAZISMU East Java. (3) Organisational barriers in e-commerce do not significantly influence the business performance of MSMEs fostered by LAZISMU East Java. (4) Environmental barriers in e-commerce significantly influence the business performance of MSMEs fostered by LAZISMU East Java. (5) Consumer trust barriers in e-commerce do not significantly influence the business performance of MSMEs fostered by LAZISMU East Java. (6) Recommendations can be submitted to help MSMEs fostered by LAZISMU East Java overcome the obstacles faced in adopting e-commerce and improve their business performance. MSMEs fostered by LAZISMU East Java must focus on improving infrastructure and technological skills. This can include investing in a more sophisticated e-commerce system, training employees in the latest technology, and developing applications or platforms enabling better customer interaction.

The limitations of research on improving the performance of MSMEs in LAZISMU East Java are related to obstacles to e-commerce adoption, which include several aspects. First, this study may be limited to an area, namely East Java, so the results cannot be generalised to MSMEs in other areas with different challenges or market conditions. Second, this study may only highlight certain factors, such as technological barriers, organisations, and consumer trust. In contrast, other factors, such as access to capital, government regulations, or infrastructure support, may also play an important role in the success of e-commerce adoption. Third, using quantitative data alone may not provide a complete picture of the more complex dynamics of the decision-making process at the MSME managerial level. These limitations open up opportunities for further research that can address methodological limitations and broaden the scope of analysis.

Further research on improving MSME performance related to barriers to e-commerce adoption is recommended to expand the geographical scope to identify differences in challenges faced by MSMEs in various regions. In addition, future research can explore other factors that may affect MSME business performance in more depth, such as access to capital, the role of government policies, or digital infrastructure support. A mixed approach between quantitative and qualitative data can also be used to understand better MSMEs' motivations, perceptions, and managerial strategies in dealing with e-commerce barriers. Further research can also explore the impact of technology assistance programs and digital training on improving MSME performance.

REFERENCES

- Abed, S. S. (2020). Social Commerce Adoption Using TOE Framework: An Empirical Investigation Of Saudi Arabian SMEs. *International Journal of Information Management*, 53, 102118. <https://doi.org/10.1016/j.ijinfomgt.2020.102118>.
- Adiningrat, A. A., Idrawahyun, Rustan, & Ruhayu, Y. (2023). MSME Performance:



- Financial Information System, Work Productivity, and E-commerce. *Journal of Consumer Sciences*, 8(2), 204–219. <https://doi.org/10.29244/jcs.8.2.204-219>.
- Amiri, A. M., Kushwaha, B. P., & Singh, R. (2023). Using Bibliometric Analysis, Visualisation Of Global Research Trends And Future Research Directions Of Digital Marketing In Small And Medium Enterprises. *Journal of Small Business and Enterprise Development*, 30(3), 621–641. <https://doi.org/10.1108/JSBED-04-2022-0206>.
- Amornkitvikai, Y., Tham, S. Y., Harvie, C., & Buachoom, W. W. (2022). Barriers and Factors Affecting the E-Commerce Sustainability of Thai Micro-, Small- and Medium-Sized Enterprises (MSMEs). *Sustainability (Switzerland)*, 14(14). <https://doi.org/10.3390/su14148476>.
- Amornkitvikai, Y., Tham, S. Y., & Tangpoolcharoen, J. (2021a). Barriers and Factors Affecting E-commerce Utilisation of Thai Small and Medium-Sized Enterprises in Food and Beverage and Retail Services. *Global Business Review*. <https://doi.org/10.1177/09721509211036294>.
- Amornkitvikai, Y., Tham, S. Y., & Tangpoolcharoen, J. (2021b). Barriers and Factors Affecting E-commerce Utilisation of Thai Small and Medium-Sized Enterprises in Food and Beverage and Retail Services. *Global Business Review*, 097215092110362. <https://doi.org/10.1177/09721509211036294>.
- Aremu, A. Y., Shahzad, A., & Hassan, S. (2021). The Empirical Evidence of Enterprise Resource Planning System Adoption and Implementation on Firm's Performance Among Medium-Sized Enterprises. *Global Business Review*, 22(6), 1375–1404. <https://doi.org/10.1177/0972150919849751>.
