Analyzing the Impacts of Competency, Digitalization, and Finance on the Export Performance of Micro, Small, and Medium Enterprises (MSMEs): An Empirical Study in Indonesia

By

PANGESTU, Fajar Hadi

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

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Committee in charge:

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ABSTRACT

Micro, Small, and Medium Enterprises is one of the sectoral levels in Indonesia which negatively affected by COVID-19. MSMEs have important labor-intensive industries in Indonesia with a high level of employment and a significant share of GDP. This paper aims to analyze the impacts of competency, digitalization, and finance on the export of MSMEs in Indonesia to enhance export performance. The methodology in this research uses multiple linear regression on primary datasets. The methods are generated from a questionnaire survey on MSMEs developed by the Ministry of Trade Indonesia, the Bank of Indonesia, and the Directorate General of Customs and Excise Indonesia. The results provide evidence that competency and digitalization impact export performance. However, finance has not impacted the export performance. This finding could serve as a basis for the Indonesian government to shape more impactful policies to enhance the performance of MSMEs and determine the extension of MSME financing.

Keywords: MSMEs, export, competency, digitalization, finance

ACKNOWLEDGEMENTS

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I. Introduction

The recent COVID-19 pandemic caused a decline in world economic activity, including at the sectoral level in Indonesia. One of the sectoral levels is Micro, Small, and Medium Enterprises (MSMEs), of which 87.5% or 2,600 were negatively affected by the pandemic (Department of Communication Bank Indonesia, 2019). The debate in economics and especially trade studies, about how MSMEs are the most significant contributor to the country's GDP and labor absorption within the business sectors has a longstanding history.

According to the data from the Information and Documentation Management Officer of Ministry Cooperatives and MSMEs Indonesia (2022), MSMEs contribute 60.5% of the Indonesian total Gross Domestic Product (GDP) within the business sector, as shown in Figure 1. MSMEs also absorb 96.9% of the entire workforce.

Figure 1
Percentage Contribution of MSMEs to GDP
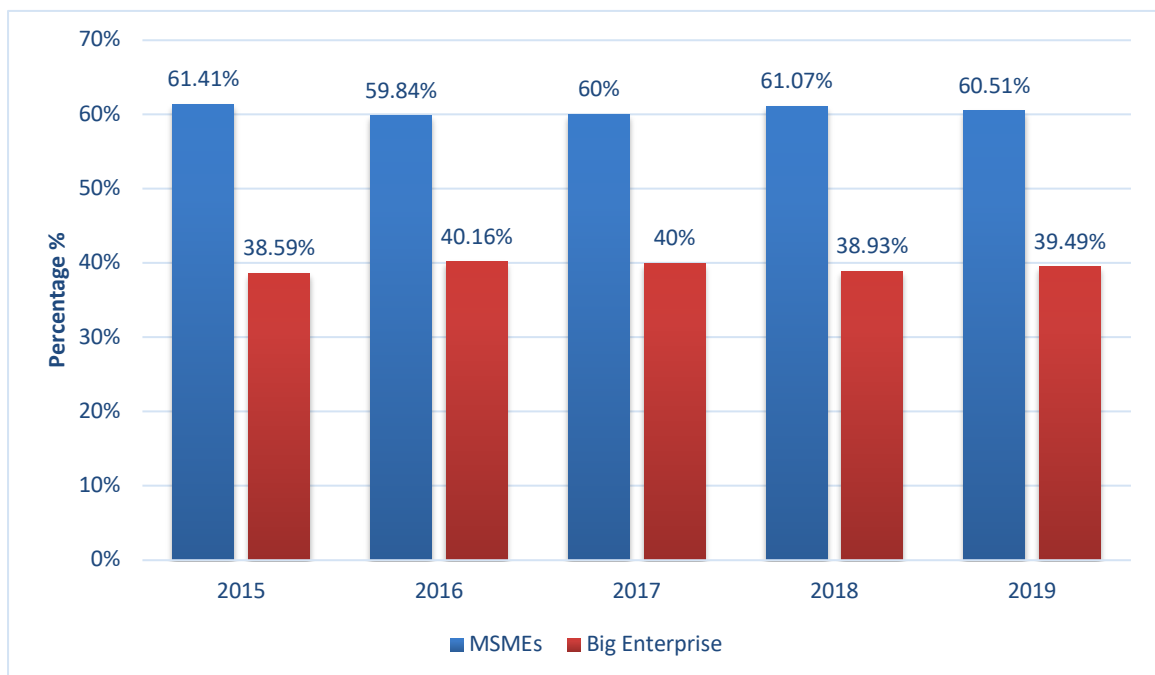
Source: Annual Report Ministry of Cooperatives and SMEs Indonesia

The export of MSMEs plays a crucial role in a country's economy as it can increase foreign exchange reserves, help address trade balance and balance of payments deficits. Growing exports is needed to boost economic growth in Indonesia (Situmorang, 2018).

However, the annual report of the Ministry of Cooperatives and Small and Medium Enterprises Indonesia (2023) stated that the contribution of MSMEs to exports is only 15.65%, as shown in the year 2019 in Table 1.

Table 1
Comparison of Export MSMEs and Big Enterprise

Enterprise	Export MSMEs (in millions of rupiah)									
	2015		**2016**		**2017**		**2018**		**2019**	
	Total	%	Total	%	Total	%	Total	%	Total	%
Micro	15,562	1.32	22,719	1.28	26,466	1.26	25,006.4	1.22	30,289	1.4
Small	31,289	2.65	45,536	2.57	52,085	2.48	47,099.7	2.3	56,407	2.6
Medium	139,124	11.76	186,870	10.53	219,656	10.44	221,734.8	10.85	252,493	11.65
Total MSME	**185,975**	**15.73**	**255,125**	**14.38**	**298,207**	**14.18**	**293,840**	**14.37**	**339,189**	**15.65**
Big	996,668	84.27	1,519,500	85.62	1,806,225	85.83	1,750,649.9	85.63	1,827,889	84.35

This amount is also considerably low compared to selected other countries in Asia, as shown in Figure 2.

Figure 2
Comparison of the Export MSMEs in Asia
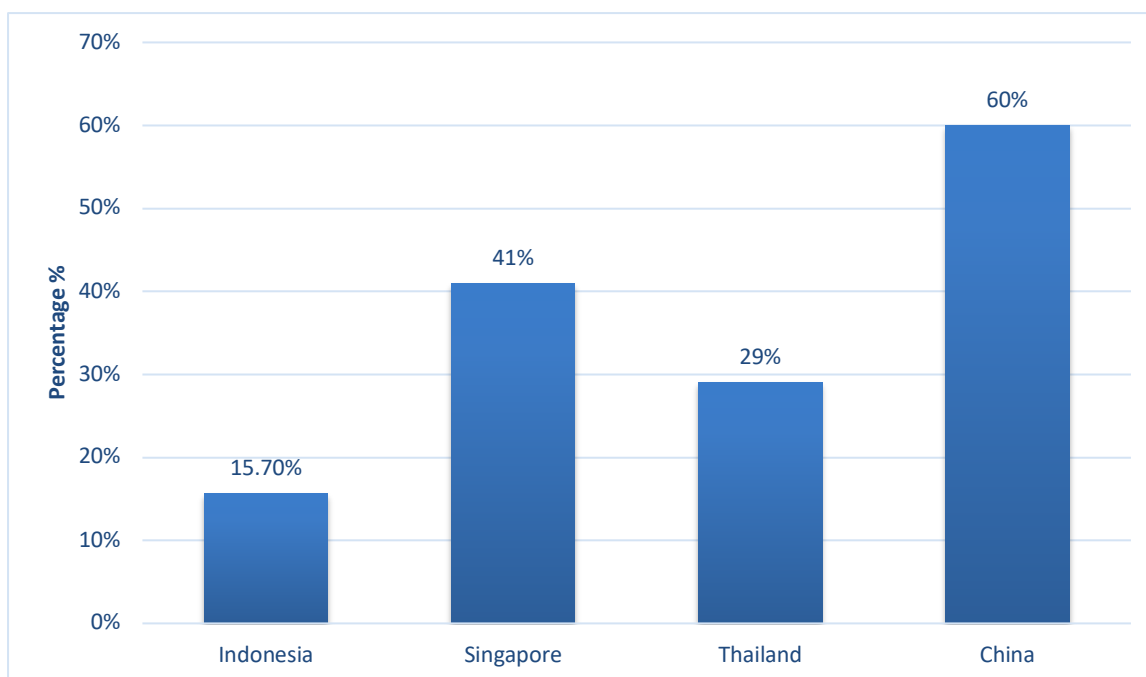
Source: Indonesian Business

