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# Confronting the COVID-19 By Digital Economy Utilization in MSMEs

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## Abstract: Confronting the COVID-19 By Digital Economy Utilization in MSMEs

This study aimed to identify the effect of applying digital economy in the framework for improving MSMEs' strength and resilience in Salatiga City before and after the COVID-19 pandemic. This research used 134 samples representing all small and medium enterprises in Salatiga City. The data focused in this research related to the application of the digital economy by business actors in Salatiga City. The analytical techniques of this research included descriptive statistics and a multiple linear regression model estimated by ordinary least squares (OLS). The result of this research indicated that the application of the digital economy in the framework for improving MSMEs' strength and resilience amidst the COVID-19 pandemic was not proven in this study. The variables of the digital economy and total length of business did not significantly affect the turnover of the MSME actors in Salatiga City. Meanwhile, the labor variable proved to have a positive and significant effect on the turnover of the MSME actors in Salatiga City. However, the service business sector has been shown to negatively and significantly impact the turnover of MSME actors. MSMEs engaged in the service business sector tended to have lower turnover than MSMEs engaged in the trade business sector.

**Keywords**: MSMEs; Digital Economy; Strengthening and Resilience of MSMEs, COVID-19

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# INTRODUCTION

Micro and small enterprises (MSMEs) play a significant role in the Indonesian economy. When the crisis hit the Indonesian economy in 1997/1998, MSMEs were able to survive while large businesses fell. Additionally, the existence of MSMEs dominates the business sector in Indonesia to date. Based on the 2016 Economic Census, the number of MSMEs reached more than 26 million businesses, or 98.68% of the total non-agricultural businesses in Indonesia. These businesses also successfully absorbed more than 59 million labours, or approximately 75.33% of the total non-agricultural labours (BPS, 2019). However, the MSMEs sustainability began to be at stake when the COVID-19 pandemic hit the world, including Indonesia.

In 2019, the world economy was rocked by a crisis caused by the COVID-19 pandemic. The pandemic began to strike Indonesia on March 2, 2020. In preventing the spread of COVID-19, the Government established a policy that limited community activities. Unfortunately, this policy hampered economic activity. The household spending decreased in line with restrictions on community activities. The decline in household spending certainly affected the business turnover. This condition forced business actors to reduce their employees to maintain business sustainability. However, many businesses eventually had to stop operating since they could no longer survive the slump in household demand during the COVID-19 pandemic. The Minister of Cooperatives and SMEs of Indonesia said that 47% of MSMEs had to be wound up in 2020 as a result of the COVID-19 pandemic (Bisnis.com, 2020). Although the restrictions on community activities were initially carried out in Jakarta, the impacts of the COVID-19 pandemic were felt by all business actors in all regions in Indonesia, including in Salatiga City.

The business actors in Salatiga City, a city in Central Java Province, were also affected by the policy that limited community activities to prevent the spread of the COVID-19 virus. It can be seen from the declining contribution of the trade sector to the total Gross Domestic Product (GDP) of Salatiga City.

Based on Table 1 below, the contribution of the trade sector to the total GRDP in 2020 is 12.84%. This number is low when compared to the total GRDP in 2019, which is 13.19%. In addition, based on data from the Cooperatives and SMEs Office of Salatiga City, the average turnover of the MSMEs in the processed food and beverage sector receiving the Economy Safety Net (*Jaring Pengamanan Ekonomi* or JPE) before the COVID-19 pandemic reached IDR15.2 million. Furthermore, after the COVID-19 pandemic and before receiving the JPE, the turnover reached IDR4.5 million, indicating a decrease in the average turnover of up to 71%. This condition urged business actors to implement sales strategies suitable for the COVID-19

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pandemic. One thing they could do was implement sales and apply the digital economy using internet media such as e-commerce.

Table 1. Distribution of GRDP Based on Current Prices by Business Field in 2019-2020 (in per cent)

| Category | Description | 2019 | 2020 |
|---|---|---|---|
| A | Agriculture, Forestry, and Fisheries | 4,5 | 4,57 |
| B | Mining and Quarrying | 0,04 | 0,04 |
| C | Processing Industry | 31,26 | 32,23 |
| D | Electricity and Gas Procurement | 0,18 | 0,19 |
| E | Water Procurement; Waste and Garbage Management; and Recycling | 0,07 | 0,07 |
| F | Construction | 14,41 | 13,95 |
| G | Wholesale and Retail Trade; Car and Motorcycle Repair | 13,19 | 12,84 |
| H | Transportation and Warehousing | 3,01 | 2,28 |
| I | Provision of Accommodation, Food, and Beverages | 7,53 | 7,15 |
| J | Information and Communication | 3,22 | 3,85 |
| K | Financial Services and Insurance | 3,48 | 3,56 |
| L | Real Estate | 4,58 | 4,62 |
| M,N | Corporate Services | 1,32 | 1,26 |
| O | Government Administration, Defense, and Compulsory Social Security | 5,18 | 5,2 |
| P | Educational Services | 5,39 | 5,44 |
| Q | Health Services and Social Activities | 1,61 | 1,8 |
| R,S,T,U | Other services | 1,02 | 0,96 |
| | GRDP | 100 | 100 |

Source: BPS Salatiga, (2022)

The digital economy in Indonesia started to grow and change the way people work, consume goods and services, and interact with each other (World Bank, 2021). The utilization of internet media by MSME actors is a form of applying the digital economy using digital distribution channels such as computers, mobile phones, smartphones, and other digital devices (Dekker and Okano-Heijmans, 2020). The digital economy in Indonesia is experiencing