- Atuahene, N. A., Asadina, C., Acquah, R., & Boateng, P. A. (2023). Exploring The Relationship Between Organisations Internal And External Environments: A Conceptual Study. *International Journal of Research and Scientific Innovation*, 10(8), 1–11. <https://doi.org/10.51244/ijrsi.2023.10801>.
- Ballerini, J., Herhausen, D., & Ferraris, A. (2023). How Commitment And Platform Adoption Drive The E-Commerce Performance Of SMEs: A Mixed-Method Inquiry Into E-Commerce Affordances. *International Journal of Information Management*, 72. <https://doi.org/10.1016/j.ijinfomgt.2023.102649>.
- Bening, S. A., Dachyar, M., Pratama, N. R., Park, J., & Chang, Y. (2023a). E-Commerce Technologies Adoption Strategy Selection in Indonesian SMEs Using the Decision-Makers, Technological, Organizational and Environmental (DTOE) Framework. *Sustainability*, 15(12), 9361. <https://doi.org/10.3390/su15129361>.
- Bening, S. A., Dachyar, M., Pratama, N. R., Park, J., & Chang, Y. (2023b). E-Commerce Technologies Adoption Strategy Selection in Indonesian SMEs Using the Decision-Makers, Technological, Organizational and Environmental (DTOE) Framework. *Sustainability (Switzerland)*, 15(12). <https://doi.org/10.3390/su15129361>.
- Bening, S. A., Dachyar, M., Pratama, N. R., Park, J., & Chang, Y. (2023c). E-Commerce Technologies Adoption Strategy Selection in Indonesian SMEs Using the Decision-Makers, Technological, Organizational and Environmental (DTOE) Framework. *Sustainability (Switzerland)*, 15(12). <https://doi.org/10.3390/su15129361>.
- Cassia, F., & Magno, F. (2022). Cross-Border E-Commerce As A Foreign Market Entry Mode Among SMEs: The Relationship Between Export Capabilities And Performance. *Review of International Business and Strategy*, 32(2), 267–283. <https://doi.org/10.1108/RIBS-02-2021-0027>.



- Chatterjee, S., Rana, N. P., Dwivedi, Y. K., & Baabdullah, A. M. (2021). Understanding AI Adoption In Manufacturing And Production Firms Using An Integrated TAM-TOE model. *Technological Forecasting and Social Change*, 170, 120880. <https://doi.org/10.1016/j.techfore.2021.120880>.
- Coşkun, A., & Yetkin Özbük, R. M. (2020). What Influences Consumer Food Waste Behaviour In Restaurants? An Application Of The Extended Theory Of Planned Behaviour. *Waste Management*, 117, 170–178. <https://doi.org/10.1016/j.wasman.2020.08.011>.
- Daud, I., Nurjannah, D., Mohyi, A., Ambarwati, T., Cahyono, Y., Haryoko, A. D. E., Handoko, A. L., Putra, R. S., Wijoyo, H., Ari-Yanto, A., & Jihadi, M. (2022). The Effect Of Digital Marketing, Digital Finance And Digital Payment On Finance Performance Of Indonesian SMEs. *International Journal of Data and Network Science*, 6(1), 37–44. <https://doi.org/10.5267/J.IJDNS.2021.10.006>.
- Deng, F., Huang, H., & Cheng, H. (2022). Consumers' Trust in Persuasion: Objective Versus Biased Elaboration Likelihood in China's E-Commerce Advertising. *Journalism & Mass Communication Quarterly*, 99(4), 1126–1147. <https://doi.org/10.1177/10776990211045369>.
- Djakasaputra, A., Wijaya, O. Y. A., Utama, A. S., Yohana, C., Romadhoni, B., & Fahlevi, M. (2021). An empirical study of Indonesian SMEs Sales Performance In The Digital Era: The Role Of Quality Service And Digital Marketing. *International Journal of Data and Network Science*, 5(3), 303–310. <https://doi.org/10.5267/j.ijdns.2021.6.003>.
- Du, S. (2024). An Evolutionary Game-Theoretic Analysis Of Cooperation Strategy Between SMEs And Cross-Border E-Commerce Platforms Considering The Cross-Network Effect. *Kybernetes*, 53(5), 1857–1887. <https://doi.org/10.1108/K-09-2022-1316>.
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting The Future Of Digital And Social Media Marketing Research : Perspectives And Research Propositions. *International Journal of Information Management*, 59(August 2021), 102168. <https://doi.org/10.1016/j.ijinfomgt.2020.102168>.
