

SUPPLY CHAIN SUSTAINABILITY AND FINANCIAL PERFORMANCE: THE ROLE OF E-COMMERCE, DIGITAL BANKING AND DIGITAL MARKETING OF SMES

Nagian Toni^{1*}, Thomas Sumarsan Goh², Yusuf Ronny Edward¹, Calen³

Received 05.10.2024. | Sent to review 21.10.2024. | Accepted 27.01.2025.

Original article



¹ Universitas Prima Indonesia

² Universitas Methodist Indonesia

³ Prodi Manajemen, Universitas Murni Teguh PSDKU Pematang Siantar

*Corresponding Author:

Nagian Toni

Email: nagiantoni@unprimdn.ac.id

JEL Classification: M31, G14, M21

Doi: 10.2478/eoik-2025-0027

UDK: 339.976:336.645.1]:004.738.5

ABSTRACT

This study aims to analyse the relationship between e-commerce and the business sustainability of the supply chain, as well as digital marketing variables and the business sustainability of the supply chain. The method used in this study is an associative strategy: business sustainability and financial performance, Digital banking and the financial performance of SMEs. The research method used in this study is a quantitative approach. This study uses a purposive sampling technique because sampling is carried out with specific considerations or criteria that must be met. The data collection method in this study was carried out by distributing questionnaires online through social media. Respondents in this study were 668 SME owners in Indonesia. The scale used to measure is a scale with an interval of 1 - 5, from strongly disagree to agree strongly. The data collection technique in this study uses a questionnaire by providing several written statements addressed to respondents, which will then be answered. Structural equation modelling is often called Partial Squares Structural Equation Modeling (PLS-SEM) with SmartPLS version 3.0. The results of this study show that the E-Commerce variable has a positive effect on the business sustainability of the supply chain, and digital marketing has a positive impact on the business sustainability of the supply chain. The supply chain of business sustainability has a positive and significant relationship to financial performance. Digital banking has a positive and significant relationship with the financial performance of SMEs.

Keywords: Supply Chain Sustainability Performance, E-Commerce, Digital Marketing Adoption, SMEs, Indonesia

1. INTRODUCTION

Small and medium enterprises (SMEs) significantly affect Indonesia's economic development. With the development of SMEs in Indonesia, it has absorbed more than 119 million workers. From these data, 97% of the total national workforce is in the SME sector. The role of SMEs is so large that it must be supported so that SMEs can grow and develop and answer economic problems in Indonesia (Gao, 2023). The role of the government is also very large in the development of SMEs by strengthening and encouraging their growth. One way to support and enhance the SME sector is by improving the financial performance of the SMEs. SME financial performance is a picture of how well a small and medium enterprise (SME) manages its finan-

cial resources to achieve its business goals. This financial performance covers various aspects, such as profitability, liquidity, operational efficiency, and solvency, which will be reported in the form of financial reports that are prepared systematically. Optimal SME financial performance is achieved by increasing profit growth every year. It is known that for SME financial performance to achieve optimal results, it is undoubtedly influenced by the financial management capabilities of the SME actors. One way to improve financial management capabilities is by implementing financial literacy.

Financial performance is the periodic determination of an organisation's and its employees' operational effectiveness based on previously set targets, standards, and criteria (Nugroho et al., 2024). Financial performance is a condition that reflects the financial condition of a company based on previously set targets, standards, and criteria. Financial performance is one of the most important issues to be studied in public sector organisations, including government. Since the implementation of performance-based budgeting, all governments have been required to produce good financial performance by paying attention to effectiveness, efficiency, and economy (Prajapati et al., 2022). In the digital era of 5.0, internet technology has been increasingly utilised by various organisations, especially SMEs. Business activities using internet technology are an innovative way to carry out company activities to enter the virtual world market, known as electronic business (e-business) and electronic commerce (e-commerce). By utilising internet technology, SMEs can carry out various business activities electronically, such as business transactions and sharing information with consumers and suppliers to maintain relationships before, during and after the purchasing process. Marketing in the early 21st century began to change little by little, and development activities in the technology sector supported this event. The more advanced technology in the world, the easier it is to access any needs that are already available on social media, including shopping for daily needs. The technology that has been provided will make it easier for us to make innovations, including shopping online through various applications that are already available, which we usually call e-commerce (Purba et al., 2021).

There is now quite a lot of social media, including Facebook, WhatsApp, and Instagram. Facebook has become very popular for promoting products from a business (Gyenge et al., 2021). The Ministry of Communication and Informatics (Kemenkominfo) said that internet users were recorded at 63 million people, with 95% using the Internet to access social media: WhatsApp, TikTok, YouTube, Instagram and Facebook. E-commerce will be the main driver of the digital economy in Indonesia in 2021. This is reflected in e-commerce transactions, with the number of e-commerce users in 2022 reaching 145 million users and 2021 reaching 193 million users, and it can be projected that in 2024, it will reach 276.2 million users or 75.3% of the total market population (Febransyah et al., 2022). The use of social media platforms in Indonesia has grown significantly. Anand Tilak, Head of Facebook Indonesia, revealed that active Facebook users in Indonesia reach 69 million users each month. The most important thing is how to use social media to promote or introduce products offered to consumers. Social media is a new phenomenon that has changed the way the business environment operates. Through social media, businesses gain access to resources that are otherwise unavailable to business owners [6]. It also helps companies increase their viability, foster strategic partnerships, and increase their contact with customers and suppliers. Business owners and marketers need to understand how social media works as a communication and marketing tool and how they can significantly grow their business (Gyenge et al., 2021).

E-commerce is the process of buying, selling, transferring, or exchanging products, services or information through computer networks, including the Internet. E-commerce allows companies to expand their business reach. As previously mentioned, e-commerce can be a great opportunity for SMEs to market and develop their businesses. E-commerce provides an alternative

trading system that is increasingly in demand, along with the development of information and communication technology. In recent years, e-commerce has experienced a significant increase. E-commerce provides a broad overview of technology, processes, and practices that can be carried out without using paper as a means of transaction. E-commerce has had a major influence on today's society's social and economic growth (Rao et al., 2021). To compete and maintain their existence in a very competitive business world, SMEs should utilise the Accounting Information System and E-Commerce as a means and capital to compete with large companies that exist today to improve SMEs' performance.

Digital Banking Services are more focused on meeting customer needs by maximising the benefits of Digital Technology through Software. Customers can also use digital banking services anytime and anywhere, reducing face-to-face contact with bank officers. In other words, customers are no longer required to make financial transactions at bank branches (Ren et al., 2024). The purpose of digital banking is to encourage operational efficiency and the quality of banking services provided to customers. Customer satisfaction with banking services is projected to increase transactions through banks, which means that banking profitability will grow along with transaction growth. Increasing financial literacy can have an impact on improving the financial performance of SMEs. Implementing Accounting Information Systems (AIS) has an essential impact on the success of SMEs' financial performance. Accounting information in financial reports is the basic capital for SMEs to make decisions in SME management: market expansion decisions, price expansion decisions related to creditors (financial institutions/banks) and the government (Adam et al., 2020). Financial literacy and the use of accounting information systems supported by the implementation of digital banking will improve the financial performance of SMEs. Through the financial literacy index, SME actors can determine the level of knowledge, trust, and skills of the community toward financial institutions. In this regard, the implementation of accounting information systems also has an essential impact on improving the financial performance of SMEs. The digitalisation capabilities of various computers, applications, operating systems, and networks allow for the exchange of information through meaningful and effective methods. There is a need to develop digital banking for all types of online banking transactions at this time to make it easier for consumers/customers to use their services with one touch using their gadgets/smartphones (He et al., 2022). This provides convenience and speed of various banking services that facilitate SME transactions. The results of this study have an impact on SMEs, namely encouraging SMEs to use the E-Commerce platform to improve SME performance and profits, encouraging SMEs to use the Digital Banking platform to improve their financial performance to be safer and more effective and encouraging SMEs to use digital marketing to improve sales performance and increase their competitiveness.