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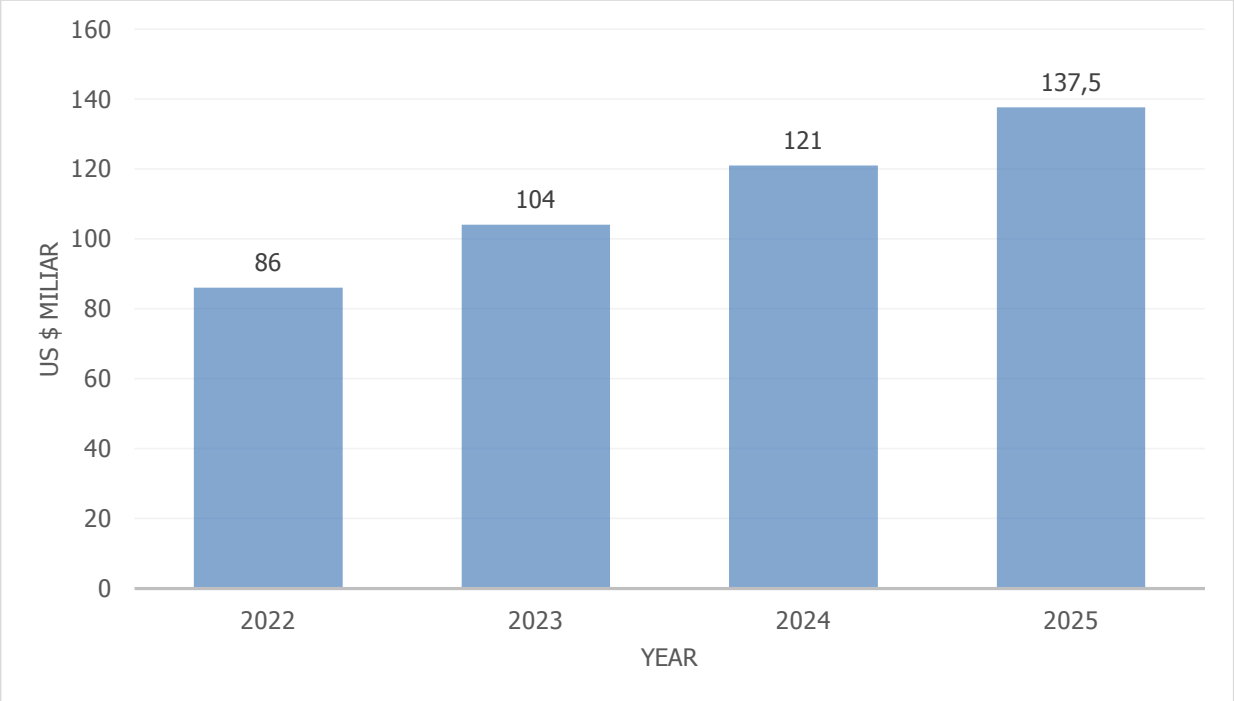
rapid development, as indicated by the increasing transactions using the internet (e-commerce). In 2020, the value of internet transactions was recorded at IDR401 trillion and increased in 2021 to IDR526 trillion, or an increase of 31.2% (BPS, 2022). The value of e-commerce transactions is projected to continue to increase in line with technological development and changes in people's transaction preferences.

Figure 1. Projection of the Value of E-Commerce Transactions in Indonesia in 2022-2025




Source: Redseer, (2022)

The application of the digital economy by MSMEs through internet media provides many benefits, including a more efficient advertising cost to promote the brands so they can gain more recognition from the public. In other words, it will expand the range of the product distribution (Litan, 2001; Kenney and Zysman, 2016). The expansion will certainly increase the turnover of the business actors, helping them survive and develop during the COVID-19 pandemic. Research by Chan and Yazdanifard (2014) proves that the application of social media positively impacts the profits of business actors. In addition to retaining the existing consumers, the application of the digital economy will attract new consumers, which will influence the turnover (Kenney and Zysman, 2016). Moreover, Song et al. (2022) shares their research result that the application of the digital economy plays an essential role in maintaining and expanding the market, especially during the COVID-19 pandemic. The purpose of digitalization in the economy is to encourage the expansion and improvement of Indonesian

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economic activities in an efficient and globally connected manner. The Government also believes that this e-commerce roadmap can encourage the creation, innovation, and discovery of new economic activities among the young generation (Arifin et al., 2019). Hossain et al. (2022) stated that the digital economy applied by MSMEs is proven to be able to deal with the economic crisis. Business actors who make the best use of digital platforms by utilizing technology and innovation can increase their business profits. By understanding the occurring crisis, creating opportunities, and adopting strategies through the digital economy and entrepreneurial innovation, MSMEs can survive the crisis period.

Much literature has analysed the application of the digital economy in MSMEs amidst the COVID-19 pandemic, yet several studies did not analyse how technological innovation affects the MSME sustainability. Therefore, this study recommends a dynamic and resilient strategy model of the digital economy to be adopted in the "new normal" for successful, sustainable MSMEs in the future. Thus, there is an important research gap in this study. This study aimed to examine the impact of the digital economy application and the technological capabilities of MSMEs to survive during the COVID-19 pandemic crisis. Hopefully, the results of this study can help and enable the formulation of resilient strategies by policymakers and MSME owners for improving the MSMEs' strength and resilience in facing potential crises in the future.

