Jurnal Ilmu Manajemen Retail (JIMAT), 2024
Vol. 5, No. 2, https://doi.org/

THE ROLE OF TECHNOLOGY IN THE ECONOMY IN THE DIGITAL ERA

Muhammad Dzakwan Taufiqurokhman 1[1], Anggi Andriana 2[2], Ilham Fadhillah 3[3]
Retail Management, Economic Faculty, Universitas Muhammadiyah Sukabumi
Email : dzakwan011@ummi.ac.id

Received :
Date written by publisher
29-09-2024
Received in Revised Format :
30-09-2024
Accepted :
01-10-2024
Available Online :
02-10-2024

ABSTRACT

The purpose of this research is to analyze and explain the optimization of the role of collaboration and the role of technology in the economy in the digital era. The data of this study is MSMEs in SUKABUMI City with a population of 31,926 people and is used as a sample in this study as many as 100 business actors taken using a simple size web.raosoft.com with an error rate of 10%. The research method uses a quantitative research method, with a data collection method, namely the distribution of questionnaires through google-form of statements to respondents and interviews. Simple linear regression analysis is used as the analysis method in this study. The results of the study explained that there was a positive influence of technology on the economy in Sukabumi City with a large influence of 61.2% and 38.8% influenced by other variables.

Keywords: The role of technology, economy, digital era, MSMEs

INTRODUCTION

The development of digital technology has fundamentally changed the economic landscape in the last decade (Shepherd, 2004). Technology has become a key factor influencing various aspects of economic activity, from the way businesses are run to consumer behavior. In today's digital era, digital technology has become a catalyst for transformation in the world of economics and business. Various technological innovations, such as the internet, artificial intelligence, the Internet of Things, and blockchain technology, have created new opportunities as well as challenges for economic actors (Gupta, 2018). Digital technology has enabled the digitization of business processes, the creation of disruptive new business models, and the change of consumer behavior and expectations (Alhidayatullah, 2022). This has had a significant impact on how organizations carry out economic activities, how products and services are delivered, and how consumers interact with producers.

On the one hand, digital technology has increased productivity, efficiency, and market reach for economic players. But on the other hand, technology also raises challenges related to data security and privacy, digital divides, and the threat of disruption to traditional business models (Nurmilah et al., 2022; Azkia et al., 2024). Therefore, a deep understanding of the role of technology in the economy in the digital era is very important for stakeholders, both the government, business actors, as well as the community, in order to take advantage of existing opportunities and face challenges that arise effectively (Danial et al., 2024).

The problem faced in the role of technology in the economy in the digital era is the digital divide, namely the rapid development of digital technology can create a digital gap between groups of people who can access and utilize technology and those who do not

(Doukidis, 2004). This can lead to widening economic and social inequality. Disruption of traditional business models the emergence of disruptive new business models based on digital technology has changed and even shifted traditional business models. This forces old business actors to adapt or be eliminated from the market (Turulja et al., 2016). Dependence on Technology The increasing reliance on digital technology in business operations can be a vulnerability in the event of a system failure or technological disruption. The purpose of this research is to analyze and explain the role of technology in the economy in the digital era.

LITERATURE REVIEW

The Role of Technology

The role of technology can be defined as the contribution and influence given by various forms of technology to various aspects of human life (Bliznets et al., 2018). There are several roles of technology in Human Life, which play an important role in facilitating, speeding up, and improving the efficiency of various activities and processes in human daily life. Technology can improve human productivity, performance, and quality of life in various fields, such as work, education, health, and communication. Technology drives innovation, efficiency improvement, and economic growth through automation, digitalization, and business model transformation (Xiaojuan, 2023). Technology creates new opportunities, increases competitiveness, and facilitates wider access for society (Pagoropoulos et al., 2017). Technology has changed the way humans interact, communicate, and acquire information and knowledge. The impact of technology can affect people's behavioral patterns, lifestyles, and social structures (Pinem, 2019).

Economy in the Digital Era

The economy in the digital era can be defined as an economic system that is influenced and transformed by the development of digital technology (Zhang et al., 2022). The economy in the digital era has undergone fundamental changes in the way business and economic activities are conducted (Hildebrandt et al., 2015). There is a shift from traditional economic models to business models based on digital technology, such as e-commerce, digital platforms, and the sharing economy (Guo et al., 2017). The economy in the digital era is driven by the adoption of digital technology that changes the way goods and services are produced, distributed, and consumed. Economic processes become more integrated, efficient, and connected through the use of digital technology (Yudina, 2019). The economy in the digital era is changing the behavior of consumers, producers, and business people in transacting, interacting, and creating value (Li et al., 2020). There has been a shift in preferences and consumption patterns, as well as the emergence of new business models that are more oriented to consumers' digital needs (Druicã, 2012). The economy in the digital era is characterized by the dominance of digital platforms that connect various economic actors and facilitate transactions (Santoso, 2019). Digital platforms act as catalysts for economic growth and innovation through the ecosystem created.

