

14<sup>th</sup> ISCA 2024**The Effect of Technology Readiness, Digital Capability, and Government Support on BUMDes Performance With Digital Capability as Mediating Variable****Dectychia Dina Fianty<sup>1\*</sup>, Alisa Tri Nawarini<sup>2</sup>, Monica Rosiana<sup>3</sup>, Ekyn Anggraeni Alkautsar<sup>4</sup>**<sup>1</sup>Jenderal Soedirman University, dectychia.fianty@mhs.unsoed.ac.id, Indonesia<sup>2</sup>Jenderal Soedirman University, alisa.nawarini@unsoed.ac.id, Indonesia<sup>3</sup>Jenderal Soedirman University, monicarosiana@unsoed.ac.id, Indonesia<sup>4</sup>Kementerian Desa PDTT, ekyn.anggraini@gmail.com, Indonesia

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**ABSTRACT**

This study aims to analyze the effect of technological readiness, digital capability, and government support on BUMDes performance with e-commerce adoption as a mediating variable. This research uses quantitative methods with an explanatory approach. The population in this study are BUMDes managers in West Java who have adopted e-commerce. The sample was determined by non-probability sampling and the data collected was collected by survey using a questionnaire. In the end as many as 145 BUMDes managers became respondents in this study. Based on the results of research and data analysis using SEM (Structural Equation Modeling) with SmartPLS analysis tools, it shows that technological readiness, digital capability, and government support have a positive and significant effect on e-commerce adoption, technological readiness has a positive and significant effect on BUMDes performance, digital capability and government support have no effect on BUMDes performance, e-commerce adoption has a positive and significant effect on BUMDes performance, e-commerce adoption mediates the effect of technological readiness on BUMDes performance, e-commerce adoption does not mediate the effect of digital capability on BUMDes performance, and e-commerce adoption mediates the effect of government support on BUMDes performance.

**Keywords:** Technology Readiness, Digital Capability, Government Support, E-commerce Adoption, BUMDes Performance.

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**1. Introduction**

Empowering communities is one of the government's goals in developing rural areas, which in turn can increase the productivity and diversity of rural businesses in Indonesia (Sofyani et al., 2019). The government established a local economic institution called Badan Usaha Milik Desa (BUMDes) based on Law No. 6/2014 on Villages to improve the economy in rural areas. The government is trying to improve the village economy by looking at the potential of local wisdom through village autonomy (Seran Nuak et al., 2020). Based on data from the Kemendesa (2024), there are 60.416 village-owned enterprises (BUMDes) in Indonesia. According to Sofyani et al. (2019), BUMDes can be an important factor in advancing the village economy towards a developed and prosperous village.

Digitalization has played an important role in business transformation, including in the BUMDes sector (Garzoni et al., 2020). With today's technological advancements, there are several digital marketing techniques that can be utilized such as E-commerce Adaption (Desai & Vidyapeeth, 2019). However, until now there are still few BUMDes that adopt e-commerce in their business processes (Kurnia et al., 2015). This depends on the interaction of technological, organizational, and environmental (TOE) factors that ensure the success of the digital transformation of these entities (Hossain, 2019). The research by Salah & Ayyash (2024) proves that TOE factors have indirect positive influence on business performance that uses e-commerce adoption as a mediating variable. The research found that the TOE factor is positively and significantly related to e-commerce adoption, and e-commerce adoption is also significant and positive in influencing business performance.

This study examines the impact of TOE factors on BUMDes performance, using e-commerce adoption as a mediating variable. By addressing the gaps in existing research, this study aims to provide insights into the digital transformation of rural enterprises and its implications on BUMDes performance. By focusing on West Java, a region with notable technology adoption rates and targeted e-commerce training initiatives, the research investigates how technological readiness, digital capabilities, and government support drive business performance. With e-commerce offering opportunities for increased efficiency, market expansion, and operational improvement, this study provides valuable insights into its role as a transformative tool for enhancing rural business performance.

## **2. Literature Review**

### *2.1 Technological-Organizational-Environmental (TOE) Theory*

Company adoption decisions can be influenced by three different elements, namely technological context, organizational context, and environmental context (Tornatzky & Fleischer, 1990). On this research technology readiness (technology), digital capability (organization), and government support (environment).