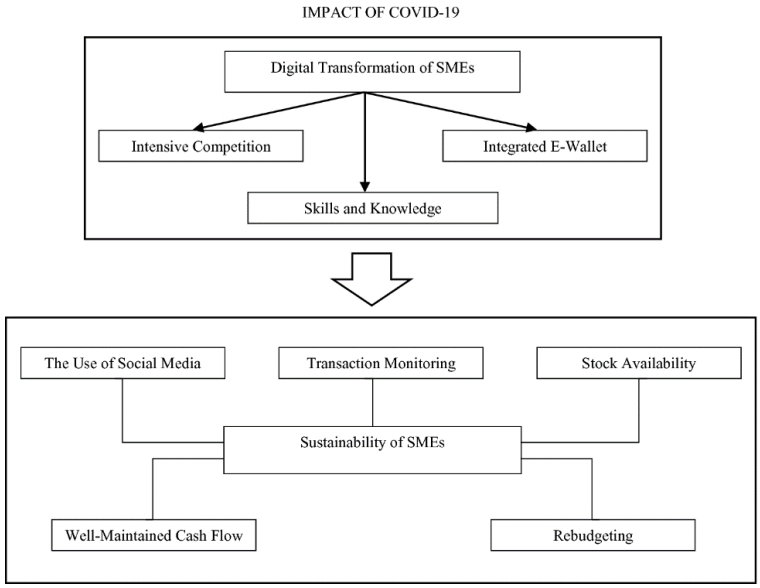
## LITERATURE REVIEW

Digital technology has played an essential role in preventing the impacts of the pandemic and in sustaining and expanding consumption. After the pandemic, new products powered by digital technology, new services, new business forms, and new business models in various sectors such as the education, health, and smart-homing sectors will be important factors that will impact the economic growth and improve the circular economy in a country (Jiang, 2020). Chatterjee et al. (2022) explained that innovations driven by digitalization in business and the technological capabilities of MSMEs influence MSME performance after the COVID-19 pandemic. Research conducted by Song et al. (2022) revealed that the application of the digital economy in China had promoted sustainable economic and social development in the country. Furthermore, the digital economy has also promoted economic growth rapidly, raised people's living standards, increased the efficient use of resources, and strengthened environmental protection in China.

The digital economy utilizes the internet in social and economic activities (Leksono and Handayani, 2022). The technologies in the digital economy include (1) infrastructure

(broadband lines, routers); (2) access devices (PC, smartphone); (3) applications (Google, Salesforce); and (4) digital functions (IoT internet, data analysis, cloud computing). The digital economy is growing rapidly, especially in developing countries. The digital economy contributes about 5% of global GDP and 3% of global employment (Bukht and Heeks, 2019). The digital economy will be a means to drive sustainable economic recovery and facilitate disruptive changes in production activities, accelerating the shift in the application of digital technology from the consumption process to the production process (Jiang, 2020).

Figure 2. Conceptual Framework for the Application of the Digital Economy in MSMEs




Source : Winarsih et al. (2021)

A digital economy is defined as any economic transactions or activities carried out using the internet (Bukht and Heeks, 2018). The application of the digital economy includes online sales, online purchases, and online payments. In terms of online sales, business actors make sales through the internet. The digital economy provides many benefits, including cost efficiency, more people knowing the products, making an impact in a relatively short time, and introducing the brands to the public (brand building). Several platforms to implement digitalization in the economy that can be applied by business actors include e-mail, search engines such as Google, influencers, social media such as Facebook and Twitter, personal website, and the websites of other parties (Shirisha, 2018).

The steps taken to sustain MSMEs can be observed in Figure 2. Winarsih et al. (2021) explained the conceptual framework designed to improve MSME-based digital transformation during the COVID-19 pandemic for the MSME sustainability. In dealing with the COVID-19 impact, the application of digital transformation through the digital economy by MSME actors is

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a necessary strategy to help MSMEs survive and develop during times of crisis.

There are three factors that support the digital economy, namely (1) infrastructure that supports digital technology to maintain computer network availability and operation, (2) digital transactions using a system known as "e-commerce", and (3) content created for the digital economy (Barefoot et al., 2018). Zhang et al. (2021) also mentioned three factors that support the digital economy at the national level. The first factor is the digital economy infrastructure. Computer networks, such as the internet, are the foundation of the digital economy. Availability of infrastructure that supports digital technology includes hardware and software equipment as well as network system management. Infrastructure is used to measure the level of digital economy infrastructure development across provinces, a crucial prerequisite for regional digital economy development.

The second one is the need to develop the digital economy industry. Digitalization in the industry requires the following actions: measuring the scale of the industry, companies, and the status of digital economy investment development across provinces; describing the scale of the core industry of the digital economy with added value for the information technology service industry and electronic equipment manufacturing; and ICT investment in the regional digital economy. The third factor is the integration and application of the digital economy. Integration is necessary, especially to measure the level of the development of digital economic integration across provinces.

There are several studies related to identifying the influence of the digital economy, especially the use of the internet in selling their products. The research used a qualitative method based on a literature study so that it cannot be measured quantitatively regarding the influence of applying the digital economy in increasing business turnover. For this reason, this study aimed to identify the influence of applying the digital economy in increasing business turnover using the internet in MSMEs in Salatiga City before and after the COVID-19 pandemic.

The use of the digital economy with the internet provides beneficial opportunities for business actors. Yet, there are obstacles to its application, causing many business actors to refuse to or would never apply digitalization in their business. Lovisa (2018) found that there are many business actors who have yet to take advantage of the digital economy since they are constrained by the capability of human resources and time. The obstacles for business actors to implement the digital economy are the incompatibility of technology with the target market (Song et al., 2022) and the shortage of the digital economy telecommunication network facilities (Ali et al., 2018). In addition, the lack of knowledge of business actors about online

payment systems is one of the obstacles for business actors to apply the digital economy in their business (Baijal et al., 2021).