As a regulator, the government is responsible for understanding and improving the MSME's export performance. According to McKinsey and Company (2020), the government should prioritize enhancing three key aspects within a thriving and high-performing MSMEs ecosystem: elevating MSMEs' business confidence, facilitating the overall growth of SMEs, and enhancing the competitiveness of MSMEs. Therefore, a considerable amount of research has been carried out on analyzing the impacts of the export performance of MSMEs in Indonesia, which concentrates mainly on digitalization (Prestianto, 2021; Gunawan, 2021; Zahro, 2021). According to Zahro (2021), the rapid development of the digital economy and technology spawned various digital platforms that offer innovation in production. This digitalization provides opportunities for MSMEs to adapt, transform, and rise.

A fundamental aspect of digitalization lies in establishing networks that link devices, objects, and individuals. This strategy is exemplified in an ongoing delivery model where multifunctional information technology teams automate systems and refine procedures to rapidly deploy and refine software (McKinsey & Company, 2015). In addition to digitalization, Siddiqui and Singh (2021) asserted that there is a strong connection between entrepreneurs' decisions to engage in exports and their subsequent export performance. It is confirmed that the extent of export activities is contingent upon the competencies of entrepreneurs, while institutions indirectly shape firms' choices regarding export participation.

Competency is essential as an organizational skill or area of expertise. Competencies can fall into two categories: hard skills, like predictive analytics and software development, or soft skills, such as decision-making and talent management. When these individual competencies are effectively combined, they form a capability that enhances the organization's capacity to deliver substantial value to its customers. These capabilities can serve as a foundation for creating a lasting distinction and competitive advantage in the marketplace, as they are not easily replicable by competitors (McKinsey & Company, 2017).

Previous research conducted by Kresnawati and Rasyidah (2021) has argued that finance also significantly accelerates the export of MSMEs in Indonesia to enter the global value chain and support from the government with capital loans largely determines the product competitiveness in the international trade arena.

Based on the development of the Korea Fund, the government established two specific funds: one to finance technological SMEs and the other to invest in early-stage SMEs with a high potential for job creation (McKinsey & Company, 2020).

However, as these studies are largely descriptive, existing research does not examine the effectiveness of competency in supporting MSMEs export. The existing theories and empirical analysis on MSMEs export are limited and fragmented. Most scholars only describe digitalization and finance in the context of improving MSMEs exports and require additional research on potential factors to reduce barriers to export. My research is intended as an addition to existing scholarship about competency, digitalization, and financial impacts in MSMEs export by building a new variable on existing research, namely the competency variable.

This paper casts light on the question of whether competency, digitalization, and finance have an impact on the export of MSMEs in Indonesia. In this study, we explore the key important factors and seek answers to the following three research questions: First, how are the impacts of competency on the export of MSMEs? Then, how are the impacts of digitalization on the export of MSMEs? Last, how are the impacts of finance on the export of MSMEs? The structure of this paper is as follows: In the first section, we analyze some variables that affect MSME export. In the following section, we briefly review the methodology and data used in the study. In section 3, we will be discussing the result.

II. Literature Review

According to McKinsey and Company (2022), MSMEs have a crucial global impact on economies and societies. They substantially contribute to GDP, exports, job creation, and living standards in developed and developing countries. However, these enterprises face growing challenges that could hinder their growth and reduce their ability to make a substantial difference.

MSME products in developing countries like Indonesia have tremendous potential to penetrate the export market. However, many are still unaware and lack understanding of the procedures and mechanisms that need to be followed for their products to be exported abroad. The barriers to export consist of competency, digitalization, and finance.

2.1. Export Performance of Micro, Small and Medium Enterprises (MSMEs)

Along with the new normal after COVID-19 economic shocks and catch-up with globalization, the export performance of MSMEs have developed as a significant feature that can bring to the next level economy of the developing country. Export performance has received increasing attention over recent decades, but there still needs to be a factor that can contribute to a significant result. Before exploring this explanation, we should clarify what export performance means. The term 'export performance' defines how to systemize decision-making in export-related operations and enhance key export drivers (Safari & Saleh, 2020). Firms must create competitive strategies that help them navigate competitive marketplaces while maximizing profitability and a sustainable market strategy for export performance (Keskin et al., 2021; Martin et al., 2017; Zehir et al., 2015). On the other hand, export performance is also constrained by some obstacles, including the scarcity of capital loans, unutilized technology, and the weakness of human capital. These barriers become a real obstacle to developing their competitiveness in competitive markets (Gunawan, 2021).

Similarly, analyzing the obstacle of export performance on MSMEs in Indonesia concentrates mainly on digitalization. The key findings are that the rapid development of the digital economy offers innovation in production (Prestianto, 2021; Zahro, 2021; Priyono et al., 2020). Priyono et al. (2020) argued that an essential element of digital literacy concerns what abilities must be mastered using information and communication technology. Mkhaiber et al. (2021) also argued that banks were the most solid supporters of capital loans for MSME businesses. However, as these studies are primarily descriptive, existing research fails to examine the effectiveness of competency in supporting MSMEs export because the conceptual definition of competency is limited. For the purpose of this study, the focus on three drivers consisting of competency, digitalization, and finance has been adopted, mainly because this research paper focuses on the exploration of export performance and secondly, because of its relevance with the new normal era after the pandemic and how MSMEs catch-up with the globalization, which we can examine the impact based on three main variables that differ among the MSMEs.

2.2. Competency in Export Performance MSMEs

According to Subowo and Setiawan (2016), human resources significantly impact on the progress or development of an enterprise. Human resources are production tools and determinants of the production process. The advancement and development of an organization are greatly influenced by the role of human resources, which have the most significant contribution. Therefore, the quality and capacity of human resources within an organization determine the progress of that organization.

Adamy (2016) stated that competent human resources are required to meet the expectations of an organization. Nugraha et al. (2022) claimed that given the importance of human resources in an organization, competence is one of the aspects that can determine an enterprise's success. High competence among human resources in an enterprise determines the quality of the human resources involved and, ultimately, the enterprise's competitiveness. The same applies to MSMEs, where the competence of human resources also plays a crucial role in their development.

