Porter's Five Forces Strategy and Digital Transformation in Increasing the Competitiveness of MSMEs

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ABSTRACT

The digital era has fundamentally changed the business competition landscape, including for Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. This study aims to analyze the influence of Porter's Five Forces and digital transformation on the competitiveness of MSMEs, as well as assess the role of digital transformation moderation in the relationship between the two. A quantitative approach was used by a survey method of 210 respondents of MSME actors in various sectors, who have applied digital technology in business processes. Data analysis was carried out using Structural Equation Modeling-Partial Least Squares (SEM-PLS) to test the relationships between variables in the conceptual model. The results of the study show that Porter's Five Forces have a positive and significant effect on the competitiveness of MSMEs. Digital transformation also has a positive effect on competitiveness. Digital transformation acts as a moderator that strengthens the influence of Porter's strategy on competitiveness. This means that the higher the level of digital adoption, the greater the influence of industrial power on the competitive ability of MSMEs. This study confirms that the combination of industry structure analysis and digital capabilities is an effective strategy in creating sustainable competitive advantage. These findings have implications for the development of MSME digitalization policies, as well as provide a theoretical contribution to the enrichment of Porter's Five Forces model in the digital economy era.

Keywords: Porter's Five Forces, Digital Transformation, Competitiveness, MSMEs, Competitive Advantage, Business Strategy

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Introduction

Micro, Small, and Medium Enterprises (MSMEs) have a strategic role in encouraging economic growth, innovation, and labor absorption in various countries, both developed and developing. In Indonesia, MSMEs contribute more than 60% to the national Gross Domestic Product (GDP) and absorb more than 97% of the total workforce (BPS, 2024). Despite their significant contributions, MSMEs still face various structural challenges in maintaining competitiveness, especially in the midst of the dynamics and disruption brought by the digital era. The acceleration of digital transformation has changed the business competition landscape, shifted traditional business models, and forced MSMEs to adapt to technological changes, the emergence of new competitors, and changes in consumer behavior (Nguyen et al., 2023; OECD, 2022).

Porter's Five Forces framework is one of the most influential models in analyzing industry competitiveness and a company's strategic position. This model highlights the five forces that determine the intensity of competition and profitability of an industry, namely: the threat of new entrants, the bargaining power of buyers, the bargaining power of suppliers, the threat of substitution products, and the intensity of competition among existing competitors (Porter, 1980). Although this framework is widely applied to large companies, its application in the context of MSMEs is still relatively limited, especially in developing countries that are undergoing digital transformation (Ndzabukelwako et al., 2024). Furthermore, traditional interpretations of Porter's models often assume a stable market environment, whereas today's digital economy is characterized by rapid technological disruption, the emergence of platform-based competition, and data-driven decision-making (Li & Liu, 2022).

Researchers are beginning to integrate digital transformation perspectives into competitive strategy analysis. Digitalization affects all dimensions of Porter's Five Forces. The threat of new entrants increases as digital technology lowers barriers to market entry and allows the emergence of new business models such as e-commerce, dropshipping, and digital marketplaces (Papadopoulos et al., 2020). The bargaining power of buyers is growing as they can access product information widely over the internet, while suppliers acquire new channels to reach end consumers directly. In addition, substitution products are emerging rapidly because digitalization allows the conversion of physical products into online services, thereby strengthening the intensity of competition between business actors (Ghezzi & Cavallo, 2020). Therefore, MSMEs that do not adopt digital strategies risk losing market relevance and declining their competitiveness.

Digital transformation is not only understood as technological adaptation, but also as a process of strategic reorientation that changes the way companies create and capture value (Vial, 2019). For MSMEs, digital transformation includes the integration of digital technology in all business processes, from operations, supply chains, marketing, to customer interaction. When combined with a deep understanding of Porter's five competitive strengths, digital transformation can empower MSMEs to identify new opportunities, mitigate external threats, and strengthen their strategic position in the market. However, empirical research examining the relationship between the Porter's Five Forces framework and digital transformation in the context of MSMEs, especially in Southeast Asia, is still limited (Sumba-Bustamante, 2024).