- Elia, S., Giuffrida, M., Mariani, M. M., & Bresciani, S. (2021). Resources And Digital Export: An RBV Perspective On The Role Of Digital Technologies And Capabilities In Cross-Border E-Commerce. *Journal of Business Research*, 132, 158–169. <https://doi.org/10.1016/j.jbusres.2021.04.010>.
- Expósito, A., Sanchis-Llopis, A., & Sanchis-Llopis, J. A. (2023). CEO Gender and SMEs Innovativeness: Evidence For Spanish Businesses. *International Entrepreneurship and Management Journal*, 19(3), 1017–1054. <https://doi.org/10.1007/s11365-021-00758-2>.
- Fonseka, K., Jaharadak, A. A., & Raman, M. (2022). Impact of E-commerce adoption on business performance of SMEs in Sri Lanka; moderating role of artificial intelligence. *International Journal of Social Economics*, 49(10), 1518–1531. <https://doi.org/10.1108/IJSE-12-2021-0752>.
- Gao, J., Siddik, A. B., Khawar Abbas, S., Hamayun, M., Masukujjaman, M., & Alam, S. S. (2023). Impact of E-Commerce and Digital Marketing Adoption on MSMEs' Financial and Sustainability Performance during the COVID-19 Pandemic: An Empirical Study. *Sustainability*, 15(2), 1594. <https://doi.org/10.3390/su15021594>.



- Ghozali, I. (2021). *Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.2.9 Untuk Penelitian Empiris* (2nd ed.). Badan Penerbit Undip.
- Gu, J. (2023). What drives SMEs to adopt e-commerce? The Joint Role Of Testosterone And Absorptive Capacity. *Asia Pacific Journal of Marketing and Logistics*, 35(1), 90–107. <https://doi.org/10.1108/APJML-07-2021-0487>.
- Gupta, S., Kushwaha, P. S., Badhera, U., Chatterjee, P., & Gonzalez, E. D. R. S. (2023). Identifying Benefits, Challenges, And Pathways In E-Commerce Industries: An Integrated Two-Phase Decision-Making Model. *Sustainable Operations and Computers*, 4(June), 200–218. <https://doi.org/10.1016/j.susoc.2023.08.005>.
- Handayani, W., & Sihananto, A. N. (2023). Social Media Marketing Maintains Business Existence. *7th International Seminar of Research Month 2022, 2023*, 76–81. <https://doi.org/10.11594/nstp.2023.3312>.
- Handoyo, S. (2024). Purchasing in the digital age: A Meta-Analytical Perspective On Trust, Risk, Security, And e-WOM In E-Commerce. *Heliyon*, 10(8), e29714. <https://doi.org/10.1016/j.heliyon.2024.e29714>.
- Harini, S., Pranitasari, D., Said, M., & Endri, E. (2023). Determinants of SME performance: Evidence from Indonesia. *Problems and Perspectives in Management*, 21(1), 471–481. [https://doi.org/10.21511/ppm.21\(1\).2023.40](https://doi.org/10.21511/ppm.21(1).2023.40).
- Harmawan, B. N., & Ridho, W. F. (2023). Determinants influencing SMEs in E-commerce Adoption Through Local Government Facilities In Indonesia: Mixed Methods Approach. *The Electronic Journal Of Information Systems In Developing Countries*. <https://doi.org/10.1002/isd2.12301>.
- Hattingh, M., Matthee, M., Smuts, H., Pappas, I., Yogesh K., D., & Mäntymäki, M. (2020). 19th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2020. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Bioinformatics)*, 12066. <https://doi.org/10.1007/978-3-030-44999-5>.
- Hendrawan, S. A., Chatra, A., Iman, N., Hidayatullah, S., & Suprayitno, D. (2024). Digital Transformation in MSMEs: Challenges and Opportunities in Technology Management. *Jurnal Informasi Dan Teknologi*, 6(2), 141–149. <https://doi.org/10.60083/jidt.v6i2.551>.
- Hendricks, S., & Mwapwele, S. D. (2023). A Systematic Literature Review On The Factors Influencing E-Commerce Adoption In Developing Countries. *Data and Information Management*, 100045. <https://doi.org/10.1016/j.dim.2023.100045>.
- Hussain, A., Shahzad, A., & Hassan, R. (2020). Organisational And Environmental Factors With The Mediating Role Of E-Commerce And SME Performance. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 1–21. <https://doi.org/10.3390/joitmc6040196>.
