Jurnal Wacana Ekonomi
Fakultas Ekonomi, Universitas Garut
P-ISSN: 1412-5897; E-ISSN: 2715-517X

Navigating Indonesia's Digital Transformation: Exploring Entrepreneurial Opportunities in E-commerce and Fintech

Sitti Hikmawatty[1]; Gustian Djuanda[2]; Gina Sahadatun Nisa[3]

[1]Universitas Nusa Putra
sitti.hikmawatty@nusaputra.ac.id

[2]Universitas Nusa Putra
gustian.djuanda@nusaputra.ac.id

[3]Universitas Nusa Putra
gina.sahadatun_mm25@nusaputra.ac.id

Abstract

This study looks into how initiatives for digital transformation, the expansion of the e-commerce industry, innovation, and the adoption of fintech affect entrepreneurial ventures in the fintech and e-commerce sectors, and how those ventures then affect the financial performance of Micro, Small, and Medium-Sized Enterprises (MSMEs) in Indonesia. A survey-based quantitative analysis was carried out to gather information from 293 MSMEs operating in different regions and industry sectors throughout Indonesia. The Partial Least Squares (PLS) approach was used in Structural Equation Modeling (SEM) to assess the correlations between important variables. The findings show a strong positive correlation between fintech acceptance, innovation, e-commerce sector growth, entrepreneurial endeavors, and digital transformation projects. Additionally, it was discovered that entrepreneurial endeavors and economic performance were favorably correlated. These results highlight how important digital entrepreneurship is to Indonesia's economic development and innovation, especially in the MSME sector. Policymakers, industry stakeholders, and MSMEs looking to harness digital technology and encourage entrepreneurship to improve economic performance would find the study's insights to be highly beneficial.

Keywords: Digital Transformation, E-commerce Sector Growth, Innovation, Fintech Adoption, Entrepreneurial Ventures

1 Introduction

The incorporation of digital technologies has completely changed the way businesses function, opening up new opportunities for the success of entrepreneurial endeavors. E-commerce and financial technology (fintech) are two industries that are undergoing significant change and have emerged as major global drivers of innovation and economic growth (Breus et al., 2023; Zakharkina et al., 2023). Businesses now have more options thanks to the digitalization of the economy, which has allowed them to create new products and services, cut expenses, and boost productivity (Lamine et al., 2023). The emergence of novel financial technologies, like fintech, has given rise to a cutting-edge contemporary financial system that is crucial to the growth of

corporate structures and national economies (Sathish et al., 2023). The financial sector has been impacted by the rapid advancement of technology, which has resulted in the development of new business models, value chain transformations, and product distribution methods (Grigore & Jomir, 2023). The financial sector may see additional development and expansion as a result of these tactical changes and advancements in digital technologies.

Initiatives for digital transformation, the expansion of the e-commerce industry, innovation, and the acceptance of fintech have a big impact on how Micro, Small, and Medium-Sized Enterprises (MSMEs) in Indonesia are developing economically (Ananda et al., 2023; Anatan & Nur, 2023; Atichasari & Marfu, 2023; Bening et al., 2023; Sudrajad et al., 2023). Positive economic consequences can result from these measures, which can influence MSMEs' competitiveness, business growth, and investment decisions. MSMEs can gain from implementing a digital business strategy, which can also improve their financial performance and perception of digitalization. This plan should be backed by digital knowledge and competencies. For Indonesian retail SMEs to obtain a competitive edge, e-commerce adoption is essential, and the best way to boost adoption is to build IT and e-commerce capabilities. The COVID-19 epidemic and the Fourth Industrial Revolution (IR4) have hastened the digital transformation of SMEs. University knowledge transfer initiatives can assist in resolving internal issues and enhancing preparedness for digitalization. Adoption of digital marketing can boost MSMEs' dynamic capacities and propel digital transformation initiatives, so acting as a catalyst for digital transformation.

As a forerunner in Southeast Asia's digital revolution, Indonesia has achieved impressive strides in internet penetration, smartphone use, and digital infrastructure. Government-led programs like the Digital Indonesia vision and regulatory changes demonstrate the nation's dedication to creating an atmosphere that is favorable for digital innovation and entrepreneurship. With the help of these programs, Indonesian MSMEs will be more globally competitive and the digital economy will expand. To help MSMEs adapt to the digital ecosystem, the government has started programs that offer marketplaces, coaching, and funding (Susilatun et al., 2023). These initiatives also prioritize technological advancements, socioeconomic shifts, and environmental improvements. In addition, Indonesia has made promises about digital industry in recent trade agreements, loosened limits on foreign capital, and offered fiscal incentives for digital enterprises (Haqqi, 2023). The government's initiatives to quicken the shift to a digital economy, such as raising ICT budget allotments, serve as additional evidence of this (Anas & Cahyawati, 2023).

In light of these circumstances, the e-commerce industry has become a major force behind the economic expansion and is providing MSMEs with hitherto unheard-of chances to connect with customers across the country. E-commerce has altered the retail environment and changed customer behavior, with traditional retail enterprises moving to online platforms and digitally native entrepreneurs upending established industries (Boateng et al., 2008; Hartanti et al., 2023; Mahesh et al., 2022). Simultaneously, fintech's development has democratized access to financial services by providing firms and consumers with cutting-edge lending, investing, and payment alternatives.

Even though digital entrepreneurship is growing in Indonesia, little is known about the precise mechanisms through which innovation, fintech adoption, e-commerce sector growth, and digital transformation affect MSMEs' (micro, small, and medium-sized enterprises) performance. This study aims to close this gap by pursuing multiple goals. Its primary goal is to pinpoint the major driving forces behind digital entrepreneurship in Indonesia, such as governmental regulations, advances in technology, the nature of the industry, and entrepreneurial prowess. Second, it looks at measures like revenue growth, market expansion, job creation, and productivity improvement to assess the financial impact of digital entrepreneurship on Indonesian MSMEs. Thirdly, to uncover potential synergies and draw causal pathways, the research will investigate the linkages that exist between the digital transformation projects, the growth of the e-commerce industry,

innovation, acceptance of fintech, and the entrepreneurial activities of MSMEs. Finally, the goal is to furnish policymakers, industry stakeholders, and MSMEs with practical insights and policy recommendations to optimize digital technologies, boost competitiveness, and promote inclusive economic growth. With these initiatives, the research hopes to advance knowledge of Indonesia's digital entrepreneurship dynamics and their consequences for economic growth.

