Jurnal Pendidikan Administrasi Perkantoran (JPAP)
Journal homepage: https://journal.unesa.ac.id/index.php/jpap

Jurnal Pendidikan Administrasi Perkantoran (JPAP)
Vol. 12 No. 1 2024
E-ISSN: 23389621

INNOVATION DEVELOPMENT AND TECHNOLOGY ADVANCEMENTS IMPACT MSME SUCCESS WITH DIGITAL MARKETING LITERACY AS A INTERVENING

Silvia Eka Febrianti[a], Ludi Wishnu Wardana[b], Nasikh[c]

[a1]Master of Management Student Universitas Negeri Malang, Malang, Indonesia
[b] Lecturer Universitas Negeri Malang, Malang, Indonesia
[c] Lecturer Universitas Negeri Malang, Malang, Indonesia

ARTICLE INFO

Keywords:
Digital Literacy; Innovation Development; Technology Advancements; MSME Success

Article History:
Received 7 July 2024
Accepted 15 August 2024
Available online 1 September 2024

https://doi.org/10.26740/jpap.v12n1.p217-234

ABSTRACT

Phenomenon/Issue: Companies worldwide invest heavily in innovation and technology development strategies to improve their competitiveness. However, Micro, Small, and Medium Enterprises (MSMEs) in Malang Regency still face challenges in adopting digital technology and developing innovations to achieve business success.
Purpose: This study aims to analyze the influence of innovation development strategies and technological advances on the success of MSME businesses in Malang Regency, with digital marketing literacy as a mediating variable.
Novelty: This study provides new insights into the mediation role of digital marketing literacy in the relationship between innovation development strategies, technological advancements, and MSME business success. These findings can make theoretical and practical contributions that are useful for developing MSMEs in the digital era.
Research Methods: This study uses a quantitative approach with a survey method. Data was collected through a questionnaire distributed to MSME owners or managers in Malang Regency. Data analysis uses structural equation modeling (SEM) to test the research hypothesis.
Results: The study's results show that the strategy of developing innovation and technological advances has a positive and significant effect on the success of MSME businesses. In addition, digital marketing literacy has been proven to mediate the relationship between the two variables.
Research Contributions: This research makes a theoretical contribution by expanding the understanding of the mediation role of digital marketing literacy in increasing the success of MSME businesses through innovation development strategies and technological advancements.

[1] **Correspondence:**
Silvia Eka Febrianti, Master of Management Student Universitas Negeri Malang, Malang, Indonesia. Email: silvia.eka.2004158@students.um.ac.id

E-ISSN: 23389621

INTRODUCTION

In today's era of globalization and digitalization, innovation and technological advancement are the keys to business success in various sectors. Around the world, companies of all sizes invest heavily in innovation and technology development strategies to improve their competitiveness (Kanedi et al., 2022). The use of advanced technologies such as artificial intelligence AI, the Internet of Things (IoT), and big data analytics is becoming increasingly common. The application of this technology allows companies to create better products and services, improve operational efficiency, and expand their market reach globally (Amelia et al., 2021). On the other hand, digital marketing has become the backbone of modern business strategies, allowing businesses to reach a wider audience at a lower cost than traditional marketing. Micro, Small, and Medium Enterprises in Indonesia, especially in the Malang Regency area, play an essential role in the local economy, significantly contributing to job creation, community income, and regional economic growth (Ichsan & Yusuf, 2021). The types of MSME businesses in this area are diverse, including the agriculture, trade, creative industry, culinary, and tourism sectors. Malang Regency also has excellent potential to become a center for developing MSMEs (Micro, Small, and Medium Enterprises) due to various key factors that create a conducive business environment (Bakaritantri et al., 2022). First, abundant natural resources, especially in the agricultural sector, provide high-quality raw materials for various MSME products. Fertile farmland and a supportive climate allow various crops and livestock to grow well, producing superior products such as vegetables, fruits, coffee, and livestock products. Second, as a popular tourist destination in East Java, Malang Regency attracts many local and foreign tourists, which creates a high demand for local products such as handicrafts, typical food and beverages, and tourism services. Adequate infrastructure, including roads, transportation, and public facilities, supports the distribution of goods and services and facilitates accessibility for tourists and business people (Dan & Entrepreneurship, 2021; Setyawati et al., 2023).

In addition, there needs to be more digital literacy. According to data from the Central Statistics Agency (BPS), the level of digital literacy in Malang Regency still needs to improve, with only about 40% of the population having basic knowledge and skills in using information technology and the internet. It indicates that many MSME actors may need help understanding the potential and benefits they can get through digital marketing. The impact of this lack of technology adoption and innovation is felt in an increasingly competitive and dynamic market. MSMEs that still rely on conventional methods tend to lose competition with competitors who are more adaptive and responsive to consumer trends and behavior changes. This can hinder their business growth and ultimately impact their economic well-being(Hock-Doepgen et al., 2021; Shams et al., 2020). Therefore, further efforts are needed to improve digital literacy and knowledge about digital marketing among MSMEs in Malang Regency. Local governments, educational institutions, and other relevant parties can play a role in providing the training and assistance needed to help MSMEs understand and adopt technology and innovation effectively. Thus, MSMEs can become more competitive and sustainable in this increasingly digital market. To overcome these problems, this research provides several solutions, including developing an innovation development strategy. Innovation development strategy is the key to the success of MSME businesses for several vital reasons. First, innovation allows MSMEs to meet the market's and customers' growing needs. By developing new products or services that are more suitable for their needs or superior to existing ones, MSMEs can attract the attention of more customers and expand their market share(Andersén, 2021; Azizi et al., 2021; Falahat et al., 2020). Second, innovation helps MSMEs to remain competitive in an ever-changing business environment. Third, innovation can improve operational efficiency and reduce costs. Through the application of new technology or more efficient business processes, MSMEs can save time and resources and increase productivity. This can help MSMEs to become more financially resilient and better able to face economic challenges that may arise(Caloghirou et al., 2021; Müller, 2019; Tu et al., 2021). Overall, the innovation development strategy is essential for the success of MSME businesses because it helps them stay relevant in a dynamic market, improve operational efficiency, open up new growth opportunities, and build a strong brand image.

A successful innovation development strategy to support the success of MSME businesses involves holistic steps. First, it is essential to understand the market and customers thoroughly through comprehensive market research, including interviews, surveys, and data analysis(Hock-Doepgen et al., 2021; Yin et al., 2020). From here, MSMEs can identify innovation opportunities by focusing on problems or shortcomings that can be solved with new products or services(Ukkas, 2018). Adopting relevant technologies, such as artificial intelligence or data analytics, can also improve operational efficiency and enable the development of innovative new products or services. It is essential to test and iterate on a new product or service before it is widely launched, taking advantage of customer feedback. Creative and innovative marketing and proper performance measurement are also vital in introducing innovations to the market and measuring their impact. Finally, consistency in innovating and readiness to adapt to changes in markets and industries is important to ensure the long-term success of MSME businesses. By implementing this strategy, MSMEs can increase their competitiveness and achieve sustainable growth.

In addition to the innovation development strategy, utilizing technological advances is also an essential factor in supporting the success of an MSME because technological advances have had a positive impact on the growth and sustainability of MSME businesses (Bıçakcıoğlu et al., 2020; Klein & Spychalska-Wojtkiewicz, 2022; Müller, 2019). Through growing e-commerce platforms such as Tokopedia, Shopee, and Bukalapak, MSMEs can expand their markets online without being limited by geographical restrictions. In addition, the adoption of digital payments such as GoPay, OVO, or Dana makes it easier for MSMEs to accept payments from their customers electronically, reduce the risk of cash transactions, and improve administrative efficiency (Bakaritantri et al., 2022; Sundari, 2019). With digital marketing through social media, websites, and other platforms, MSMEs can promote their products at a lower cost and reach a wider audience(McGovern, 2021). Stock management software allows MSMEs to manage their inventory more efficiently, while data analysis helps them understand customer behavior for better decision-making. Integrated with logistics solutions, the delivery process becomes more efficient, increasing customer satisfaction. Meanwhile, online training platforms allow MSMEs to improve their skills and knowledge. By taking advantage of all this, MSMEs in Malang Regency can increase their competitiveness, develop their businesses, and achieve more tremendous success in this digital era.