- Hussein, L. A., Baharudin, A. S., Kiumarsi, S., & Hilmi, M. F. (2020). Factors Influencing the Intention to Continue Using B2B e-Commerce in Manufacturing SMEs. *Engineering, Technology & Applied Science Research*, 10(2), 5528–5533. <https://doi.org/10.48084/etasr.3373>.
- Ji, C., Chen, Q., & Zhuo, N. (2020). Enhancing Consumer Trust In Short Food Supply Chains. *Journal of Agribusiness in Developing and Emerging Economies*, 10(1), 103–116. <https://doi.org/10.1108/JADEE-12-2018-0180>.
- Kala'lembang, A. (2020). Adopsi E-Commerce Dalam Mendukung Perkembangan Usaha Mikro Kecil Dan Menengah (UMKM) Di Masa Pandemi Covid-19. *Capital: Jurnal Ekonomi Dan Manajemen*, 4(1), 54. <https://doi.org/10.25273/capital.v4i1.7358>.



- Karami, M., & Tang, J. (2022). Decision-makers' logic of control and SME international performance. *Journal of Business & Industrial Marketing*, 37(5), 1138–1149. <https://doi.org/10.1108/JBIM-11-2020-0516>.
- Kemenkop UKM. (2022, December 27). *20,76 Juta UMKM di Indonesia Masuk Ekosistem Digital pada 2022*. <https://DataIndonesia.Id/Bursa-Keuangan/Detail/2076-Juta-Umkm-Di-Indonesia-Masuk-Ekosistem-Digital-Pada-2022>. <https://dataindonesia.id/bursa-keuangan/detail/2076-juta-umkm-di-indonesia-masuk-ekosistem-digital-pada-2022>.
- Kemp, S. (2023a, January 26). *Digital 2023: Global Overview Report*. Report. <https://datareportal.com/reports/digital-2023-global-overview-report>.
- Kemp, S. (2023b, February 9). *Digital 2023: Indonesia*. Report. <https://datareportal.com/reports/digital-2023-indonesia>.
- Khsroo, I. T. N., Burhanuddin, M., Ali, M. A., & Shihab Ahmed, M. (2024). The Influence of Technological Factors on Adoption E-Commerce in SME: The Role of Trust. *Journal of Global Information Technology Management*, 27(2), 148–167. <https://doi.org/10.1080/1097198X.2024.2327945>.
- Kurniawati, E., Idris, I., Handayati, P., & Osman, S. (2021). Digital transformation of MSMEs in Indonesia during the pandemic. *Entrepreneurship and Sustainability Issues*, 9(2), 316–331. [https://doi.org/10.9770/jesi.2021.9.2\(21\)](https://doi.org/10.9770/jesi.2021.9.2(21)).
- Lashitew, A. A. (2023). When businesses go digital: The role of CEO attributes in technology adoption and utilisation during the COVID-19 pandemic. *Technological Forecasting and Social Change*, 189, 122324. <https://doi.org/10.1016/j.techfore.2023.122324>.
- Li, X., Guo, H., Jin, S., Ma, W., & Zeng, Y. (2021). Do farmers gain internet dividends from E-commerce adoption? Evidence from China. *Food Policy*, 101, 102024. <https://doi.org/10.1016/j.foodpol.2021.102024>.
- Ma, D., Ma, P., & Hu, J. (2024). The Impact of Blockchain Technology Adoption on an E-Commerce Closed-Loop Supply Chain Considering Consumer Trust. *Sustainability (Switzerland)*, 16(4). <https://doi.org/10.3390/su16041535>.
- McIntyre, D. P., Srinivasan, A., & Chintakananda, A. (2021). The persistence of platforms: The role of network, platform, and complementary attributes. *Long Range Planning*, 54(5), 101987. <https://doi.org/10.1016/j.lrp.2020.101987>.
- Mochklas, M., Panggayudi, D. S., Mauliddah, N., Sari, T. A. M., & Maretasari, R. (2023). Motivasi Kerja Memediasi Pengaruh Pelatihan Terhadap Produktivitas Umkm Masyarakat Pesisir Surabaya. *EKUITAS (Jurnal Ekonomi Dan Keuangan)*, 7(3), 305–327. <https://doi.org/10.24034/j25485024.y2023.v7.i3.5475>.