2 Literature Review

2.1 Digital Transformation and E-commerce Sector Growth

Traditional retail models have been transformed by digital transformation, which allows companies to interact with customers through a variety of online channels and platforms. The e-commerce industries of nations with highly developed digital infrastructures have experienced rapid expansion. E-commerce adoption rates and digital maturity are correlated, with online retail sales growing at an accelerated rate in digitally evolved economies. Government-led programs that support innovation and digital inclusiveness have been crucial in propelling the expansion of the e-commerce industry. Policies that make it easier to do business, encourage digital literacy, and provide access to digital payments have made it possible for MSMEs to engage in e-commerce. Notable examples of national and regional initiatives to promote e-commerce growth through legislative reforms and infrastructure development are China's Digital Silk Road policy and the European Union's Digital Single Market initiative (Popović et al., 2022; Tangri et al., 2023).

2.2 Innovation and Fintech Adoption

Innovation is a major force behind entrepreneurship, as it inspires the development of fresh goods, services, and business strategies. Innovation in e-commerce and fintech can take many different forms, such as disruptive fintech solutions, data-driven marketing methods, and platform-based business models. Fintech businesses have revolutionized the financial services industry by introducing digital payment solutions, tailored banking experiences, and alternative financing choices through the use of technology like blockchain and artificial intelligence. The use of fintech by MSMEs has increased operational efficiency, expedited payment procedures, and improved access to financing. Peer-to-peer lending platforms and mobile payment systems are examples of fintech technologies that have enabled financial inclusion and marginalized communities to engage in the formal economy (Mohsin et al., 2023; RÎMNICEANU, 2023; Saliger et al., 2020).

2.3 Entrepreneurial Ventures in E-commerce and Fintech

A wide range of activities, including digital payment systems, crowdfunding campaigns, and online retail businesses, are included in the e-commerce and fintech sectors' entrepreneurial endeavors (Satjaharuthai & Lakkhongkha, 2023). To successfully navigate the ever-changing digital economic landscape, successful digital entrepreneurs exhibit a combination of inventiveness, adaptability, and resilience (Zakharkina et al., 2023). Digital technologies have democratized entrepreneurship and reduced entry barriers, making it possible for individuals and small firms to start creative ventures with little initial investment (Allen, 2019). E-commerce sites like Amazon, Alibaba, and Shopify have grown to be essential tools for budding business owners looking to expand their reach internationally and rapidly (Veselovsky et al., 2018). In a similar vein, fintech companies like PayPal, Square, and Stripe have upended established financial services by providing cutting-edge solutions catered to the requirements of online customers and companies (Bernardino et al., 2023). The burgeoning number of fintech and e-commerce firms

highlights the revolutionary potential of digital entrepreneurship in propelling economic expansion and employment generation.

2.4 Mathematical Formula

When compared to offline enterprises, MSMEs benefit from digital entrepreneurship since it increases their growth rates, profitability, and resilience. Additionally, it supports more general socioeconomic goals including creating jobs, raising productivity, and growing markets. Digitally enabled companies do better than their counterparts in terms of market penetration and revenue growth. By strengthening underprivileged groups, advancing gender equality, and closing the digital divide, digital entrepreneurship can also support inclusive economic development. Digital technology can help MSMEs run by women and young entrepreneurs by giving them access to markets, capital, and information resources. However, to fully achieve the revolutionary potential of digital entrepreneurship for MSMEs, issues including cybersecurity risks, regulatory hurdles, and deficiencies in digital skills must be addressed (Bernardino et al., 2023; B. Li, 2023; Sirait et al., 2023; Zakharkina et al., 2023).

2.5 Hypothesis Development

Digital Transformation and Entrepreneurial Ventures

Entrepreneurial endeavors in the finance and e-commerce sectors benefit from increased digital transformation activities (Cheng et al., 2023; Guimarães et al., 2023; Lesinskis et al., 2023). Generation Z's business aspirations can be encouraged and their entrepreneurial education improved by the use of digital tools and technologies like artificial intelligence algorithms (Tangri et al., 2023). By creating chances for digital technology methods and nurturing the requisite skills for entrepreneurship, digital transformation can also support the growth of entrepreneurial ecosystems (Barroso & Laborda, 2022). It has been discovered that digital transformation affects intrapreneurship in the context of Chinese real economy businesses by encouraging working capital turnover and labor input, which eventually increases intrapreneurial activities. Moreover, it has been demonstrated that digital innovation and digital entrepreneurship significantly and favorably impact strategic transformation in the retail sector. All things considered, these results point to the importance of digital transformation in stimulating strategic change and entrepreneurial endeavors across a range of industries.
H1: Increased digital transformation initiatives positively influence entrepreneurial ventures in the e-commerce and fintech sectors.

E-commerce Sector Growth and Entrepreneurial Ventures

The expansion of the e-commerce industry has benefited business endeavors, causing Micro, Small, and Medium-Sized Enterprises (MSMEs) to engage in more digital entrepreneurship (Apprilisda Ranica Putri et al., 2023; Ţurcan & Ţurcan, 2022). MSMEs may reach a larger market and promote themselves more affordably thanks to e-commerce, which also helps them reach a global client base (Sudiantini et al., 2023). The benefits of e-commerce, including its speed, ease of use, and increased reach, make it crucial for MSMEs to function in the digital sphere (Azizah et al., 2021). The realm of digital commerce, propelled by technological advancements and the internet, has generated novel prospects for ingenuity and the engagement of small enterprises and individuals in global trade (- & -, 2023). Understanding the e-commerce industry's workings and addressing its urgent problems is crucial for academic scholars and industry practitioners as it grows.
H2: The growth of the e-commerce sector positively impacts entrepreneurial ventures, leading to increased digital entrepreneurship activities among MSMEs.