Digital-based MSME business development has spurred the economic movement in various remote areas by reaching consumers in one local area and abroad (Sukarmi et al., 2021). Dekker and Okano-Heijmans (2020) argue about the online sales strategy by referring to literature studies, showing that the digital economy for sales will maintain consumer loyalty to the marketed products. In other words, the digital economy, especially the use of the internet, will have a positive impact on business turnover. Tabaghdehi (2022) and Bi et al. (2017) found that the digital economy using social media affects consumer behaviour to buy a product offered so that it will increase profits for business actors.

The digital economy impacts business expansion, so business actors should collaborate with bloggers or website adminitrators to be able to market their products so that in the end it will increase business profits (Jiang, 2020; Tabaghdehi, 2022). In this case, the digitalization in MSMEs will make businesses grow faster. Zhang et al. (2021) also found that implementing the digital economy, can increase the productivity of business actors. This makes the study conclude that the digital economy is a more effective strategy to increase business turnover.

In particular research, Song et al. (2022) conducted a study during the COVID-19 pandemic and gave results that the use of technology in MSMEs has an important role during the COVID-19 pandemic. The digital economy will maintain the market and accelerate economic recovery during the COVID-19 pandemic.

## RESEARCH METHODS

The population of this research covered all small and medium enterprises in Salatiga City. The data focused in this research was qualitative and related to the application of the digital economy by business actors in Salatiga City. Assuming that the proportion of the population of business actors in Salatiga City who applied the digital economy ($\pi$) s the same as e-commerce users as of June 30, 2021, in Central Java, which was 30.1% (BPS, 2021), and expecting that the sample obtained could be used to estimate the proportion of business actors who applied the digital economy, which was believed to be 95% accurate with an estimation error tolerance (e) of a maximum of 10%, then the minimum sample size that must be taken was (Berenson et al., 2020):

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$$n_{min} \geq \pi(1-\pi)\left(\frac{z}{e}\right)^2 = 30{,}1\%\ (1-30{,}1\%)\left(\frac{1{,}96}{10\%}\right)^2 \approx 81 \qquad (1)$$

where $n_{min}$ = minimum sample size to be taken, $z$ = value from the normal distribution table at the desired confidence level, and $e$ = the tolerable level of estimation error.

The stratified sampling technique was applied to collect the minimum number of samples that must be taken per subdistrict (Berenson et al., 2020). Afterwards, the samples in each subdistrict were selected by adopting the judgment sampling technique (Berenson et al., 2020) under a criterion that business actors have been operating for at least two years. This consideration was taken since the survey was conducted from October to November 2021 and intended to record business conditions before and during the COVID-19 pandemic.

Sampling in each subdistrict was performed by ensuring that all business sectors, including (1) agriculture, plantations, animal husbandry, and fisheries, (2) processing industry (manufacturing), (3) trade, and (4) services, were represented. The total population of micro, small, and medium enterprises, the minimum samples that must be taken, and the selected samples per subdistrict in Salatiga City can be previewed in Table 2.

Table 2. Populations and Samples of the Number of Micro, Small, and Medium Enterprises per Subdistrict in Salatiga City

| District | Number of Companies | | | Ratio of the Selected Samples to the 2020 Population |
|---|---|---|---|---|
| | Population 2020[1)] | Minimum Samples[2)] | Selected Samples[3)] | |
| Argomulyo | 306 | 12 | 25 | 8.2% |
| Tingkir | 601 | 25 | 35 | 5.8% |
| Sidomukti | 477 | 20 | 37 | 7.8% |
| Sidorejo | 585 | 24 | 37 | 6.3% |
| Totals | 1.969 | 81 | 134 | 6.8% |

Note: (1) The BPS population data (2022). (2) The minimum samples refer to the minimum number of samples that must be taken. (3) The selected samples refer to the number of samples taken. The criteria for micro, small, and medium enterprises can be seen in table 3.

Samples data were collected through surveys with questionnaire guidance; thus, the data in this study are primary. The data includes the identity of respondents, the identity of business units, and business characteristics before and during the COVID-19 pandemic, as well as the identification of the use of the digital economy. The business characteristics include turnover, assets, and the number of labours. Asset data was not collected bearing the value in rupiah

by considering the respondents are not necessarily the owners of or decision-makers in the business and do not necessarily comprehend the value of business assets; thus, assets were only identified in their type.

Table 3. Criteria for Micro, Small, and Medium Enterprises

| Business Type | Assets*) (IDR Million/year)[1)] | Turnover (IDR Million)[1)] | Labour (People)[2)] |
|---|---|---|---|
| Micro | ≤ 50 | ≤ 300 | 1 – 4 |
| Small | < 50 – ≤ 500 | < 300 – ≤ 2.500 | 5 – 19 |
| Medium | > 500 – ≤ 10.000 | > 2.500 – ≤ 50.000 | 20 – 99 |

Note: *) excluding land and buildings of business premises.

Source: 1) Law No. 20 of 2008 (BPK, 2022). 2) (BPS, 2022b).

The respondents or the MSMEs actors who applied the digital economy were requested to elaborate on the digitalisation of the economy they adopted and the benefits they gained. On the other hand, those who did not implement the digital economy would be interviewed on obstacles restricting the use of the digital economy. Likewise, those stating they were not interested in implementing the digital economy would be interviewed regarding their reasons for not being interested.