2. LITERATURE REVIEW

2.1. DIGITAL MARKETING

Digital marketing is one of the efforts to market products. The use of technology in every process is a characteristic of digital marketing. This has been proven to increase the selling power of products, especially from SMEs. Research shows that the use of social media can boost sales of SME craft products (Ren et al., 2024). Digital marketing by utilising WhatsApp (WA), Instagram (IG), Facebook (FB) and other social media can significantly increase income (Juliana et al., 2024). These media make it easier for them to market the products they produce. Research has shown that digital marketing management has an impact on increasing start-up business income (Adam et al., 2020). However, what is often a problem is that they need help understanding how to create good content. In addition, the response to the content provided needs to

be improved. This cannot be separated from the literacy of MSME actors regarding the digital world itself. The same thing was also expressed) In his research, he revealed differences in the profile of a demographic of social media users. So, a digital marketing communication strategy is needed so as not to miss the target (Munizu et al., 2024). It is somewhat different from what has been studied, which emphasises that there is still a mix in marketing even though digital media has been used. The Marketing Mix cannot be separated because marketing in a mainstream way is too common (Iyer et al., 2004).

2. 2. E-COMMERCE

E-commerce describes the process of buying, selling, transferring or exchanging products, services or information through computer networks, including the Internet. E-commerce is the use of digital technology and the Internet to run the main business processes (Muduli et al., 2022). E-commerce is the process of buying and selling goods/services electronically, and it involves transactions using the Internet, networks, and other digital technologies. E-commerce, as stated by economic experts, can be concluded as online shopping with the Internet, and in paying for the shopping, money is transferred digitally. Based on a review of the definition of e-commerce from 4 perspectives, the communication perspective is the activity of sending goods, information, services and so on through electronic equipment that has internet access (Wahyuningjati & Purwanto, 2024). As stated by Loudon, E-commerce is a buying and selling activity carried out by buyers and sellers electronically from one company to another. E-commerce Many businesses use or are based on digital networks called electronic business and electronic commerce today. Electronic business (electronic business or e-business) is a business process that utilises digital technology and the Internet in its main operations (Sun et al., 2021). E-business includes internal management activities of a company as well as coordination activities with suppliers and other business partners (Adam et al., 2020). E-commerce (electronic commerce) is part of e-business (electronic business) that is related to the buying and selling of goods/services via the Internet. E-commerce also includes activities that support these transactions, such as advertising, marketing, customer support, security, shipping, and payment. E-commerce will change all marketing activities and also reduce operational costs for trading activities. E-commerce is a term used or often heard in connection with the Internet today. In short, e-commerce is a dynamic collection of technologies, applications, and business processes that connect businesses, consumers, and certain communities. An e-commerce sales system is the process of buying and selling products or services to increase business profits and using a computer network or the Internet for transactions, be it marketing, development, payment or distribution (Muduli et al., 2022). The relationship between the e-commerce sales system and financial performance is that with the convenience brought by this technology, the sales process becomes more efficient so that consumer interest in buying products or services offered by the company can be encouraged. When sales increase, it affects the profits generated.

2. 3. SUSTAINABILITY OF SUPPLY CHAIN BUSINESS

Sustainability of the supply chain is defined as a form of verb that describes a state or condition that is ongoing and continuing, is a process that occurs and eventually leads to the existence or resilience of a state (Praditya et al., 2024). The sustainability of a supply chain business is a form of consistency in business conditions, where sustainability is the process of ongoing business and business development, and all of this leads to the sustainability and existence (resilience) of the business. Business sustainability is a state or condition of a business in which there are ways to maintain, develop, and protect resources and meet the needs that exist in an industry (business) (Oláh et al., 2018). The methods used are based on the personal experience of other people and are based on the economic conditions or circumstances that are currently occurring

in the business world, so business continuity is a form of consistency of business conditions, where business continuity includes growth, development, strategies to maintain business continuity and business development, where all of this leads to business continuity and existence (resilience) (Mechman et al., 2022).

Supply chain business sustainability can be interpreted as the total effort of a company to reduce the impact on the life of the earth and the ecosystem (Puška et al., 2023). At the same time, corporate sustainability can be interpreted as the adoption of business strategies and activities that meet the needs of the company and stakeholders while protecting, maintaining, and improving human and natural resources that will be needed in the future. Therefore, it can be concluded that a company needs to think about the sustainability of its business processes by considering and aligning the use of available resource aspects, both physical resources, materials, and human resources, and, of course, supported by the use of effective and efficient technology. The implementation of business sustainability applied by the company aims to make the company always sensitive to changes in compiling a series of strategies (Sheikh et al., 2018). It is hoped that the strategy set by the company will be able to overcome various obstacles and challenges that will be faced in the future. This statement shows that many companies have paid attention to their corporate sustainability performance (Xu et al., 2023). Corporate sustainability in question is a business approach taken by the company so that it can create long-term consumer and employee interests that create a green strategy, namely a business strategy that not only prioritises profit but also how the business can run in its social, cultural and economic environment simultaneously (Shukla et al., 2023). Environmental performance is a mechanism for companies to voluntarily integrate environmental concerns into their operations and interactions with stakeholders beyond the organisation's legal responsibilities (Mechman et al., 2022). Environmental performance is the measurable outcome of an environmental management system, which is related to the control of its environmental aspects (Kuzmak & Kuzmak, 2023). Some businesses can survive, but not a few of them eventually have to accept their fate to close down. In addition to business competition, business development is also needed to create competitive advantages over competitors. In addition to surviving with competitive advantages, product marketing strategies must also receive attention. By implementing various strategies, the sustainability of these micro and medium businesses can survive the storm of the pandemic (San Miguel et al., 2023).

2. 4. DIGITAL BANKING

Digital banking is described as an electronic banking service that is intended to make maximum use of customer data to provide faster, easier and more customised customer service (Lin et al., 2024). This service can also be done by the customers themselves, as long as security considerations are considered. This provides an opportunity for prospective customers and/or Bank customers to communicate, register, open accounts, complete banking transactions, close accounts, obtain additional information and conduct transactions that are not related to banking products, such as investments, financial advisors, e-commerce, and other Bank customer needs. Adequate infrastructure is needed for strategic planning that results in digital banking services (Jallouli et al., 2022). This includes adjusting information technology, business models, business processes, internal controls, risk management, and human resources to support information collection, communication, opening and closing accounts, as well as the convenience, security and dependability of digital banking services (Lusianty et al., 2023). The first digital banking innovation was in the form of an ATM (Automated Teller Machine). Digital banking service innovations consist of machines (Topić – Pavković, 2024). Through this digital banking service innovation, customers do not have to go to the bank or bank branch office to access their bank

accounts because all banking facilities can now be easily accessed anywhere and anytime. Mobile banking is the first step in the transformation of banks into financial service providers. In this situation, the role of banks is more than just storing and distributing money. Banks will operate as financial service providers in the future to handle their customers' accounts. This includes bill payments and also retirement planning (Wang et al., 2018). These services are individual and tailored to consumer needs. Banking services are provided through mobile communications, such as mobile phones, that provide services identical to ATMs except for cash withdrawals. Furthermore, m-banking is a banking facility that can be accessed via mobile phones. This service is similar to Internet banking because it eliminates the need for customers to visit the bank by allowing them to carry out banking transactions through the use of mobile phones or smartphones (Chen et al., 2021).