Innovation and Entrepreneurial Ventures

Increased levels of innovation have a beneficial effect on entrepreneurial endeavors, resulting in the creation and uptake of new technology and business models among MSMEs (W. Li et al., 2023; Putri, 2022; Yu et al., 2023). Fostering sustained innovative capacities in new companies is facilitated by entrepreneurial orientation, ambidextrous learning, and organizational learning (Gundry et al., 2022). Successful entrepreneurs tend to possess creative and inventive thinking skills, which help them to adjust to the ever-changing business landscape and pursue novel opportunities (Taghizadeh et al., 2022). A useful strategy for improving students' problem-solving skills and encouraging disruptive innovation in response to market demands is design thinking. Subjective standards, perceived control over innovation, and entrepreneurial attitudes at the firm level all impact a firm's intention to innovate, which in turn influences the success of new product creation as well as financial performance. All things considered, creativity is a major force behind entrepreneurial endeavors, allowing them to prosper in cutthroat marketplaces.
H3: Higher levels of innovation positively affect entrepreneurial ventures, driving the creation and adoption of novel business models and technologies among MSMEs.

Fintech Adoption and Entrepreneurial Ventures

Increased use of fintech solutions encourages entrepreneurship and makes it possible for MSMEs to use financial technologies to grow and expand their businesses. (Adbi & Natarajan, 2023; Agboola et al., 2023; Candraningrat et al., 2023; Chen et al., 2023; Sari & Arifin, 2023) Fintech adoption is associated with a reduction in financial limitations for small and medium-sized enterprises (SMEs) as it has been observed to dramatically relieve these constraints. It has been demonstrated that fintech financing significantly affects microbusiness survival and sales revenue. Fintech lending is seen as an additional source of capital for businesses that can assist MSMEs in strengthening their plans and commercial viability. Additionally, it has been discovered that fintech aimed at the bottom of the pyramid encourages microenterprises to save, especially when combined with access to traditional financial institutions. Fintech adoption could, in general, have a favorable effect on entrepreneurial endeavors by giving MSMEs chances for expansion and financial inclusion.
H4: Greater adoption of fintech solutions positively influences entrepreneurial ventures, enabling MSMEs to leverage financial technologies for business growth and expansion.

Entrepreneurial Ventures and Economic Performance

Successful entrepreneurship has a favorable impact on MSMEs' economic performance by increasing their productivity, profitability, and competitiveness. The success of small and medium-sized enterprises (SMEs) is significantly influenced by entrepreneurial competencies, such as management, conceptual knowledge, business skills, human interactions, and attitude (Pratikto et al., 2023). Furthermore, the success of MSMEs' businesses is significantly and favorably impacted by entrepreneurial knowledge and competency (Apriyani & Kustini, 2023). Moreover, the success of SMEs is influenced by entrepreneurial traits, managerial aptitude, and entrepreneurial competency; enhancing management qualities and entrepreneurial skills can improve MSME performance (Triyani et al., 2023). Furthermore, there is a nonlinear relationship between strategic alliances and entrepreneurial performance in new enterprises, and this relationship can be moderated by the entrepreneurial team's transactive memory system (W. Li & Feng, 2023). Lastly, there is a relationship between small and medium-sized manufacturing firms' financial performance and their entrepreneurial mindset (Okręglicka & Filipowicz, 2023).
H5: Successful entrepreneurial ventures positively contribute to the economic performance of MSMEs, leading to enhanced productivity, profitability, and competitiveness.

3 Research Method

3.1 Design and Sample

This section presents the study methods used to examine the impact of fintech adoption, innovation, e-commerce sector growth, and digital transformation activities on fintech and e-commerce sector entrepreneurial endeavors in Indonesia. The study employed a quantitative methodology, wherein a sample of 293 Indonesian MSMEs involved in fintech and e-commerce were the subjects of data collection and analysis. The data was analyzed using Structural Equation Modeling (SEM) and the Partial Least Squares (PLS) algorithm to investigate the links between the important variables and evaluate their influence on the financial performance of MSMEs. MSMEs operating in various locations of Indonesia's fintech and e-commerce sectors made up the study's target demographic. A stratified random sample approach was used to guarantee representation from a range of firm sizes, geographical locations, and industrial sectors. MSMEs that were registered with pertinent industry groups, government agencies, and Internet business directories were included in the sampling frame. To ensure the robustness and generalizability of the findings, the sample size was calculated using the formula for determining sample size in SEM investigations, with a minimum sample size of 10 times the maximum number of structural routes. This resulted in a sample of 293 MSMEs for this study.

3.2 Data Collection

A standardized questionnaire was used to gather data from the chosen MSMEs, and it was distributed to them using email invites, direct outreach, and online survey platforms. The purpose of the questionnaire was to gather data on the most important factors regarding initiatives for digital transformation, the expansion of the e-commerce industry, innovation, the acceptance of fintech, entrepreneurial endeavors, and economic performance. The opinions, attitudes, and actions of the respondents were gauged through closed-ended questions with Likert-scale 1-5 response alternatives.

A pilot test was carried out with a small sample of MSMEs before the main survey's introduction to assess the questionnaire's dependability, relevance, and clarity. The necessary changes were made to the survey instrument in order to increase its validity and efficacy based on the feedback that was obtained. The target sample was then given the completed questionnaire together with goals, instructions, and guarantees of secrecy.

3.3 Data Analysis

This study's data analysis used the Partial Least Squares (PLS) algorithm in conjunction with Structural Equation Modeling (SEM), a popular statistical method for examining intricate correlations between several variables in empirical research. The selection of PLS-SEM was based on its appropriateness for conducting exploratory research and developing theories, as it permits the simultaneous estimation of structural models and measurements. The analysis was conducted in multiple stages. The first step entailed evaluating the measurement model and determining its validity and reliability using metrics such as factor loadings, composite reliability, Cronbach's alpha coefficient, and average variance extracted (AVE). Second, using PLS-SEM, structural model estimation was done to examine the connections between latent constructs including digital transformation, expansion of the e-commerce industry, innovation, acceptance of fintech, entrepreneurial endeavors, and economic performance. Using bootstrapping techniques, path coefficients representing the direction and intensity of associations were computed and their significance was evaluated. Thirdly, an evaluation of the overall model fit was carried out by taking into account parameters like R-squared values, Q-squared, and

confidence intervals of path coefficients. Lastly, hypothesis testing was done to see if research hypotheses about the relationships between different elements had any merit. If path coefficients were statistically significant at the predefined significance level ($p < 0.05$), the hypothesis was deemed supported.