- Mohammadi, S., & Dickson, G. (2021). Online Shopping for Sporting Goods: The Role of Flow, E-Satisfaction, and E-Loyalty. *Global Business Review*, <https://doi.org/10.1177/09721509211019516>.
- Nasution, M. D. T. P., Rafiki, A., Lubis, A., & Rossanty, Y. (2021). Entrepreneurial orientation, knowledge management, dynamic capabilities towards e-commerce adoption of SMEs in Indonesia. *Journal of Science and Technology Policy Management*, 12(2), 256–282. <https://doi.org/10.1108/JSTPM-03-2020-0060>.
- Nazir, M. A., & Roomi, M. A. (2021). Barriers to Adopting Electronic Commerce for Small and Medium-sized Enterprises in Emerging Economies. *EMAJ: Emerging Markets Journal*, 10(2), 43–55. <https://doi.org/10.5195/emaj.2020.203>.
- Noerchoidah, Mochklas, M., Indriyani, R., & Arianto, B. (2022). The Mediating Effect of Knowledge Sharing on Interpersonal Trust and Job Satisfaction of Creative Industry in East



- Java. *Matrik : Jurnal Manajemen, Strategi Bisnis Dan Kewirausahaan*, 16(1), 75–86. <https://doi.org/10.24843/MATRIK:JMBK.2022.v16.i01.p07>.
- Nurchahyo, R., & Putra, P. A. (2021). Critical Factors in Indonesia's E-Commerce Collaboration. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(6), 2458–2469. <https://doi.org/10.3390/jtaer16060135>.
- Patma, T. S., Wardana, L. W., Wibowo, A., Narmaditya, B. S., & Akbarina, F. (2021). The impact of social media marketing for Indonesian SMEs sustainability: Lesson from Covid-19 pandemic. *Cogent Business and Management*, 8(1). <https://doi.org/10.1080/23311975.2021.1953679>.
- Ramli, Y., & Maysari, D. P. (2020). The Influence of Customer Attitude towards Customer Purchase Decision by Implementing Green Marketing. *International Journal of Emerging Trends in Social Sciences*, 8(2), 42-50. <https://doi.org/10.20448/2001.82.42.50>.
- Rasaputhra, S., Peiris, V., Magallagoda, R., Panditasekara, C., Wisenthige, K., & Jayasuriya, N. (2024). Do technological, environmental and entrepreneurial factors affect the adoption of social commerce? *Journal of Small Business and Enterprise Development*. <https://doi.org/10.1108/JSBED-09-2023-0420>.
- Religia, Y., Surachman, S., Rohman, F., & Indrawati, N. (2021, January 25). *E-Commerce Adoption in SMEs: A Literature Review*. <https://doi.org/10.4108/eai.17-7-2020.2302969>.
- Sánchez-Torres, J. A., Rojas Berrío, S. P., & Ortiz Rendón, P. A. (2021). Adoption of E-commerce in SMEs: the Colombian Case. *Journal of Telecommunications and the Digital Economy*, 9(3), 110–135. <https://doi.org/10.18080/jtde.v9n3.403>.
- Santoso, D. R., Handayani, P. W., & Azzahro, F. (2022). The Resistance to Adopting Online Marketplace: The Influence of Perceived Risk and Behavioral Control of Small and Medium Enterprises in Indonesia. *CommIT (Communication and Information Technology) Journal*, 16(1), 53–68. <https://doi.org/10.21512/commit.v16i1.7858>.
- Santoso, R. (2020). Review of Digital Marketing & Business Sustainability Of E-Commerce During Pandemic Covid-19 in Indonesia. *Jurnal Ilmu Ekonomi Terapan*, 5(2), 95–106. <https://doi.org/10.21512/commit.v16i1.7858>.
- Saoula, O., Shamim, A., Mohd Suki, N., Ahmad, M. J., Abid, M. F., Patwary, A. K., & Abbasi, A. Z. (2023). Building E-Trust And E-Retention In Online Shopping: The Role Of Website Design, Reliability And Perceived Ease Of Use. *Spanish Journal of Marketing - ESIC*, 27(2), 178–201. <https://doi.org/10.1108/SJME-07-2022-0159>.
- Scupola, A. (2009). SMEs' E- Commerce Adoption: Perspectives From Denmark And Australia. *Journal of Enterprise Information Management*, 22(1/2), 152–166. <https://doi.org/10.1108/17410390910932803>.
