



SUSTAINABLE COMPETITIVE ADVANTAGE MODEL OF UMKM: THE EXISTENCE OF TECHNOLOGICAL INNOVATION AND MARKET ORIENTATION AS A PREDICTOR

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Abstrak

Tujuan utama penelitian yakni menganalisis pengaruh technological innovation dan market orientation terhadap sustainable competitive advantage. Sampel dalam penelitian ini berjumlah 180 responden yang ditentukan dengan pendekatan convenience sampling. Pengumpulan data menggunakan instrumen kuesioner yang kemudian dibagikan secara online. Analisis data menggunakan aplikasi SPSS dengan menampilkan hasil pengolahan data melalui uji instrumen penelitian dengan uji validitas dan reabilitas, analisis regresi berganda, koefisien determinasi dan uji hipotesis. Berdasarkan hasil analisis data menyatakan technological innovation dan market orientation berpengaruh positif dan signifikan terhadap sustainable competitive advantage. Implikasi penelitian menerangkan penting bagi UMKM untuk meningkatkan kemampuan mereka dalam mengadopsi teknologi baru dan mengembangkan inovasi teknologi yang dibutuhkan dalam bisnis mereka. UMKM dapat mencari bantuan dari berbagai sumber seperti pemerintah, organisasi bisnis, dan lembaga keuangan untuk memperoleh akses ke sumber daya dan informasi yang dibutuhkan dalam mengadopsi teknologi baru dan mengembangkan inovasi teknologi yang dapat membantu mereka memperoleh keunggulan kompetitif. Lebih lanjut, untuk mengatasi masalah market orientation pada UMKM perlu adanya upaya-upaya untuk meningkatkan pemahaman tentang kebutuhan pasar, memanfaatkan riset pasar, fokus pada kebutuhan dan keinginan pasar, memiliki strategi pemasaran yang jelas, dan meningkatkan sumber daya yang tersedia.

Kata Kunci: Sustainable Competitive Advantage, Technological Innovation, Market Orientation, UMKM

Abstract

The main objective of the research is to analyze the effect of technological innovation and market orientation on sustainable competitive advantage. The sample in this study amounted to 180 respondents, determined by the convenience sampling approach. Data collection uses a questionnaire instrument which is then distributed online. Data analysis uses the SPSS application by displaying data processing results through research instrument tests with validity and reliability tests, multiple regression analysis, coefficient of determination, and hypothesis testing. Based on the results of data analysis, it is stated that technological innovation and market orientation have a positive and significant effect on sustainable competitive advantage. The research implications explain that it is important for SMEs to improve their ability to adopt new technologies and develop technological innovations needed in their business. MSMEs can seek assistance from various sources, such as governments, business organizations, and financial institutions, to access the resources and information needed to adopt new technologies and develop technological innovations that can help them gain a competitive advantage. Furthermore, to overcome the problem of market orientation in MSMEs, efforts are needed to increase understanding of market needs, utilize market research, focus on market needs and wants, have a clear marketing strategy, and increase available resources.

Keywords: Sustainable Competitive Advantage, Technological Innovation, Market Orientation, MSMEs

INTRODUCTION

MSMEs have a very important role in the Indonesian economy, but many MSMEs still need help maintaining business continuity (Julyanthry, Putri, Lie, et al., 2021). One of the challenges MSMEs face is increasingly fierce competition with their competitors (Sudirman et al., 2022). To continue to exist and develop during increasingly fierce competition, MSMEs must have a sustainable competitive advantage (SCA) (Augustinah et al., 2022). However, not all MSMEs can develop and maintain the SCA in practice. One effort that can be taken to maintain business SCA is to increase mastery of technology (Sudirman et al., 2022).

Technology is company-specific information regarding production processes' characteristics, performance properties, and product designs (Zhou et al., 2020). According (Gathogo & Ragui, 2014), technology is part of the competitive advantage that companies have against rivals and is classified into two interrelated elements: product innovation and process innovation. Therefore, the urgency of understanding technological innovation is felt to be very crucial for all business actors, including SMEs (Ukpabio et al., 2017), to encourage and create product innovations that they will market. This opinion is supported (Donbesuur et al., 2020), who said the failure of small industries could be caused by a lack of knowledge related to technological innovation (Mustafa & Jacob, 2018).