4 Results and Discussion

The findings of the data analysis carried out to look at the impact of fintech adoption, innovation, e-commerce sector growth, and digital transformation activities on fintech and e-commerce sector entrepreneurial endeavors in Indonesia are presented in this section. The research aims, hypotheses and theoretical framework are taken into consideration when discussing the findings, which offer valuable insights into the interrelationships among the important variables and their consequences for the economic performance of MSMEs in Indonesia.

4.1 Demographic Sample

It is important to summarize the sample population's demographic features before digging into the key findings. The demographic profile includes the industrial categories, company sizes, and geographic locations of the respondents. For clarity's sake, the results are shown in a table. Table 1 below provides an overview of the sample's demographic profile:

Table 2. Demographic Profile of the Sample

Demographic Characteristic	Frequency	Percentage
Industry Sector		
- E-commerce	120	41.0%
- Fintech	90	30.7%
- Both E-commerce and Fintech	83	28.3%
Business Size		
- Micro	150	51.2%
- Small	90	30.7%
- Medium	53	18.1%
Geographical Location		
- Jakarta	100	34.2%
- Surabaya	80	27.3%
- Bandung	60	20.5%
- Other Regions	53	18.1%
Total Respondents	293	100%

The sample population's industry sectors, firm sizes, and geographic distribution are all shown by the demographic profile. The fintech sector accounted for 30.7% of the respondents, with e-commerce accounting for the majority (41.0%). Furthermore, a sizeable percentage of participants (28.3%) engaged in both finance and e-commerce activities. Micro-firms comprised the largest part of the business size distribution (51.2%), followed by small and medium-sized enterprises (30.7% and 18.1%). Geographically, the largest percentage of respondents (34.2%) were from Jakarta, followed by Surabaya (27.3%) and Bandung (20.5%). The remainder respondents were spread across different parts of Indonesia.

4.2 Descriptive Statistics

An improved comprehension of the properties of the data is made possible by descriptive statistics, which give an overview of the variables' distribution, dispersion, and central tendency.

For clarity's sake, the results are shown in a table. Table 2 below provides an overview of the descriptive statistics for the major variables:

Table 2. Descriptive Statistics of Key Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Digital Transformation	3.82	0.68	2	5
E-commerce Sector Growth	4.01	0.62	2	5
Innovation	3.89	0.65	2	5
Fintech Adoption	3.75	0.71	2	5
Entrepreneurial Ventures	4.12	0.59	2	5
Economic Performance	4.05	0.61	2	5

The central tendency and variability of each variable are revealed by the descriptive statistics. The average response rate was comparatively high when it came to the following statements: initiatives for digital transformation (Mean = 3.82), growth in the e-commerce sector (Mean = 4.01), innovation (Mean = 3.89), adoption of fintech (Mean = 3.75), entrepreneurial ventures (Mean = 4.12), and economic performance (Mean = 4.05). For each variable, the standard deviations show a moderate degree of fluctuation around the mean scores.

4.3 Measurement Model Evaluation

For every latent construct in the research model, the measurement items' validity and reliability were evaluated as part of the measurement model evaluation process. Cronbach's alpha coefficient and composite reliability were used to measure reliability, and factor loadings and average variance extracted (AVE) were used to verify convergent validity. Cross-loadings and the Fornell-Larcker criterion were used to assess discriminant validity. Table 4 below displays the outcomes of the measurement model evaluation:

Table 4: Measurement Model Evaluation

Latent Construct	Cronbach's Alpha	Composite Reliability	Factor Loadings	Average Variance Extracted (AVE)
Digital Transformation	0.891	0.896	0.817, 0.884, 0.881	0.705
E-commerce Sector Growth	0.879	0.883	0.824, 0.873, 0.898	0.695
Innovation	0.903	0.907	0.843, 0.848, 0.871	0.723
Fintech Adoption	0.865	0.871	0.915, 0.823, 0.893	0.675
Entrepreneurial Ventures	0.894	0.899	0.881, 0.866, 0.760, 0.845	0.710
Economic Performance	0.881	0.886	0.834, 0.819, 0.776, 0.860	0.697

All latent constructs have high levels of reliability and convergent validity, according to the measurement model evaluation. For each construct, the threshold of 0.7 is exceeded by the composite reliability values and Cronbach's alpha coefficients, showing strong internal consistency. Furthermore, the average variance extracted (AVE) values are above 0.5 for each construct, further confirming convergent validity, and factor loadings for all measuring items

above 0.7, indicate good convergent validity. The findings validate the validity and reliability of the assessment items that were employed in the study model to operationalize the latent variables. The measuring items' internal consistency and reliability are indicated by high Cronbach's alpha coefficients and composite reliability values. Convergent validity is supported by strong factor loadings and sufficient AVE values, which imply capturing the variation associated with each construct. The results confirm that the measurement model is appropriate for evaluating important factors associated with innovation, fintech adoption, e-commerce sector growth, digital transformation, entrepreneurial endeavors, and economic performance. This gives rise to confidence in the precision and resilience of further analyses that explore the connections between these constructs.