2. 5. FINANCIAL PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES (SMES)

Financial skills refer to the results achieved or demonstrated (Mastilo et al., 2024). Financial skills are the procedures carried out and the results achieved when an organisation provides services and goods to its customers. In this observation, the financial skills of SMEs are assessed from the amount of assets, turnover, and operating profit generated by SMEs during a certain period. Assets are assets (resources) owned by an entity that can be measured using a classification system based on monetary units and the speed of their conversion into cash units (Zhong et al., 2020). In contrast, performance elements refer to direct performance testing in the form of success factors and key performance elements. Describes the results of performance assessments that can be done by comparing performance and goal achievement. Assessing performance by assessing the organisation's progress and the quality of its decisions, providing an overview of the organisation's level of success or results, and assessing the next steps the organisation will take (Barykin et al., 2021). The performance of SMEs is analysed using an approach based on the following three assumptions, namely: It is often difficult to measure the performance of small and medium enterprises quantitatively due to limited resources (financial and human resources), Performance measurement usually takes into account complex financial indicators, which do not fully reflect the actual state of the Company, Performance measures that are often used are only suitable for large companies with relatively structured corporate management (Mucowska et al., 2021). Measuring the performance of SMEs is often difficult to do quantitatively due to limited resources (financial understanding and workforce). Financial performance can be assessed through indicators such as profitability, return on assets, liquidity, solvency and sales growth, all of which can be taken from the financial side of the report and/or report, showing the results of the financial characteristics of an SME are annual sales, annual profit, net assets and number of employees.

2. 6. RELATIONSHIP BETWEEN E-COMMERCE AND BUSINESS SUSTAINABILITY SUPPLY CHAIN

The advancement of Information Technology needs to be utilised by Small and Medium Enterprises (SMEs) to develop their business through e-commerce because the opportunities are wide open and technically easy to run. (Barykin et al., 2021) Said in a conversation with Business News. E-commerce can be interpreted as a process of buying or selling products electronically carried out by consumers to companies or consumers to consumers with the help of computer equipment and the Internet (Zhong et al., 2020). One of the keys to becoming the largest marketplace is in terms of service and guarantees of sales transactions (Amornkitvikai et al., 2022). This is in line with what has been expressed, which is that the services provided

by the marketplace can increase consumer confidence in using it. Meanwhile, responding to the use of the marketplace as a means of buying and selling is a manifestation or implementation of the Industrial Revolution 4.0 (Emon et al., 2023).

H1: E-commerce has a positive effect on the Business sustainability of the supply chain.

2. 7. RELATIONSHIP BETWEEN DIGITAL MARKETING AND BUSINESS SUSTAINABILITY SUPPLY CHAIN

Digital marketing adoption is a determining factor for MSMEs' sustainability; other factors can make SMEs sustainable, such as collaborating with other SMEs or making costs more efficient in other ways. Besides digital marketing adoption, the higher the application of electronic systems that are easy to use in the use of digital marketing does not make SMEs more efficient in using costs sustainably and the higher the application of electronics does not make SMEs work together with other SMEs (Zhong et al., 2020). Digital marketing adoption does not positively affect sustainability because of the low completeness and accuracy of the information provided by SMEs in their systems (Ambarwati et al., 2024). The results of the study (Emon et al., 2023) show that digital marketing adoption has a positive effect on the sustainability of a business. Digital marketing through social media is one of the doors to expanding potential customers. Research shows that the use of digital marketing media can increase customer loyalty. The ability of MSMEs to survive during this pandemic is supported by good financial management and adaptation strategies. The adaptation carried out by SME actors is related to the use of digital marketing facilities to increase awareness. The digital marketing used in this case is social media. Of the 50% of SME business actors who were able to recover, almost all of them adapted to digital strategies (Mucowska et al., 2021). This change concerns the methods of selling, promotion, distribution, supply chains, and others. If, in normal times, business actors can do it offline, then this can no longer be done during a pandemic. Business actors change everything online, from promotion to sales methods (Amornkitvikai et al., 2022).

H2: Digital marketing has a positive effect on Business sustainability supply chain

2. 8. RELATIONSHIP BETWEEN BUSINESS SUSTAINABILITY SUPPLY CHAIN AND FINANCIAL PERFORMANCE

The results of the data analysis in this study prove that the Business sustainability supply chain has a positive and significant effect on financial performance. This indicates that with a better Business sustainability supply chain, the financial performance of existing SMEs can be improved (Gao, 2023). Good financial literacy helps SME owners manage cash flow more effectively. SME actors can predict cash needs, manage receivables and payables well, and ensure that the business has sufficient liquidity to meet short-term obligations. The results of this study are in line with research) which proves that financial literacy has a positive and significant effect on SMEs (Nugroho et al., 2024). The results of this study prove that the Business sustainability supply chain has a positive and significant effect on SME financial performance. Business sustainability supply chain has brought significant changes in various aspects of economic life, including the financial performance of Small and Medium Enterprises (SMEs). The business sustainability supply chain has opened new doors for SMEs to obtain financing through online loan platforms (peer-to-peer lending) and crowdfunding (Gyenge et al., 2021). This certainly helps SMEs in financing or capital obtained to develop SMEs to be more advanced. The results of this study are in line with research that proves that the Business sustainability supply chain has a positive and significant effect on SME performance.

H3: Business sustainability supply chain has a positive relationship to financial performance

2. 9. RELATIONSHIP BETWEEN DIGITAL BANKING AND FINANCIAL PERFORMANCE

Digital Banking is a form of banking with the transfer of banking services to the Internet that uses accounting insight and knowledge, computer science, various types of online banking applications to exchange information in a useful way and the use of smartphones owned by the application of internet technology that can be used anytime and anywhere (Gao, 2023). This is certainly also related to the financial literacy of MSME business actors because, with good knowledge, they can work more easily. The financial literacy obtained will provide a programmed learning experience in the form of formal, non-formal, and informal education that aims to improve the ability of MSME actors to be useful and play their role well in their business fields. Of course, this is related to the financial performance of MSME businesses because it helps MSME actors to keep their businesses stable. Digital Banking offers convenience and speed of various banking services to customers (MSME actors), which greatly helps MSME businesses (Purba et al., 2021). The services that have moved include (a) saving, withdrawing, and sending money; (b) account management; (c) loan requests; (d) bill payments; and others. This means that SMEs can open accounts without going to the bank because the service can be accessed via the Internet. So, there is no special office for the bank (Al Mashalah et al., 2022). SMEs do not need to bother accessing their accounts. The use of digital banking has been proven to have an impact on increasing SME business turnover. The use of various digital banking is also related to the implementation of AIS because banking services via the Internet require good recording and administration supported by a good accounting information system (Al Mashalah et al., 2022). Therefore, fast ordering of goods and services requires assistance from various aspects, including the use of a good, capable and fast accounting information system in responding to consumer responses; of course, this will affect the financial performance of SME businesses, namely related to the level of SME business ability to generate profits. This will also trigger an increase in the number of consumers and an increase in business sales every month, and there will be an increase in profits and business profits every month (Gyenge et al., 2021). In addition, monthly profit income and the level of profit obtained each month have increased and experienced growth from the previous year. Based on the description, the hypothesis proposed is:

H4: Digital banking has a positive and significant relationship with financial performance and the financial performance of SMEs.

3. METHOD

The method used in this study is an associative strategy. An associative strategy is a research strategy used to determine the relationship between two or more variables. The research method used in this study is a quantitative approach. This study uses a purposive sampling technique because sampling is carried out with certain considerations or criteria that must be met. The data collection method in this study was carried out by distributing questionnaires online through social media. Respondents in this study were 668 MSME owners in Indonesia. The scale used to measure is a scale with an interval of 1 - 5, from strongly disagree to strongly agree. In measuring respondents' answers, filling out the questionnaire was measured using a Likert scale. Statements are given a score of 1 for strongly disagree answers, a score of 2 for disagree answers, a score of 3 for doubtful answers, a score of 4 for agree answers, and a score of 5 for strongly agree answers. The data collection technique in this study uses a questionnaire by providing several written statements addressed to respondents, which will then be answered. Structural equation modelling is often called Partial Squares Structural Equation Modeling (PLS-SEM)

with SmartPLS version 3.0. Hypothesis testing can be seen from the t-statistic value and probability value. For hypothesis testing, namely by using statistical values, then for alpha 5%, the t-statistic value used is 1.96. So, the criteria for accepting or rejecting the hypothesis are that H_a is accepted, and H_0 is rejected if the t-statistic is > 1.96 . To reject or accept the hypothesis using probability, H_a is accepted if the p-value < 0.05 . The variables in this study are independent variables, namely E-commerce, digital marketing and digital banking, the dependent variables are supply chain business sustainability and financial performance.