### *2.2 BUMDes Performance*

Business performance refers to an organization's ability to achieve its goals by optimizing resources through operational efficiency, productivity, and innovation (Ramdan et al., 2022). Business performance is the success or ability of an entity, individual, group, or organization in achieving its goals (Laitinen, 2002). The BUMDes performance indicators used in this study are sales growth, marketing growth, profitability, and customer retention.

### *2.3 Technology Readiness*

Technology readiness is readiness and ability of the organization to incorporate innovation and understand the importance of readiness in utilizing technology (Goutam et al., 2022). Technology readiness consists of four indicators namely optimism, innovative, discomfort, and insecurity.

## *2.4 Digital Capability*

Digital capability is Organization's ability to use digital technology effectively to complete various tasks and responsibilities (Khin & Ho, 2020). The indicator of digital capability are digital technology, new digital opportunity, mastering in digital technology, and development innovation product/services.

## *2.5 Government Support*

Government support is the role of the government in making policies and programs that aim to encourage the growth and development of a business (Iskamto et al., 2024). The indicator of government support are financial support, technical support, and institutional support.

## *2.6 E-commerce Adaption*

E-commerce adoption is the process of accepting electronic commerce using digital technology, which was initially not used but is starting to be used in general (Ahmad et al., 2015). The indicators used are electronic marketing, electronic advertising, electronic customer support service, electronic payment system.

## *2.7 Hypothesis Development*

### *2.7.1 Technology Readiness has positive effect on E-Commerce Adoption*

Technological readiness significantly affects e-commerce adoption, which includes technological infrastructure and human resource competence in utilizing technology. An organization's ability to implement new technologies or strong technology readiness has a direct and positive impact on e-commerce adoption, as highlighted by Zhu & Kraemer (2005). Therefore, the first hypothesis in this research can be proposed as below:

H1: Technological readiness has a positive effect on e-commerce adoption

### *2.7.2 Digital Capability has positive effect on E-Commerce Adoption*

Digital capability includes an organization's ability to implement digital competencies to react to changes in the business environment in the era of digitalization, having a positive and significant effect on e-commerce adoption (L. Li et al., 2018). Organizations with good digital capabilities will find it easier to adopt e-commerce in their business processes. Therefore, the second hypothesis in this research can be proposed as below:

H2: Digital Capability has a positive effect on e-commerce adoption

### *2.7.3 Government Support has positive effect on E-Commerce Adoption*

Government support encourages information technology innovation by emphasizing technology adoption in SME business processes, government support affects SMEs' decisions to use technologies such as e-commerce (King et al., 1994). then the third hypothesis in this study can be proposed as follows:

H3: Government support has a positive effect on e-commerce adoption

#### *2.7.4 Technology Readiness has positive effect on BUMDes Performance*

Technology readiness is a factor that can support the achievement of organizational performance, there is a positive and significant relationship between technology readiness and organizational performance (Kalambo et al., 2024). Technological readiness makes organizations more responsive to market changes, it can improve overall performance and maintain competitive advantages (Lokuge et al., 2019). Therefore, the fourth hypothesis in this research can be proposed as below:

H4: Technological readiness has a positive effect on BUMDes performance

#### *2.7.5 Digital Capability has positive effect on BUMDes Performance*

Digital capability is the ability of a company or organization with digital technology, by utilizing digital capabilities business actors can manage their business more efficiently and can directly influence and improve business performance Hutama et al., (2023). Organizations with good digital capabilities can more easily adapt to market changes and improve overall performance. Therefore, the fifth hypothesis in this research can be proposed as below:

H5: Digital capability has a positive effect on BUMDes performance

#### *2.7.6 Government Support has positive effect on BUMDes Performance*

Government support has a significant effect on business performance and plays an important role in providing support for the business development of SMEs (Iskamto et al., 2024). Government support in making policies and training that support business development has a positive and significant impact on business performance, especially SMEs (Adula & Kant, 2022). Therefore, the sixth hypothesis in this research can be proposed as below:

H6: Government support has a positive effect on BUMDes performance

#### *2.7.7 E-commerce Adaption has positive effect on BUMDes Performance*

The businesses that e-commerce adaption in their business operations and have a direct impact on business performance (Sutrisno, n.d. 2024). This is in line with Abed (2020) that found e-commerce adoption has a positive impact on MSMEs in several aspects, such as increasing sales, improving operational efficiency, and expanding markets. Therefore, the seventh hypothesis in this research can be proposed as below:

H7: E-commerce adoption has a positive effect on BUMDes performance

#### *2.7.8 E-Commerce Adoption mediates the effect of technological readiness on BUMDes Performance*

Technology readiness can improve overall organizational performance (Tejo Bawono, n.d.). However, Harini et al. (2023) states that the indirect impact of technology readiness can also have a positive effect on the performance of SME companies, which can be mediated by e-commerce adoption. When a business is technologically ready and able to adopt e-commerce in

its business operations it can improve overall performance. Therefore, the eighth hypothesis in this research can be proposed as below:

H8: E-commerce adoption mediates the effect of technological readiness on BUMDes performance

2.7.9 E-Commerce Adoption mediates the effect of digital capability on BUMDes Performance

Heredia et al. (2022) found that digital capabilities do not influence company performance directly, but rather through the adoption of technology with e-commerce. These findings suggest that an organization's digital capabilities should be optimized through the adoption of digital technologies such as e-commerce that can generate maximum impact on business performance. Therefore, the ninth hypothesis in this research can be proposed as below:

H9: E-commerce adoption mediates the effect of digital capability on BUMDes performance

2.7.10 E-Commerce Adoption mediates the effect of technological readiness on BUMDes Performance

Government support can improve the ability of information system resources by adopting digital technology, especially such as e-commerce and this can improve performance (Sameera, n.d. 2020). This support can be in the form of policies that support e-commerce adoption training that can improve the overall performance of BUMDes. Therefore, the tenth hypothesis in this research can be proposed as below:

H10: E-commerce adoption mediates the effect of government support on BUMDes performance

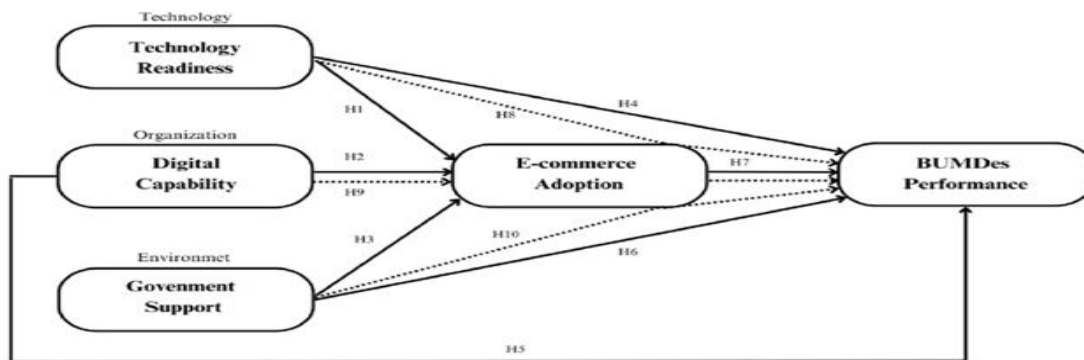


Figure 1 Research framework

### 3. Research Methodology

This study adopts a quantitative research approach. The population consists of all BUMDes managers in West Java who are assisted by the Ministry of Village Balai Jakarta who have used e-commerce. The sample size was determined, resulting in a sample of 145 respondents. Data collection was conducted using questionnaires, which were distributed online via Google Forms. The technique used for data collection in this study is a survey with a questionnaire distribution

method, which is aimed at respondents to answer several relevant questions. In measuring the variables in this study, the measurement method used is the Likert scale. This scale assesses the responses of respondents to each question instrument from very positive to very negative (Suliyanto, 2018)

#### 4. Results

##### 4.1 Characteristics of respondents

Table 1 Characteristics of respondents

Characteristics of respondents	Category	Frequency	Percentage
Gender	Men	103	71%
	Woman	42	29%
Age	20 – 30	43	29,7%
	31 – 40	40	27,6%
	41 – 50	43	29,7%
	> 50	19	13,1%
BUMDes age	1	15	10,3%
	2 – 3	28	19,3%
	3 – 4	31	21,4%
	4 – 5	15	10,3%
	5	56	38,6%
Type of business	Trade	63	43%
	Services	48	33%
	Tourism	26	18%
	Others	8	6%
Type of e-commerce	Marketplace	38	21,1%
	Social Media	114	63,3%
	Website	20	11,1%
	Others	8	4,4%

This study was conducted using SEM-PLS. Respondents who participated in this study were dominated by men with 71%, respondents aged 20-30 and 41-50 years with an percentage of 29.7% each, dominated by BUMDes administrators who have been running for more than 5 years with 38.6%, dominating respondent is the trading business unit with 43%, and the most widely used e-commerce by BUMDes in West Java is social media with 63.3%.