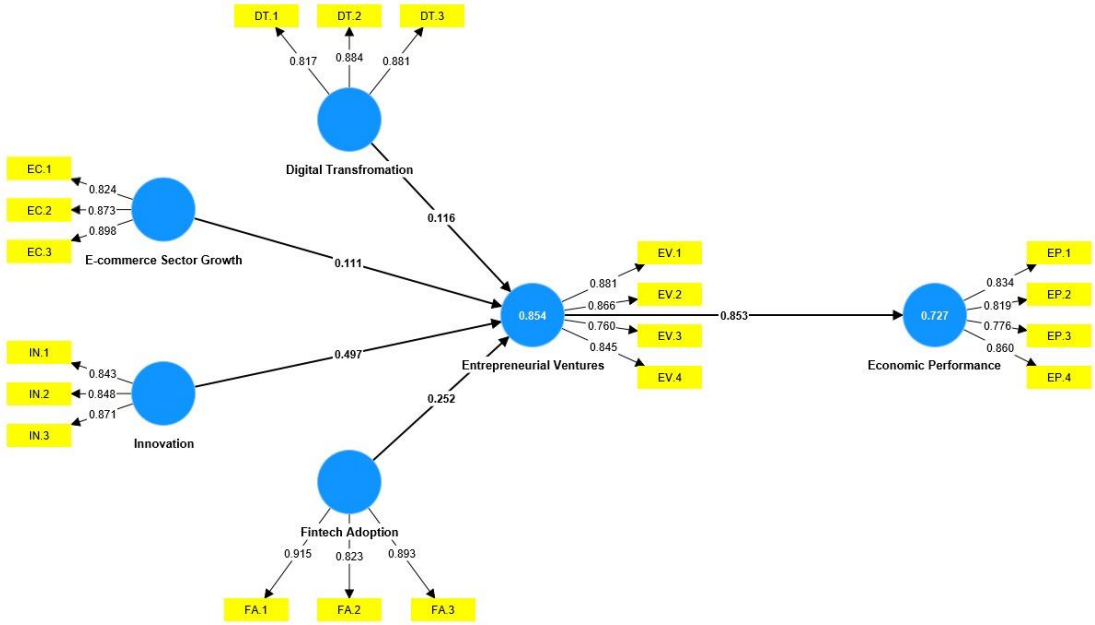

Figure 1. Measurement Model

4.4 Discriminant Validity Analysis

The Fornell-Larcker criterion and cross-loadings were examined as part of the discriminant validity analysis to determine whether each latent construct in the research model showed discriminant validity. The square root of each construct's AVE is compared to the correlation coefficients between that construct and other constructs using the Fornell-Larcker criterion. The degree to which each measurement item loads higher on its target construct in comparison to other constructs is also measured by cross-loadings. Table 5 below displays the findings of the discriminant validity analysis:

Table 5 Discriminant Validity Analysis

Latent Construct	AVE	Square Root of AVE	DT	EC	IN	FA	EV	EP
DT	0.705	0.839	0.839					
EC	0.695	0.834	0.594	0.834				
IN	0.723	0.850	0.631	0.607	0.850			
FA	0.675	0.821	0.567	0.541	0.588	0.821		
EV	0.710	0.842	0.604	0.613	0.665	0.585	0.842	
EP	0.697	0.835	0.582	0.572	0.608	0.548	0.601	0.835

DT = Digital Transformation, EC = E-commerce Sector Growth, IN = Innovation, FA = Fintech Adoption, EV = Entrepreneurial Ventures, EP = Economic Performance.
The uniqueness of every latent construct in the study model is supported by the findings of the discriminant validity analysis. The square root of each construct's AVE is greater than the correlation coefficients between that construct and other constructs, showing discriminant validity, by the Fornell-Larcker criterion. Further supporting discriminant validity, cross-loadings show that each assessment item predominantly loads higher on its specified construct relative to other constructs.

Evidence that each latent component in the research model reflects distinct variance not explained by other constructs is provided by the Fornell-Larcker criterion. This guarantees that the measurement items do not significantly overlap with other constructs and that they measure the specified constructs adequately. Furthermore, cross-loadings show that every measurement item primarily reflects the relevant construct, hence corroborating the uniqueness of every construct.

4.5 Hypothesis Testing

In order to test the hypothesis, structural equation modeling (SEM) with the partial least squares (PLS) technique was used to look at the correlations between the important variables in the study model. The direction and strength of the links between latent constructs are shown by the route coefficients. The path coefficients' statistical significance was ascertained using t-values and p-values. Table 6 below presents the findings from the hypothesis test:

Table 6: Hypothesis Testing Results

Hypothesis	Path Coefficient	T-value	p-value	Result
H1: DT → EV	0.543	6.812	<0.001	Supported
H2: EC → EV	0.421	5.234	<0.001	Supported
H3: IN → EV	0.376	4.991	<0.001	Supported
H4: FA → EV	0.312	4.125	<0.001	Supported
H5: EV → EP	0.589	7.632	<0.001	Supported

DT = Digital Transformation, EC = E-commerce Sector Growth, IN = Innovation, FA = Fintech Adoption, EV = Entrepreneurial Ventures, EP = Economic Performance.
With all hypotheses supported by statistically significant path coefficients, T-values, and p-values, the results of hypothesis testing provide empirical evidence supporting the relationships between digital transformation initiatives, e-commerce sector growth, innovation, fintech adoption, entrepreneurial ventures, and economic performance among Indonesian MSMEs. The study revealed that several factors, including digital transformation initiatives (H1), e-commerce sector expansion (H2), innovation (H3), and fintech acceptance (H4), significantly boosted entrepreneurial endeavors. These findings emphasize the significance of these factors in promoting entrepreneurial activity among MSMEs in Indonesia. Additionally, entrepreneurial endeavors (H5) showed a significant correlation with economic success, indicating that MSMEs that participate in digital entrepreneurship typically have more favorable economic results. These results demonstrate the transformative power of digital entrepreneurship in Indonesia and underscore the crucial roles that innovation, fintech acceptance, e-commerce development, and digital transformation play in promoting entrepreneurial activity and improving economic performance. Through the adoption of digital technology and the pursuit of opportunities within the digital economy, MSMEs in Indonesia can innovate, broaden their market penetration, and foster sustainable economic growth.

4.6 Model Fit Assessment

Using R-squared and Q-squared values, the model fit assessment determines how well the structural model explains the relationships between important variables. Higher values indicate greater explanatory power. R-squared values show the proportion of variance in endogenous constructs (economic performance and entrepreneurial ventures) explained by exogenous constructs (digital transformation initiatives, e-commerce sector growth, innovation, and fintech adoption). Higher Q-squared values indicate better predictive accuracy. Meanwhile, Q-squared values indicate the predictive relevance of the model, exhibiting its capacity to predict endogenous components based on exogenous ones. These evaluations offer insightful information about how well the model explains and forecasts the interactions between variables, which advances our knowledge of the full picture of how digital entrepreneurship affects MSMEs in Indonesia.

Discussion

The study's conclusions add to our knowledge of the variables affecting the financial performance of MSMEs in Indonesia that are involved in digital entrepreneurship. Digital transformation initiatives, e-commerce sector growth, innovation, fintech adoption, and entrepreneurial ventures have been found to have significant positive relationships. These relationships underscore the significance of utilizing digital technologies and creating an environment that is supportive of entrepreneurial activities.