Based on the study of previous theories and research, the research hypothesis was formulated in Fig 1, namely:

H1: E-commerce has a positive effect on the supply chain business sustainability

H2: Digital marketing has a positive effect on supply chain business sustainability

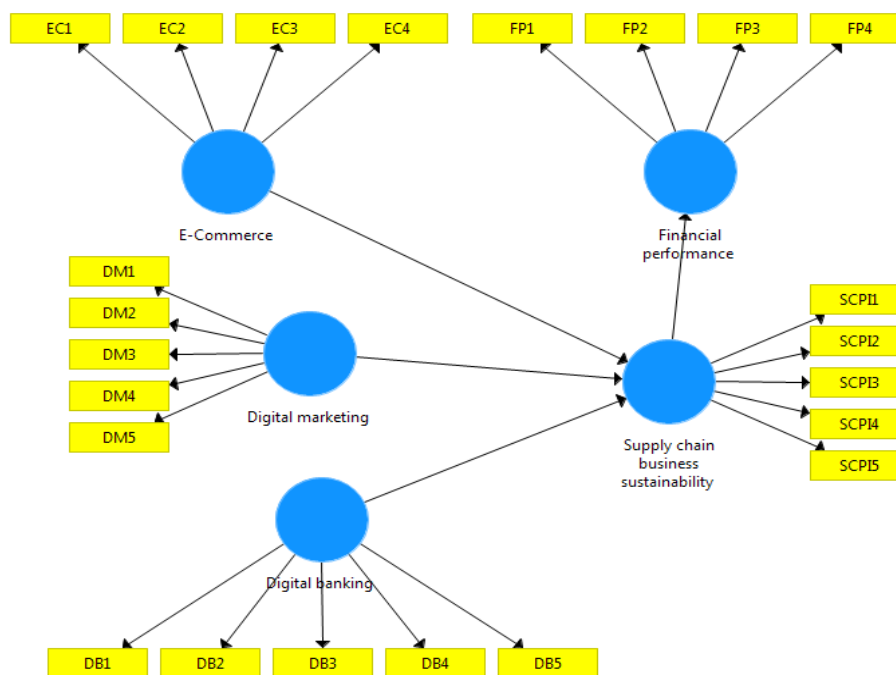
H3: Business sustainability supply chain has a positive relationship to financial performance

H4: Digital banking has a positive relationship with the financial performance of SMEs.

4. RESULT AND DISCUSSION

The analysis technique used in this study is Path Analysis with the help of SmartPLS 3.0 software. The PLS method is used because it does not require a large sample, and the purpose of prediction where using the PLS approach is assumed that all variance measures are useful to explain Data analysis using SmartPLS software is carried out in two stages namely the measurement model and the structural model are shown in figure 1.

Figure 1. Research Model



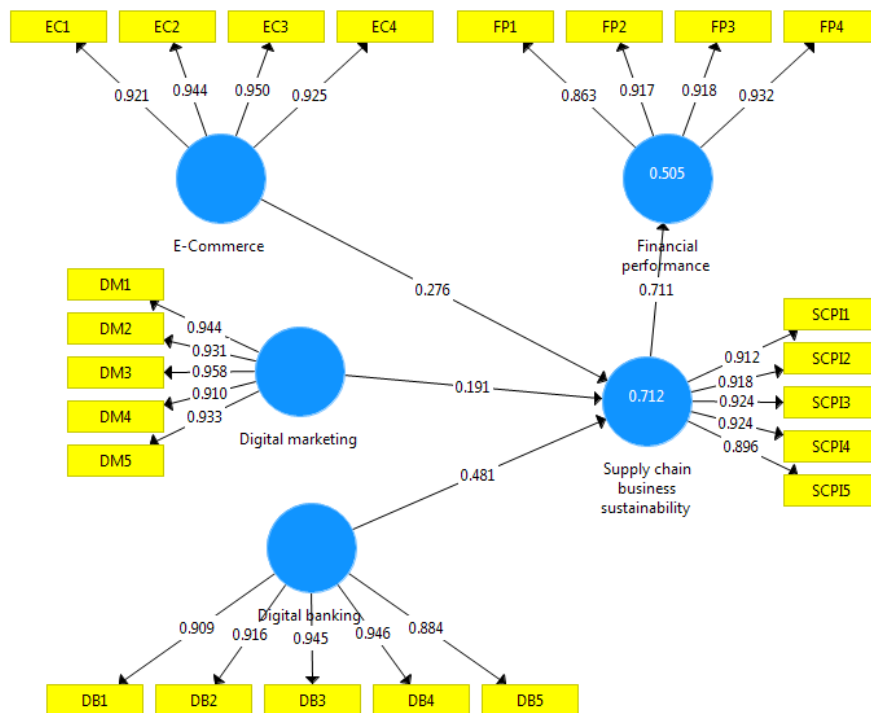
Source: SmartPLS Analysis by Author, 2024

4. 1. CONVERGENT VALIDITY TEST

The factor loading number owned by the latent variable against its indicator functions to determine the validity of a construct. Based on the theory of the indicator factor, a loading value ≥ 0.7 is called valid. However, in developing the model, the agreement on the factor loading value between 0.5 - 0.6 can still be tolerated. In this study, a limit of 0.5 was used, so indicators with

factor loading values above 0.5 were declared valid. It can be seen in Fig 2 from the validity test at this stage that all items and factor loading values are all above 0.5, So they are declared valid.

Figure 2. Validity testing



Source: SmartPLS Analysis by Author, 2024

4. 2. RELIABILITY TEST

The test is used to measure stable or constant measurement results and can be relied on/reliable. This indicates that a person's answer to the question is consistent or stable based on several tests through the internal consistency method, the composite reliability feature, and Cronbach's Alpha coefficient. The values used to obtain reliability consist of Cronbach's Alpha and Composite Reliability, which must exceed 0.70 for confirmatory research, and a value of 0.60 - 0.70 is still acceptable for exploratory research. The results of this test are as are shown in table 1. follows:

Table 1. Reliability Test

Variables	Cronbach's Alpha	Composite Reliability
E-Commerce	0.706	0.703
Digital Marketing	0.732	0.732
Supply chain business sustainability	0.714	0.703
Financial performance	0.712	0.718
Digital banking	0.745	0.767

Source: SmartPLS Analysis by Author, 2024

The conclusion of the data processing shows satisfactory numbers in Table 1; all variables are above the threshold of 0.70, indicating high consistency and stability of the instruments used. It is concluded that all constructs of this study have become fit measuring instruments and have good reliability.

4. 3. AVERAGE VARIANCE EXTRACTED (AVE) TEST

It shows how much variance in the diversity of manifest variables is owned by the latent construct, and a standard figure of 0.5 means good convergent validity, which can also be interpreted as an average above the indicator variant. The number 0.50 or above is the standard value of the variable AVE. The results of the research data processing show that all variables have good construct validity, as shown in Table 2.

Table 2. Average Variance Extracted (AVE) Test

Variables	Average Variance Extracted (AVE) Test
E-Commerce	0.798
Digital Marketing	0.703
Supply chain business sustainability	0.603
Financial performance	0.708
Digital banking	0.702

Source: SmartPLS Analysis by Author, 2024

Based on the results of the average variance extracted (AVE) test, the AVE value for all variables was greater than 0.60, so it was concluded that all variables have good construct validity.

4. 4. R-SQUARE ANALYSIS

This analysis is to determine the percentage of endogenous construct variability that may be explained by exogenous construct variability. This analysis also determines the goodness of the structural equation model. The higher the R-square value, the greater the exogenous variable can explain the endogenous variable, so the structural equation is better. Attached is the output value of the R Square value are shown in table 3 as follows:

Table 3. R-Square Analysis

Variables	R-Square
Supply chain business sustainability	0.800
Financial performance	

Source: SmartPLS Analysis by Author, 2024

Based on the results of the R-Square analysis in Table 3, the R-Square value for the performance variable is 0.800, or 80%, meaning that the independent variables of E-Commerce and digital marketing contribute 80% to the Supply chain business sustainability variable, while the remaining 20% is a contribution from other variables not discussed in this study.