Some obstacles MSME actors face include the need for more access to technology and information. MSMEs that need access to the technology and information needed to develop SCA will find it difficult to compete with their competitors (Sembiring et al., 2022). The

fundamental problem for SMEs today is the problem of mastering and using appropriate technology, which can drive higher SME productivity (Gharakhani & Mousakhani, 2012). This is done so that the quality of SME products can be better, as well as being able to anticipate demand with more quantity (Halim et al., 2021). The results of research examining technological innovation also show that technological innovation has a significant positive influence on sustainable competitive advantage (Sinaga et al., 2022); (Lie et al., 2023).

The next problem is that most MSMEs cannot adapt to market changes and have an unclear market orientation (Halim et al., 2020). One of the factors considered to affect business performance is market orientation, which is believed to increase a business's competitive advantage (Inrawan et al., 2022). Competitive advantage is setting a strategy that follows the characteristics of the market to be entered so that it is expected that with a market orientation, a company can know what is needed. (Lie et al., 2023), also added that in the marketing concept in Era 4.0, the production process is not only based on quantity and quality products but also on interconnection involving internal and external business parties through time optimization and cooperation by considering the impact of market orientation (Purba et al., 2022).

An ever-changing market can cause SMEs that cannot adapt to lose their competitive advantage (Butarbutar et al., 2022). Many MSMEs need to understand better the needs and wants of the market. As a result, they often need help to adapt their products and services to changing market needs (Sudirman et al., 2022). Furthermore, MSMEs often need a clear and structured marketing strategy. As a result, they often need help to promote their products and services to the right

market. Furthermore, the study results (Papa et al., 2018) conclude that every business organization that adopts an innovative market orientation quickly has a great opportunity to be ahead of similar competitors.

Based on the problem phenomena above, conducting in-depth research on SCA is important. Therefore, research on SCA in SMEs in terms of technological innovation and market orientation is an important contribution to helping SMEs develop sustainable competitive advantages and maintain them long-term. Thus, MSMEs can be more able to grow and develop amid increasingly fierce competition.

LITERATURE REVIEWS

Technological Innovation

Technological innovation is developing, implementing, and disseminating new technology to increase efficiency and effectiveness in business and industry (Basoeky et al., 2021). This concept includes all types of technological innovation, be it product, process, or system innovation (Taghizadeh et al., 2020). The disruptive innovation theory describes how new technological innovations can shake up established industries by offering products or services that are simpler, cheaper, and easier to use. These innovations were initially not taken seriously by established competitors but could gradually take a significant market share (Garcia-Morales et al., 2018). Technological innovation can provide many benefits for MSMEs in increasing their competitiveness (Donbesuur et al., 2020). Although technology can help MSMEs increase their competitiveness, larger, more established competitors can leverage the technology more effectively (Wang, 2019). The results of previous studies suggest that technological innovation has a significant effect on

sustainable competitive advantage (Garcia-Morales et al., 2017); (Rahman et al., 2016). Therefore, based on several previous research results, this study is carried out to develop hypotheses:

Technological innovation affects sustainable competitive advantage.

Market Orientation

Market orientation or market orientation in MSMEs is an approach that focuses on customer needs and desires as a basis for developing products and services that are relevant and competitive (Hilman & Kaliappen, 2014). This can help MSMEs understand the market, competition, and customer needs to develop more effective marketing and product strategies (Kumar et al., 2011). By understanding the market and competition, MSMEs can develop more competitive products and marketing strategies, thereby increasing their competitiveness (Bamgbade et al., 2017). On the other hand, by understanding the market and customers, MSMEs can develop products and services that are more relevant and attractive to customers, thereby increasing sales and profitability (Fernandes et al., 2020). The results of previous studies suggest that market orientation significantly affects sustainable competitive advantage (Guleş et al., 2015); (De Guimarães et al., 2018). Therefore, based on several previous research results, this study is carried out to develop hypotheses:

H2:Market orientation affects sustainable competitive advantage.

Sustainable Competitive Advantage

Sustainable Competitive Advantage (SCA) is a competitive advantage that a company can maintain in the long term by developing and implementing the right strategy (Tehseen & Ramayah, 2015). For MSMEs, creating SCA can be the key to

success in maintaining existence and survival amidst increasingly fierce competition (Saragih et al., 2020). The theory of sustainable competitive advantage (SCA) states that a company can create a sustainable competitive advantage by developing and implementing the right strategy in the long term (De Guimarães et al., 2018). This competitive advantage can provide significant added value for customers and is difficult for competitors to imitate (Sudrartono et al., 2022), so the company can maintain a strong market position and survive amidst increasingly fierce competition (Sinaga et al., 2022). Companies can develop close relationships with customers and deeply understand the market to develop the right strategy to win the competition (Muniarty et al., 2021). In creating SCA, companies need to pay attention to influential internal and external factors such as technological innovation (Hasan et al., 2021), market competition, government regulations, and changes in the business environment (Sundulusi et al., 2022). Companies also need to pay attention to the needs and desires of customers to create significant added value and win the competition in the market (Julyanthry, Putri, & Sudirman, 2021).