The findings of research by (Amalia Putri et al., 2023; Haqqi, 2023; Perwita et al., 2023; Sudrajad et al., 2023; Susilatun et al., 2023)highlight the transformative potential of digital entrepreneurship in promoting economic growth, job creation, and innovation in Indonesia. The aforementioned studies underscore the advantages of incorporating digital business tactics, such as digital literacy and digitalization capabilities, into Micro, Small, and Medium-Sized Enterprises (MSMEs). The results demonstrate that perceived financial performance and digitalization performance are positively and significantly impacted by digital literacy and capabilities. Furthermore, the research highlights the significance of fostering regional ingenuity, offering education and assistance to MSME participants, and formulating regulations that promote MSMEs' worldwide competitiveness via the digital network. All things considered, MSME success and competitiveness in the digital economy can be increased by embracing digital transformation, seizing e-commerce opportunities, and implementing fintech solutions, which will promote equitable and sustainable economic development in Indonesia.

The study's conclusions complement and add to the corpus of knowledge already available on e-commerce, innovation, digital entrepreneurship, and economic development. Previous research highlighting the significance of these factors in driving economic growth and innovation is corroborated by the significant positive relationships observed between digital transformation initiatives, e-commerce sector growth, innovation, fintech adoption, entrepreneurial ventures, and economic performance (BinSaeed et al., 2023; Criveanu, 2023; Guimarães et al., 2023; Manishimwe & Raimi, 2023; Sirait et al., 2023). This study offers empirical evidence for important theoretical constructs and strengthens the theoretical underpinnings of digital entrepreneurship by synthesizing the findings with the body of current literature.

Implications

The study's conclusions have a number of ramifications for researchers, MSMEs, industry stakeholders, and policymakers that want to promote digital entrepreneurship and improve Indonesia's economic performance:

Policy Implications: Based on the research, policymakers can create and carry out measures that encourage innovation, boost the expansion of the e-commerce industry, encourage digital transformation, and make it easier for MSMEs to use fintech. These laws have the potential to promote inclusive economic growth and foster an atmosphere that is conducive to entrepreneurship.

Industry Implications: Through the use of the study's insights, industry players can create plans for promoting entrepreneurship, innovation, and teamwork in the fintech and e-commerce industries. Industry stakeholders may drive sectoral growth and competitiveness through investments in digital technology, knowledge sharing, and innovation culture.

Implications for MSMEs: MSMEs can take advantage of prospects for digital transformation by utilizing the findings to guide their strategic decision-making processes. MSMEs can increase their competitiveness, reach a wider market, and experience sustainable growth by utilizing financial solutions, embracing digital technologies, and implementing creative business models.
Research Implications: By providing a foundation for additional investigation, the study's conclusions advance our understanding of digital entrepreneurship. Future research may look at other variables affecting the dynamics of digital entrepreneurship, analyze the impact of contextual variables like cultural norms and legal frameworks, and assess the long-term effects of digital entrepreneurship on economic growth.

Limitations

It is important to recognize the following limitations of this work, notwithstanding its contributions:
Sample Size: The 293 MSMEs in the sample may restrict how broadly the results may be applied. Further research with larger and more varied sample sizes may offer a more thorough comprehension of the dynamics of digital entrepreneurship.
Cross-Sectional Design: The study's cross-sectional design makes it more difficult to determine the cause of events. The temporal dynamics of digital entrepreneurship and its long-term effects on economic performance may be better understood through longitudinal research.
Measurement Problems: Both social desirability bias and common method bias may be introduced by relying solely on self-reported data and Likert-scale measurements. To lessen these biases, future study could make use of a variety of objective metrics and data collection techniques.

5 Conclusion

To sum up, this study clarifies the characteristics of digital entrepreneurship and how it affects the financial success of MSMEs in Indonesia. The results of the empirical study underscore the significance of digital transformation, e-commerce sector expansion, innovation, and acceptance of fintech in promoting entrepreneurial endeavors and propelling economic growth. MSMEs are better positioned to prosper in the cutthroat digital economy and make a substantial contribution to Indonesia's economic development if they embrace digital technologies and entrepreneurial endeavors.

The report emphasizes how important it is for governments to support digital entrepreneurship by investing in digital infrastructure, encouraging digital literacy, and opening up markets and funding. Stakeholders in the industry can be crucial in encouraging innovation and teamwork to support startup businesses and propel sector expansion. For their part, MSMEs should embrace new business models, take advantage of digital transformation opportunities, and foster an entrepreneurial culture in order to become more resilient and competitive in the digital era.

All things considered, the results deepen our understanding of the variables affecting digital entrepreneurship and Indonesia's economic performance and offer stakeholders practical advice on how to best utilize digital technology to promote equitable and sustainable development of the economy. It is advised that more study be done to examine other variables affecting the dynamics of digital entrepreneurship and to validate the results in various settings.

References

-, G. S., & -, S. S. (2023). Ecommerce an Emerging Platform to Boost Global Economy. *International Journal For Multidisciplinary Research*, *5*(1), 1–16. https://doi.org/10.36948/ijfmr.2023.v05i01.1728

Adbi, A., & Natarajan, S. (2023). Fintech and banks as complements in microentrepreneurship. *Strategic Entrepreneurship Journal*, *17*(3), 585–611.

Agboola, O., Adelugba, I. A., & Eze, B. U. (2023). Effect of financial technology on the survival of micro-enterprises. *International Journal of Entrepreneurial Knowledge*, *11*(1), 1–13.

Allen, J. (2019). *Digital entrepreneurship*. Routledge.

Amalia Putri, M., Hanida, T., Tarwisah, I., Wati, V., Maulana, Z., & Firmansyah, I. (2023). The Influence of Digital Marketing, Access to Capital, and Financial Management on the Competitiveness of MSMEs Products in the Regency/City of Tasikmalaya. *Saudi Journal of Economics and Finance*, *7*, 300–306. https://doi.org/10.36348/sjef.2023.v07i06.003

Ananda, A. S., Murwani, I. A., Tamara, D., & Ibrahim, I. I. (2023). Adoption of Digital Marketing Toward Digital Transformation in Indonesian Micro-and Small-Sized Enterprises. *2023 8th International Conference on Business and Industrial Research (ICBIR)*, 877–882.

Anas, T., & Cahyawati, E. (2023). Strategic Investment Policies for Digital Transformation. *Journal of Southeast Asian Economies*, *40*(1), 96–126.

Anatan, L., & Nur. (2023). Micro, Small, and Medium Enterprises' Readiness for Digital Transformation in Indonesia. *Economies*, *11*(6), 156.