Research gap: First, there is no specific data on how MSMEs have adopted advanced technologies such as artificial intelligence, the Internet of Things, or big data analytics, as well as how innovations are carried out in their products, services, or business processes. Second, the need for digital literacy among MSME actors is mentioned as the main obstacle. However, its concrete impact on the use of technology in MSMEs in Malang Regency still needs to be further evaluated. Third, research has yet to precisely evaluate the direct impact of innovation development strategies and technology utilization on MSME business performance in this region. Finally, the supporting and inhibiting factors in the innovation and technology development strategy in Malang Regency MSMEs have yet to be explained in depth, including environmental, social, institutional, or economic factors that may affect the adoption of technology and innovation. Therefore, further research can fill this knowledge gap to provide a deeper understanding of how innovation and technology can be encouraged and utilized effectively to improve the performance of MSMEs in Malang Regency.

This research contributes significantly by introducing innovation and a deeper understanding of the application of technology and innovation strategies in MSMEs in the Malang Regency, Indonesia. The study focuses on filling knowledge gaps in the literature, particularly regarding the adoption of advanced technologies such as artificial intelligence, the Internet of Things, and big data analytics by MSMEs in the region. The study aims to provide insights into the potential and challenges of applying advanced technologies in small and medium-sized businesses by analyzing the extent to which these technologies are adopted and integrated into MSME operations. Additionally, this research highlights the impact of a lack of digital literacy on technology use in MSMEs, offering a better understanding of how education and training can enhance technology adoption and innovation among MSME actors.

E-ISSN: 23389621

The urgency of this research is underscored by the strategic role of MSMEs in Malang Regency's economy and the sector's challenges. By addressing the knowledge gap regarding adopting advanced technologies and innovation strategies, the study will offer a clearer view of how MSMEs can leverage technology to enhance competitiveness and business sustainability. Highlighting the impact of digital literacy deficiencies, the research will lay the groundwork for developing appropriate training and education programs to support MSMEs in effectively utilizing technology. Through a comprehensive evaluation of the strategic impact of innovation development strategies, the study will provide insights into how innovation can drive the growth and success of MSMEs in Malang Regency. The findings will assist stakeholders in designing more effective policies and programs to support inclusive and sustainable economic growth in the region.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Innovation development

This study refers to the approach or plan used by MSMEs (Micro, Small, and Medium Enterprises) in Malang Regency in producing and implementing innovations in their products, services, business processes, or business models (Bismala et al., 2019; Oktavianto, 2021). This innovation development strategy includes steps such as market research, product development, collaboration with other parties, and the application of new technologies to increase the business's competitiveness and relevance.

Technological Advancement

This study refers to technological developments that affect MSMEs in the Malang Regency (Kanedi et al., 2022). These could include the adoption of digital technologies such as e-commerce platforms, business applications, management systems, or more efficient production technologies. These technological advances can significantly impact the operations and business performance of MSMEs, both directly and through increased efficiency, productivity, and market access.

Digital Marketing Literacy his study refers to MSMEs' understanding, skills, and abilities in using and utilizing digital marketing strategies(Low et al., 2020; Saura, 2021; Vieira et al., 2019). Digital marketing literacy includes an understanding of various digital platforms (such as social media, search engines, and websites), digital data analysis, search engine optimization (SEO), content marketing, and the use of other digital tools and techniques to increase the visibility and attractiveness of an online business (Apidana, 2021). As a moderation variable, digital marketing literacy can affect the relationship between innovation development strategies, technological advancements, and MSME business success by regulating or moderating the effects of technological strategies and advances on business results.

Business Success

This study refers to the achievement of MSMEs in Malang Regency in terms of sales growth, profitability, market expansion, and business sustainability. The success of MSME businesses can also be measured through indicators such as the number of new customers, customer retention, increased operational efficiency, and product or service innovation(Elali, 2021; Kozielski, 2019; Liu et al., 2021; Penttinen & Frösén, 2022)

METHOD

This study uses a quantitative approach. The variables to be studied are Innovation Development Strategy (X1), Technological Advancement (X2), Digital Marketing Literacy (Z), and MSME Business Success (Y). The following is the research conceptual framework:

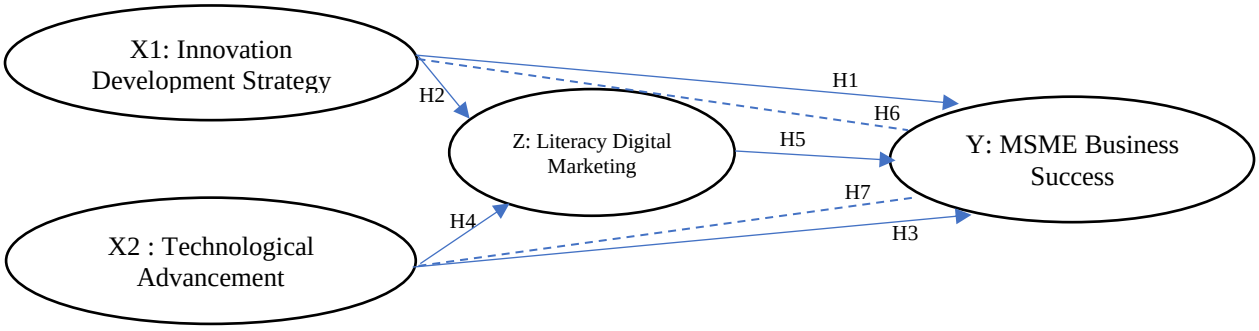


Figure 1 Research Framework

In addition, each object that the researcher studies is a population, including people, objects, areas, and events. Populations can also have a variety of sizes, and traits or differences can be observed. The population of the subject of this study is comprised of MSME actors in Malang Regency, as many as 500 MSMEs. This study uses purposive sampling to examine the model developed. The sample criteria used in this study are MSMEs that have been running for more than 2 years and MSMEs that are still using the conventional system. Based on these criteria and calculated from the sample size calculator with a margin of error of 5% and a population proportion of 50%, it is known that the number of samples in this study is as many as 218 samples.

The method carried out in analyzing the data is to group the data based on variables and types of respondents, tabulate the data based on the variables of all respondents that have been determined, present the data of each variable studied, and perform calculations to test the hypothesis of a research. The data analysis technique in this study uses SmartPLS 3.3.3 statistical software, Structural Equation Model (SEM) with a Variance Based SEM approach, better known as Partial Least Square (PLS). The PLS model was first developed by Will, who mentioned that PLS is a powerful analysis method often referred to as "soft modeling" because it eliminates the assumptions of Ordinary Least Square (OLS) regression, such as data must be normally distributed in a multivariate manner. There is no multicoloniality problem between exogenous variables. PLS can not only be used as a theoretical confirmation (hypothesis test) but can also be used to build relationships that do not have a theoretical basis or for proportional testing. PLS can also be used to confirm a theory, but it can also be used to explain the existence or absence of a relationship between latent variables.

RESULTS AND DISCUSSIONS

Results

The SEM-PLS analysis steps refer to the procedure developed by Chin (1999) and Hair et al. (2013, 2020), which include (1) evaluation of the measurement model (outer model), (2) evaluation of the structural model (inner model), and (3) goodness of Fit, and (4) hypothesis testing.