This study adopted descriptive statistics and multiple linear regression models estimated by Ordinary Least Square (OLS) as the analysis technique. Descriptive statistical analysis was applied to present a comprehensive overview of respondents and business units that served as the samples in this study. Providing that the application of the digital economy was classified into qualitative data; thus, the developed regression models are as follows:

$$Turnover_{,Period=0} = b_0 + b_1 \cdot Market_i + b_2 \cdot Labour_i + b_3 \cdot Length_i + b_4 \cdot AgriInd_i + b_5 \cdot Service_i + e_i \quad (2a)$$

$$Turnover_{,Period=1} = b_0 + b_1 \cdot Market_i + b_2 \cdot Labour_i + b_3 \cdot Length_i + b_4 \cdot AgriInd_i + b_5 \cdot Service_i + \varepsilon_i \quad (2b)$$

where:

- Period = {0, before the COVID-19 pandemic, 1 during the COVID-19 pandemic},
- *i* = index for the business units samples, *Turnover* = average turnover (IDR/month),
- *Market* = dummy variable for the application of digital economy = {1 for yes, 0 for no},
- *Labour* = total permanent and non-permanent workers,
- *Length* = length of business operation (years),
- *AgriInd* = dummy variable for agriculture, plantation, animal husbandry, fishery, and processing industry = {1 for yes, 0 for no}. The two business fields were combined due

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to the small-sized samples.

- *Service* = dummy variable for the service business sector = {1 for yes, 0 for no} and,
- *e* and ε = residual model.

Meanwhile, the trading business sector served as the comparison for the two dummy variables of business sectors. Furthermore, model (2) was estimated for conditions before and after the COVID-19 pandemic.

It was ensured that Model (2) met the applicable assumptions. Multicollinearity did not apply since a strong linear correlation between the quantitative independent variables in the model was not identified. The Pearson correlation coefficient between Labour and Length amounted to 0.0563. Model (2) was estimated with a robust standard error to meet the assumption of homoscedasticity. Model (2) also met the assumption of normality since the P-value of the Kolmogorov-Smirnov test amounted to more than 10%, as displayed in Table 4.

Table 4a. Kolmogorov-Smirnov Error Model Test Results before the Pandemic

| Smaller Group | D | P-value |
|---|---|---|
| e | 0,0367 | 0,696 |
| Cumulative | –0,0749 | 0,222 |
| Combined K-S | 0,0749 | 0,490 |

Source: Secondary data output after processing, 2022; (Adhitya, 2022)

Table 4b. Kolmogorov-Smirnov Error Model Test Results after the Pandemic

| Smaller Group | D | P-value |
|---|---|---|
| e | 0,0510 | 0,499 |
| Cumulative | –0,0776 | 0,199 |
| Combined K-S | 0,0776 | 0,394 |

Source: Secondary data output after processing, 2022; (Adhitya, 2022)

## RESULT AND DISCUSSION

The trade business sector dominates the MSMEs in Salatiga City, which amounted to 70.1%, followed by the service business sector of 26.1% (Figure 3). The development of the trade and service business sectors in Salatiga City is closely related to the position of Salatiga City, which is located at the intersection of three major cities, namely Jogjakarta, Surakarta, and Semarang or better known as Joglosemar. The location of the Salatiga City area, surrounded by the three big cities, is very influential on the development of the trade and

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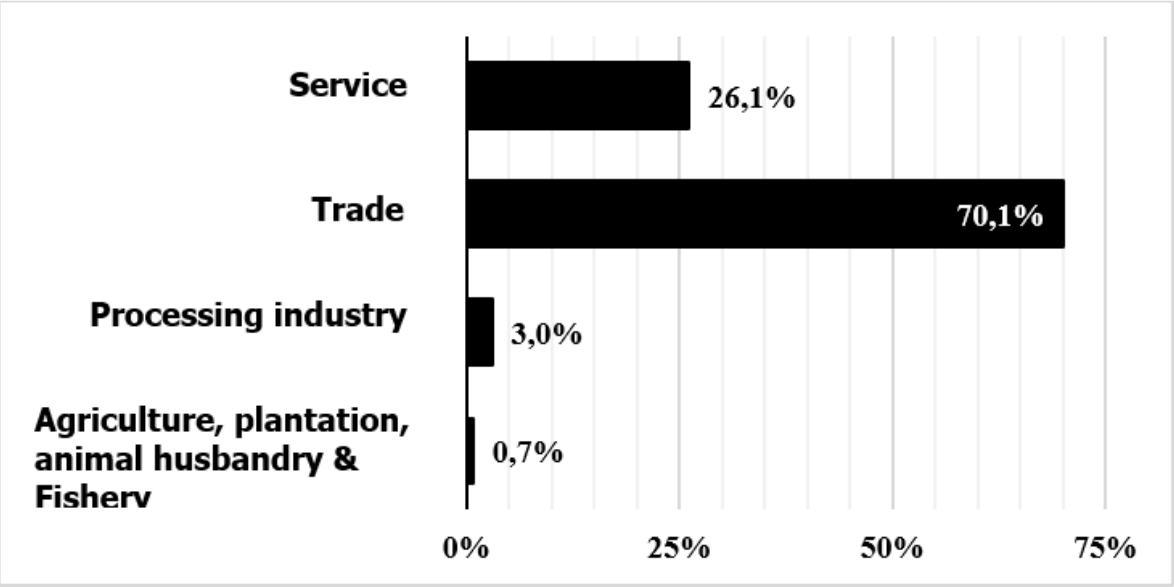
service business sector in Salatiga City.