Entrepreneurial competency results from a complex relationship between a person's abilities, level of knowledge, and professional conduct (Surya et al., 2021). While much research has focused on competency in export performance, few studies have been conducted since 2020 (but see Khan et al., 2020; Ibidunni et al., 2021; Aidara et al., 2021). Khan et al. (2020) argued that competency for human resources in entrepreneurs will affect the performance of the enterprise.

In the same line of thought, other authors also suggested that the work strategy will maintain the performance of the enterprise (Grimmer et al., 2017; Hashim et al., 2018). MSMEs are often seen as crucial in the developing economy, particularly for industrialization advancement, poverty reduction, and job creation (Surya et al., 2021; Manzoor et al., 2021; Ndubisi et al., 2021).

Having explained how entrepreneurial competency influences the performance of entrepreneurs, we need to explain how they bring enterprises to overcome COVID-19. According to Haneberg (2021), entrepreneurs reacted to the pandemic based on how unpredictable they considered the situation. The findings demonstrate that an entrepreneur's focus on manageable losses is mainly influenced by uncertainty, whereas experimentation behavior is primarily influenced by learning after a crisis.

In businesses utilizing digital technology, human resource management (HRM) is essential due to the transformation of human capital (Grigorescu et al., 2021). All employees need skills, including great motivation for work, high productivity, and agility to operate digital tasks (Leroy et al., 2018; Marescaux et al., 2019; He et al., 2021).

Bacigalupo et al. (2016) also delineate the competencies necessary for cultivating the skills, capabilities, and expertise needed to foster the growth of the SME sector in EU countries. This effort culminated in a framework encompassing 15 competencies categorized into three domains, as depicted in Figure 3.

Figure 3
Competency Framework for Training MSMEs

Source: EntreComp

Not only does it consider entrepreneurship competency in initiating, sustaining, and expanding SMEs, it also regards it as a universal competency for personal growth, continuous learning, and effective engagement in society. However, there is still a dearth of research and existing studies adopt traditional constructs to determine the connection between entrepreneurial skills and the success of MSMEs in Indonesia.

2.3. Digitalization in Export Performance MSMEs

Digital transformation involves company cultural, organizational, and operational changes (Priyono et al., 2020). Similarly, Zahro (2021) argued that digital capabilities are how entrepreneurs receive and identify information. To remain competitive, businesses must gather knowledge about upcoming technology (Nguyen et al., 2017). Several industries produced new business ideas during COVID-19 due to the diversity of survival strategies used by entrepreneurs. Digital technology has fundamentally altered how business owners manage their companies. Businesses with digital capabilities launched and adopted new ventures and practices (Nambisan, 2017).

Several researchers provide us with insight into why this is so. For instance, Wang et al. (2023) claim that developing digitalization in MSME can potentially increase the sector's export competitiveness. Prestianto (2021) argues that an essential element of digital literacy concerns what abilities must be mastered using information and communication technology. Also, Nwankpa and Roumani (2016) claim that digital transformation will continue to improve the product quality of businesses and increase their ability to compete globally. Although few researchers have focused on information on digitalization, a few studies have been conducted on innovation on running a business (see Chen & Gupta, 2017; Martuscelli & Varela, 2018).

According to Katadata (2020), MSMEs are making efforts offline, online, or combining both methods. Various approaches are taken to navigate through the pandemic. Many MSME owners have smartphones or internet-connected PCs/laptops to run their businesses, but not all use them to market their products digitally, as shown in Figure 4.

Figure 4
The digital devices used in running a business
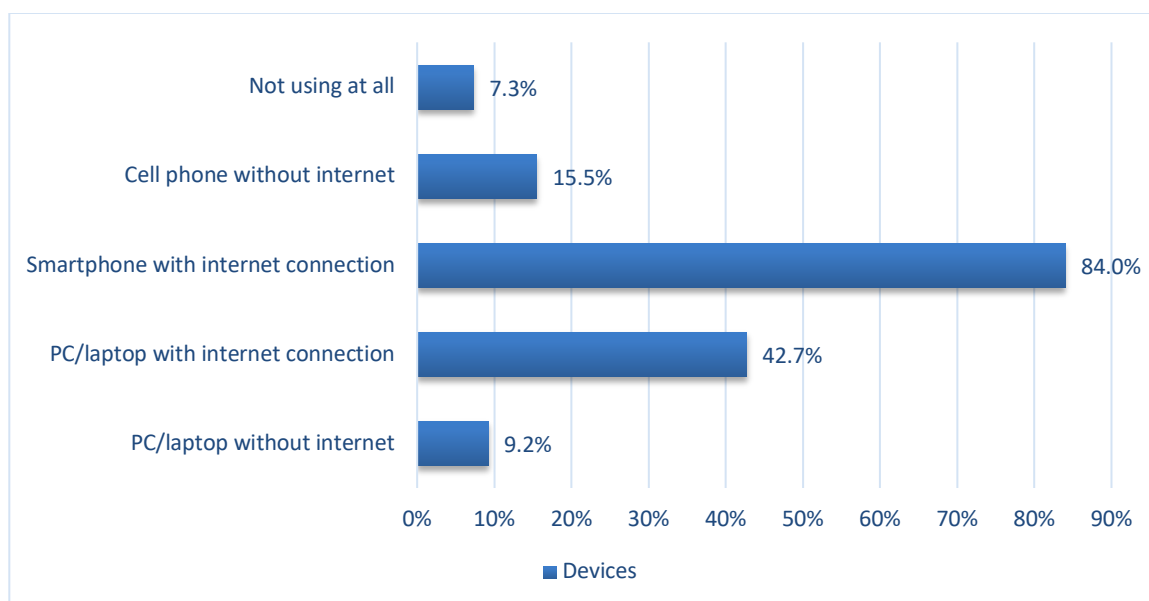
Source: Katadata

A more comprehensive explanation that fits the purpose of this study is that of Villajos and Sotoca (2018), who stated that if a corporation engages in innovative digitalization activities, it can withstand adverse business vibrations to overcome export barriers.

2.4. Finance in Export Performance of MSMEs

Lestari (2021) states that financing is the provision of capital from financing entities to those needing capital to sustain a business. Generally, MSMEs rely on their capital to run their businesses, and they often have limited access to formal sources of financing. Microfinance assistance is part of the government's plan to support the development of viable MSMEs to obtain credit or financing facilities from creditors. However, some MSMEs lack the collateral the government requires (Ayasha, 2010).

MSMEs are essential for fostering innovation in a developing country and require funding to launch new innovative goods that are strong in the economy (Wellalage & Fernandez, 2019). According to the Directorate of Macroeconomic Planning and Statistics of the Central Statistics Agency (2020), the financial assistance needed by MSMEs after being affected by the pandemic is shown in Figure 5 below.