4. 5. HYPOTHESIS TESTING

It is intended to find a significant influence between independent variables and dependent variables by examining path coefficients that indicate parameter coefficients and statistical T significance values in Table 4. Parameter significance is estimated to provide an overview of the correlation between research variables. The standard for rejecting and accepting the proposed hypothesis is to use a probability of 0.05. The table below presents the estimation output for structural model testing:

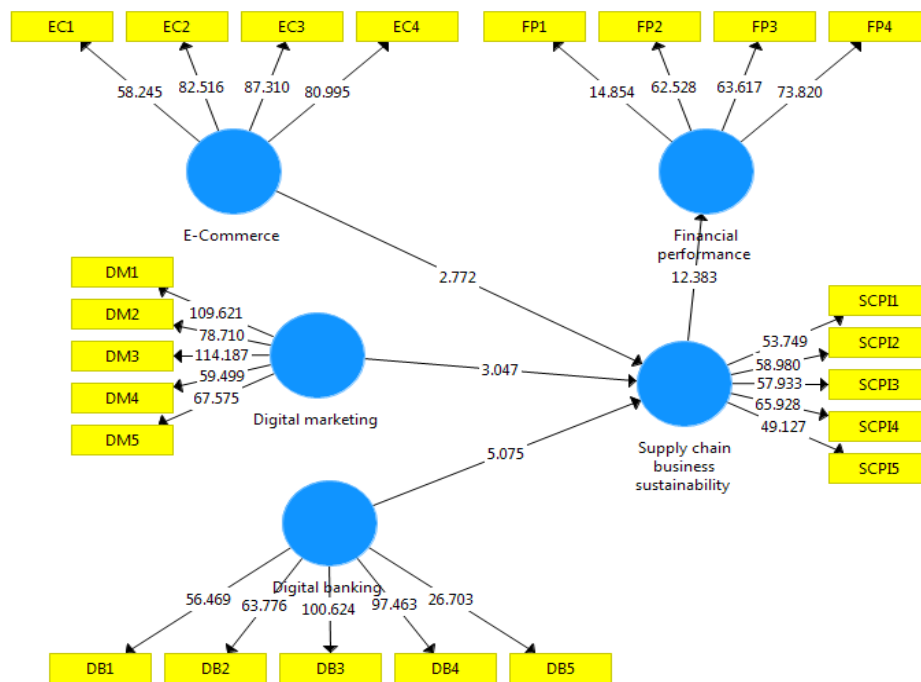
Table 4. Hypothesis Testing

Hypothesis	T value	P value	Remark
H1: E-Commerce - supply chain business sustainability	6.896	0.000	Supported
H2: Digital marketing - supply chain business sustainability	2.885	0.000	Supported
H3: Business sustainability supply chain - financial performance	4.342	0.000	Supported
H4: Digital banking - financial performance -	1.765	0.000	Supported

Source: SmartPLS Analysis by Author, 2024

The figure below presents the estimation output for structural model testing:

Figure 3. Hypothesis Testing



Source: SmartPLS Analysis by Author, 2024

4. 6. RELATIONSHIP BETWEEN E-COMMERCE AND SUPPLY CHAIN BUSINESS SUSTAINABILITY

The results of the tests in Fig 3 show that e-commerce has a positive effect on supply chain business sustainability. This can be interpreted that the higher the use of technology, such as e-commerce, the more it increases supply chain business sustainability. MSMEs, in running their businesses through e-commerce, use quality providers so that they can encourage business operations (Febransyah et al., 2022). The use of e-commerce makes it easier for sellers and buyers to transact. In addition, with e-commerce, if there is a complaint, it can be done online without having to come to the store. The use of e-commerce can expand market share and increase sales of business products. This is shown in the indicators of internet access, ease of information, HR capabilities, and managerial responsibility. The results of this study are in line with the attribution theory, which states that e-commerce is an external cause that can influence a person's behaviour in running their business, namely the influence of changes or utilisation of technology (Febransyah et al., 2022). Most business actors have used e-commerce, and the many demands from consumers who prefer online shopping have encouraged business actors to use e-commerce to increase competitiveness for MSMEs, which has a positive impact on the business sustainability of the supply chain, including customer service performance, sales, mar-

keting and internal operations (Purba et al., 2021). By using e-commerce, business actors can expand their market share and increase sales of their business products. The implementation of e-commerce also provides flexibility in production because it can provide faster shipping information to customers, send and receive offers faster, and support online or electronic payments. This can encourage MSME business actors to increase competitiveness (Gyenge et al., 2021). For MSMEs, the existence of E-commerce during the current pandemic makes it easy for MSME actors to carry out marketing activities for MSME products online. MSME actors will find it difficult to maintain their performance. Previous research concluded that the implementation of e-commerce had a positive and significant effect on company performance (Al Mashalah et al., 2022). E-commerce is an electronic buying and selling transaction using the internet media. It can also be interpreted as a business process using electronic technology that connects companies, consumers, and the community in the form of electronic transactions and online buying and selling. E-commerce adoption on MSME performance E-commerce has a significant and positive effect on MSME performance; this means that if e-commerce adoption increases, MSME performance will increase.

The use of e-commerce is a must in the business world, considering the increasingly complex problems, the increasing number of competitors, and the demands to follow the developments in the global world that require creative action. The use of e-commerce in business makes it easier for business actors to identify workflows and competition, build partnerships, and more effective product marketing. Through e-commerce, consumers can obtain information very quickly and accurately, thus providing certain points to the competitive advantage of MSMEs. Through the use of e-commerce, MSMEs can reach a wider market (Al Mashalah et al., 2022).

In addition, e-commerce can also increase the speed and accuracy of delivering information and can help save operational costs. With the use of e-commerce, companies can reach relatively distant consumer markets so that consumers will be easier to obtain, and ultimately, SMEs' performance will also increase (Febransyah et al., 2022). The results of this study indicate that the use of e-commerce is one of the important things in reaching the market and attracting consumer interest so that it can improve company performance. Adoption of e-commerce has a positive and significant effect on SMEs performance. The use of e-commerce can be one solution to overcome the problems of SME actors so that their businesses can continue to survive because e-commerce can facilitate access to information, improve business performance, improve the quality and speed of service, follow technological developments and increase cost efficiency. The definition of e-commerce) is the use of websites to transact or facilitate the sale of products and services online. It can also be used as a tool to buy and sell products or services via the Internet using a computer system to increase the efficiency of the company as a whole. Usually, it consists of trade that occurs through buyers visiting the seller's website and online transactions (Gyenge et al., 2021). Electronic Commerce describes the process of buying, selling, transferring, or exchanging products, services and information via computer networks, including the Internet (Purba et al., 2021).

4. 7. RELATIONSHIP BETWEEN DIGITAL MARKETING AND THE SUPPLY CHAIN BUSINESS SUSTAINABILITY

Business sustainability through sustainable cost efficiency and cooperation with other business actors is not influenced by the ownership of a website that is integrated with suppliers, customers, and back office systems that allow business transactions to be carried out electronically through the use of e-commerce, although MSMEs always monitor the competitive movements of competitors, overcome customer dissatisfaction by serving complaints quickly and adjusting products, have unique products and designs that are difficult for competitors to imitate (Iyer et

al., 2004). This also explains that the existence of competitive advantage does not make e-commerce adoption have a positive effect on business sustainability. The results of this study are different from the results of previous studies, which state that e-commerce adoption can have a positive effect on sustainability through competitive advantage (Ren et al., 2024). Furthermore, the results of this study prove that the variable of digital marketing adoption can have a positive effect on the variable of sustainability. With the existence of competitive advantage, the use of digital marketing can have a more positive impact on the sustainability of a business and further encourage business sustainability in the long term. The increasing application of easy-to-use electronic systems in the use of digital marketing makes SMEs more efficient in the use of costs sustainably if through monitoring the competitive movements of competitors carried out by SMEs, handling complaints and customer dissatisfaction quickly and the advantages of SME products that are difficult to imitate by other competitors with unique designs so that other SMEs are interested in working with SMEs that implement digital marketing. The results of this study are in line with previous studies, which state that digital marketing adoption has a positive effect on the business sustainability of the supply chain (Sun et al., 2021).