Evaluation of Measurement Model (Outer Model)

Table 1
MEASUREMENT INNOVATION DEVELOPMENT STRATEGY MODEL (X1)

Code	Variables and Indicators	Loading Factor	Cronbach's Alpha	CR	AVE
PI1	1. My MSMEs routinely develop new products or services that are unique.	0.821	0.961	0.967	0.747
PI2	2. My MSMEs have succeeded in creating products/services that are different from competitors	0.710			
PI3	3. My MSMEs have an effective method for identifying innovation opportunities	0.811			
PI4	4. My MSMEs have a structured process to develop innovative ideas into real products/services	0.938			
PI5	5. My MSMEs use the latest technology in the production and operational process.	0.763			
PI6	6. My MSMEs are actively investing in new technologies to improve efficiency	0.937			
PI7	7. My MSMEs often collaborate with universities or research institutions for innovation development strategies.	0.884			
PI8	8. My MSMEs actively participate in innovation networks or communities	0.948			
PI9	9. My MSMEs have a clear strategy for managing and implementing innovation.	0.846			
PI10	10. Leadership and culture in MSMEs: I strongly support innovation.	0.948			

Source: Researchers, 2024

Based on Table 1, it is known that the variable Innovation Development Strategy (X1), after a convergence validity test using SmartPls 3.0 software, all indicator items have a loading factor in the range of 0.710-0.948 above 0.70 or > 0.70. Thus, referring to the opinions of Chin (1998), Chin (2010), and Hair et al. (2013), ten indicators on the variable Innovation Development Strategy (X1) meet convergent validity. Furthermore, based on Table 1, it is known that the variable Innovation Development Strategy (X1) has a value of Cronbach's alpha (a), 0.961> 0.70, and composite reliability (CR) of 0.967> 0.70 so that it meets the composite reliability test (Chin, 1998; Chin, 2010; Hair et al., 2013). Table 4.11 also shows that the variable Innovation Development Strategy (X1) has an average variance extracted (AVE) of 0.747> 0.5 so that it meets convergent validity (Chin, 1998; Chin, 2010; Hair et al., 2013). Based on Table 4.7 and the previous descriptions, it can be concluded that the variables of the Innovation Development Strategy (X1) meet convergent validity, discriminant validity, and composite reliability.

Table 2
MEASUREMENT RESULTS OF THE TECHNOLOGY PROGRESS MODEL (X2)

Code	Variables and Indicators	Loading Factor	Cronbach's Alpha	CR	AVE
KT1	My business routinely adopts the latest technology in its daily operations.	0.710	0.961	0.968	0.792
KT2	I am constantly updating the technology we use to improve efficiency.	0.941			
KT3	I have adequate hardware (computers, servers, etc.) to support business operations.	0.940			
KT4	The quality of internet connectivity that I have dramatically supports the smooth operation of business operations	0.937			
KT5	I use a management information system to monitor and manage the business's day-to-day operations.	0.809			
KT6	Digital platforms (email, instant messaging apps, etc.) are used effectively for internal and external communication.	0.894			
KT7	My Business team regularly attends technology training to improve its capabilities.	0.926			
KT8	My Business Team can operate the latest technology we use in business.	0.936			

Source: Researchers, 2024

Furthermore, based on Table 2, it is known that the Technological Progress variable (X2) has a Cronbach's alpha (a), 0.961> 0.70, and a composite reliability (CR) value of 0.968> 0.70 so that it meets the composite reliability test (Chin, 1998; Chin, 2010; Hair et al., 2013). Table 4.7 also shows that the Technological Progress variable (X2) has an average variance extracted (AVE) of 0.792>0.5 so that it meets the convergent validity (Chin, 1998; Chin, 2010; Hair et al., 2013). Based on Table 4.2 and the previous descriptions, it can be concluded that the Technological Progress variable (X2) meets convergent validity, discriminant validity, and composite reliability.

Table 3
MEASUREMENT RESULTS OF THE DIGITAL MARKETING LITERACY (Z) MODEL

Code	Variables and Indicators	Loading Factor	Cronbach's Alpha	CR	AVE
LDM1	I understand various digital platforms that can be used to market MSME products.	0.937	0.991	0.992	0.940
LDM2	I can use digital marketing tools such as SEO and SEM.	0.963			
LDM3	I can create engaging and relevant content to post on social media.	0.969			
LDM4	I have skills in planning and scheduling digital content posts effectively.	0.980			
LDM5	I am able to design an effective digital marketing strategy for MSMEs.	0.978			

LDM6	I know the target audience and how to segment the digital market.	0.968
LDM7	I understand the importance of keeping customer data safe in digital marketing.	0.981
LDM8	I have the skills to protect digital data from cyber threats	0.981

Source: Researchers, 2024

Furthermore, based on Table 3, it is known that the Digital Marketing Literacy (Z) variable has a value of Cronbach's alpha (a), 0.991> 0.70, and a composite reliability (CR) value of 0.992> 0.70 so that it meets the composite reliability test (Chin, 1998; Chin, 2010; Hair et al., 2013). Table 4.13 also shows that the Digital Marketing Literacy (Z) variable has an average variance extracted (AVE) of 0.940> 0.5 so that it meets convergent validity (Chin, 1998; Chin, 2010; Hair et al., 2013). Based on Table 4.13 and the previous descriptions, it can be concluded that the Digital Marketing Literacy (Z) variable meets convergent validity, discriminant validity, and composite reliability.

Table 4
RESULTS OF BUSINESS SUCCESS MODEL MEASUREMENT (Y)

Code	Variables and Indicators	Loading Factor	Cronbach's Alpha	CR	AVE
KB1	My business's net profit has increased in the last 12 months.	0.798	0.956	0.962	0.720
KB2	My business revenue shows steady growth monthly/yearly	0.833			
KB3	My business customers are more likely to return to make repeat purchases.	0.899			
KB4	My customers are generally satisfied with the products/services I offer.	0.891			
KB5	My business's market share has increased in the last 12 months.	0.724			
KB6	My products/services have reached a wider distribution area.	0.900			
KB7	The launch of innovations gets a positive response from customers.	0.800			
KB8	The frequency of launching innovations in my business is relatively high.	0.831			
KB9	My employees are generally satisfied with the working conditions in my business.	0.895			
KB10	I regularly provide training and development programs for my employees.	0.896			

Source: Researchers, 2024

Furthermore, based on Table 4, it is known that the Business Success (Y) variable has a Cronbach's alpha (a) value, 0.956> 0.70, and a composite reliability (CR) value of 0.962> 0.70 so that it meets the composite reliability test (Chin, 1998; Chin, 2010; Hair et al., 2013). Table 4.14 also shows that the Business Success variable (Y) has an average variance extracted (AVE) of 0.720> 0.5 so that it meets the convergent validity (Chin, 1998; Chin, 2010; Hair et al., 2013). Based on Table 4.14 and the previous descriptions, it can be concluded that the Business Success variable (Y) meets convergent validity, discriminant validity, and composite reliability.

In addition to using the criteria described, the discriminant validity test in this study also refers to the criteria developed by Fornell-Larscher (1988). Table 5 is the result of the discriminant validity test referring to the Fornell-Larscher criterion. Based on Table 5, it is known that the variables Innovation Development Strategy (X1), Technological Progress (X2), Digital Marketing Literacy (Z), and Business Success (Y), cross-loading value> 0.70, which means that these variables meet discriminant validity (Fornell, 1988; Chin, 2009; Hair, et al., 2013).

Table 5
FORNELL-LARSCHER DISCRIMINANT VALIDITY TEST RESULTS

	Business Success (Y)	Technological Advancement (X2)	Digital Marketing Literacy (Z)	Innovation development strategy (X1)
Business Success (Y)	0.849			
Technological Advancement (X2)	0.804	0.890		
Digital Marketing Literacy (Z)	0.808	0.799	0.970	
Innovation development strategy (X1)	0.790	0.633	0.762	0.864

Source: Researchers, 2024

Structural Model Evaluation (Inner Model)

Hair et al. (2013, 2020) recommended five stages of procedure in the test of the structural model (inner model), which include: (1) testing collinearity, 2) testing the path coefficient, 3) testing the level of R-Square or R2; (4) tested the effect of the size f2 and (5) tested the relevant predictions from Q2.