METHODS

A quantitative research design with an associative approach is used in this study. The research population used in this study is MSME business actors in Indonesia. Due to the unknown population, the sample was taken using a convenience sampling technique. According to (Hair, 2014), if the total population is unknown, ideally, the size of the representative respondents depends on the number of all indicators in the variable multiplied by 5-10. This study has eight teen indicators, so the number of respondents for this study is $18 \times 10 = 180$ samples. This number is

considered representative to be observed as representative of the population because it has met the minimum sample threshold. This study uses a research instrument test consisting of validity and reliability tests. The quantitative analysis consists of a normality test, regression test, hypothesis test, correlation test, and coefficient of determination.

RESULTS AND DISCUSSION

Table 1. General Profile of Respondents

Categories	Details	amount	Percentage (%)
Gender	Men	108	60
	woman	72	40
Age (years)	20-29	45	25
	30-39	25	13.89
	40-49	83	46.11
	50-59	27	15
Level of education	High School	122	67.78
	Diploma	48	26.67
	Bachelors	10	5.55
Years of service	< 1	45	25
	1-5	65	36.11
	6-10	40	22.22
	> 10	30	16.67
<i>Type of business</i>	Culinary	73	40.56
	Fashion	27	15
	Automotive	11	6.11
	Agribusiness	9	5
	Internet		
	Technology Business	26	14.44
	Beauty And Beauty Products Business	14	7.78
	Event Organizer	10	5.56
	Other Types of Business	10	5.56

Validity and Reliability Test

Table 2. Validity Test Results

Variables	Corrected items - Total correlation	N of Items	Test results
Technological Innovation	0.610	18	Valid
Market Orientation	0.597	9	Valid
Sustainable Competitive Advantage	0.624	18	Valid

Based on the validity test of table 1 above, it is concluded that all indicators in the study have a value above 0.30, and the measurement items used in this research are valid. Next, a reliability experiment is carried out to measure the measurement items on the questionnaire items that describe the indicators of the variables.

Table 3. Reliability Test Results

Variables	Cronbach's Alpha	N of Items	Test results
Technological Innovation	0.896	18	reliable
Market Orientation	0.825	9	reliable
Sustainable Competitive Advantage	0.905	18	reliable

The results of the experiment's reliability shown in table 2 above prove that all indicators have a Cronbach alpha value for each instrument > 0.60 , so it can be concluded that all the instruments used are reliable.

Multiple Regression Test

Table 4. Multiple Regression Test Results

Model	Unstandardized Coefficients		t-count	Sig.
	B	std. Error		
(Constant)	4,380	1,916	2,810	.004
1 Technological Innovation	,186	0.057	4.106	.000
Market Orientation	,114	0.070	3,670	.000

The equation model is obtained from the multiple linear regression above =

$4.380 + 0.186X_1 + 0.114X_2$, meaning that technological innovation and market orientation positively affect sustainable competitive advantage. Based on these equations, it can be explained as follows:

1. The constant value of 4,380 can be interpreted if the variables of technological innovation and market orientation are considered zero, then the value of the sustainable competitive advantage will be in the range of values of 4,380.
2. The value of the beta coefficient on the technological innovation variable is 0.186, which means that every change in the technological innovation variable by one unit will result in a change in the sustainable competitive advantage of 0.186 units with the assumption that the other variables are at constant values.
3. The beta coefficient value on the market orientation variable is 0.114, which means that every change in the market orientation variable by one unit will result in a change in the sustainable competitive advantage of 0.114 units with the assumption that the other variables are at constant values.

Simultaneous and Partial Hypothesis Testing

To examine the variable binding simultaneously, experiment F is used. Simultaneous hypothesis testing analyzes whether technological innovation and market orientation variables can influence sustainable competitive advantage simultaneously.