SMEs Customer expansion can be done through various doors. Business actors can also create new customers from the business they have done (Muduli et al., 2022). So, during the pandemic, SME actors who have used the marketplace as a means of selling are relatively able to survive compared to those who are still offline. Meanwhile, those who have not used the marketplace as a means of selling are starting to apply it. One of the efforts made by business actors to survive and face new competition in cyberspace is the massive promotion through social media. Social media, used as a digital marketing tool, can boost consumer awareness. This awareness functions to remind consumers of brands that once existed (Mao et al., 2024). During the pandemic, the focus of consumers is no longer on expensive brands or not, but the focus is on when this pandemic will end. In his research, it was revealed that customer value in determining business sustainability is 86% of the total components. Therefore, retaining customers and seeking new customer expansion is the most rational strategy amid a pandemic (Iyer et al., 2004).

4. 8. RELATIONSHIP OF BUSINESS SUSTAINABILITY SUPPLY CHAIN TO FINANCIAL PERFORMANCE OF SMES

The results of the data analysis in this study prove that Business Sustainability Supply Chain has a positive and significant effect on financial performance. This indicates that with a better Business Sustainability Supply Chain, the financial performance of existing SMEs can be improved. Good financial literacy helps SME owners manage cash flow more effectively. SMEs can predict cash needs, manage receivables and payables well, and ensure that the business has sufficient liquidity to meet short-term obligations. The results of this study are in line with research) which proves that financial literacy has a positive and significant effect on SME performance (Praditya et al., 2024). The results of this study prove that the business sustainability supply chain has a positive and significant effect on SMEs' financial performance. Business Sustainability Supply Chain has brought significant changes in various aspects of economic life, including the financial performance of Small and Medium Enterprises (SMEs). The Business Sustainability Supply Chain has opened new doors for SMEs to obtain financing through online loan platforms (peer-to-peer lending) and crowdfunding (Sheikh et al., 2018). This certainly helps SMEs in financing or capital obtained to be able to develop SMEs to be more advanced. The results of this study are in line with research that proves that the Business sustainability supply chain has a positive and significant effect on the performance of SMEs. The company's financial performance is an achievement achieved by the company in a certain period that reflects the health level of the company. Companies must maintain relationships with their stake-

holders, especially stakeholders who have power over the availability of resources used for the company's operational activities, such as labour, the market for the company's products and others. One of the company's strategies to maintain relationships with stakeholders is to disclose sustainability reports that provide information about economic, social and environmental (San Miguel et al., 2023). This can affect the company's net profit level, where increasing the company's net profit will increase the company's ROA value. The ROA ratio is used to measure the company's management's ability to obtain overall profits, so the higher ROA value indicates that the company has a high level of profit in utilising its assets. Extensive disclosure of sustainability reports tends to create corporate transparency towards its stakeholders, which reflects a good relationship between the company and its social and environmental aspects. Improving the company's reputation in the eyes of stakeholders will ultimately have an impact on increasing the company's profitability (Guo et al., 2024). Disclosure of economic performance shows a significant positive effect on the company's financial performance because the information contained in the economic dimension of the sustainability report can convince stakeholders of the potential for competitive capital resources with a low level of risk. By disclosing economic performance, clarity regarding the economic impact of stakeholders on the company's organisational activities will be increasingly transparent, thereby increasing stakeholder trust in their investments (Shukla et al., 2023).

4. 9. RELATIONSHIP BETWEEN DIGITAL BANKING AND FINANCIAL PERFORMANCE

Mobile banking offers various benefits to its consumers, including ease of service due to connectivity accessibility. Mobile banking is quite easy to learn thanks to its various functions (Praditya et al. 2024). Affordable because all instructions are provided clearly and comprehensively. Because users receive SMS every time there is an action on their account, whether it is a deposit, withdrawal, or transfer between accounts, mobile banking can reduce the risk of fraud in terms of security. Mobile banking services are cheaper and can reduce telebanking costs (Sheikh et al., 2018). In addition, these additional services can facilitate transactions for customers, helping banks improve customer satisfaction and Digital banking. The wide reach of mobile banking can be used to market various financial products, including credit cards, loans, and so on, to certain consumer demographics. Other uses of mobile banking include increasing customer transactions. Increasing transactions indicate investment performance in the past and can be used to predict future growth. Sales growth is an increase in sales each year. Significant growth in banking company transactions will be reflected in greater revenue. The ability to maintain revenue in markups for prospective future opportunities will be determined by the company's growth rate. Electronic banking systems can reduce operating costs, thereby increasing bank profitability. Banks that offer m-banking are more successful and operationally effective than banks that do not. Banks that provide mobile banking facilities have superior asset quality and control over building and equipment maintenance costs (Sheikh et al., 2018). Impact of implementing branchless banking and mobile banking on Indonesian banking performance: Mobile banking has a significant impact on banking performance (ROA). This shows that increasing the number of mobile banking application users will improve the financial performance of Indonesian banking (Shukla et al., 2023). Based on the explanation above, it can be concluded that digital banking has a positive effect on bank profitability. Digital banking has a positive effect on ROA. Bank Size Against ROA: company size has a positive and significant effect on ROA. This shows that the larger the size of the bank, the greater the ROA that can be generated. Because, in general, banks that have high assets tend to show high levels of profitability.

5. CONCLUSION AND RESEARCH IMPLICATION

5. 1. CONCLUSION

The results of this study show that the E-Commerce variable has a positive effect on the business sustainability of the supply chain, and digital marketing has a positive effect on the business sustainability of the supply chain. These findings provide a significant contribution to the understanding of the impact of sustainability and e-commerce adoption on the performance of the MSME supply chain. Practical implications include encouragement for MSMEs to consider sustainable practices in their operations, while still understanding that e-commerce adoption may require more careful risk management. Further research is suggested to elaborate further on the positive and negative impacts of e-commerce activities in terms of sustainability. The aspects used as references are also not limited to environmental aspects but also discuss economic and social aspects. This is done so that further research is more comprehensive and better represents the real conditions of e-commerce in Indonesia. Furthermore, suggestions to the government as regulators and policymakers to create binding regulations for e-commerce actors by considering sustainability aspects. The results impact of this study have an impact on SMEs, namely encouraging SMEs to use the E-Commerce platform to improve SME performance and profits, encouraging SMEs to use the Digital Banking platform to improve their financial performance to be safer and more effective and encouraging SMEs to use digital marketing to improve sales performance and increase their competitiveness.

5. 2. RESEARCH IMPLICATIONS

Implementing sustainability can increase economic benefits and present a positive image of the business and its products. Businesses that can find a balance between resource use and the value of the products offered to consumers will benefit financially and environmentally. In addition to the financial side, being proactive in implementing the concept of sustainability can also prepare businesses for the requirements of government business operational regulations as well as consumer demand for more sustainable products in the future. That way, plastic product manufacturers will have a more advantageous position in responding to external demand and gaining their competitive advantage. One of the most popular ways to achieve this balance is by choosing the best raw materials and processing methods. It would be great if you could have access to several suppliers and collaborators to evaluate which raw materials and production methods can provide the maximum results with the least expenditure.