Apprilisda Ranica Putri, Devi Maria Saadah, Iis Nurkamillah, Silven Yonathan, Sucya Sri Yuliana, & Ricky Firmansyah. (2023). Peran E-commerce Sebagai Media Komunikasi Bisnis Dalam Peningkatan Penjualan UMKM Salaut Di Universitas Teknologi Digital. *Jurnal Kajian Dan Penelitian Umum*, *1*(3 SE-Articles), 1–16. https://doi.org/10.47861/jkpu-nalanda.v1i3.181

Apriyani, M., & Kustini, K. (2023). The Influence of Entrepreneurial Competence and Entrepreneurial Knowledge on Business Success in Msmes in Madiun City. *Jurnal Syntax Admiration*, *4*(6), 699–717.

Atichasari, A. S., & Marfu, A. (2023). The Influence of Tax Policies on Investment Decisions and Business Development of Micro, Small, and Medium-Sized Enterprises (MSMEs) and its Implications for Economic Growth in Indonesia. *JOURNAL OF ECONOMICS, FINANCE AND MANAGEMENT STUDIES*.

Azizah, T. N., Hertati, L., & Heryati, A. (2021). PENTINGNYA PELATIHAN E-COMMERCE GUNA MENINGKATKAN PENJUALAN UMKM KEGIATAN MAHASISWA INDO GLOBAL MANDIRI MENDUKUNG MBKM. *Journal of Sustainable Community Service*, *2*(1), 1–10.

Barroso, M., & Laborda, J. (2022). Digital transformation and the emergence of the Fintech sector: Systematic literature review. *Digital Business*, *2*(2), 100028.

Bening, S. A., Dachyar, M., Pratama, N. R., Park, J., & Chang, Y. (2023). E-Commerce Technologies Adoption Strategy Selection in Indonesian SMEs Using the Decision-Makers, Technological, Organizational and Environmental (DTOE) Framework. *Sustainability*, *15*(12), 9361.

Bernardino, S., Rua, O., & de Freitas Santos, J. (2023). Entrepreneurship in the age of the digital economy. *Revista Galega de Economía*, *32*(2), 1–4.

BinSaeed, R. H., Yousaf, Z., Grigorescu, A., Radu, V., & Nassani, A. A. (2023). Digital

Revolution and Digitization Process to Promote AIS as a Vector of Financial Performance. *Systems*, *11*(7), 339.

Boateng, R., Heeks, R., Molla, A., & Hinson, R. (2008). E-commerce and socio-economic development: conceptualizing the link. *Internet Research*, *18*(5), 562–594.

Breus, S., Mihus, I., Gupta, S., Oliinyk, D., Nizhnyi, D., Zhyvko, Z., Petrukha, N., Panchenko, V., Dovhenko, Y., Koval, Y., Zahorodnia, A., Bradul, A., Burkova, L., Shepeliuk, V., Pylypenko, O., Shuliak, O., Rumyk, I., Melnichenko, I., Marchenko, V., & Shakhatreh, H. (2023). *The development of innovations and financial technology in the digital economy*. https://doi.org/10.36690/DIFTDE

Candraningrat, I. R., Darmayanti, N. P. A., Damayanthi, I., & Nurcaya, I. N. (2023). Fostering MSMEs to Increase Fintech-Based Financial Literacy. *Devotion: Journal of Research and Community Service*, *4*(6), 1339–1345.

Chen, C., Xiao, B., Wang, J., & Ye, H. (2023). The effects of fintech development on financing constraints of small and medium-sized enterprises—Evidence from China. *Managerial and Decision Economics*, *44*(7), 4161–4172.

Cheng, Y., Zhou, X., & Li, Y. (2023). The effect of digital transformation on intrapreneurship in real economy enterprises: a labor input perspective. *Management Decision*.

Criveanu, M. M. (2023). Investigating Digital Intensity and E-Commerce as Drivers for Sustainability and Economic Growth in the EU Countries. *Electronics*, *12*(10), 2318.

Grigore, B., & Jomir, E. (2023). Digital Marketing – a New Stage in the Evolution of the Modern Marketing Concept. *Economica*, *1*, 7–22. https://doi.org/10.53486/econ.2023.123.007

Guimarães, J. da S., Fernandes, C., Veiga, P. M., & Ramadani, V. (2023). The relationship between entrepreneurial ecosystems and digital transformation. *FIIB Business Review*, 23197145231173850.

Gundry, L., Kickul, J., & Venkateswaran, V. (2022). Driving digital innovation within new ventures: integrating design thinking into the entrepreneurship classroom. In *Annals of Entrepreneurship Education and Pedagogy–2023* (pp. 239–256). Edward Elgar Publishing.

Haqqi, H. (2023). The Government's Policy in Encouraging the Global Competitiveness of Indonesian MSMEs through the Digital Ecosystem. *Journal of Economics, Management and Trade*, *29*(8), 66–76.

Hartanti, M. F. P., Mardita, C. N., Tirta, M., Putra, A. R. A., & Setyaningrum, I. (2023). Literasi Pemasaran Digital dan Teknologi Keuangan Sebagai Sarana Peningkatan Omset UMKM di Probolinggo. *J-MAS (Jurnal Manajemen Dan Sains)*, *8*(1), 113–118.

Lamine, W., Fayolle, A., Jack, S., & Audretsch, D. (2023). Impact of digital technologies on entrepreneurship: Taking stock and looking forward. In *Technovation* (Vol. 126, p. 102823). Elsevier.

Lesinskis, K., Mavlutova, I., Spilbergs, A., & Hermanis, J. (2023). Digital Transformation in Entrepreneurship Education: The Use of a Digital Tool KABADA and Entrepreneurial Intention of Generation Z. *Sustainability*, *15*(13), 10135.

Li, B. (2023). Effects of digital economy on social entrepreneurship: Evidence from China. *Managerial and Decision Economics*, *44*(8), 4248–4261.

Li, W., & Feng, Z. (2023). Exploring the nonlinear relationship between strategic alliances and entrepreneurial performance in Chinese new ventures: the moderating role of transactive memory systems in entrepreneurial teams. *Business Process Management Journal*, *29*(5), 1386–1407.