Based on Table 6, it is known that the values of the variance inflation factor (VIF), variables of innovation development strategy (X1), technological progress (X2), Digital Marketing Literacy (Z), and business success (Y) are lower than 5.00 so that collinearity does not occur (Hair et al., 2013). Thus, all indicators of the tested construct are valid.

Table 6
***VARIANCE INFLATION FACTOR* (VIF) VALUES**

	Business Success (Y)	Technological Advancement (X2)	Digital Marketing Literacy (Z)	Innovation development strategy (X1)
Business Success (Y)				
Technological Advancement (X2)	2.779		1.667	
Digital Marketing Literacy (Z)	3.968			
Innovation development strategy (X1)	2.390		1.667	

Source: Researchers, 2024

In this study, the data was processed using 500 bootstrapped samples. Table 7 shows the value of the path coefficient (fi) of the five positive relationships between the variables. The complete results of the line coefficient (fi) test can be seen in Table 7 below:

Table 7
Results of the Path Coefficient Test

Variable Relationship	Path Coefficient (p)
Technological Advancement (X2) -> Business Success (Y)	0.412
Technological Advancement (X2) -> Digital Marketing Literacy (Z)	0.529
Digital Marketing Literacy (Z) -> Business Success (Y)	0.181
Innovation development strategy (X1) -> Business Success (Y)	0.391
Innovation development strategy (X1) -> Digital Marketing Literacy (Z)	0.427

Source: Researchers, 2024

The complete results of the R2 test variables of Technological Progress (X2), Digital Marketing Literacy (Z), and Business Success (Y) can be seen in Table 8 below:

Table 8
R-Square (R2) Test Results

Variable	R Square
Business Success (Y)	0.786
Digital Marketing Literacy (Z)	0.748

Source: Researchers, 2024

Furthermore, Table 9 shows that the f2 value of the innovation development strategy variable (X1) to Digital Marketing Literacy (Z) is 0.433, which shows a large size effect. Similarly, the f2 value of the Technological Progress variable (X2) against Digital Marketing Literacy (Z) is 0.667, which shows a large size effect. The complete results of the measure effect test (f2) of each latent variable predictor on the structural model can be seen in Table 9 below:

Table 9 F2 Size Effect Test Results

	Business Success (Y)	Technological Advancement (X2)	Digital Marketing Literacy (Z)	Innovation development strategy (X1)
Business Success (Y)				
Technological Advancement (X2)	0.285		0.667	
Digital Marketing Literacy (Z)	0.039			
Innovation development strategy (X1)	0.300		0.433	

Source: Researchers, 2024

A Q value of 2> 0 (zero) indicates the model has a predictive relevance value. A Q2< value of 0 indicates that the model lacks predictive relevance. The formula used in this study is as follows: Q2 = 1- (1- R2).

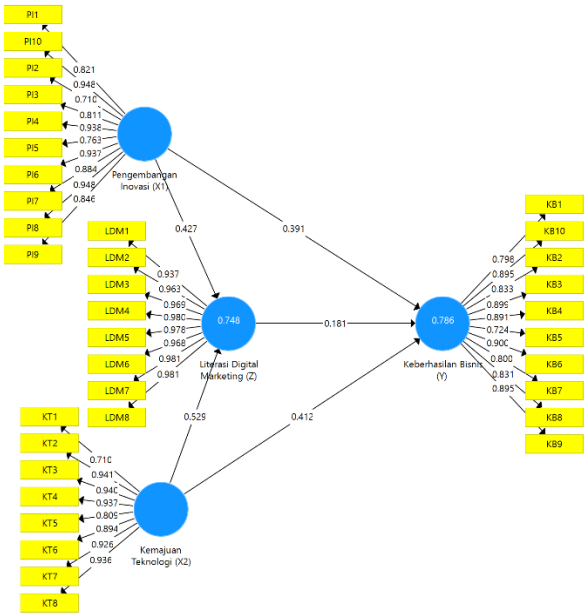
Q2 = 1-(1-R12) (1-R22)
Q2 = 1-(1-0.748) (1-0.786)
Q2 = 0.946> 0

Based on the test results, it is known that the Q2 values of the variables Innovation Development Strategy (X1), Technological Progress (X2), Digital Marketing Literacy (Z), and Business Success (Y) are more significant than 0, thus showing that the model has a predictive relevance value.

Hypothesis Testing

Based on the results of the outer model and inner model tests, they have been qualified for hypothesis testing.

Figure 2 Path Diagram of the Research Theoretical Model



Furthermore, hypothesis testing is carried out using statistical analysis of t or t-test (t calculation must be > 1.645), and the value of p (probability) must be less (<) than 0.050. If the results of data processing meet the required values, then the research hypothesis that has been submitted can be accepted. The testing of the research hypothesis will be discussed step by step according to the hypothesis proposed. This study proposes seven hypotheses, the discussion of which is described in the following section

Table 10
Hypothesis Testing Results

Direct Influence	T Statistics	t-value Sobel Test	P Values
Technological Advancement (X2) -> Business Success (Y)	8.681		0.000
Technological Advancement (X2) -> Digital Marketing Literacy (Z)	8.085		0.000
Digital Marketing Literacy (Z) -> Business Success (Y)	3.003		0.003
Innovation development strategy (X1) -> Business Success (Y)	7.980		0.000
Innovation development strategy (X1) -> Digital Marketing Literacy (Z)	6.458		0.000
Indirect Influence			
Technological Advancement (X2) -> Digital Marketing Literacy (Z) -> Business Success (Y)		2.741	0.006
Innovation Development Strategy (X1) -> Digital Marketing Literacy (Z) -> Business Success (Y)		2.718	0.007

Source: Researchers, 2024

H1 The Influence of Innovation Development Strategy (X1) on Business Success (Y)

The first hypothesis of this study is that the innovation development strategy (X1) has a positive and significant effect on Business Success (Y). The results of data processing obtained a t-value on the influence of innovation development strategy (X1) on Business Success (Y) in Table 4.21 of 7.980> 1.645 and a p-value of 0.000 < 0.050. Thus, the first hypothesis of this study is accepted. This means that statistically, the innovation development strategy (X1) has a positive and significant effect on the tested Business Success (Y).

H2 The Influence of Innovation Development Strategy (X1) on Digital Marketing Literacy (Z)

The second hypothesis of this study is that the innovation development strategy (X1) has a positive and significant effect on Digital Marketing Literacy (Z). The results of data processing obtained a t-value

on the influence of the innovation development strategy (X1) on Digital Marketing Literacy (Z) in Table 4.21 of 6,458>1,645 and a p-value of 0.000<0.050. Thus, the hypothesis of these two studies is accepted. This means that statistically, the innovation development strategy (X1) has a positive and significant effect on the tested Digital Marketing Literacy (Z).

H3 The Influence of Technological Advancement (X2) on Business Success (Y)
The third hypothesis of this study is that technological advancement (X2) has a positive and significant effect on Business Success (Y). The results of data processing obtained a t-value on the influence of technological progress (X2) on Business Success (Y) in Table 4.21 of 8.681> 1.645 and a p-value of 0.000< 0.050. Thus, the three hypotheses of this study are accepted. This means that statistically, technological progress (X2) positively and significantly affects the tested Business Success (Y).

H4 The Influence of Technological Advancement (X2) on Digital Marketing Literacy (Z)
The fourth hypothesis of this study is that technological Advancement (X2) has a positive and significant effect on Digital Marketing Literacy (Z). The results of data processing obtained a t-value on the influence of technological progress (X2) on Digital Marketing Literacy (Z) in Table 4.21 of 8.085> 1.645 and an ap-value of 0.000< 0.050. Thus, the four hypotheses of this study are accepted. This means that statistically, technological advances (X2) have a positive and significant effect on tested Digital Marketing (Z) Literacy.