Figure 3. Business Distribution by Business Sector




Source: Secondary data output after processing, 2022; (Adhitya, 2022)

Concerning the age group, Figure 4 displays that as many as 63.4% of MSME business actors in Salatiga City are relatively young, between 17 and 48 years old. This fact indicates that more young people are interested in becoming entrepreneurs. Further, it is also supported by the position of Salatiga City, which is considered highly favorable for the development of the trade business sector.

MSMEs actors in Salatiga City have run their business for 11.5 years on average, which means that the MSMEs sector can survive in business competition. The COVID-19 pandemic that the world experienced and began to enter Indonesia in February 2020 had an impact on the business conditions of MSMEs actors in Salatiga City. This point was indicated by a decrease in the average turnover of the business. Before the pandemic, MSMEs actors in Salatiga City could reach a turnover of IDR18.7 million, which decreased to IDR10.1 million after the COVID-19 pandemic. Likewise, the COVID-19 pandemic had also decreased the number of labours employed, in which each MSME could employ three labours before the pandemic dropped to two after the pandemic. This data suggests that to survive amidst the COVID-19 pandemic, one of the solutions that businesses should take is reducing the number of labours.

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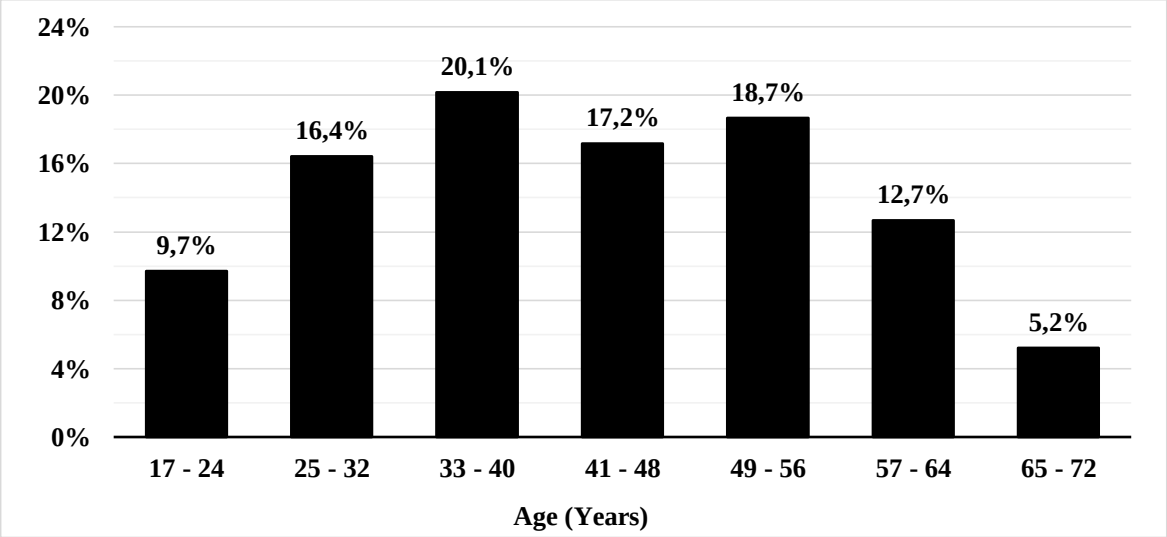
Figure 4. Distribution of MSME Actors by Age Group




Source: Secondary data output after processing, 2022; (Adhitya, 2022)

Table 5. Summary of Statistics on the Characteristics of Respondents and Business Units

| Variable | Unit | n | Mean | St. Dev | Min. | Max. |
|---|---|---|---|---|---|---|
| Age of respondents | year | 135 | 42.66 | 13.11 | 18 | 71 |
| Length of Business Operation | year | 135 | 11.5 | 11.1 | 3 | 74 |
| Turnover before the pandemic | IDR million/month | 135 | 18.7 | 30.5 | 0.1 | 300 |
| Turnover during the pandemic | IDRmillion/month | 135 | 10.1 | 17.2 | 0.125 | 150 |
| Labours before the pandemic | person | 135 | 2.1 | 2.8 | 1 | 31 |
| Labours during the pandemic | person | 135 | 1.7 | 1.0 | 1 | 7 |

Note: 1. Mean = average, St. Dev = standard deviation, Min. = minimum value, and Max. = maximum value.

Source: Secondary data output after processing, 2022; (Adhitya, 2022)

Table 6a. Estimation Results of the Impact of the Digital Economy on MSMEs in Salatiga City before the Pandemic

| Variable | Coefficient | Std.Err | t | prob |
|---|---|---|---|---|
| *Market* | 0.2991 | 0.2005 | 1.49 | 0.1381 |
| *Labour* | 0.0832 | 0.0233 | 3.57 | 0.0005 * |
| *Length* | -0.0039 | 0.0080 | –0.49 | 0.6241 |
| *Service* | -1.3627 | 0.2455 | –5.55 | 0.0000 * |
| *AgriInd* | 0.4356 | 0.4089 | 1.07 | 0.2887 |
| *Constant* | 16.1227 | 0.1669 | 96.61 | 0.0000 * |

Note: (1) The dependent variable = turnover, (2) * and ** are significant at $\alpha$ = 1% and 5%, respectively.