E-commerce can contribute to sustainability by implementing various steps, such as Reducing packaging waste by using recyclable and sustainable packaging. Reducing excess packaging to reduce shipping costs and waste and increase customer satisfaction. Optimising the supply chain and logistics. Consider using more environmentally friendly electric vehicles. Ensuring easy product recycling. Increasing manufacturing efficiency. Partnering with sustainable suppliers. Sustainability in business or business sustainability is an approach to running a business that considers its impact on the environment, society, and the economy. The goal is to create long-term value that is balanced and sustainable for all parties involved. E-commerce also requires a digital infrastructure and is controlled by people who understand the digital world well. In addition, in the development of e-commerce, integration is also needed with various elements such as the use of social media and variations in payment methods, for example, via debit cards, credit card payments, payments with e-money systems and other institutions that provide payment facilities. One thing that e-commerce companies must continue to do to support the sustainability of a business is to continue to innovate without stopping. Innovation is a key to business success in building added value; without innovation, the business being run will

stagnate and cannot grow optimally. The use of e-commerce in these three things can be done by companies that implement it, one of which is in the development of the economic aspect, where e-commerce can play an active role in maintaining the level of demand for goods and services, cutting promotional costs, expanding the market to new market levels and being able to cut distribution channels. The expected end goal is an increase in revenue from the organisation. In terms of social development, by utilising e-commerce, companies can contribute more by getting closer to their consumers through customer service that is available 24 hours a day so that customer satisfaction can be achieved and automatically improve the company's image. The expected result is, of course, more customers making transactions on the e-commerce site. In terms of consumer protection, e-commerce is carried out more electronically so that operational waste, such as unnecessary use of paper and fuel, can be reduced. Thus, the level of expenditure in the operational scope can be made more efficient.

REFERENCES

- Al Mashalah, H., Hassini, E., Gunasekaran, A., & Bhatt, D. (2022). The impact of digital transformation on supply chains through e-commerce: Literature review and a conceptual framework. *Transportation Research Part E: Logistics and Transportation Review*, 165, 102837. <https://doi.org/10.1016/j.tre.2022.102837>
- Adam, M., Ibrahim, M., Ikramuddin, I., & Syahputra, H. (2020). The role of digital marketing platforms on supply chain management for customer satisfaction and loyalty in small and medium enterprises (SMEs) in Indonesia. *International Journal of Supply Chain Management*, 9(3), 1210-1220. <https://core.ac.uk/download/pdf/328146431.pdf>
- Ambarwati, D., Hermawan, A., & Munawaroh, N. A. (2024). E-Commerce Adoption, Social Media Marketing Strategy and MSME Performance: The Mediating Role of Business Sustainability in the Creative Industry. *International Journal of Economics, Business and Innovation Research*, 3(03), 89-111. <https://www.e-journal.citakonsultindo.or.id/index.php/IJEBIR/article/view/831>
- 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*, 14(14), 8476. <https://doi.org/10.3390/su14148476>
- Barykin, S. E., Smirnova, E. A., Chzhao, D., Kapustina, I. V., Sergeev, S. M., Mikhachevsky, Y. Y., ... & Moiseev, N. (2021). Digital echelons and interfaces within value chains: end-to-end marketing and logistics integration. *Sustainability*, 13(24), 13929. <https://doi.org/10.3390/su132413929>
- Chen, Y., Kwilinski, A., Chygryn, O., Lyulyov, O., & Pimonenko, T. (2021). The green competitiveness of enterprises: Justifying the quality criteria of digital marketing communication channels. *Sustainability*, 13(24), 13679. <https://doi.org/10.3390/su132413679>
- Emon, M. M. H., & Nahid, M. H. (2023). Factors Affecting Sustainable E-Commerce Adoption: Empirical Evidence from Bangladeshi SME's. *Corporate Sustainable Management Journal (CSMJ)*, 1(01), 32-36. <http://doi.org/10.26480/csmj.01.2023.32.36>
- Febransyah, A., & Camelia Goni, J. I. (2022). Measuring the supply chain competitiveness of e-commerce industry in Indonesia. *Competitiveness Review: An International Business Journal*, 32(2), 250-275. <https://doi.org/10.1108/CR-05-2020-0059>
- 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 the financial and sustainability performance of MSMEs during the COVID-19 pandemic: An empirical study. *Sustainability*, 15(2), 1594. <https://doi.org/10.3390/su15021594>
- Gyenge, B., Máté, Z., Vida, I., Bilan, Y., & Vasa, L. (2021). A new strategic marketing management model for the specificities of E-commerce in the supply chain. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(4), 1136-1149. <https://doi.org/10.3390/jtaer16040064>
- Guo, J., Jia, F., Yan, F., & Chen, L. (2024). E-commerce supply chain finance for SMEs: the role of green innovation. *International Journal of Logistics Research and Applications*, 27(9), 1596-1615. <https://doi.org/10.1080/13675567.2023.2167959>
- Goldman, S. P., van Herk, H., Verhagen, T., & Weltevreden, J. W. (2021). Strategic orientations and digital marketing tactics in cross-border e-commerce: Comparing developed and emerging markets. *International small business journal*, 39(4), 350-371. <https://doi.org/10.1177/0266242620962658>

- Haudi, H., Rahadjeng, E., Santamoko, R., Putra, R., Purwoko, D., Nurjannah, D., ... & Purwanto, A. (2022). The role of e-marketing and e-CRM on e-loyalty of Indonesian companies during Covid pandemic and digital era. *Uncertain Supply Chain Management*, 10(1), 217-224. <https://doi.org/10.5267/j.uscm.2021.9.006>
- He, P., Wang, T. Y., Shang, Q., Zhang, J., & Xu, H. (2022). Knowledge mapping of e-commerce supply chain management: a bibliometric analysis. *Electronic Commerce Research*, 1-37. <https://doi.org/10.1007/s10660-022-09609-w>
- Juwaini, A., Chidir, G., Novitasari, D., Iskandar, J., Hutagalung, D., Pramono, T., ... & Purwanto, A. (2022). The role of customer e-trust, customer e-service quality and customer e-satisfaction on customer e-loyalty. *International journal of data and network science*, 6(2), 477-486. <https://doi.org/10.5267/j.ijdns.2021.12.006>
- Iyer, K. N., Germain, R., & Frankwick, G. L. (2004). Supply chain B2B e-commerce and time-based delivery performance. *International Journal of Physical Distribution & Logistics Management*, 34(8), 645-661. <https://doi.org/10.1108/09600030410557776>
- Jallouli, R., & Kaabi, S. (2022). Mapping top strategic e-commerce technologies in the digital marketing literature. *Journal of Telecommunications and the Digital Economy*, 10(3), 149-164. <https://doi.org/10.3316/informit.664110694021082>
- Juliana, J., Pramezwary, A., Lemy, D. M., Pramono, R., Djakasaputra, A., & Purwanto, A. (2022). Hotel Performance in the Digital Era: Roles of Digital Marketing, Perceived Quality and Trust. *Journal of Intelligent Management Decision*, 1(1), 36-45. <https://doi.org/10.56578/jimd010105>
- Kanellos, N., Karountzos, P., Giannakopoulos, N. T., Terzi, M. C., & Sakas, D. P. (2024). Digital Marketing Strategies and Profitability in the Agri-Food Industry: Resource Efficiency and Value Chains. *Sustainability*, 16(14), (2071-1050). <https://doi.org/10.3390/su16145889>
- Khrais, L. T., Zorgui, M., & Aboalsamh, H. M. (2023). Harvesting the digital green: A deeper look at the sustainable revolution brought by next-generation IoT in E-Commerce. *Periodicals of Engineering and Natural Sciences*, 11(6), 5-13. <https://core.ac.uk/reader/599380280>
- Kuzmak, O., Kuzmak, O. (2023). Social responsibility of business towards sustainable development: Case of Ukraine. *Collection of papers new economy*, 1, 126-148. <https://doi.org/10.61432/CPNE0101126k>
- Lusianty, V., & Rojuaniah, R. (2023). E-Commerce Adoption dan Digital Marketing Adoption terhadap Sustainability melalui Competitive Advantage pada UMKM Makanan dan Minuman DKI Jakarta. *Innovative: Journal Of Social Science Research*, 3(4), 9054-9069. <https://j-innovative.org/index.php/Innovative/article/view/4685>
- Lin, J., & Fan, Y. (2024). Seeking sustainable performance through organisational resilience: Examining the role of supply chain integration and digital technology usage. *Technological Forecasting and Social Change*, 198, 123026. <https://doi.org/10.1016/j.techfore.2023.123026>
- Mastilo, Z., Štilić, A., Gligović, D., & Puška, A. (2024). Assessing the banking sector of Bosnia and Herzegovina: An analysis of financial indicators through the MEREC and MARCOS methods. *Journal of Central Banking Theory and Practice*, 13(1), 167–197. <https://doi.org/10.2478/jcbtp-2024-0008>