H5 The Influence of Digital Marketing Literacy (Z) on Business Success (Y)
The seventh hypothesis of this study is that digital Marketing Literacy (Z) has a positive and significant effect on Business Success (Y). The results of data processing obtained a t-value on the influence of Digital Marketing Literacy (Z) on Business Success (Y) in Table 4.21 of 3.003>1.645 and a p-value of 0.003< 0.050. Thus, the five hypotheses of this study are accepted. This means that statistically, Digital Marketing Literacy (Z) has a positive and significant effect on tested Business Success (Y).

H6 Indirect Influence of Innovation Development Strategy (X1) Through Digital Marketing Literacy (Z) on Business Success (Y)
The eighth hypothesis of this study states that the innovation development strategy (X1) has a positive and significant indirect effect through Digital Marketing Literacy (Z) on Business Success (Y). The results of the indirect influence of the innovation development strategy (X1) on Business Success (Y) through Digital Marketing Literacy (Z) show that the t-value of the Sobel Test in Table 4.21 is 2.718> 1.645, and the probability of the Sobel Test is 0.007 which is smaller than 0.050 (p< 0.050). Thus, the sixth hypothesis of this research is accepted. This means that statistically, the innovation development strategy (X1) has a positive and significant indirect effect through the Digital Marketing Literacy (Z) test on business success (Y).

H7 Indirect Influence of Technological Progress (X2) Through Digital Marketing Literacy (Z) on Business Success (Y)
The ninth hypothesis of this study states that technological advancement (X2) has a positive and significant indirect effect through Digital Marketing Literacy (Z) on Business Success (Y). The results of the indirect influence of Technological Progress (X2) on Business Success (Y) through Digital Marketing Literacy (Z) show that the t-value of the Sobel Test in Table 4.21 is 2.741> 1.645, and the probability of the Sobel Test is 0.006 which is smaller than 0.050 (p< 0.050). Thus, the seventh hypothesis of this study is accepted. This means that statistically, technological progress (X2) has a positive and significant indirect effect through Digital Marketing Literacy (Z) on Business Success (Y) tested

Discussion
H1 The Influence of Innovation Development Strategy (X1) on Business Success (Y)
This study found that innovation development strategies affect the business success of MSME actors in Malang Regency. The better the innovation development strategy, the higher the business success of MSME actors in Malang Regency. Similarly, vice versa, the worse the innovation development

strategy, the worse the business success of MSME actors in Malang Regency will be. The results of this study also show that the innovation development strategy is in the good category, and the business success of MSME actors in Malang Regency is also in the good category. The innovation development strategy carried out by MSMEs must be profitable for consumers. The level of profit or usefulness of an innovation can be measured based on its economic value, or from the factors of social status, pleasure, satisfaction, or because it has a very important component. The more profitable it is for the recipient, the faster the innovation spreads. The higher the benefits of innovation consumers feel, the higher the chances of MSME business success. MSMEs will be able to increase stable growth every month/year. Customer growth is also increasing; customers tend to make repeat purchases because they are satisfied with the products or services offered by MSMEs(de Kwant et al., 2021; Lungu, 2020; Pardo-Garcia & Barac, 2020).

MSME actors in developing innovations must pay attention to the compatibility of innovation with consumers' values, experience, and needs. Innovations that are not by the values or norms believed by consumers will not be accepted as quickly as innovations that are by the norms that exist in society(Jain, 2022; Srhoj et al., 2021). Innovations by the norms or culture that apply in society will be easily accepted because people are used to them, so they are easy to apply in daily life. Promising acceptance of innovation ensures the sustainability and success of innovation in society. Innovations that are contrary to norms can cause disharmony and rejection from society. If this is done well, it will provide a higher chance of MSME business success. Business success in terms of innovation is marked by a positive response from customers to launched innovations. This encourages MSMEs to increase the frequency of innovations launched in their business. The difficulty in understanding and using innovation for consumers needs to be suppressed. An innovation that is easy to understand and use by the recipient will spread quickly.

In contrast, an innovation that the recipient finds difficult to understand or use will be slow to spread. Innovations that are easy for consumers to understand must be simple and easy to understand so that consumers more quickly accept them. Innovation must be by the needs and problems faced by consumers. Products or services from MSMEs must be easy to use so that they are more attractive to consumers. In addition, there needs to be clear and complete information that will accelerate consumer understanding. The results of this study are in line with the research (D'Alessandro et al., 2020; Hadjichristodoulou et al., 2020; Purnamasari et al., 2020), which shows that there is a positive influence on innovation strategies on business success. The research results are expected to provide knowledge on running an MSME business, especially for coffee shop midwives.

H2 The Influence of Innovation Development Strategy (X1) on Digital Marketing Literacy (Z)
This study found that innovation development strategies affect the digital marketing literacy of MSME actors in Malang Regency. The better the innovation development strategy, the higher the digital marketing literacy of MSME actors in Malang Regency. Similarly, on the contrary, the worse the innovation development strategy, the worse the digital marketing literacy of MSME actors in Malang Regency. The results of this study also show that the innovation development strategy is in the good category, and the digital marketing literacy of MSME actors in Malang Regency is also in the good category. The MSME innovation development strategy is carried out by applying new technology. MSMEs must be able to use the latest technology in the production and operational process. MSMEs must actively invest in new technologies to improve efficiency. Applying new technology increases the efficiency and productivity of MSMEs, allowing for better monitoring and control of production. The latest technology will allow MSMEs to create products that are more innovative, of higher quality, and by higher standards. In addition, technology can reduce production costs through automation and operational efficiency.

Applying new technology will encourage MSME actors to understand digital technology as well. MSME actors must understand various digital platforms that can be used for marketing MSME products and be able to use digital marketing tools such as SEO and SEM. The use of digital platforms is easy and convenient. With a digital platform, MSME customers can easily access a wide range of products

and information. Customers do not need to go to the physical place where MSME actors are (Falahat et al., 2020; Haider & Kayani, 2021). Digital platforms allow MSME actors to reach a wider range of customers and are not limited by geographical location. MSME products can be known and accessed by consumers from various parts of the world.

The innovation development strategy of MSMEs can be improved with collaboration and partnerships. MSMEs must often collaborate with universities or research institutions to develop innovative strategies. MSMEs must also actively participate in innovation networks or communities. Building networks and communities is important in helping MSME actors share knowledge and experience to increase their business growth(Kapareliotis et al., 2019; Müller, 2019). By joining the community, MSME actors get greater access to appropriate resources and knowledge for their business. Community networks allow collaboration with other MSMEs, leading to innovation and new product development. Through community networks, MSME actors can explore new markets and expand their business reach(Hadjichristodoulou et al., 2020; Ranta et al., 2021). With collaboration in the community, it encourages MSME actors to be able to carry out digital marketing strategies. MSME actors must be able to design an effective digital marketing strategy, have knowledge of the target audience, and how to segment the digital market. MSME actors must be able to run quality digital marketing relevant to their target customers. Good marketing materials will attract users' attention and strengthen brand awareness. Social media must be optimized to interact with customers, promote products, and build a community.