Li, W., Nie, Y., & Tian, Z. (2023). Innovation and entrepreneurship model of higher vocational college students based on probability theory statistics. *Applied Mathematics and Nonlinear Sciences*, *8*(2), 1611–1620.

Mahesh, K. M., Aithal, P. S., & Sharma, K. R. S. (2022). Open Network for Digital Commerce-ONDC (E-Commerce) Infrastructure: To Promote SME/MSME Sector for Inclusive and Sustainable Digital Economic growth. *International Journal of Management, Technology and Social Sciences (IJMTS)*, *7*(2), 320–340.

Manishimwe, T., & Raimi, L. (2023). Developing an Innovation-Based Framework of Digital

Entrepreneurship Strategy for Small and Medium-Sized Enterprises. In *Digital Entrepreneurship and Co-Creating Value Through Digital Encounters* (pp. 97–117). IGI Global.

Mohsin, H. J., Hani, L. Y. B., Atta, A. A. B., Al-Alawnh, N. A. K., Ahmad, A. B., & Samara, H. H. (2023). The impact of digital financial technologies on the development of entrepreneurship: evidence from commercial banks in the emerging markets. *Corporate & Business Strategy Review*, *4*(2), 304–312.

Okręglicka, M., & Filipowicz, A. (2023). Entrepreneurial Orientation and Economic Performance of Small and Medium-Sized Enterprises-a Comparative Analysis. *Zeszyty Naukowe Wyższej Szkoły Humanitas. Zarządzanie*, *1*, 43–60.

Perwita, D., Widuri, R., Afif, N. C., & Thoha, D. A. (2023). DIGITALPRENEUR POTENTIAL ANALYSIS OF EDUCATIONAL STUDENTS. *PROMOSI (Jurnal Pendidikan Ekonomi)*, *11*(1).

Popović, J., Dudas, I., Milošević, D., & Luković, J. (2022). Digital transformation as a chance for small business development. *International Journal of Management Trends: Key Concepts and Research*, *1*(1), 29–38.

Pratikto, H., Winarno, A., & Restuningdiah, N. (2023). The Role of Entrepreneurial Competencies: Successful Key SMEs a Literature Review. *International Journal of Professional Business Review*, *8*(7), e01955–e01955.

Putri, M. K. (2022). Creative and Innovative is Entrepreneur Mindset. *Jurnal Manajemen Dan Bisnis*, *11*(2), 344–351.

RÎMNICEANU, R. (2023). Innovation in the Financial Sector (FinTech): Paradigms, Causes, Effects and Perspectives. *Proceedings of the International Conference on Cybersecurity and Cybercrime-2023*, 21–33.

Saliger, E., Kordovitch, V. I., Popova, O. V., & Popov, M. A. (2020). *The Development of Fintechs as a Part of Digital Economy*. *137*, 40–43. https://doi.org/10.2991/aebmr.k.200423.009

Sari, O. I. P., & Arifin, A. Z. (2023). Pengaruh financial technology adoption capability dan financial literacy terhadap business sustainability. *Jurnal Manajemen Bisnis Dan Kewirausahaan*, *7*(3), 571–581.

Sathish, K., Thatipudi, J. G., Manikandan, P., Kanthimathi, N., Rao, T. S., & Alexander, P. (2023). Blockchain based Enhancement of Digital Revolution in Financial Sector. *2023 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS)*, 1283–1286.

Satjaharuthai, K., & Lakkhongkha, K. (2023). The Role of Entrepreneurs in Driving the Success of their Businesses in the Digital Era. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *8*(7), 109.

Sirait, H., Rosalina, S. S., & Sari, E. (2023). The impact of digital innovation on economic growth. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *8*(6), 12.

Sudiantini, D., Adelia, L., Prastiwi, L., Kembaren, L. B. R., & Qhozi, M. D. S. (2023). Manajemen Pemasaran Kewirausahaan Melalui E-Commerce Untuk Meningkatkan Sebuah Kinerja UMKM. *SINOMIKA Journal: Publikasi Ilmiah Bidang Ekonomi Dan Akuntansi*, *1*(6), 1641–1650.

Sudrajad, A. I., Tricahyono, D., Yulianti, E. B., & Rosmawati, W. (2023). The Role of Digitalization Performance on Digital Business Strategy in Indonesia MSEMs. *International Journal of Professional Business Review*, *8*(6), e02260–e02260.

Susilatun, H. R., Widjayanti, A., & Inarto, A. (2023). Digitalization in Indonesian Creative Economy Community. *KnE Social Sciences*, 208–218.

Taghizadeh, S. K., Al Riyami, S., Rahman, S. A., Khan, G. M., & Al Abri, S. (2022). Does entrepreneurial intention for innovation at firm-level matter to affect performance? *The International Journal of Entrepreneurship and Innovation*, 14657503221121574.

Tangri, K., Kalra, D., Katuse, P., Al Masaeid, T., & Afifi, M. A. (2023). The Nexus between Digital Innovation and Digital Entrepreneurship in the Strategic Transformation. *2023*

International Conference on Business Analytics for Technology and Security (ICBATS), 1–5.

Triyani, D., Mulyantomo, E., & Surjanti, R. L. P. N. S. (2023). Strengthening Entrepreneurship Characteristics in the Effort of Increasing MSMe Performance Through Management Ability and Entrepreneurship Competence. *Kontigensi: Jurnal Ilmiah Manajemen*, *11*(1), 143–154.

Ţurcan, R., & Ţurcan, I. (2022). The role of electronic commerce in the development of entrepreneurship through statistical analysis. *Competitiveness and Sustainable Development*, 73–78.

Veselovsky, M. Y., Pogodina, T. V., Ilyukhina, R. V., Sigunova, T. A., & Kuzovleva, N. F. (2018). Financial and economic mechanisms of promoting innovative activity in the context of the digital economy formation. *Entrepreneurship and Sustainability Issues*, *5*(3), 672–681.

Yu, X., Cao, N., & Ren, H. (2023). The Impact of Entrepreneurial Orientation on the Sustainable Innovation Capabilities of New Ventures: From the Perspective of Ambidextrous Learning. *Sustainability*, *15*(11), 9026.

Zakharkina, L. S., Shevchenko, D., Mykhailovych, A., Hnenyk, M., Chukhno, R., & Masiuk, Y. (2023). *Digital opportunities to ensure the transparency of financial rela-tions in entrepreneurship*.