- Munizu, M., Alam, S., Pono, M., & Riyadi, S. (2024). Do digital marketing, integrated supply chain, and innovation capability affect competitiveness and creative industry performance?. *International Journal of Data and Network Science*, 8(2), 1025-1034. <https://doi.org/10.5267/j.ijdns.2023.12.005>
- Muduli, K., Raut, R., Narkhede, B. E., & Shee, H. (2022). Blockchain technology for enhancing supply chain performance and reducing the threats arising from the COVID-19 pandemic. *Sustainability*, 14(6), 3290. <https://doi.org/10.3390/su14063290>
- Mao, B., & Tian, H. (2024). Business model based on the synergistic drive of flexible supply chain and digital marketing. *International Journal of Information and Communication Technology*, 24(8), 1-19. <https://doi.org/10.1504/IJICT.2024.139868>
- Mechman, A., Omar, S. S., Hamawandy, N. M., Abdullah, A. S., & Qader, A. N. (2022). The effect of digital marketing, and E-Commence on SMEs performance of Baghdad. *Journal of Positive School Psychology*, 6(3), 4197-4212. <https://journalppw.com/index.php/jpsp/article/view/2410>
- Mucowska, M. (2021). Trends of environmentally sustainable solutions of urban last-mile deliveries on the e-commerce market—a literature review. *Sustainability*, 13(11), 5894. <https://doi.org/10.3390/su13115894>
- Nugroho, B. S., Salsiyah, S. M., Purnamasari, E., Afandi, A., & Ramadhani, R. A. (2024). The Influence of Integrated Digital Marketing, Supply Chain Management, and Business Performance on the Sustainability of MSMEs. *International Journal of Economics, Business and Innovation Research*, 3(01), 17-30. <https://e-journal.citakonsultindo.or.id/index.php/IJEBIR/article/view/615>
- Oláh, J., Kitukutha, N., Haddad, H., Pakurár, M., Máté, D., & Popp, J. (2018). Achieving sustainable e-commerce in environmental, social and economic dimensions by taking possible trade-offs. *Sustainability*, 11(1), 89. <https://doi.org/10.3390/su11010089>
- Prajapati, D., Chan, F. T., Chelladurai, H., Lakshay, L., & Pratap, S. (2022). An internet of things embedded sustainable supply chain management of B2B E-commerce. *Sustainability*, 14(9), 5066. <https://doi.org/10.3390/su14095066>
- Purba, M., Simanjutak, D., Malau, Y., Sholihat, W., & Ahmadi, E. (2021). The effect of digital marketing and e-commerce on financial performance and business sustainability of MSMEs during the COVID-19 pandemic in Indonesia. *International Journal of Data and Network Science*, 5(3), 275-282. <https://doi.org/10.5267/j.ijdns.2021.6.006>
- Puška, A., Božanić, D., Mastilo, Z., & Pamučar, D. (2023). Extension of MEREC-CRADIS methods with double normalization-case study selection of electric cars. *Soft Computing*, 27(11), 7097-7113. <https://doi.org/10.1007/s00500-023-08054-7>
- Praditya, R. A. (2024). Linking The Role of Digital Marketing and E-Commerce on Performance Marketing. *UJoST-Universal Journal of Science and Technology*, 3(2), 7-12. <https://ujost.org/index.php/journal/article/view/149>
- Praditya, R. A., & Purwanto, A. (2024). The Role of Viral Marketing, Brand Image and Brand Awareness on Purchasing Decisions. *PROFESOR: Professional Education Studies and Operations Research*, 1(01), 11-15. <https://journal-profesor.org/index.php/profesor/article/view/3>
- Rao, P., Balasubramanian, S., Vihari, N., Jabeen, S., Shukla, V., & Chanchaichujit, J. (2021). The e-commerce supply chain and environmental sustainability: An empirical investigation on the online retail sector. *Cogent Business & Management*, 8(1), 1938377. <https://doi.org/10.1080/23311975.2021.1938377>
- Ren, H., & Luo, Z. (2024). Decisions and coordination of e-commerce supply chain considering product quality and marketing efforts under different power structures. *Sustainability*, 16(13), 5536. <https://doi.org/10.3390/su16135536>

- Sun, M., Grondys, K., Hajiyeve, N., & Zhukov, P. (2021). Improving the e-commerce business model in a sustainable environment. *Sustainability*, 13(22), 12667. <https://doi.org/10.3390/su132212667>
- SanMiguel, P., Pérez-Bou, S., Sádaba, T., & Mir-Bernal, P. (2021). How to communicate sustainability: From the corporate Web to E-commerce. The case of the fashion industry. *Sustainability*, 13(20), 11363. <https://doi.org/10.3390/su132011363>
- Sheikh, A. A., Rana, N. A., Inam, A., Shahzad, A., & Awan, H. M. (2018). Is e-marketing a source of sustainable business performance? Predicting the role of top management support with various interaction factors. *Cogent Business & Management*, 5(1), 1516487. <https://doi.org/10.1080/23311975.2018.1516487>
- Shukla, S., & Shyam, K. C. (2023). Leveraging Blockchain for sustainability and supply chain resilience in e-commerce channels for additive manufacturing: A cognitive analytics management framework-based assessment. *Computers & Industrial Engineering*, 176, 108995. <https://doi.org/10.1016/j.cie.2023.108995>
- Saura, J. R., Palos-Sanchez, P., & Rodríguez Herráez, B. (2020). Digital marketing for sustainable growth: Business models and online campaigns using sustainable strategies. *Sustainability*, 12(3), 1003. <https://doi.org/10.3390/su12031003>
- Topić – Pavković, B. (2024). Challenges to Global Monetary and Financial Stability. *Collection of papers new economy*, 2, 31-45. <https://doi.org/10.61432/CPNE0201031t>
- Wahyuningjati, T. & Purwanto, E. (2024). Exploring the Influence of Electronic Word of Mouth and Customer Reviews on Purchase Decisions: The Mediating Role of Trust in the Shopee Marketplace. *MindVanguard: Beyond Behavior*, 2(2), 11-28. <https://doi.org/10.56578/mvbb020201>
- Wang, Y., Jia, F., Schoenherr, T., & Gong, Y. (2018). Supply chain-based business model innovation: the case of a cross-border E-commerce company. *Sustainability*, 10(12), 4362. <https://doi.org/10.3390/su10124362>
- Xu, G. W., Ali, D. A., Bhaumik, A., Yang, M. S., & Wang, N. (2023). The Influence of Digital Transformation in Enterprises on the Dynamics of Supply Chain Concentration: An Empirical Analysis of Chinese A-Share Listed Companies. *Journal of Organizations, Technology and Entrepreneurship*, 1(2), 88-97. <https://doi.org/10.56578/jote010202>
- Yang, Y. (2024). The improved BP neural network supply chain performance evaluation model under the cross-border e-commerce marketing chain. *Journal of Computational Methods in Sciences and Engineering*, 24(3), 1727-1740. <https://doi.org/10.3233/JCM-247290>
- Zhong, Y., Lai, I. K. W., Guo, F., & Tang, H. (2020). Effects of partnership quality and information sharing on express delivery service performance in the E-commerce industry. *Sustainability*, 12(20), 8293. <https://doi.org/10.3390/su12208293>