Figure 5
The financial assistance needed by MSMEs
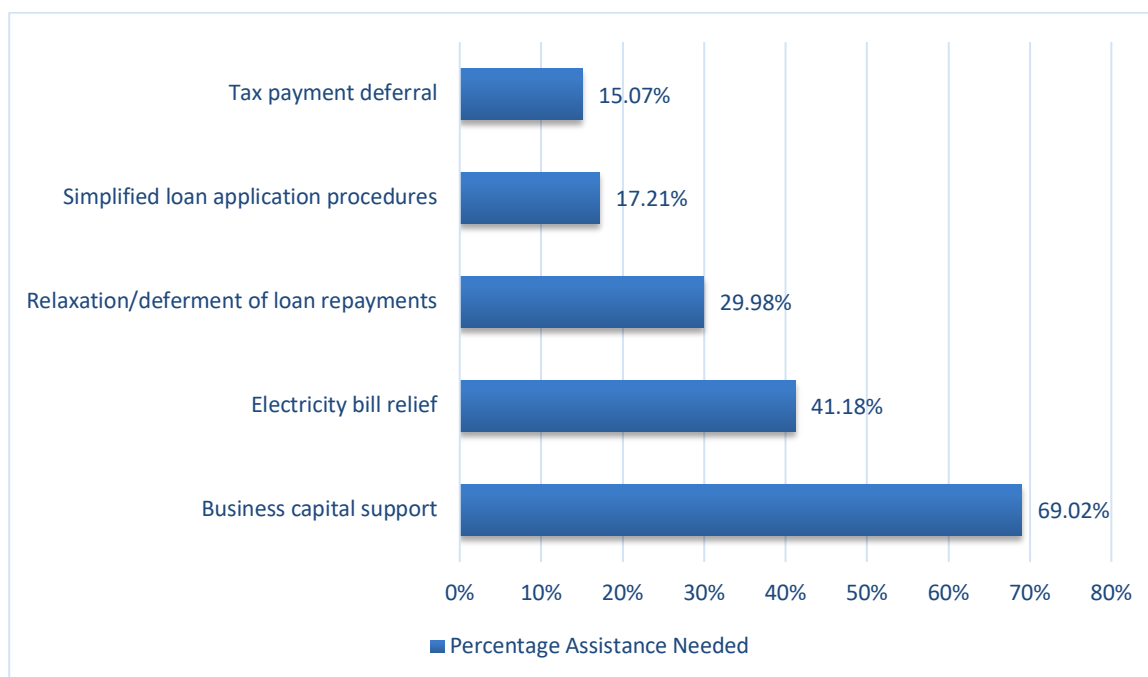
Source: Central Statistics Agency of Indonesia

According to Ridwansyah et al. (2021), the role of MSME actors in maintaining the growth of MSMEs during the pandemic has become very important. Government policies to promote the

sustainability of MSMEs include providing social assistance, tax incentives, credit relaxation and restructuring for MSMEs, business recovery and consolidation, and expanding financing.

Financial limitations severely impede this process, even though access to capital is considered the backbone of MSMEs for engaging in creative activities (Wang, 2016). Similarly, the potential of obtaining external financing for MSMEs significantly contributes, particularly in creating jobs and raising regional revenue (Irman et al., 2021).

However, there is little research that demonstrates the impact of finance on export performance (but see Archer et al., 2020; Kim et al., 2019). Kim et al. (2019) show that financial restrictions have little impact on SMEs' capacity for innovation. Similarly, Sasidharan et al. (2015) found no connection between MSME access to financing and innovation.

2.5. Size of MSMEs in Export Performance of MSMEs

Based on the Republic of Indonesia Law No. 20 of 2008 regarding MSMEs, micro-enterprises are defined as productive businesses owned by individuals or individual business entities that satisfy the micro-enterprises criteria specified in this legislation. Small enterprises are characterized as self-sustained economic endeavors conducted by individuals or business entities that operate independently, without being subsidiaries or branches of companies that are owned, controlled, or affiliated directly or indirectly with Medium Enterprises or Large Enterprises. Small Enterprises must also meet the criteria for Small Enterprises outlined in this Law. On the other hand, Medium Enterprises are autonomous economic activities conducted by individuals or business entities that are not subsidiaries or branches of companies that fall under Small Enterprises or Large Enterprises. They must meet the stipulated net worth or annual sales criteria this Law outlines.

Most of the enterprises in Indonesia are micro-enterprises, followed by small and medium enterprises as a minority number. The statistics of the number of MSMEs in Indonesia are shown in Figure 6.

Figure 6
The Number of MSMEs in Indonesia

65,465

798,679

64,601,352

■ Micro ■ Small ■ Medium
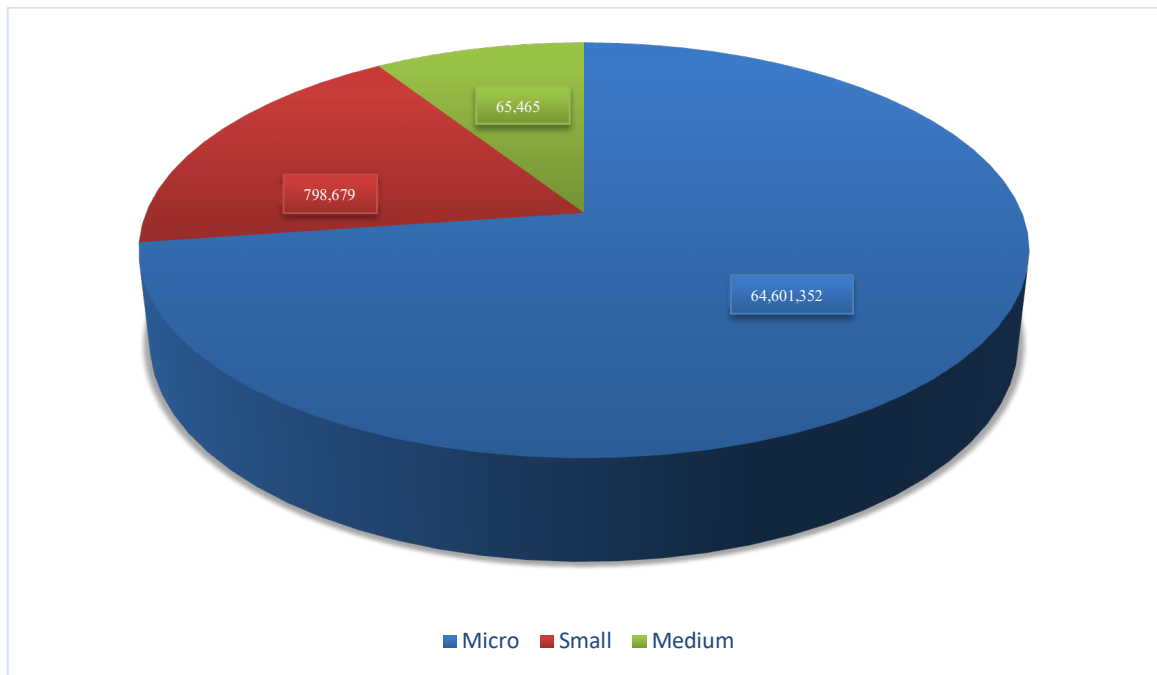
Source: Annual Report Ministry of Cooperatives and SMEs Indonesia

Based on its criteria, MSMEs are differentiated in terms of net worth and annual sales turnover, as depicted in Figure 7.

Figure 7
The Criteria of MSMEs in Indonesia

Micro	• Possessing a net value not exceeding Rp50,000,000.00 (fifty million Rupiah), excluding land and business premises; or • Achieving an annual sales turnover of up to Rp300,000,000.00 (three hundred million Rupiah).
Small	• Possessing a net value exceeding Rp50,000,000.00 (fifty million Rupiah) but not exceeding a maximum of Rp500,000,000.00 (five hundred million Rupiah), excluding land and business premises; or • Achieving an annual sales turnover surpassing Rp300,000,000.00 (three hundred million Rupiah) but not exceeding a maximum of Rp2,500,000,000.00 (two billion five hundred million Rupiah).
Medium	• Possessing a net value exceeding Rp500,000,000.00 (five hundred million Rupiah) but not exceeding a maximum of Rp10,000,000,000.00 (ten billion Rupiah), excluding land and business premises; or • Achieving an annual sales turnover surpassing Rp2,500,000,000.00 (two billion five hundred million Rupiah) but not exceeding a maximum of Rp50,000,000,000.00 (fifty billion Rupiah).