Several studies show that the interaction between digital capabilities and industrial power is key to building a sustainable competitive advantage. For example, Bresciani et al. (2022) found that MSMEs that leverage digital platforms can reduce their dependence on traditional intermediaries, thereby weakening suppliers' bargaining power and increasing cost efficiency. Meanwhile, Nguyen and Luu (2023) observed that digital marketing and data analytics capabilities enable MSMEs to respond to customer needs more quickly, strengthen loyalty, and reduce the threat of substitution products. These findings suggest that the Porter framework, when contextualized in the digital age, can be a comprehensive lens to understand MSME competitiveness strategies.

However, there is still a knowledge gap in understanding how digital transformation interacts with each Porter's strength in shaping the competitiveness of MSMEs. Most existing studies treat digitalization only as an external factor, rather than as an integral part of a competitive strategy. Therefore, empirical research is needed that specifically examines the combined influence of competitive strategies based on Porter's Five Forces and the level of digital transformation on the competitiveness of MSMEs, especially in developing countries such as Indonesia. This country is an interesting case because it has rapid digital economic growth and strong government policy support through programs such as the National Proud Made in Indonesia Movement and Go Digital MSMEs (KemenkopUKM, 2023).

This research aims to fill this gap by analyzing how the Porter's Five Forces framework interacts with digital transformation strategies in increasing the competitiveness of MSMEs in Indonesia. In particular, this study aims to: (1) analyze the relevance of each competitive force in the context of the digital era; (2) assess how digital transformation moderates the influence of Porter's five forces; and (3) developing a conceptual model of the strategic competitiveness of MSMEs in the digital market. By integrating classical competitive strategy theory with the reality of digital disruption, this research contributes to the development of managerial theory and practice. Theoretically, this study expands Porter's framework to be more relevant to the dynamics of competition in the digital era. Practically, the results of this research can be a guide for MSME actors and policymakers in designing digital strategies that improve market position, efficiency, and business sustainability.

The integration between Porter's Five Forces strategy and digital transformation provides a strong framework for revisiting the concept of MSME competitiveness. The traditional determinants of industrial competition are now being redefined by the presence of digital platforms, data analytics, and online ecosystems. Understanding these changes is crucial so that MSMEs can formulate adaptive strategies that ensure sustainability and long-term growth. This research makes an important contribution to the literature on competitive strategies in the digital age by offering an integrative approach between classical analysis and contemporary technological realities.

LITERATURE REVIEW
2.1 Theory of Competitiveness and Competitive Strategy

Competitiveness is the ability of an organization to create sustainable economic value and excel over its competitors (Barney, 1991). Competitiveness is determined not only by cost efficiency or product innovation, but also by adaptability to changing business environments. Porter (1980) stated that competitive strategies can be developed through three main approaches, namely *cost leadership*, *differentiation*, and *focus strategy*. These three strategies serve as a response to the five forces that make up the competitive structure in an industry.

Previous studies have shown that the implementation of Porter's strategy can improve business sustainability and profitability, especially when combined with internal factors such as managerial capabilities and innovation (Grant, 2019). The implementation of competitive strategies often demands high flexibility due to limited resources, so the analysis of industrial strengths is the first step in determining an effective strategic position (Ndzabukelwako et al., 2024).

2.2 Porter's Five Forces Framework for MSMEs

Porter's Five Forces model (1980) emphasizes the five forces that determine the intensity of competition and the profitability of industry, namely:
1. Threat of new entrants
2. Bargaining power of suppliers
3. Bargaining power of buyers
4. Threat of substitutes
5. Rivalry among existing competitors

Each of these forces has unique characteristics. According to Sumba-Bustamante (2024), the threat of newcomers to the MSME sector is increasing due to low barriers to market entry in the digital era, such as lower initial costs and the ease of opening an online store. The bargaining power of suppliers has also changed, as MSMEs now have more options for sourcing raw materials through digital platforms. Meanwhile, buyers' bargaining power increases because consumers can quickly compare prices and quality online (Ghezzi & Cavallo, 2020).

Digitalization also expands the threat of substitution products, as technological innovations allow new products and services to emerge in a short period of time. Rivalry between competitors increases through price competition in e-commerce and social media. Therefore, understanding the dynamics of Porter's Five Forces is an important basis for MSMEs in formulating digitally-oriented adaptive strategies.