METHODS

Types and Objects of Research

This study uses a quantitative method with a type of causal associative relationship, which is research that aims to reveal problems that are causal relationships between two or more variables (Sugiyono, 2019) The type of research used is descriptive, which is research that aims to decrypt or explain something as it is or an overview of a situation (Arikunto, 2021) The object of this research is digital technology

(X), and economics (Y). The location of this research is Sukabumi City MSMEs.

Types and Data Sources

This study uses primary data, namely data from the dissemination of questions or questionnaires related to digital technology, and economics. The primary data of this study was sent to respondents, namely MSMEs in the Sukabumi City Area.

Population and Sample

The population of this study is MSMEs in Sukabumi City, with a total population of 31,926 business actors obtained from the West Java web open data. Samples were taken using the web raosoft.com sample size calculator with a data accuracy rate of 90% and a margin of error of 10%. So there were respondents who could be used as a sample of 100 people.

Data Analysis Techniques

Statistical data analysis is carried out in stages, namely first conducting a data feasibility test (validity and reliability test), while the analysis technique used is simple linear regression, and a determination coefficient test. For a simple linear regression it can be formulated as follows:

$$Y = \alpha + bX + e$$

RESULTS AND DISCUSSION

Characteristics of Respondents

The respondents in this study are 100 MSME actors in Sukabumi City. The characteristics of these respondents are based on gender and education, where business actors with the female gender dominate. Education level, and characteristics of MSMEs based on products.

Table 1. Respondent Charateristics

No	Information	Frequency	Percentage
1.	**Gender**		
	Man	40	40%
	Woman	60	60%
2.	**Education Level**		
	Junior high school	30	30%
	Senior high school	35	35%
	Diploma III	15	15%
	S1	13	13%
	S2	7	7%
	Sum	100	100%

Validity and Reliability Test Results

The validity test carried out is by testing all variable instruments, digital technology, and the economy. The statement of whether or not an instrument is valid or not is by comparing r calculation with r critical. Where if r is calculated above critical r (0.3), it is declared valid, and if r calculation is below critical r, it is declared invalid (Sugiyono, 2019).

The reliability test was carried out using the Cronbach alpha formula technique, declared reliable if the alpha Cronbach value was above 0.600. The results of the reliability test in this study were declared reliable (>0.600). It can be seen in the table below:

Table 2. Research Validity and Reliability Test Result

Variables	*Indicators*	*r Count*	*r Critical*	*Critical Point*	*Cronbach's Alpha*	*Result*
Digital technology	X_1.1	0,976	0,3	0,600	0,675	**Valid & Reliable**
	X_1.2	0,876	0,3			
	X_1.3	0,888	0,3			
	X_1.4	0,724	0,3			
	X_1.5	0,721	0,3			
	X_1.6	0,694	0,3			
Economy	Y1	0,731	0,3	0,600	0,862	**Valid & Reliable**
	Y2	0,658	0,3			
	Y3	0,695	0,3			
	Y4	0,748	0,3			
	Y5	0,712	0,3			
	Y6	0,846	0,3			
	Y7	0,764	0,3			

Results of Simple Linear Regression Analysis

The results of the simple regression test developed in this study are noted as follows:

Y = 9,899 + 1,580 X + e

Explanation:

Y: Economy

X: Digital technology

e: epsilon/error

From the results of the simple linear regression, it can be explained that:

The constant value of 9.899 means that digital technology (X) and economy (Y) have a value of 0, then the economy is 9.899. The value of the regression coefficient of collaborative digital technology is 1,580 and is positive, which means that digital technology and the economy are directly proportional, where if digital technology increases, it will increase the economy by 1,580.

Determination Test

To perform a determination test, a determination coefficient (R-squared) is usually used which ranges from 0 to 1. R-squared measures the proportion of variation in dependent variables that can be explained by independent variables in regression models. The higher the R-squared value, the better the regression model is at explaining the variation in the data. The results of the determination test can be seen from the following table:

Table 3. Determination Test

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.782[a]	.612	.608	3.50346

a. Predictors: (Constant), Technology_digital

Based on the table above, it can be explained that the value of the R square coefficient of 0.612 has the meaning that digital technology can affect the economy by 61.2%. Meanwhile, 38.8% were influenced by other variables that were not studied.

DISCUSSION

Digital technology to the Economy

Based on the results of the statistical test above, it was found that the p-value of digital technology is 0.000 < 0.05, this explains that digital technology has a significant influence on the economy. Meanwhile, the value of the determination coefficient is 0.612, meaning that the influence of digital technology on the economy is 61.2% while the rest is influenced by other variables. The use of digital technology appropriately and wisely as a means to sell their products on social media is a way to improve the MSME Economy.