Source: Republic of Indonesia Law No. 20 of 2008 concerning MSMEs

Firm size was positively related to firm performance (Ahmad et al., 2015). Auquier (1980) examined the relationship between the size of firms and the proportion of output exported, or export intensity, in the manufacturing industry in France. The results of this study state that larger companies are more efficient in exporting, and thus, they will export a greater amount of their output. The higher risks involved in international transactions make it only feasible for large companies to enter the international market, leveraging their advantages to spread the risks across their numerous production activities.

Tilaar (2012) stated that the size of a company affects resource allocation, production capacity, and economies of scale, all of which have a positive relationship with export performance. The larger the size of a company, the higher its export performance. The size of MSMEs can be assessed through their employee count, product life cycle, and the overall revenue generated from exports.

In their study, Alasadi and Abdelrahim (2007) highlighted that when evaluating business performance based on size (measured by the number of profitable sales) and using a firm's size as a performance indicator, accounting, technology, and purchasing emerged as significant influencing factors. Takahashi (2009) emphasized that larger enterprises can take advantage of economies of scale, allowing them to utilize available resources more efficiently than smaller counterparts. The realization of economies of scale implies that larger businesses can produce a greater volume of goods or services at lower costs, primarily due to their ability to access essential resources such as business financing. This, in turn, results in a competitive edge and improved performance.

Meanwhile, Bonaccorsi (1992) conducted research regarding the relationship between firm size and the export intensity of companies, as well as the tendency of companies to export in the manufacturing industry in Italy. The findings of this study state that, at the overall level of the manufacturing industry, the company's size does not significantly influence the export intensity of companies.

2.6. Age of MSMEs in Export Performance of MSMEs

Levebre et al. (2000) stated that there is a positive relationship between a company's age and its export performance. The older a company is, the more it is perceived to possess knowledge that can create core capabilities and influence in the international market. This can provide an advantage for the company, enabling it to compete in the international market.

Established firms build robust business partner networks and nurture positive relationships with financial institutions. They have already forged a favorable reputation in the market. The enduring presence of a company reflects the wealth of experience acquired in the industry, a crucial factor contributing to the firm's success (Takahashi, 2009; GEM, 2010).

Smith et al. (2007) stated that business performance improves over time due to the accrued learning experience. The research also indicates that performance continues to increase until a specific stage in the firm's lifespan, which starts to decline. This decline in the business life cycle can be avoided if the company consistently generates fresh and innovative ideas, thereby preventing the entrepreneur from becoming complacent as the business achieves success.

However, these core capabilities can also lead to rigidity (core rigidities) or competency traps, and younger companies might be more flexible, aggressive, and proactive in responding to international demands (Levebre et al., 2020)

Thu and Xuan (2022) point out that a blend of factors influences SME performance. These elements consist of two primary components: subjective factors, which include aspects like financial stability, company size, growth rate, access to credit institutions, workforce qualifications, and business operating duration, and objective factors, which encompass the international and regional context, domestic conditions, and industry-specific circumstances.

III. Methodology

This research aims to investigate the impact of competency, digitalization, and finance on the export performance of MSMEs. This study focuses on the export performance of local MSMEs in Indonesia. To obtain the MSMEs' performance on export from competency digitalization and finance, primary datasets were fetched from a survey of MSMEs developed by the Ministry of Trade Indonesia, Directorate General of Customs and Excise Indonesia, and Bank of Indonesia. In this research, the empirical approach employed utilizes multiple linear regression to gauge the extent to which changes in export performance can be attributed to competency, digitalization, and finance. Furthermore, it's important to note that this thesis confines both the sample to MSMEs that took part in the survey and the scope to encompass just three organizations/ministries in Indonesia.

The initial segment of this section will provide an overview of the data employed in this study. Subsequently, it will delve into the development of hypotheses, followed by an explanation of the attributes of the multiple linear regression utilized in this research. The final part of this section will focus on validating the identification assumptions.

3.1. Data Collection

To conduct empirical analysis in this study, cross-sectional data was collected, encompassing MSMEs established under development by the Ministry of Trade Indonesia, Directorate General of Customs and Excise Indonesia, and Bank of Indonesia.

The data used in this research is primary data. The questionnaire survey distributed to respondents consists of questions related to the object under study through the email and Google Form platform, accompanied by an attachment of the permission letter signed by the authorized official for conducting the research.

The survey consists of 37 questions and is spread to 1086 respondents. The unit analysis of this study uses a survey with a Likert scale index. The measurement scale index used in this research is differentiated into 5 categories, as shown in Figure 8.

Figure 8.
Likert Scale

Code	Answer Choices	Score
SA	Strongly Agree	5
A	Agree	4
SWA	Somewhat Agree	3
D	Disagree	2
SD	Strongly Disagree	1

Source: Britannica

Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. At least 104 respondents filled out the survey, with two respondents incomplete filling out the survey. As a result, 102 respondents processed the data calculation. After obtaining questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed.

The research framework has three independent variables, two control variables, and one dependent variable, as shown in Figure 9. The independent variables are competency, digitalization, and finance. The control variable consists of the size and the age of MSMEs. The dependent variable is the export performance of MSMEs.

Figure 9.
Research Framework
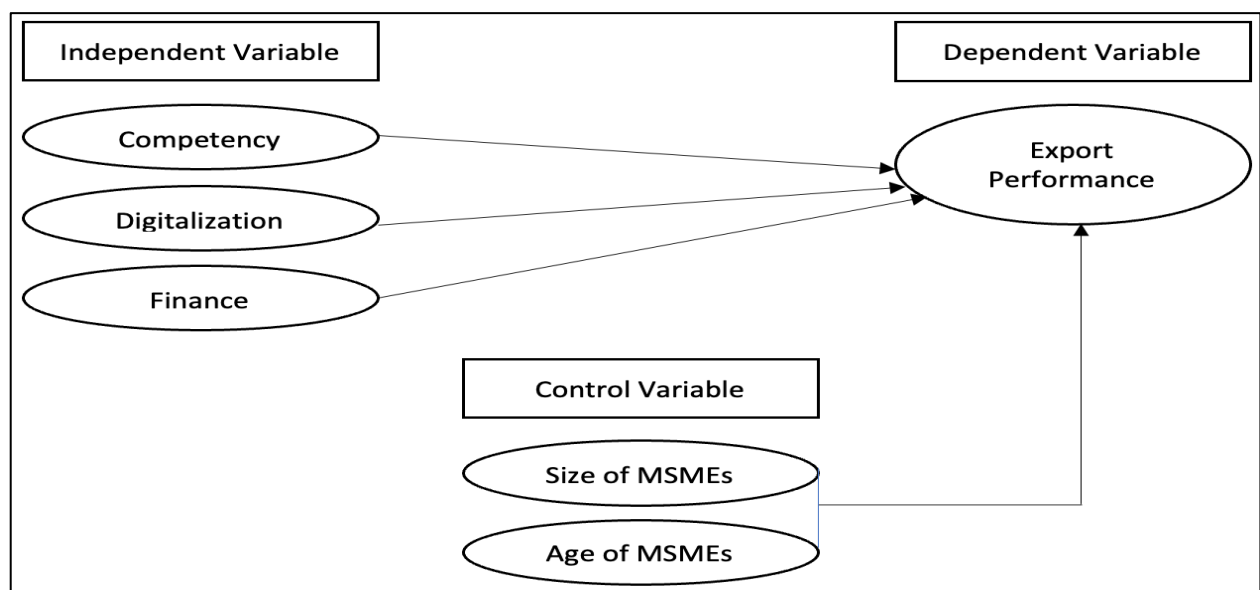
Source: Own source

3.2. Variables Measurement

3.2.1 Independent Variables

Competency

In order to measure competency, this study employs a questionnaire index from the survey with a Likert scale of 1-5, as explained earlier in the methodology. This survey includes 10 questions about competency which consist of the following:

1. MSME has knowledge about product marketing in the international market, which involves promoting and selling products in multiple countries.