2.3 Concepts and Dimensions of Digital Transformation

Digital transformation is defined as the process of integrating digital technology in all aspects of an organization's operations to create new value for customers and improve internal efficiency (Vial, 2019). This transformation includes not only the use of technology, but also changes in organizational culture, business models, and ways of interacting with customers (Bresciani et al., 2022).

Digital transformation includes the use of technologies such as social media, e-commerce, digital payment systems, and data analytics to support decision-making. According to Li and Liu (2022), digitalization provides opportunities for MSMEs to expand market reach, improve operational efficiency, and strengthen customer loyalty. However, the challenges that arise include limited digital human resources, technological infrastructure, and low digital literacy (OECD, 2022).

Research by Nguyen and Luu (2023) found that digital marketing capabilities and the adoption of online platforms contribute positively to the business performance of MSMEs. This means that digital transformation is not only a tool for efficiency, but also a new source of competitive advantage.

2.4 Porter's Five Forces Integration and Digital Transformation

The integration between Porter's Five Forces strategy and digital transformation generates a new perspective in competitive analysis in the modern era. According to Ghezzi and Cavallo (2020), digitalization has changed the competitive structure in various industries by lowering barriers to entry, accelerating innovation, and creating platform-based business models. Therefore, the application of Porter's Five Forces needs to be adapted to digital to remain relevant (Li & Liu, 2022).

For example, the threat of newcomers is now getting higher because of the ease of building a business through online technology. However, digital transformation also allows MSMEs to create new entry barriers such as customer data ownership, personalized customer experiences, and digital networks that are difficult to replicate (Papadopoulos et al., 2020). Supplier bargaining power can be minimized through a digital supply chain system, while buyer power can be managed through data-driven customer relationship management (CRM).

2.5 Conceptual Framework

Porter's Five Forces (X_1) ⟶ MSME Competitiveness (Y)

Digital Transformation (X_2) ⟶ MSME Competitiveness (Y)
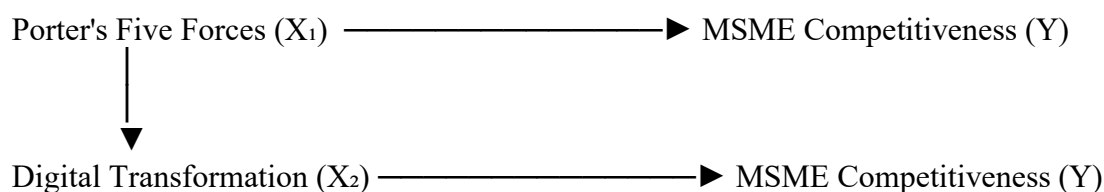
Research Methodology
3.1 Research Design
This study uses an explanatory quantitative approach, which aims to explain the causal relationship between Porter's Five Forces variables, digital transformation, and the competitiveness of MSMEs. This approach was chosen because it is able to empirically test the direct and indirect influence between variables with measurable data. The design of this study is cross-sectional, where data is collected over a certain period of time to analyze the competitive conditions of MSMEs in the digital era (Creswell & Creswell, 2018).

3.2 Population and Research Sample
The population of this study is all Micro, Small, and Medium Enterprises (MSMEs) operating in the trade, services, and manufacturing sectors in Indonesia that have applied digital technology in their business processes (e.g. e-commerce, social media, or digital financial applications). The sampling technique uses purposive sampling, with the following criteria:
1. MSMEs have been operating for at least 3 years.
2. Have adopted at least one form of digital technology (e.g. marketplace, digital payments, or customer management system).
3. Professionally managed by owners/managers who understand business strategy.

The sample size was determined by the formula of Hair et al. (2021), which is at least 5–10 times the number of indicators in the research model. With a total of 30 indicators used, the ideal sample size ranges from 150–300 respondents.

3.3 Data Types and Sources
The data used is primary data, obtained through a structured questionnaire that is distributed online to MSME owners and managers in several regions of Indonesia (Java, Sumatra, and Kalimantan). Secondary data was obtained from official publications such as BPS, the Ministry of Cooperatives and SMEs, as well as OECD journals and reports on the digital transformation of MSMEs.