- Shahadat, M. M. H., Nekomahmud, Md., Ebrahimi, P., & Fekete-Farkas, M. (2023). Digital Technology Adoption in SMEs: What Technological, Environmental and Organizational Factors Influence in Emerging Countries? *Global Business Review*, 097215092211371. <https://doi.org/10.1177/09721509221137199>.
- Sinaga, L. R., & Larasati, A. (2024). The Role of Mass Media in The Emergence of Deviant Behavior in Society. *Jurnal Indonesia Sosial Sains*, 5(4), 799–804. <https://doi.org/10.59141/jiss.v5i04.1079>.
- Statista. (2022, November 16). *Retail e-commerce sales value in Indonesia 2017-2026*. <https://www.statista.com/statistics/1341527/indonesia-retail-e-commerce-sales/>.
- Sugiyono. (2020). *Metode Penelitian Kuantitatif, Kualitatif Dan Kombinasi (Mix Methods)* (Sutopo, Ed.; 2nd ed.). Alfabeta.



- Susanty, A., Handoko, A., & Puspitasari, N. B. (2020). Push-Pull-Mooring Framework For E-Commerce Adoption In Small And Medium Enterprises. *Journal of Enterprise Information Management*, 33(2), 381–406. <https://doi.org/10.1108/JEIM-08-2019-0227>.
- Tandon, U., Mittal, A., & Manohar, S. (2021). Examining The Impact Of Intangible Product Features And E-Commerce Institutional Mechanics On Consumer Trust And Repurchase Intention. *Electronic Markets*, 31(4), 945–964. <https://doi.org/10.1007/s12525-020-00436-1>.
- Tiktok. (2023). *MSME Empowerment Report 2022*. www.tiktok.com.
- UNCTAD. (2021). *Global E-Commerce Jumps to \$26.7 Trillion, Covid-19 Boosts Online Retail Sales*. <https://unctad.org/press-material/global-e-commerce-jumps-267-trillion-covid-19-boosts-online-retail-sales>.
- Venkatesh, V., Speier-Pero, C., & Schuetz, S. (2022). Why Do People Shop Online? A Comprehensive Framework Of Consumers' Online Shopping Intentions And Behaviours. *Information Technology and People*, 35(5), 1590–1620. <https://doi.org/10.1108/ITP-12-2020-0867>.
- Vo, T. H. G., Luong, D. B., Cho, J., & Le, K. H. (2023). How To Influence Consumer Behavior: A Perspective from E-Commerce in Vietnam Context. *International Journal of Electronic Commerce Studies*, 14(4), 1–14. <https://doi.org/10.7903/ijecs.2292>.
- Wang, C. (2022). A Dynamic CGE Model for Consumer Trust Mechanism within an E-Commerce Market. *Mobile Information Systems*, 2022. <https://doi.org/10.1155/2022/5220654>.
- Wu, Y., & Huang, H. (2023). Influence of Perceived Value on Consumers' Continuous Purchase Intention in Live-Streaming E-Commerce—Mediated by Consumer Trust. *Sustainability (Switzerland)*, 15(5). <https://doi.org/10.3390/su15054432>.
- Yadav, H., Soni, U., Gupta, S., & Kumar, G. (2022). Evaluation of barriers in adopting E-commerce technology in SMEs: A fuzzy DEMATEL approach. *Journal of Electronic Commerce in Organizations*, 20(1). <https://doi.org/10.4018/JECO.292472>.
- Yani, A., Suparwata, D. O., & Hamka. (2023). Product and Service Innovation Strategies to Expand MSME Markets. *Journal of Contemporary Administration and Management*, 1(3), 163–169. <https://doi.org/10.61100/adman.v1i3.67>.
- Yong, T. X., Miskon, S., & Abdullah, N. S. (2021). Barriers in Implementing E-commerce System: A Case Study of Computer Retail Outlet. *2021 7th International Conference on Research and Innovation in Information Systems (ICRIIS)*, 1–5. <https://doi.org/10.1109/ICRIIS53035.2021.9617073>.
- Zawaideh, F. H., Abu-ulbeh, W., Majdalawi, Y. I., Zakaria, M. D., Jusoh, J. A., & Das, S. (2023). E-Commerce Supply Chains with Considerations of Cyber-Security. *2023 International Conference on Computer Science and Emerging Technologies (CSET)*, 1–8. <https://doi.org/10.1109/CSET58993.2023.10346738>.