H3 The Influence of Technological Advancement (X2) on Business Success (Y)
This study found that technological advances affect the business success of MSME actors in Malang Regency. The better the technological advances, the higher the business success of the MSME actors in Malang Regency. Similarly, on the contrary, the worse the technological advances, the worse the business success of the MSME actors in Malang Regency. The results of this study also show that technological advances are in the good category, and the business success of MSME actors in Malang Regency is also in the good category. Technological advances provide a competitive advantage for MSME actors. MSME actors must routinely adopt the latest technology in their daily operations. In addition, it also always updates the technology used to increase efficiency. Technology adoption in MSMEs can be in the form of e-commerce adoption. The adoption of e-commerce will increase the market share of MSME businesses because it does not depend on where the business is located but can reach all regions where consumers are located, which in turn increases the success of MSME businesses(Bocken & Konietzko, 2022; Dost & Umrani, 2024; Gaviria-Marin et al., 2019; Surya et al., 2021)

The adoption of technology is also in the form of social media, which plays an important role in improving the performance of MSMEs. Social media allows MSMEs to expand their market reach and increase brand awareness. The use of social media can facilitate positive relationships with potential customers (Freije et al., 2021; Gawade, 2019; Hidayat et al., 2020; Reed, 2020). MSME actors are bored of interacting directly with customers. This helps attract potential buyers and makes it easier for customers to contact MSME actors. Social media offers lower marketing costs than conventional methods. Promotion through social media can reach a broad audience at an affordable cost. In the end, using social media will increase the chances of success of MSME business. The results of this study are in line with the research (Appio et al., 2021; Baldassarre et al., 2020; Breier et al., 2021) found that technological advances have a significant effect on the success of culinary traders' businesses in Sunggal sub-district both partially and simultaneously. Technological advances have a significant impact on business actors; the higher the knowledge and ability of an entrepreneur to follow technological advances, the higher the success rate of his business.

H4 The Influence of Technological Advancement (X2) on Digital Marketing Literacy (Z)
This study found that technological advances affect the digital marketing literacy of MSME actors in Malang Regency. The better the technological advance, the higher the digital marketing literacy of MSME actors in Malang Regency. Similarly, on the contrary, the worse the technological advance, the

worse the digital marketing literacy of MSME actors in Malang Regency. The results of this study also show that technological advances are in the good category, and the digital marketing literacy of MSME actors in Malang Regency is also in the good category. MSME actors need to provide technological infrastructure to run their businesses. Hardware such as computers that are adequate to support business operations needs to be considered. The quality of internet connectivity greatly supports the smooth operation of business operations. Information and communication technology must be used to monitor and manage daily business operations. Digital platforms (email, instant messaging apps, etc.) must be used effectively for internal and external communication(Astuti et al., 2020; Jain, 2022; Qalati et al., 2021). The provision of adequate technological infrastructure will increase the digital marketing literacy of MSME actors. MSME actors will be encouraged to be able to understand various digital platforms that can be used for marketing MSME products. The existence of infrastructure encourages MSME actors to be able to create exciting and relevant content to be posted on social media and have skills in planning and scheduling digital content posts effectively. MSME actors will be able to design effective digital marketing strategies for MSMEs and have knowledge of the target audience and how to segment the digital market.

H5 The Influence of Digital Marketing Literacy (Z) on Business Success (Y)
This study found that digital marketing literacy affects the business success of MSME actors in Malang Regency. The better the digital marketing literacy, the higher the business success of MSME actors in Malang Regency. Similarly, vice versa, the worse the digital marketing literacy, the worse the business success of MSME actors in Malang Regency will be. The results of this study also show that digital marketing literacy is in the good category, and the business success of MSME actors in Malang Regency is also in the good category. High digital marketing literacy is characterized by the ability to understand digital technology, skills in managing digital content, ability in digital marketing strategies, and digital data security and privacy. This will increase the chances of MSME business success. Good digital marketing will be able to increase business revenue and show stable growth every month/year. Digital marketing can attract business customers who are more likely to return and make repeat purchases. Customers will be satisfied with MSME products/services(Davidescu et al., 2020; Sabando-Vera et al., 2022; Skala, 2022; Valova & Marinov, 2019). Good digital marketing can increase MSME business market share and expand a wider distribution area. In addition, the launch of innovations gets a positive response from customers, and the frequency of innovation launches in my business is relatively high. Ultimately, business success is marked by employee satisfaction with working conditions in MSME businesses with employee training and development programs.

H6 Indirect Influence of Innovation Development Strategy (X1) Through Digital Marketing Literacy (Z) on Business Success (Y)
The results of the hypothesis test that was carried out show a significant influence between innovation development strategies that can create positive digital marketing literacy and the success of MSME businesses in Malang Regency. A good innovation development strategy can increase digital marketing literacy and create business success. Digital marketing literacy is influential as a partial mediation between innovation development strategies and business success. A good innovation development strategy encourages MSME actors to improve digital marketing literacy, thereby increasing the ability to understand various digital platforms that can be used for marketing MSME products, improving the ability to create exciting and relevant content to be posted on social media and having skills in planning and scheduling digital content posts effectively (Fan et al., 2021; Haefner et al., 2021; Shaheer & Li, 2020). Ultimately, it will increase MSME business revenue, customer growth, and market expansion.

H7 Indirect Influence of Technological Progress (X2) Through Digital Marketing Literacy (Z) on Business Success (Y)
The hypothesis test results show a significant influence between technological advances that can create positive digital marketing literacy and business success for MSME actors in the Malang Regency. Good technological advances can increase digital marketing literacy and create business success. Digital marketing literacy is a partial mediator between technological advances and business success (Diez-Martin et al., 2019; Lestari & Saifuddin, 2020; Rachinger et al., 2019; Rijayana et al., 2019).

Technological advances through digital marketing literacy increase the ability of MSME actors to design effective digital marketing strategies for MSMEs. MSME actors will also know the target audience and how to segment the digital market. In addition, they can also understand the importance of maintaining customer data security in digital marketing and have the skills to protect digital data from cyber threats. This will increase the success of the business of MSME actors. The market share of MSME businesses will increase and reach a wider distribution area. In addition, it also encourages the launch of innovations that get a positive response from customers. In the end, business success makes employees satisfied with the working conditions in the business, and MSME actors can provide training and development programs for employees.

CONCLUSION

This study demonstrates that innovation development strategy (X1) and technological advancement (X2) have a positive and significant effect on business success (Y) and digital marketing literacy (Z). The innovation development strategy (X1) not only directly enhances business success (Y) but also does so through digital marketing literacy (Z). Similarly, technological advancement (X2) positively impacts business success (Y), both directly and through increased digital marketing literacy (Z). MSME actors in Malang Regency are advised to enhance the use of the latest technology in their production and operational processes. They must also improve their skills in effectively planning and scheduling digital content. Improved technology adoption and digital literacy are expected to boost business success for MSMEs in the region. The findings of this study highlight the importance of innovation development strategies and technological advancements in enhancing MSME business success through digital marketing literacy. Increasing the use of the latest technology in production and operations, adopting technology in daily activities, and improving digital content planning and scheduling skills are crucial steps MSME actors need to take to increase their income and business success.

ACKNOWLEDGMENTS

The researcher expresses gratitude to the Master's Program in Business and Management Education, Fakultas Ekonomi dan Bisnis, Universitas Negeri Malang, for their support throughout the study period. Special thanks are extended to all faculty members, especially to Dr. H. Ludi Wishnu Wardana, S.T., S.E., S.Pd., M.M., the Coordinator of the Master's Program in Business and Management Education, for his guidance, direction, and assistance in overcoming research challenges.

REFERENCES

Amelia, T. N., Thoyib, A., Irianto, G., & Rofiq, A. (2021). *Program Inkubasi Permulaan Teknologi : Evaluasi Model Bisnis pada Pemerintah Inkubator Berbasis di Indonesia*.

Andersén, J. (2021). A relational natural-resource-based view on product innovation: The influence of green product innovation and suppliers on differentiation advantage in small manufacturing firms. *Technovation*, *104*(February 2020), 102254. https://doi.org/10.1016/j.technovation.2021.102254

Apidana, Y. H. (2021). Pengaruh Literasi Digital, Internal Locus of Control dan Dukungan Akademik Terhadap Niat Berwirausaha Mahasiswa di Kabupaten Banyumas. *Jurnal Ilmiah Mahasiswa Manajemen, Bisnis Dan Akuntansi (JIMMBA)*, *4*(5), 666–682. https://doi.org/10.32639/jimmba.v4i5.176

Astuti, E. S., Sanawiri, B., & Iqbal, M. (2020). Attributes of innovation, digital technology and their impact on SME performance in Indonesia. *International Journal of Entrepreneurship*, *24*(1), 1–14.