Source: Secondary data output after processing, 2022; (Adhitya, 2022)

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Table 6b. Estimation Results of the Impact of the Digital Economy on MSMEs in Salatiga City during the Pandemic

| Variable | Coefficient | Std.Err | t | prob |
|---|---|---|---|---|
| *Market* | 0.3205 | 0.2192 | 1.46 | 0.1461 |
| *Labour* | 0.2380 | 0.1137 | 2.09 | 0.0383 ** |
| *Length* | −0.0056 | 0.0083 | −0.68 | 0.4984 |
| *Service* | −0.8001 | 0.2227 | −3.59 | 0.0005 * |
| *AgriInd* | 0.5325 | 0.4698 | 1.13 | 0.2591 |
| *Constant* | 15.0862 | 0.2304 | 65.48 | 0.0000 * |

Note: (1) The dependent variable = turnover, (2) * and ** are significant at $\alpha = 1\%$ and 5%, respectively.

Source: Secondary data output after processing, 2022; (Adhitya, 2022)

It is proven that technology inclusion in Indonesia has no significant impact on the MSMEs' business turnover in Salatiga City both before and after the COVID-19 pandemic. These results contrast the results of previous research conducted by Yu (2017), Raeskyesa and Lukas (2019), Fridayani et al. (2022), Brunius and Lind (2017), stating that the digital economy using the internet will affect business turnover. It is assumed that the ineffectiveness of the application of the digital economy on business turnover was affected by the small number of MSMEs actors in Salatiga City applying the digital economy with the internet in their business. Although the application of the digital economy after the COVID-19 pandemic has increased, the overall application of the digital economy for MSMEs in Salatiga City remained relatively low. Figure 3 displays that business actors who practise digital sales before and after the COVID-19 pandemic are 34.8% and 37.8%, respectively.

The insufficient application of the digital economy with the internet for MSMEs actors in Salatiga City was caused by most of them, as many as 29.51%, being less tech-savvy or technology illiterate (Table 6). The success of the digital economy application was also highly influenced by the role of the Government. The Government is considered to intervene, for example, by establishing a competitiveness policy consisting of infrastructure development, promotion of access to international markets, training and consulting programs, and promotion of digitalisation to MSMEs (García-Pérez-de-Lema et al., 2022). Further, Caballero-Morales (2021) revealed that the Government's policy of providing a loan scheme to assist MSMEs actors survive the pandemic was considered ineffective. The loan scheme policy was insufficient since MSMEs required more cash flow for business sustainability.

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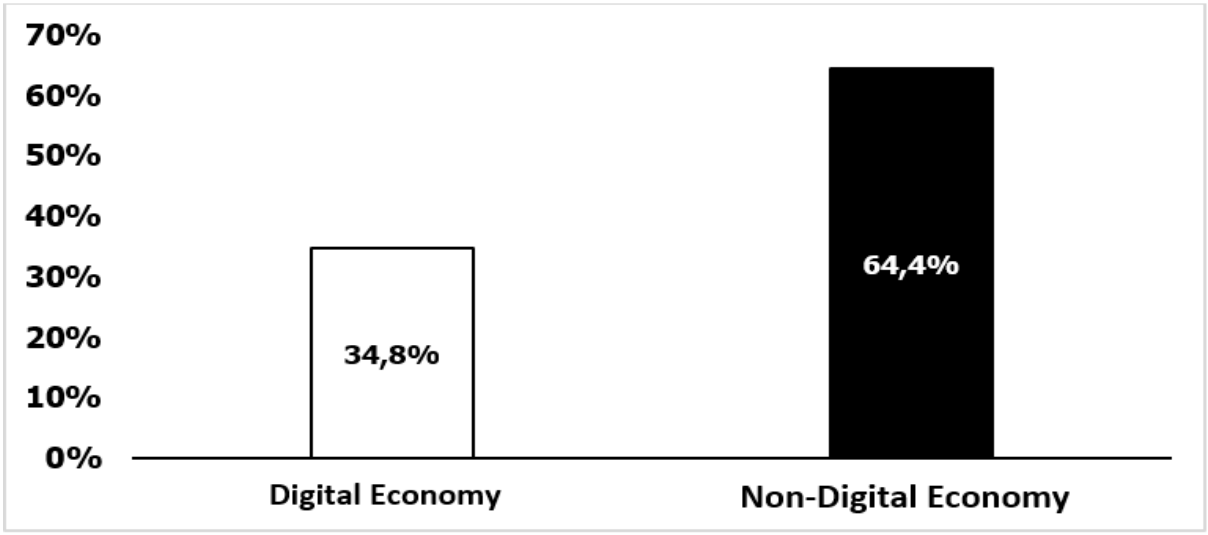
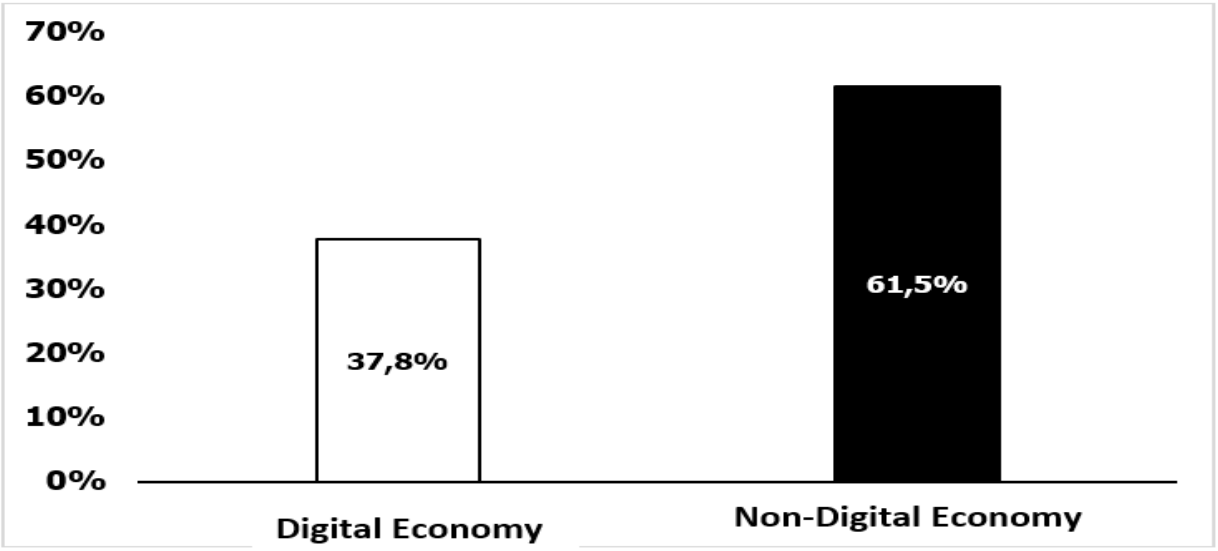
Figure 4a. Business Distribution by the Application of the Digital Economy before the Pandemic