##### 4.2 R-square

Tabel 2 R-square testing result

	<i>R-square</i>	<i>R-square adjusted</i>
<i>BP</i>	0.458	0.442
<i>EC</i>	0.617	0.608

R-square value of the BUMDes Performance (BP) variable as the dependent variable is 0.458, this means that BUMDes performance is influenced by independent and mediation variables by 45.8%, it can be concluded that the model is at a weak level. E-commerce Adaption (EC) is 0.617, this indicates that the e-commerce adaption variable is influenced by the independent variable by 61.7%, which means that the model is at a moderate level.

4.3 Hypothesis results

Table 2 Hypothesis results

Hypothesis	Sig.	Results
Technology Readiness has positive effect on E-Commerce Adoption	0.000	<b>Accepted</b>
Digital Capability has positive effect on E-Commerce Adoption	0.012	<b>Accepted</b>
Government Support has positive effect on E-Commerce Adoption	0.000	<b>Accepted</b>
Technology Readiness has positive effect on BUMDes Performance	0.013	<b>Accepted</b>
Digital Capability has positive effect on BUMDes Performance	0.108	<b>Rejected</b>
Government Support has positive effect on BUMDes Performance	0.399	<b>Rejected</b>
E-commerce Adaption has positive effect on BUMDes Performance	0.010	<b>Accepted</b>
E-commerce Adaption mediates the effect of Technology Readiness on BUMDes Performance	0.031	<b>Accepted</b>
E-commerce Adaption mediates the effect of Digital Capability on BUMDes Performance	0.168	<b>Rejected</b>
E-commerce Adaption mediates the effect of Government Support on BUMDes Performance	0.042	<b>Accepted</b>

Technology Readiness has a positive effect on E-commerce Adoption, with t-statistic of **4.313** > t-table 1.96 and a p-value of **0.00** < significance level 0.05. Digital Capability has a positive effect on E-commerce Adoption, with t-statistic **2.261** > t-table 1.96 and p-value **0.012** < significance level 0.05. Government Support has a positive effect on E-commerce Adoption, with with t-statistic **3.500** > t-table 1.96 and p-value **0.00** < significance level 0.05. Technology Readiness has a positive effect on BUMDes Performance, with t-statistic **2.226** > t-table 1.96 and p-value **0.013** < significance level 0.05. Digital Capability has no effect on BUMDes Performance, with t-statistic **1.238** < t-table 1.96 and p-value **0.108** > significance level 0.05. Government Support has no effect on BUMDes Performance, with t-statistic **0.256** < t-table 1.96 and p-value **0.399** > significance level 0.05. E-commerce Adaption has a positive effect on BUMDes performance, with t-statistic **2.314** > t-table 1.96 and p-value **0.021** < significance level 0.05.

**5. Discussion**

5.1 Technology Readiness has positive effect on E-Commerce Adoption

Technology readiness positively influences e-commerce adaptation among BUMDes. This study highlights that BUMDes must keep up with technological developments in order to effectively utilize the benefits of e-commerce. A good level of technological readiness will facilitate the adoption of digital platforms such as e-commerce. This finding is in line with Parasuraman's (2015) research which asserts that technological readiness correlates with a greater likelihood of adopting e-commerce.

5.2 Digital Capability has positive effect on E-Commerce Adoption

Digital capabilities significantly improve e-commerce adaptation among BUMDes. BUMDes managers who are good at digital capabilities will be better able to capitalize on e-commerce opportunities. Nwankpa's (2016) research supports with a positive correlation between an organization's digital capabilities and its likelihood of adopting e-commerce, that good organizational digital capabilities better enable organizations to effectively leverage and optimize e-commerce.