2. MSME has knowledge about international finance/export payments, such as a comprehensive understanding of the financial aspects and processes involved in conducting international trade and exporting goods to foreign markets.

3. MSME is familiar with export procedures, involves a good understanding of the steps, regulations, documentation, and processes involved in exporting goods from one country to another.

4. MSME is aware of potential export destinations for products, such as having knowledge and information about foreign markets or countries where the products have the potential to be sold and are likely to find demand.

5. MSME has knowledge of the required certifications/requirements for exports and encompasses a deep understanding of the specific certifications, licenses, documentation, and regulatory obligations that must be met when exporting products to foreign countries.

6. MSME proficient in foreign languages, means being able to read, write, speak, and understand the language with a degree of skill and accuracy that allows effective communication in daily and professional contexts.

7. MSME has participated in promotional activities, including exhibitions/trade missions/business matching facilitated by the government, such as the experience of engaging in events, programs, or initiatives organized or supported by governmental

authorities to promote business, trade, or economic cooperation.

8. MSME has attended workshops on understanding other markets, cultures, business practices, and negotiation processes, including the experience of participating in educational events or training sessions designed to enhance knowledge and skills related to international business.

9. MSME has a good understanding of taxation, possessing comprehensive knowledge and comprehension of the tax-related aspects, regulations, and requirements.

10. MSME has a good understanding of financial obligations in export activities, which means possessing a comprehensive knowledge and awareness of the various financial responsibilities and commitments associated with engaging in international export transactions.

Digitalization

In order to measure digitalization, this study employs a questionnaire index from the survey with a Likert scale of 1-5, as explained earlier in the methodology. This survey includes 7 questions about digitalization which consist of the following:

1. MSME has a website that shows products for sale and contains information about the profiles. A website that shows products for sale and contains information about MSME profiles can be described as an e-commerce platform or marketplace specifically focusing on supporting and promoting MSME.

2. MSME has social media/online shops for product promotion and online product sales, such as Instagram, TikTok, and Facebook.

3. MSME uses marketplaces such as (Tokopedia, Shopee, Lazada, Bukalapak, etc.) as online platforms to sell products.

4. MSME provides product catalogs on the website, marketplaces, and online shops. Enterprise presenting detailed listings or collections of products for sale on various online platforms.

5. MSME offers online payment options (bank transfer, credit card, PayPal, joint account, e-wallet). Enterprise provides customers with various electronic and traditional payment methods to facilitate product transactions on digital platforms or e-commerce websites.

6. MSME promotes products through audiovisual platforms such as YouTube. Enterprise advertising and marketing products or services by creating and sharing videos on the YouTube platform.

7. MSME uses accounting software for business financial reporting and inventory management software to run our business. The enterprise employs specialized software tools to facilitate financial management and the efficient operation of a business.

Finance

In order to measure finance, this study employs a questionnaire index from the survey with a Likert scale of 1-5, as explained earlier in the methodology. This survey includes 10 questions about finance which consist of the following:

1. MSME receives governance assistance in financing for export activities and product promotion. Enterprise receiving financial support or aid from a government entity to help facilitate its efforts in exporting products or promoting them in international markets.

2. MSME receives financing assistance for export business licensing and product certification. Enterprise obtains financial support or aid to cover the costs of securing the licenses and certifications required for conducting export business.

3. MSME receives financing assistance for foreign language proficiency. Enterprise is obtaining financial support or aid to develop and improve their proficiency in a foreign language.

4. MSME receives support from financial institutions in terms of funding for exports. Enterprise is obtaining financial assistance or resources from banks, credit institutions, or other financial entities to facilitate and finance its export-related activities.

5. MSME receives credit restructuring from banks as an incentive from the government. With

the approval and support of the government, the enterprise is offered support by financial institutions to restructure their existing credit loans.

6. MSME receives microcredit assistance from the government. Enterprise is provided with financial support by the government to help them with their entrepreneurial or income-generating activities.

7. MSME receives interest subsidies from the national economic recovery program post-COVID-19, which refers to the provision of financial support by a government or national program to reduce the interest costs associated with loans.

8. MSME receives subsidies in production costs from the government. The government grants enterprise financial assistance or incentives to help offset some of the expenses incurred in producing goods.

9. MSME receives tax incentives and exempt from tax payments. The government grants enterprises special tax advantages or exemptions, allowing them to reduce or eliminate their tax obligations.

10. MSME receives direct cash assistance from the government, which refers to providing financial aid or support through actual cash payments or transfers.

3.3.2 Dependent Variables

Export Performance

In order to measure export performance, this study employs a questionnaire index from the survey with a Likert scale of 1-5, as explained earlier in the methodology. This survey includes 10 questions about export performance which consist of the following:

1. MSME has competitive product prices in the export market. MSME effectively compete with other sellers or exporters in international markets.

2. MSME has a competitive advantage in the quality of export products. MSME produces goods that are superior in quality compared to competitors in the international market. The products offer higher quality, value, and performance.

3. MSME delivers products quickly and precisely, the efficient and accurate process of timely transporting and handing goods to customers.

4. MSME has high profits from export sales, including financial gains or earnings that an enterprise generates from selling products in international markets.

5. MSME receives positive feedback from international markets regarding the products, such as favorable comments, reviews, and responses from customers, partners, or stakeholders in foreign countries about their products' quality, performance, or value.

6. MSME has established a strong and efficient distribution network in the export market. Enterprise has successfully set up a well-organized and effective system for delivering their products or services to customers or partners in foreign markets.

7. MSME has gained many new customers in the export market since established. Enterprise has acquired a significant number of previously non-existent buyers in foreign markets since it started operating in those markets.

8. MSME can diversify products and expand new export markets, such as the capability to broaden their product range and venture into additional international markets for export.

9. MSME comply with export regulations, documentation requirements, and customs procedures in the target export markets, including adhering to the laws, rules, and procedures established by the government and relevant authorities in the specific foreign countries where it intends to export its products or conduct business.

10. MSME continuously innovates and diversifies products, consistently engages in innovation, and expands its range of products.

3.3.3 Control Variables

Age of MSME

In order to measure the age of MSME, this study employs a questionnaire index from the survey with a Likert scale of 1-5, which consists of the following:

Figure 10.
Likert Scale – Age of MSME

Answer Choices	Score
More than 20 years	5
16-20 years	4
11-15 years	3
6-10 years	2
0-5 years	1

Source: Own source

Size of MSME

In order to measure the size of MSME, this study employs a questionnaire index from the survey with a Likert scale of 1-3, which consists of the following:

Figure 11.
Likert Scale – Size of MSME

Answer Choices	Score
Medium (Income of 2.5 billion rupiahs per year - 50 billion rupiah per year)	3
Small (Income of 300 million - 2.5 billion rupiah per year)	2
Micro (Income less than 300 million rupiahs per year)	1

Source: Own source

3.3. Development of Hypotheses

For competency, prior research suggests that well-trained and skilled employees can contribute to better product quality, customer satisfaction, and adaptability to changing markets, potentially leading to improved export performance.