3.4 Research Variables and Operational Definitions
This study uses three main constructs that will be displayed in the form of a table, as follows:

Table 1. Research Variables

No.	Variable	Description	Indicators
1.	Porter's Strengths	Measuring the strength of industrial competition that affects the strategic position of MSMEs	a. Threat of new entrants (entry barriers, capital costs, competitor innovation) b. Supplier bargaining power (raw material dependency, price stability) c. Buyer bargaining power (price sensitivity, customer loyalty) d. Threat of product substitution (technological innovation, product differentiation) e. Intensity of competition (number of competitors, pricing strategy, service innovation). Porter (1980) and Sumba-Bustamante (2024)
2.	Digital Transformation	The level of adoption and utilization of digital technology in MSMEs	a. Use of digital platforms (e-commerce, social media, business applications)

No.	Variable	Description	Indicators
			b. Digitization of internal processes (automation, digital accounting, CRM) c. Digital innovation (technology-based product/service development) d. Digital human resource capabilities. Vial (2019) and Bresciani et al. (2022)
3.	The Competitiveness of MSMEs	Describe the ability of MSMEs to maintain and improve their position in the market	a. Increased market share b. Sales growth c. Operational efficiency d. Product/service innovation e. Customer loyalty Barney (1991) and Nguyen & Luu (2023)

3.5 Data Collection Techniques

Data was collected through an online questionnaire survey submitted via Google Form, accompanied by a research cover letter. Before distribution, a content validity test was carried out involving three academic experts and MSME practitioners to ensure the clarity and relevance of each indicator. Next, a pilot test was carried out on 30 respondents to assess the initial reliability of the instrument using *Cronbach's Alpha*.

3.6 Data Analysis Techniques

Data analysis was carried out using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the help of SmartPLS 4.0 software. This technique was chosen because it is suitable for models that are predictive and have latent variables with multiple indicators (Hair et al., 2021). The analysis steps include:

1. The validity and reliability test of the construct, including *the value of outer loading*, *composite reliability (CR),* and *average variance extracted (AVE).*
2. The discriminant validity test used *the Fornell–Larcker criterion* and *HTMT ratio*.
3. Test the structural model (inner model) to assess the relationship between variables through *path coefficients*, *t-statistics*, and *p-values*.
4. Test the effect of mediation/moderation, if digital transformation acts as a moderator of the relationship between Porter's Five Forces and the competitiveness of MSMEs.
5. Goodness of fit (GoF) test to ensure the compatibility of the theoretical model with empirical data.

Results

4.1 Analysis of Research Respondents

A total of 210 valid questionnaires were successfully collected from MSME actors in various economic sectors in Indonesia. The distribution of respondents is shown in the following table:

Table 1. Research Respondents

Characteristic	Category	Frequency	Percentage (%)
Gender	Man	114	54.3
	Woman	96	45.7
Respondent Age	< 25 years old	22	10.5
	25–35 years old	83	39.5
	36–45 years old	67	31.9
	> 45 years old	38	18.1
Business Sector	Trade	88	41.9
	Service	64	30.5
	Manufacturing	58	27.6

Characteristic	Category	Frequency	Percentage (%)
Length of Business Operation	< 3 years	35	16.7
	3–5 years	84	40.0
	> 5 years	91	43.3
Application of Digital Technology	Social media (promotion)	152	72.4
	E-commerce platform	123	58.6
	Digital accounting applications	89	42.4
	CRM/customer system	47	22.4

The majority of respondents are productive (25-45 years old) and have a business that has been operating for more than five years. Most MSMEs have adopted social media and e-commerce platforms, indicating a significant digital transformation in daily business activities.

4.2 Validity and Reliability Tests

The results of *the outer model* test showed that all indicators had *an outer loading* value above 0.70, *a Composite Reliability (CR)* above 0.80, and *an Average Variance Extracted (AVE)* above 0.50. Thus, all constructs are declared valid and reliable (Hair et al., 2021).

Table 2. Construct Reliability and Validity Test Results

Variable	Number of Indicators	CR	AVE	Status
Porter's Five Forces (X_1)	10	0.911	0.652	Reliable & Valid
Digital Transformation (X_2)	8	0.924	0.678	Reliable & Valid
Competitiveness of MSMEs (Y)	7	0.938	0.701	Reliable & Valid

4.3 Structural Model Test (Inner Model)

The *results of the path coefficient* and *bootstrapping* showed that all research hypotheses were accepted. A summary of the results is shown in the following table.