### 5.3 Government Support has positive effect on E-Commerce Adoption

Government support has a positive impact on BUMDes performance. Respondents indicated that government-provided digital marketing training significantly assisted BUMDes in utilizing e-commerce and other digital platforms. This is in line with the findings of Yayu Palangan (2024), who highlighted that government support through training and funding is crucial for micro enterprises adopting e-commerce.

### 5.4 Technology Readiness has positive effect on BUMDes Performance

Technology readiness has a positive impact on BUMDes performance. Respondents believe that technology can streamline daily operations, increase efficiency and competitiveness which can drive sales and improve performance. This is supported by Kalambo et al.'s research (2024) that organizations with high technological readiness can adapt quickly to market changes and improve their performance.

### 5.5 Digital Capability has positive effect on BUMDes Performance

This research found no effect of digital capability on BUMDes performance. Managers have basic knowledge of digital, they struggle to apply it effectively in business activities. Factors hindering this improvement include limited knowledge of new technologies, inadequate infrastructure and internet access issues in rural areas. As a result, the digital capabilities of BUMDes managers alone are not enough to improve performance. This is in line with Haryanti (2021), who noted that digital capabilities do not directly affect MSME performance.

### 5.6 Government Support has positive effect on BUMDes Performance

This study did not find a significant effect of government support on BUMDes performance, indicating that the support provided is not enough to improve performance. While government training helps improve knowledge, uneven implementation and lack of ongoing mentoring hinder the application of the training. As a result, BUMDes struggle to fully utilize government support for performance improvement. This is in line with Hussain et al. (2020), who note that gaps in regulations and policies limit the effectiveness of government support to MSME performance.

### 5.7 E-commerce Adaption has positive effect on BUMDes Performance

E-commerce adaptation positively affects BUMDes performance through factors such as e-marketing, advertising, customer support services, and payment systems. This study shows that the adoption of e-commerce platforms by BUMDes can improve various performance metrics. (Salah et al., 2024) supports this, showing that proactive e-commerce adoption significantly improves SME performance.

### 5.8 E-Commerce Adoption mediates the effect of technological readiness on BUMDes Performance



E-commerce adaptation mediates the effect of technological readiness on BUMDes performance. When BUMDes have a high level of technological readiness-they can effectively utilize e-commerce platforms to market their products and expand their market reach, thus improving their performance as well. Research by Harini et al. (2023) shows that technological readiness positively influences SMEs' performance through e-commerce adoption.

#### 5.9 E-Commerce Adoption mediates the effect of digital capability on BUMDes Performance

This study revealed that e-commerce adoption does not mediate the relationship between digital capabilities and BUMDes performance. Respondents identified several constraints that hinder BUMDes in improving their digital capabilities, including inadequate infrastructure and poor internet access in rural areas. These challenges prevent BUMDes from effectively utilizing digital technology to improve overall performance, even with the adoption of e-commerce. This finding is in line with Hadian & Rizaludin (2024), who stated that e-commerce adoption fails to mediate the relationship between digital capabilities and BUMDes performance.

#### 5.10 E-Commerce Adoption mediates the effect of government support on BUMDes Performance

E-commerce adoption mediates the relationship between government support and BUMDes performance. Government funding, training, and policies enable BUMDes to adopt e-commerce, which leads to market expansion, increased competitiveness, and improved performance through increased sales and profits. This finding is in line with Sameera's (2020) research, which emphasizes that government support increases the capacity of businesses to adopt digital technology and improve their performance.

## 6. Conclusion

The findings of this study highlight that technological readiness, digital capability, and government support positively influence e-commerce adoption. Technology readiness also has a positive effect on BUMDes performance, but digital capability and government support do not directly influence BUMDes performance. Specifically, e-commerce adoption positively influences BUMDes performance and serves as a mediator in the relationship between technology readiness and government support on BUMDes performance. In contrast, e-commerce adoption does not mediate the effect of digital capability on BUMDes performance. It is important for BUMDes and the government to invest in technological infrastructure, provision of digital tools as well as extensive e-commerce adoption training, and continuous mentoring from the government to assist BUMDes in optimizing their e-commerce, which ultimately improves BUMDes performance with increased sales as well as market expansion.

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