Competency Hypotheses:

(H0): There is no impact between MSMEs' competency and export performance.

(Ha): Competency has an impact on the export performance of MSMEs.

Digitalization has become essential for global business operations and outreach. As such, a higher level of digitalization can increase the speed and efficiency of cross-border transactions, marketing, and customer engagement, positively influencing export performance.

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Digitalization Hypotheses:

(H0): There is no impact between the digitalization in MSMEs and their export performance.

(Ha): Higher levels of digitalization correlate with improved export performance in SMEs.

Adequate financial resources are vital for MSMEs to invest in market expansion, research, and product development required for successful exporting. A solid financial base can enable MSMEs to navigate international challenges and seize market opportunities effectively.

Finance Hypotheses:

(H0): There is no impact between the financial resources of MSMEs and their export performance.

(Ha): Adequate financial resources contribute to higher export performance in MSMEs.

IV. Empirical Analysis

The model specification employed in this empirical approach adopts the multiple linear regression method and is structured as follows:

$$Yexpf = \beta_0 + \beta_1 Com + \beta_2 Dig + \beta_3 Fin + \beta_4 Size + \beta_5 Age$$

where *Yexpf* is export performance, the dependent variable which is defined by the performance of an enterprise to sell domestically produced goods in other countries. In this research, the export performance measurement was conducted with a questionnaire index from a survey with a Likert scale of 1-5. Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. The following point values are assigned to positive statements: strongly agree (SA) = 5, agree (A) = 4, somewhat agree (SWA) = 3, disagree (D) = 2, and strongly disagree (SD) = 1. After obtaining questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed. This survey includes 10 questions about export performance, as explained earlier in the methodology section. The questions about export performance employed in this research consist of the competitive product price in the export market, competitive advantage in the quality of product, how high the export sales, the number of customers in export, how quick and precise the delivery of product, feedback from international markets regarding the products, establishment of strong and efficient distribution network in the export market, the ability for gaining new customers, ability to diversify products and expand new export markets, compliance with export regulations, documentation requirements, and customs procedures in the target export markets, and continuation of innovate and make diversification of products.

Com is competency, the independent variable defined by the knowledge of the human resources involved in an enterprise's competitiveness in export. In this research, the competency measurement was conducted with a questionnaire index from a survey with a Likert scale of 1-5. Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. The following point values are assigned to positive statements: strongly

agree (SA) = 5, agree (A) = 4, somewhat agree (SWA) = 3, disagree (D) = 2, and strongly disagree (SD) = 1. After obtaining questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed. This survey includes 10 questions about competency, as explained in more detail earlier in the methodology section. The questions about competency in this research consist of knowledge about the export procedure and payment, knowledge about marketing the product, awareness about potential export destinations, knowledge about certification for export, experience in workshops or training about export MSMEs, proficiency in foreign languages, participation in promotional activities such as exhibitions/trade missions/business matching facilitated by the government, participation in workshops for understanding markets, a good understanding of taxation for MSMEs, and a good understanding of financial obligations in export activities.

Dig is digitalization, the independent variable defined by how enterprises adopt and integrate digital technologies, mastered using information and communication technology to improve the product quality of businesses and compete globally. In this research, the digitalization measurement was conducted with a questionnaire index from a survey with a Likert scale of 1-5. Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. The following point values are assigned to positive statements: strongly agree (SA) = 5, agree (A) = 4, somewhat agree (SWA) = 3, disagree (D) = 2, and strongly disagree (SD) = 1. After obtaining questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed. This survey includes 7 questions about digitalization, as explained in more detail earlier in the methodology. The questions about digitalization in this research consist of having a website that shows products and contains information about MSME profiles, using online social media for product promotion and sales, using marketplaces such as (Tokopedia, Shopee, Lazada, Bukalapak) as online platforms, offering online payment options (bank transfer, credit card, PayPal, joint account, e-wallet), promotion products through audiovisual platforms such as YouTube and use of accounting

software for business financial reporting and inventory management software to run our business.

Fin is finance, the independent variable defined by the provision of capital from financing entities to MSME for expanding the product in the international market. In this research, the finance measurement was conducted with a questionnaire index from a survey with a Likert scale of 1-5. Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. The following point values are assigned to positive statements: strongly agree (SA) = 5, agree (A) = 4, somewhat agree (SWA) = 3, disagree (D) = 2, and strongly disagree (SD) = 1. After obtaining questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed. This survey includes 10 questions about finance, as explained in more detail earlier in the methodology. The questions about finance in this research consist of whether the MSME receives governance assistance in financing for export activities and product promotion, receives financing assistance for export business licensing and product certification, receives credit restructuring from banks as an incentive from the government, receives financing assistance for foreign language proficiency, receive support from financial institutions in terms of funding for exports, receive microcredit assistance from the government, receive interest subsidies from the national economic recovery program post-Covid-19, receive subsidies in production costs from the government, receive tax incentives and are exempt from tax payments and receive direct cash assistance from the government.

Size is the size of MSMEs, the control variable defined by differentiation in terms of net worth and annual sales turnover. In this research, the size measurement was conducted with a questionnaire index from a survey with a Likert scale of 1-3. Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. The following point values are assigned to positive statements: Micro (Income less than 300 million rupiahs per year) = 1, Small (Income of 300 million - 2.5 billion rupiah per year) = 2, Medium (Income of 2.5 billion rupiahs per year - 50 billion rupiah per year) =3. After obtaining

questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed.

Age is the age of MSME, the control variable defined by the length of time an MSME has been in operation or the number of years since its establishment. In this research, the size measurement was conducted with a questionnaire index from a survey with a Likert scale of 1-5. Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. The following point values are assigned to positive statements: 0-5 Years =1, 6-10 Years =2, 11-15 Years =3, 16-20 Years =4, and more than 20 Years =5. After obtaining questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed.

V. Result and Discussion

5.1 Descriptive Statistics

This section provides descriptive statistics for all the variables utilized in this study to describe the primary characteristics of the dataset concisely and comprehensively. The descriptive statistics include the number of observations, the average (mean), the degree of data spread (standard deviation), the lowest recorded value (minimum value), and the highest recorded value (maximum value).

In this research, the variables were measured with a questionnaire index from a survey with a Likert scale of 1-5. Points are assigned to each response, and an individual's score is calculated by summing the point values of the statements. The following point values are assigned to positive statements: strongly agree (SA) = 5, agree (A) = 4, somewhat agree (SWA) = 3, disagree (D) = 2, and strongly disagree (SD) = 1. After obtaining questionnaire responses, the answers are converted to point values. The point values are summed and averaged before regression is performed.

Table 2
Descriptive Statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
competency	102	3.774	0.909	1.300	5
digitalization	102	3.856	0.748	2.143	5
finance	102	2.463	0.772	1.100	4.600
exportperformance	102	3.638	0.964	1	5
sizeofmsme	102	1.725	0.798	1	3
ageofmsme	102	2.363	1.508	1	5

The descriptive statistics encompass the analysis of various variables in this study. These include competency, digitalization, and finance as the independent variables, while export performance is the dependent variable. Additionally, the study considers the age of MSMEs and the size of MSMEs as control variables.