Table 5. Simultaneous Test Results

Model	Sum of Squares	df	F	Sig.
1 Regression	130,210	2	17.108	.000b
residual	220,174	177		
Total	350,384	179		

Based on the results of the simultaneous test analysis in table 5, the F-count value is $17.108 >$ from F-table with (0.05; 2 vs. 178) of 3.05 or with a significant $0.000 \leq$

0.05 can be competent technological innovation and market orientation sustainable affects competitive advantage simultaneously. Subsequently, a partial test was conducted to partially analyze the effect of technological innovation and market orientation on sustainable competitive advantage. Based on the results of data analysis in table 4, the results of the t-test in this study are as follows:

1. Technological innovation has a significant level of $0.000 \leq 0.05$, meaning that technological innovation significantly affects sustainable competitive advantage.
2. Market orientation obtained a significant level of $0.000 \leq 0.05$, meaning that market orientation significantly affects sustainable competitive advantage.

Coefficient of Determination Test

The coefficient of determination measures how far a model can explain the variation of the dependent variable. The results of the determination test in this study can be explained in Table 6 below:

Table 6. Coefficient of Determination Test Results

Model	R	R Square	Adjusted R Square	std. An error in the Estimate
1	.645a	.394	.336	1,438

Based on the results of the data analysis in table 6 above, the coefficient of determination value is 0.326, which means that the level of purchase decision of 32.6% can be explained by consumer perceptions and consumer confidence, while other factors can explain the remaining 67.4 %, not discussed in this study.

Discussion

Based on partial hypothesis testing (H1) results, technological innovation positively and significantly affects sustainable competitive advantage. The results of this study prove that every business needs technology-oriented innovation to improve its performance. In fact, until now, technology has become one of the biggest factors driving change. For this reason, innovation is needed by all companies, both large companies and those that are starting up and even small-scale businesses (Xu et al., 2019). Using new technology can help MSMEs improve their operational efficiency and effectiveness. This can help MSMEs reduce production costs, improve product or service quality, and increase the speed of response to market demand. By using the right technology, SMEs can gain cost advantages and differentiation, which can help them compete in an increasingly tight market (Rahman et al., 2016). MSMEs must ensure that the new technologies they adopt and the technological innovations they develop follow their business needs and goals. In addition, MSMEs also need to consider the availability of resources and costs required to adopt new technologies and develop technological innovations (Chege & Wang, 2020).

Based on partial hypothesis testing (H2) results, market orientation positively and significantly affects sustainable competitive advantage. In carrying out market orientation, MSMEs must continuously conduct market research to obtain information about trends and changes in consumer behavior and needs (Meylananda et al., 2021). Thus, MSMEs can adjust their marketing strategies and create products or services that are better and better suited to customer needs (Huhtala et al., 2014). However, keep in mind that market orientation refers not only to understanding the market and

customer needs but also to the ability of MSMEs to respond quickly and flexibly to market changes. Therefore, MSMEs need an effective and flexible management system to implement their market orientation strategy. MSMEs can determine their strategic position in the market (Lindgreen et al., 2016). By knowing the competitive advantages of competitors, SMEs can find ways to differentiate themselves from their competitors and create a sustainable competitive advantage.

CONCLUSION

The study results concluded that one of the phenomenal problems of technological innovation SMEs face is the need for more resources to adopt new technologies. Many MSMEs still rely on traditional business methods and need more resources to adopt new technologies that can help improve their operational efficiency and effectiveness. In addition, many MSMEs still need to gain the ability to manage technological innovations that can help them gain a competitive advantage. They need more access to the resources and information needed to develop the technological innovations required for their business. In addition, limited funds are also factors that make it difficult for MSMEs to develop technological innovations. By developing technological innovations, MSMEs can create unique products or services that meet specific market needs. Technological innovation can also help MSMEs obtain patents or trademarks for long-term competitive advantages. By gaining a differentiation advantage, MSMEs can attract loyal customers and expand their market share.

It can be concluded that Market Orientation significantly influences the Sustainable Competitive Advantage of MSMEs. By understanding the market and

customer needs, MSMEs can create products or services that meet specific market needs and gain a sustainable competitive advantage. To overcome the problem of market orientation in MSMEs, efforts are needed to increase understanding of market needs, utilize market research, focus on market needs and wants, have a clear marketing strategy, and increase available resources. In addition, training and guidance for developing market orientation can also help MSMEs in overcoming this problem.

The limitation of this study lies in the relatively small sample size. For further research, the authors recommend increasing the sample size by choosing a broader research object so that generalization and the number of predictor variables, such as social capital, entrepreneurial orientation, entrepreneurship insight, innovation culture, and human capital, can be made. In addition, other mediating variables, such as sustainable innovation and knowledge management, can also be used in future research to explain better the relationship between technological innovation and market orientation to the sustainable competitive advantage of MSMEs.

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