Source: Secondary data output after processing, 2022; (Adhitya, 2022)

Figure 4b. Business Distribution by the Use of the Internet as a Form of the Digital Economy during the Pandemic




Source: Secondary data output after processing, 2022; (Adhitya, 2022)

Table 6 indicates that the number of labours positively and significantly affects the business turnover of MSMEs actors in Salatiga City. These results are in accordance with the theory that labour as a factor of production will determine the amount of output produced by a company. The more labours employed, the more output a business produces, eventually increasing the company's income or turnover. Apart from the number of labours, another factor contributing to the business turnover of MSMEs in Salatiga City was the type of business

field. The service business sector indicated a negative and insignificant impact on the business turnover of MSME actors, where MSMEs offering services tend to achieve lower turnover than those engaging in trade. These results are consistent with the condition of business actors in Salatiga City, which most of them run a business in the trade sector, amounting to 70.1% (Figure 2).

Table 7. Key Obstacles in the Application of the Digital Economy

| Types of Obstacles | Percentage |
|---|---|
| Technology illiterate | 29.51% |
| Lack of labour (only physical shops are available)/do not employ an administrator to leverage the digital economy/lack of labour to respond direct messages (DM) | 24.59% |
| No gadget/cellphone (some have a cellphone but for their children's school purposes) | 13.11% |
| No time (to administer the digital economy, to respond to online consumers, unable to stand by to administer the digital economy, have to take care of children underage) | 11.48% |
| No intention to apply the digital economy (since it is complex/complicated to use) | 11.48% |
| Already old (It's difficult to understand how to apply the digital economy) | 8.20% |
| Other Obstacles | < 7% |

Note: (1) Answers from respondents who used to apply the digital economy. (2) Percentage derived from the total respondents.

Source: Secondary data output after processing, 2022; (Adhitya, 2022)

On the other hand, the length of business operation variable suggested an insignificant impact on the turnover of MSMEs business actors in Salatiga City. This result indicated that the longer the business run does not guarantee the higher the ability of the business management; thus, it will not affect the income or turnover of the business. In addition, the animal husbandry and the processing industry business sectors suggested zero contribution to the business turnover of MSMEs business actors in Salatiga City. It was affected by the number of MSMEs engaged in animal husbandry and processing industries was relatively low, 3% and 0.7%, respectively (Figure 2).

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Table 8. Primary Reasons Respondents Are Not Interested in Practising the Digital Economy for Sales

| The reasons respondents are not interested in applying the digital economy | Relative Frequency |
|---|---|
| Difficult (complicated) application | 22.97% |
| The seller considers it is unnecessary to apply online media for marketing since the shop is located in a strategic location, many customers have visited the shop, many customers are familiar with the business (e.g. through viva voce promotion), and already have loyal customers. | 17.57% |
| No intention to apply the digital economy | 16.22% |
| Lack of labour, no labour to handle the digital economy; Applying the digital economy (online tire repair shop) forces you to serve people demanding the services; thus, no one is on standby in the business premise. | 12.16% |
| Technology illiterate, do not master the digital economy (e.g. social media), and no one teaches how to practice the digital economy | 10.81% |
| Other reasons | < 7% |

Note: (1) Answers from respondents who used to apply the digital economy. (2) Percentage derived from the total respondents.

Source: Secondary data output after processing, 2022; (Adhitya, 2022)

## CONCLUSION

Based on the above discussion, it can be concluded that the digital economy, especially online sales, suggested zero impact on the turnover of MSMEs in Salatiga City. This result indicates that the application of the digital economy to MSME business actors in Salatiga City remains low, primarily due to business actors' low ability to adopt technological developments. This study has not proven the application of the digital economy in the framework for improving MSMEs' Strength and Resilience in confronting the COVID-19 pandemic.

The findings of this study suggest that further research on the application of the digital economy to MSMEs to examine whether MSMEs can survive and thrive in confronting a crisis is necessary. It is essential to support the Government's role in optimising the application of the digital economy to develop MSMEs in Salatiga City, especially in the current digitalisation era. Therefore, government policies and supporting infrastructure are crucial to improve business

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actors' capability to adopt technological developments in their business, for example, through dissemination and training programs on the application of digital technology in business for MSME actors.

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