CONCLUSION

The results of the statistical test analysis show that digital technology has a positive and significant influence on improving the economy of business actors, where the influence of digital technology is 61.2% on the economy, while 38.8% is influenced by other variables that are not studied. The results of this research are expected to contribute to the world of academia, and business actors who are used as research sites, and can be useful in increasing and expanding knowledge for researchers. It is hoped that this research will have an impact on the world of education, and the Sukabumi City Cooperatives, Micro Enterprises, Industry and Trade Office as a recommendation in making policies and decisions to further improve the economy of business actors. It is hoped that this research can be a reference for other researchers who conduct research related to digital technology and the economy of business actors. As well as suggestions for future research in order to involve many business actors not only in Sukabumi City but also involving business actors in Regencies and Cities in West Java, so that they can add respondents, and add other methods to strengthen quantitative data from the distribution of questionnaires.

REFERENCES

Alhidayatullah, A., Amal, M. K., Kartini, T., & Sudarma, A. (2022). Business Model Innovation Through MSME Sister Business. *International Journal of Law, Policy, and Governance*, *1*(2), 69-77.

Azkia, N. M., Angraeni, R., Jahriyah, N., & Alhidayatullah, A. (2024, July). Strategies to Improve Msme Performance with Collaboration. In *Faculty of Economics and Business International Conference (FEBIC)* (pp. 276-283).

Bliznets, I. A. Y., Kartskhiya, A. A., & Smirnov, M. G. (2018). Technology transfer in digital era: legal environment. *Journal of History Culture and Art Research*, *7*(1), 354-363.

Danial, R. D. M., Alhidayatullah, A., Amal, M. K., & Aziz, M. A. (2024). Product Innovation of Smes in Vuca Era. *Sibatik Journal: Jurnal Ilmiah Bidang Sosial, Ekonomi, Budaya, Teknologi, Dan Pendidikan*, *3*(8), 1067-1082.

Doukidis, G. I., Mylonopoulos, N., & Pouloudi, N. (Eds.). (2004). *Social and economic transformation in the digital era*. IGI Global.

Druicã, E. (Ed.). (2012). *Digital economy innovations and impacts on society*. IGI Global.

Guo, S., Ding, W., & Lanshina, T. (2017). Digital Economy for Sustainable Economic Growth. *International Organisations Research Journal*, *12*(4), 169-184.

Gupta, M. (2018). Digital Economy and the Role of Information Technology. *ANWESH: International Journal of Management & Information Technology*, *3*(2).

Hildebrandt, B., Hanelt, A., Firk, S., & Kolbe, L. (2015). Entering the digital era–the impact of digital technology-related M&As on business model innovations of automobile OEMs.

Li, K., Kim, D. J., Lang, K. R., Kauffman, R. J., & Naldi, M. (2020). How should we understand the digital economy in Asia? Critical assessment and research agenda. *Electronic commerce research and applications*, *44*, 101004.

Nurmilah, R., Sudarma, A., & Alhidayatullah, A. (2022). Culinary Tourism Development Strategy In Sukabumi. *International Journal of Entrepreneurship and Business Management*, *1*(2), 105-115.

Pagoropoulos, A., Pigosso, D. C., & McAloone, T. C. (2017). The emergent role of digital technologies in the Circular Economy: A review. *Procedia cirp*, *64*, 19-24.

Pinem, R. J. (2019). The role of technology in increasing motivation of millennial women entrepreneurs starting a business in the digital era. *International Journal of Entrepreneurship*, *23*(2), 1-7.

Santoso, I., Canon, S., & Pakaya, A. (2019, November). The role of Islamic financial institutions in supporting economic growth in the digital era: case study in Indonesia. In *The First International Conference On Islamic Development Studies 2019, ICIDS 2019, 10 September 2019, Bandar Lampung, Indonesia*.

Shepherd, J. (2004). What is the digital era?. In *Social and economic transformation in the digital era* (pp. 1-18). IGI global.

Turulja, L., & Bajgorić, N. (2016). Human resources or information technology: What is more important for companies in the digital era?. *Business Systems Research: International journal of the Society for Advancing Innovation and Research in Economy*, *7*(1), 35-45.

Xiaojuan, J. (2023). Technology and Culture in the Digital Era. *Social Sciences in China*, *44*(1), 4-24.

Yudina, T. N. (2019). Digital segment of the real economy: digital economy in the context of analog economy. *π-Economy*, *12*(2), 7-18.

Zhang, J., Zhao, W., Cheng, B., Li, A., Wang, Y., Yang, N., & Tian, Y. (2022). The impact of digital economy on the economic growth and the development strategies in the post-COVID-19 era: evidence from

countries along the "Belt and Road". *Frontiers in public health*, *10*, 856142.