Azizi, M. R., Atlasi, R., Ziapour, A., Abbas, J., & Naemi, R. (2021). Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach. *Heliyon*, *7*(6), e07233. https://doi.org/10.1016/j.heliyon.2021.e07233

Bakaritantri, P. P., Haribowo, P., & Hasyim, F. (2022). The Role of Innovation for Knowledge Management to Predispose Business Performance of Micro, Small, and Medium Enterprises (MSME) in Semarang City during Covid-19 outbreak. *Admisi Dan Bisnis*, *22*(3), 271–282.

Bismala, L., Andriany, D., & Siregar, G. (2019). Model Pendampingan Inkubator Bisnis terhadap Usaha Kecil dan Menengah (UKM) di Kota Medan. *PUSKIBII (Pusat Kewirausahaan , Inovasi Dan Inkubator Bisnis)*, *1*(1), 1–7.

Bıçakcıoğlu, N., Theoharakis, V., & Tanyeri, M. (2020). Green business strategy and export performance: An examination of boundary conditions from an emerging economy. *International Marketing Review*, *37*(1), 56–75. https://doi.org/10.1108/IMR-11-2018-0317

Bocken, N., & Konietzko, J. (2022). Circular business model innovation in consumer-facing corporations. *Technological Forecasting and Social Change*, *185*(September), 122076. https://doi.org/10.1016/j.techfore.2022.122076

Caloghirou, Y., Giotopoulos, I., Kontolaimou, A., Korra, E., & Tsakanikas, A. (2021). Industry-university knowledge flows and product innovation: How do knowledge stocks and crisis matter? *Research Policy*, *50*(3), 104195. https://doi.org/10.1016/j.respol.2020.104195

D'Alessandro, S., Cieplinski, A., Distefano, T., & Dittmer, K. (2020). Feasible alternatives to green growth. *Nature Sustainability*, *3*(4), 329–335. https://doi.org/10.1038/s41893-020-0484-y

Dan, T., & Kewirausahaan, D. A. N. (2021). *Manajemen umkm dan kewirausahaan*.

Davidescu, A. A. M., Apostu, S. A., Paul, A., & Casuneanu, I. (2020). Work flexibility, job satisfaction, and job performance among Romanian employees- Implications for sustainable human resource management. *Sustainability (Switzerland)*, *12*(15). https://doi.org/10.3390/su12156086

de Kwant, C., Rahi, A. F., & Laurenti, R. (2021). The role of product design in circular business models: An analysis of challenges and opportunities for electric vehicles and white goods. *Sustainable Production and Consumption*, *27*, 1728–1742. https://doi.org/10.1016/j.spc.2021.03.030

Diez-Martin, F., Blanco-Gonzalez, A., & Prado-Roman, C. (2019). Research challenges in digital marketing: Sustainability. *Sustainability (Switzerland)*, *11*(10). https://doi.org/10.3390/su11102839

Dost, M., & Umrani, W. A. (2024). *Managerial Proactiveness, Frugal Innovation, and Firm Performance*. https://doi.org/10.1177/09713557241256212

Elali, W. (2021). The Importance of Strategic Agility to Business Survival During Corona Crisis and Beyond. *International Journal of Business Ethics and Governance*, *1*, 1–8. https://doi.org/10.51325/ijbeg.v4i2.64

Falahat, M., Ramayah, T., Soto-Acosta, P., & Lee, Y. Y. (2020). SMEs internationalization: The role of product innovation, market intelligence, pricing, and marketing communication capabilities as drivers of SMEs' international performance. *Technological Forecasting and Social Change*, *152*(June 2019), 119908. https://doi.org/10.1016/j.techfore.2020.119908

Fan, M., Qalati, S. A., Khan, M. A. S., Shah, S. M. M., Ramzan, M., & Khan, R. S. (2021). Effects of entrepreneurial orientation on social media adoption and SME performance: The moderating role of innovation capabilities. *PLoS ONE*, *16*(4 April 2021), 1–24. https://doi.org/10.1371/journal.pone.0247320

Freije, I., de la Calle, A., & Ugarte, J. V. (2021). Role of supply chain integration in the product innovation capability of serviced manufacturing companies. *Technovation*, *xxxx*. https://doi.org/10.1016/j.technovation.2020.102216

Gaviria-Marin, M., Merigó, J. M., & Baier-Fuentes, H. (2019). Knowledge management: A global examination based on bibliometric analysis. *Technological Forecasting and Social Change*, *140*(July), 194–220. https://doi.org/10.1016/j.techfore.2018.07.006

Gawade, M. S. (2019). Fostering Innovation, Integration and Inclusion through Interdisciplinary Practices in Management. *International Journal of Trend in Scientific Research and Development*, *Special Is*(Special Issue-FIIIIPM2019), 91–94. https://doi.org/10.31142/ijtsrd23072

Hadjichristodoulou, V., Varnava Marouchou, D., Konis, E., & Mihai Yiannaki, S. (2020). The success of STEM graduates in entrepreneurship training: a European case study. *Global Business and Economics Review*, *22*(1/2), 198. https://doi.org/10.1504/gber.2020.10026718

Haefner, N., Wincent, J., Parida, V., & Gassmann, O. (2021). Artificial intelligence and innovation management: A review, framework, and research agenda☆. *Technological Forecasting and Social Change*, *162*(June 2020), 120392. https://doi.org/10.1016/j.techfore.2020.120392

Haider, S. A., & Kayani, U. N. (2021). The impact of customer knowledge management capability on project performance-mediating role of strategic agility. *Journal of Knowledge Management*, *25*(2), 298–312. https://doi.org/10.1108/JKM-01-2020-0026

Hidayat, M., Latief, F., Bahasoan, S., Widiawati, A., & Nianty, D. A. (2020). Factors Influencing Resilience of Micro Small and Medium Entrepreneurs (MSME) during COVID-19 Outbreak in

South Sulawesi Province Indonesia. *TEST Engineering & Management*, *83*(May-June 2020), 26707–26721. https://doi.org/10.31219/osf.io/cme2j

Hock-Doepgen, M., Clauss, T., Kraus, S., & Cheng, C. F. (2021). Knowledge management capabilities and organizational risk-taking for business model innovation in SMEs. *Journal of Business Research*, *130*(December), 683–697. https://doi.org/10.1016/j.jbusres.2019.12.001

Ichsan, R. N., & Yusuf, M. (2021). *Strategi Bisnis Umkm Selama Pandemi Covid-19*. *6*(2).

Jain, K. (2022). An insight into financial literacy of University faculties: A case study of University of Rajasthan employees, India. *Social Sciences & Humanities Open*, *5*(1), 100262. https://doi.org/10.1016/j.ssaho.2022.100262

Kanedi, I., Siswanto, S., Yupianti, Y., Sari, V. N., & ... (2022). Pemanfaatan Teknologi E_Commerce dalam Proses Bisnis pada Era Society 5.0. *Jurnal Dehasen …*, *1*(2), 99–104.