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According to the data presented in Table 2, all these variables exhibit a small standard deviation relative to their respective mean values. This suggests that the data points in the dataset are closely concentrated around the mean, indicating limited variability or dispersion from a statistical perspective. Meanwhile, there is variability in the means themselves, with lower mean values observed for the variables finance, MSME age, and MSME size. In comparison, higher mean values are noted for variables competency, digitalization, and export performance.

5.2 Multiple Linear Regression

The basic formulation of multiple linear regression is illustrated using the table in Table 3. It presents the impact of the independent variable on the dependent variable.

Table 3
Multiple Linear Regression

VARIABLES	(1) exportperformance
competency	0.628***
	(0.0866)
digitalization	0.235**
	(0.105)
finance	0.0645
	(0.0909)
Constant	0.206
	(0.406)
Observations	102
R-squared	0.507

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

It can be interpreted that without the presence of the competency, digitization, finance, size of MSME, and age of MSMEs variables, the export performance variable would experience an increase by 0.206, as shown in Constant in Table 3. The increase of 1 unit in competency increases export performance by 0.628. The findings support the alternative hypothesis that competency impacts the export performance of MSMEs.

The increase suggests that MSMEs with higher competency levels achieve better export performance. This aligns with prior research highlighting the role of skilled employees and managerial expertise in navigating international markets and effectively meeting customer demands.

Utilization of 1 unit in digitalization from MSMEs increases export performance by 0.235. The correlation between digitalization and export performance reinforces the importance of adopting digital technologies for MSMEs engaged in international trade. The results indicate that MSMEs embracing digitalization are more likely to improve their cross-border transactions, marketing strategies, and customer engagement, contributing to enhanced export performance.

However, holding other things constant, financing is not associated with export performance at a 5% significance level. The findings indicate a correlation between financial resources and export performance, but it is insignificant. The increase of 1 unit in finance will only increase export performance by 0.0645. This implies that adequate financial resources are not vital for MSMEs to expand the market and a solid financial base is not significant for MSMEs to navigate international challenges and seize market opportunities.

In the second multiple linear regression analysis, the involvement of the control variable minimizes the influence of confounding or extraneous factors that could lead to inaccurate or misleading results.

The multiple linear regression contained both control variables, namely the age of MSMEs and the size of MSMEs, alongside the independent variables of competency, digitalization, and finance. Table 4 in column 2 shows the impact of the independent variable on the dependent variable without the existence of the control variable. Meanwhile table 4 in column 3 shows the impact of the independent variable on the dependent variable with the existence of the control variable.

Table 4

Multiple Linear Regression with control variable

VARIABLES	(1) Export performance	(2) Export performance
competency	0.628***	0.624***
	(0.0866)	(0.0888)
digitalization	0.235**	0.238**
	(0.105)	(0.107)
finance	0.0645	0.0674
	(0.0909)	(0.0926)
ageofmsme		0.00407
		(0.0550)
sizeofmsme		0.0166
		(0.104)
Constant	0.206	0.161
	(0.406)	(0.448)
Observations	102	102
R-squared	0.507	0.507

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The result is the increase of 1 unit in the age of MSMEs will increase export performance by 0.004, and the increase of 1 unit in the size of MSMEs will increase export performance by 0.016. The independent variables of competency have a changing impact on export performance from 0.628 to 0.624. The increase of 1 unit in competency will increase export performance by 0.624. Digitalization has a changing impact from 0.235 to 0.238. Increasing 1 unit in the digitalization will increase export performance by 0.238. The finance variable also rose from 0.0645 to 0.0674. The increase of 1 unit in the finance will only increase export performance by 0.0674.

Overall, the influence of independent variables on dependent variables with the presence of control variables remained consistent. This result reinforces the study's validity. This enhances the trustworthiness and dependability of the research or analysis, as the coefficients of the independent variables remained unaltered, and there is only a slight change in the standard error.

VI. Conclusion and Policy Implications

This study examined the impact of competency, digitalization, and finance on the export performance of MSMEs in Indonesia. It observes the different effects of each variable in terms of MSME activities. This research used the multiple linear regression approach with cross-section data for empirical analysis. Data are collected from MSMEs developed by the Ministry of Trade Indonesia, the Bank of Indonesia, and the Directorate General of Customs and Excise Indonesia (MSMEs, which has export products). The variables used in this research are competency, digitalization, and finance as independent variables, the age of MSME and the size of MSME as a control variable, and export performance as a dependent variable. This thesis hypothesized that competency, digitalization, and finance impact the export performance of MSMEs in Indonesia.

After conducting an empirical analysis, it is found that competency and digitalization impact export performance, while finance does not. The multiple linear regression method estimates an increase in export performance subject to competency by 0.6242. The increase of 1 unit in competency will increase export performance by 0.624. The findings presented in this paper are significant as they provide evidence that competency in MSME operations has a notable impact on export performance in Indonesia.

The multiple linear regression method estimates an increase in export performance subject to digitalization by 0.2377. Increasing 1 unit in the digitalization will increase export performance by 0.238. The findings obtained in this paper show that MSMEs engage in innovative digitalization activities that can withstand adverse business vibrations to overcome export barriers. Digital technology has fundamentally altered how business owners manage their MSMEs. The digitalization in MSME can potentially increase the sector's export competitiveness, improve the product quality of businesses, and increase their ability to compete globally.

The multiple linear regression method estimates an increase in export performance subject to finance by 0.0674, but it is insignificant. The increase of 1 unit in the finance will only increase export performance by 0.0674. The findings obtained in this paper show that adequate financial

resources are not vital for MSMEs to expand the market and a solid financial base is not significant for MSMEs to navigate international challenges and seize market opportunities.

The second multiple linear regression analysis is conducted by adding some control variables, such as the age of MSME with several criteria establishing less than five years until MSMEs have more than 20 years. The other control variable is the size of MSME with several criteria from MSME, which has an income of less than 300 million rupiahs per year, an income of 300 million - 2.5 billion rupiah per year, and an income of 2.5 billion rupiahs per year - 50 billion rupiah per year. After conducting a second multiple linear regression, it can be concluded that the finding estimates remain constant, thereby supporting the validity of this research. It enhances the credibility and reliability of the study or analysis. The coefficient of independent variables remains constant, and the standard error has only experienced a slight change.

Moreover, the examination of the empirical study concerning the influences of competency, digitalization, and finance on the export performance of MSMEs has provided valuable evidence. This evidence can assist government entities, policymakers, and MSMEs in crafting efficient policies to enhance the competitiveness of export performance. The findings can also serve as a reference point for deciding whether to expand initiatives to bolster competency, promote digital transformation for greater digitalization, and increase funding support for MSMEs. This study reveals that while competency and digitalization effectively enhance export performance, there is an insignificant in financial resources to support MSMEs.

Nonetheless, it is important to note that this study restricts its focus to competency, digitalization, and finance variables. Consequently, it offers only a partial view of MSMEs' performance in export-related activities and may not capture the comprehensive performance of MSMEs. Additionally, due to data constraints regarding the number of MSMEs, this study may not provide a definitive conclusion regarding the influence of finance on export performance.

Furthermore, considering the disruption caused by the pandemic, additional endogenous variables might influence the trade performance of MSMEs, apart from the independent variables.

Future research could consider selecting more representative variables about MSMEs' performance and expanding the dataset to obtain more robust and reliable estimates. Consequently, these findings would provide a definitive confirmation of the impact of competency, digitalization, and finance on MSMEs' export performance, particularly when MSMEs have fully recovered from the effects of the pandemic.

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