Table 3. Hypothesis Test Results

Hypothesis	Relationships between Variables	Path Coefficients	t-statistic	p-value	Information
H1	Porter's Five Forces → MSME Competitiveness	0.412	6.282	0.000	Accepted
H2	Digital Transformation → MSME Competitiveness	0.465	7.014	0.000	Accepted
H3	Porter's Five Forces × Digital Transformation → MSME Competitiveness	0.238	3.987	0.000	Accepted

The R^2 value for MSME Competitiveness = 0.684, shows that 68.4% of the variation in MSME competitiveness can be explained by the Porter's Five Forces and Digital Transformation variables. The value of $Q^2 = 0.562$, indicates that the model has good predictive ability.

Conclusion

1. The Influence of Porter's Five Forces on the Competitiveness of MSMEs

The results showed that *Porter's Five Forces* had a positive and significant effect on the competitiveness of MSMEs ($\beta = 0.412$; $p < 0.001$). This proves that the analysis of industrial structures remains relevant in the context of MSMEs, even in the digital era. Factors such as competition intensity, the threat of substitution products, and customer bargaining power are the most dominant aspects in influencing the competitive position of MSMEs. These findings support Porter's (1980) theory that understanding the dynamics of industrial power allows business actors to form strategies for differentiation and cost efficiency. In the Indonesian context, MSMEs that are able to read digital competition (for example, competitors in marketplaces and social media) show better adaptability to market changes (Sumba-Bustamante, 2024).

2. The Influence of Digital Transformation on the Competitiveness of MSMEs

Digital transformation has a significant effect on the competitiveness of MSMEs ($\beta = 0.465$; $p < 0.001$). These findings are in line with the research of Bresciani et al. (2022) and Li & Liu (2022), which affirm that digitalization improves operational efficiency, access to new customers, and product innovation.

In the context of the field, MSME actors who actively use e-commerce, social media, and digital payment platforms have proven to have increased sales and customer loyalty. Digital technology also helps MSMEs conduct faster and more accurate market analysis, accelerate strategic decision-making, and expand distribution networks nationally and even internationally.

3. The Role of Digital Transformation Moderation

The results of the analysis showed that digital transformation strengthened the relationship between Porter's Five Forces and the competitiveness of MSMEs ($\beta = 0.238$; $p < 0.001$). This means that the higher the level of digital adoption, the stronger the influence of competition strategies on competitiveness.

Digitalization makes MSMEs more resilient to industry pressures, for example, by using *market intelligence tools* to monitor competitors, or by building *online customer relationship systems* to maintain customer loyalty. These findings support the view *of Dynamic Capability Theory* (Teece, 2018), that adaptability to technological changes is the key to the sustainability of competitive advantage. MSMEs that combine Porter's strategic analysis with digital capabilities can create a unique position in a market that is difficult for competitors to replicate

DISCUSSION

This study aims to analyze the influence of Porter's Five Forces and Digital Transformation on the Competitiveness of MSMEs in Indonesia, as well as assess the role of digital transformation moderation in the relationship between the two. Based on the results of the analysis using Structural Equation Modeling (SEM-PLS) on 210 respondents of MSME actors in various sectors, several important conclusions were obtained as follows:

1. Porter's Five Forces have a positive and significant effect on the competitiveness of MSMEs. These results prove that the strength of the industry, including the threat of new competitors, the bargaining power of suppliers and buyers, the threat of substitution products, and the intensity of competition, are still key elements in determining the competitive position of MSMEs. Business actors who understand their industry structure can design adaptive strategies that are more appropriate to survive and grow in a competitive market.

2. Digital transformation has a significant influence on increasing the competitiveness of MSMEs. The adoption of digital technologies such as e-commerce platforms, digital payment systems, and app-based customer management has been proven to improve operational efficiency, expand market reach, and strengthen customer relationships. Digitalization is a source of new capabilities that increase innovation capabilities and respond quickly to changes in market demand.

3. Digital transformation moderates the relationship between Porter's Five Forces and the competitiveness of MSMEs in a positive way.
   This means that when digital adoption rates are high, the influence of Porter's strategy on competitive advantage is getting stronger. Digitalization helps MSMEs in taking advantage of market opportunities, minimizing competitor threats, and creating value-added differentiation of products or services.

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