Kapareliotis, I., Voutsina, K., & Patsiotis, A. (2019). Internship and employability prospects: assessing student's work readiness. *Higher Education, Skills and Work-Based Learning*, *9*(4), 538–549. https://doi.org/10.1108/HESWBL-08-2018-0086

Klein, M., & Spychalska-Wojtkiewicz, M. (2022). The Role of Design Management in Creation of Sustainable Business Models. *Energies*, *15*(15). https://doi.org/10.3390/en15155481

Kozielski, R. (2019). Determinants of SMEs business success – emerging market perspective. *International Journal of Organizational Analysis*, *27*(2), 322–336. https://doi.org/10.1108/IJOA-02-2018-1343

Lestari, P., & Saifuddin, M. (2020). Implementasi Strategi Promosi Produk Dalam Proses Keputusan Pembelian Melalui Digital Marketing Saat Pandemi Covid'19. *Jurnal Manajemen Dan Inovasi (MANOVA)*, *3*(2), 23–31. https://doi.org/10.15642/manova.v3i2.301

Liu, A., Liu, H., & Gu, J. (2021). Linking business model design and operational performance: The mediating role of supply chain integration. *Industrial Marketing Management*, *96*(June 2020), 60–70. https://doi.org/10.1016/j.indmarman.2021.04.009

Low, S., Ullah, F., Shirowzhan, S., Sepasgozar, S. M. E., & Lee, C. L. (2020). Smart digital marketing capabilities for sustainable property development: A case of Malaysia. *Sustainability (Switzerland)*, *12*(13). https://doi.org/10.3390/su12135402

Lungu, M. F. (2020). The influence of strategic agility on firm performance. *Proceedings of the International Conference on Business Excellence*, *14*(1), 102–110. https://doi.org/10.2478/picbe-2020-0011

McGovern, G. (2021). Capturing community value in civic energy business model design. *Energy Policy*, *156*(November 2020), 112468. https://doi.org/10.1016/j.enpol.2021.112468

Müller, J. M. (2019). Business model innovation in small- and medium-sized enterprises: Strategies for industry 4.0 providers and users. *Journal of Manufacturing Technology Management*, *30*(8), 1127–1142. https://doi.org/10.1108/JMTM-01-2018-0008

Oktavianto, R. (2021). Inovasi Pembelajaran Produk Kreatif dan Kewirausahaan Berbasis Etika Bisnis Digital dan Lingkungan Untuk Membentuk Wirausaha Anti Cyberfraud dan Pro …. *Learning and Curriculum Inovation Paper*, *May*, 0–10. https://www.researchgate.net/profile/Rizki-Oktavianto/publication/351983964_Inovasi_Pembelajaran_Produk_Kreatif_dan_Kewirausahaan_Berbasis_Etika_Bisnis_Digital_dan_Lingkungan_Untuk_Membentuk_Wirausaha_Anti_Cyberfraud_dan_Pro_Lingkungan/links/60b38eac92851

Pardo-Garcia, C., & Barac, M. (2020). Promoting employability in higher education: A case study on boosting entrepreneurship skills. *Sustainability (Switzerland)*, *12*(10), 1–23. https://doi.org/10.3390/SU12104004

Penttinen, V., & Frösén, J. (2022). Shared analytical capabilities in business networks. *Industrial Marketing Management*, *106*(August 2021), 308–322. https://doi.org/10.1016/j.indmarman.2022.08.018

PURNAMASARI, P., PRAMONO, I. P., HARYATININGSIH, R., ISMAIL, S. A., & SHAFIE, R. (2020). Technology Acceptance Model of Financial Technology in Micro, Small, and Medium Enterprises (MSME) in Indonesia. *Journal of Asian Finance, Economics and Business*, *7*(10), 981–988. https://doi.org/10.13106/jafeb.2020.vol7.no10.981

Qalati, S. A., Li, W., Ahmed, N., Mirani, M. A., & Khan, A. (2021). Examining the factors affecting SME performance: the mediating role of social media adoption. *Sustainability (Switzerland)*,

13(1), 1–24. https://doi.org/10.3390/su13010075

Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E. (2019). Digitalization and its influence on business model innovation. *Journal of Manufacturing Technology Management*, *30*(8), 1143–1160. https://doi.org/10.1108/JMTM-01-2018-0020

Ranta, V., Aarikka-Stenroos, L., & Väisänen, J. M. (2021). Digital technologies are catalyzing business model innovation for circular economy—Multiple case study. *Resources, Conservation and Recycling*, *164*(December 2019), 105155. https://doi.org/10.1016/j.resconrec.2020.105155

Reed, J. H. (2020). Strategic agility and the effects of firm age and environmental turbulence. *Journal of Strategy and Management*, *14*(2), 129–149. https://doi.org/10.1108/JSMA-07-2020-0178

Rijayana, I., Sultan, M. A., & Lilyana, F. (2019). SMES marketing information systems. *Journal of Advanced Research in Dynamical and Control Systems*, *11*(3 Special Issue), 868–874.

Sabando-Vera, D., Yonfa-Medranda, M., Montalván-Burbano, N., Albors-Garrigos, J., & Parrales-Guerrero, K. (2022). Worldwide Research on Open Innovation in SMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(1). https://doi.org/10.3390/joitmc8010020

Saura, J. R. (2021). Using Data Sciences in Digital Marketing: Framework, methods, and performance metrics. *Journal of Innovation and Knowledge*, *6*(2), 92–102. https://doi.org/10.1016/j.jik.2020.08.001

Setyawati, A., Wibowo, N. A., Sugangga, R., & Rahma, A. (2023). *Determinants of Employee Work Productivity in UMKM Malang*. *3*(1).

Shaheer, N. A., & Li, S. (2020). The CAGE around cyberspace? How digital innovations internationalize in a virtual world. *Journal of Business Venturing*, *35*(1), 1–19. https://doi.org/10.1016/j.jbusvent.2018.08.002

Shams, R., Vrontis, D., Belyaeva, Z., Ferraris, A., & Czinkota, M. R. (2020). Strategic agility in international business : A conceptual framework for " agile " multinationals. *Journal of International Management*, *January*, 100737. https://doi.org/10.1016/j.intman.2020.100737

Skala, A. (2022). Sustainable Transport and Mobility—Oriented Innovative Startups and Business Models. *Sustainability (Switzerland)*, *14*(9). https://doi.org/10.3390/su14095519

Srhoj, S., Lapinski, M., & Walde, J. (2021). Impact evaluation of business development grants on SME performance. *Small Business Economics*, *57*(3), 1285–1301. https://doi.org/10.1007/s11187-020-00348-6

Sundari, C. (2019). Tantangan Bisnis Bagi Generasi Milenial. *Prosiding Seminar Nasional Fakultas Ekonomi Untidar, Revolusi Industri 4.0 Merupakan Peluang Dan Tantangan Bisnis Bagi Generasi Milenial Di Indonesia*, 555–563. https://jurnal.untidar.ac.id/index.php/semnasfe/article/view/2111

Surya, B., Menne, F., Sabhan, H., Suriani, S., Abubakar, H., & Idris, M. (2021). Economic growth, increasing productivity of SMEs, and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(1), 1–37. https://doi.org/10.3390/joitmc7010020

Tu, B., Bhowmik, R., Hasan, M. K., Asheq, A. Al, Rahaman, M. A., & Chen, X. (2021). Graduate students' behavioral intention of toward social entrepreneurship: Role of social vision, innovativeness, social proactiveness, and risk-taking. *Sustainability (Switzerland)*, *13*(11), 1–23. https://doi.org/10.3390/su13116386

Ukkas, I. (2018). Pengembangan sdm berbasis pelatihan keterampilan dan pemberdayaan pemuda. *Prosiding Seminar Nasional*, *3*(1), 120–125.

Valova, I., & Marinov, M. (2019). Facebook as a tool aiding university education - whether it is possible and useful. *TEM Journal*, *8*(2), 670–676. https://doi.org/10.18421/TEM82-48

Vieira, V. A., de Almeida, M. I. S., Agnihotri, R., da Silva, N. S. D. A. C., & Arunachalam, S. (2019). In pursuit of an effective B2B digital marketing strategy in an emerging market. *Journal of the Academy of Marketing Science*, *47*(6), 1085–1108. https://doi.org/10.1007/s11747-019-00687-1

Yin, D., Ming, X., & Zhang, X. (2020). Sustainable and smart product innovation ecosystem: An integrative status review and future perspectives. *Journal of Cleaner Production*, p. *274*, 123005. https://doi.org/10.1016/j.jclepro.2020.123005