The Role of Competitive Advantage in Mediating the Relationship Between Digital Transformation and MSME Performance in Bali

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Abstract- Advances in technology and digital-based information are expected to be put to good use by conventional business people. The pressure of the global COVID-19 pandemic that hit the world has an impact on the acceleration of digital transformation for business people, especially MSMEs. MSMEs as a sector of the national economy that has proven to have the ability to survive in a crisis are encouraged to accelerate the digital transformation process due to the social distancing policy imposed during the COVID-19 pandemic. This study aims to investigate the role of digital transformation on the performance of MSMEs through competitive advantage. This study uses quantitative methods and the data was collected using a questionnaire instrument. This survey was conducted in July-September in the midst of the covid-19 pandemic. The research location was carried out in MSMEs registered in 9 regencies/cities throughout Bali with a total of 326,000 with a total sample of 400 MSME managers. The results of this study found that all proposed hypotheses were acceptable and competitive advantage served as a partial mediation of the relationship between digital transformation and MSME performance.

Keywords: Competitive Advantage; Digital Transformation; MSME Performance

I. INTRODUCTION

The Covid-19 pandemic in various parts of the world, including Indonesia, has had a major impact on health and the economy in terms of trade, investment and tourism. Bali as the main tourist destination in Indonesia, which relies on the tourism sector as the backbone of the economy, has fallen and is under very heavy pressure and consequently not only has an impact on the tourism sector but also on other sectors such as SMEs. So far, the role of MSMEs is believed to be able to drive the economy of a region or a country, as stated by the Indonesian MSME Association (Akumindo) that in 2020 the contribution of MSMEs to Indonesia's Gross Domestic Product (GDP) will reach 65% or around Rp. 2394.5 Trillion (Ingratubon, 2020). However, since the Covid-19 pandemic, as the results of a survey by the Indonesian Institute of Sciences show that the competitiveness of MSMEs in Indonesia has become so fragile along with various disruptions that have an impact on performance (Handoko, 2020). Likewise, the impact on MSMEs in Bali is very worrying. The data from Bank Indonesia (BI) of Bali Province shows that MSMEs in Bali are experiencing severe pressure and paralysis caused by the drop in trading activity as a result of a 68% decline in sales, 12% capital difficulties, 10% distribution difficulties, 6% raw material difficulties and difficulty 4% production. The decline in sales turnover can also be caused by the characteristics inherent in MSMEs such as limited capital, incomplete licensing, low awareness of paying taxes, weak innovation and low technology adoption (Kaimuddin, 2020; Pramuki, 2020; Sukarsa, 2020). In a situation like COVID-19, the transformation of information technology is the best solution to
increase the competitiveness of MSMEs which can further improve MSME performance.

The findings of previous research have proven that the performance of SOEs can be improved by business transformation through competitive advantage (Widjajanti, 2009). Other findings also support that when a business person carries out information technology-based transformation, it can automatically increase the competitiveness of MSMEs (Andi; Sylvania & Awanuddin, 2017) and business performance (Mubarak, Shaikh, Mubarik, Samo, & Mastoi, 2019; Popović-Pantić, Semenčenko, & Vasilić, 2019). Furthermore, with an increasing competitive advantage, it will further improve business performance (Buul & Omundi, 2017; Isaboke, 2018). Different results found by Jamil, (2019), that when the transformation process occurs at PT Berdikari (PERSERO, it has a negative impact on financial performance in terms of financial performance being down, on the other hand, the impact of digital transformation on employees is the increase in work stress in the employee environment which leads to a decrease in company performance (Winasis, 2020).

Based on the explanation and the previous studies above, a further study is needed to be done. Given the low level of digital transformation for MSME actors, it is necessary to study the perception of MSME business actors in responding to the transformation of digitalization into their business. Thus, this study aims to this study aims to investigate the role of digital transformation on the performance of MSMEs through competitive advantage. This research modifies the model or framework that has been developed by Widjajanti (2009) by adding competitive advantage as a mediating variable. To the knowledge of the researcher, this kind of model is still rarely used in the context of MSMEs and makes this a motivation for researchers to understand the performance of MSMEs in the midst of the COVID-19 pandemic. The use of the competitive advantage variable as a mediating variable is the novelty of this study in order to produce a more comprehensive variety of MSME performance. The importance of studying this phenomenon is expected to be able to provide an initial contribution to the development of MSMEs, especially in Bali, especially in the context of digital-based technology transformation to improve the competitiveness and performance of MSMEs.

II. CONCEPT AND HYPOTHESIS

Resourced Base View Theory (RBV)

The resource-based view has been widely used in the information systems and technology literature to explain how firms can gain competitive advantage and superior performance. The essence of this theory is that superior company performance is caused by resources and skills that are specific to the company, rare, and difficult to imitate by competing companies (Barney, 2001). As a result, firms can achieve competitive advantage by acquiring or developing organizational capabilities that are rare, non-substitutable, and non-imitable (J. Barney, 1991). Furthermore, the theory assumes that the skills, capabilities, and other resources possessed by organizations differ between organizations and these resources are the main determinants of company performance. Thus, companies that are able to identify the characteristics of resources or capabilities that cannot be imitated by competitors will achieve a sustainable competitive advantage (J. Barney, 1991).

Digital Transformation

In general, digital transformation is a radical and comprehensive shift in the use of technology with the aim of improving company performance. One of the definitions of digital transformation is from Kaplan et al., (2004) which states that digital transformation is a change caused or influenced by the use of digital technology in every aspect of human life. When businesses are forced to change due to the Covid-19 pandemic, promotions can be done through online applications. Digital transformation can run if there is a commitment from MSME managers, such as offering products through social media, giving discounts, and so on. There are four things that can be applied to digital transformation, including 1) ensuring the business remains competitive, 2) providing efficiency in business processes, 3) increasing customer satisfaction and 4) making it easier for business people to make various strategic decisions (Winarsih, Indriastuti, & Fuad, 2021).

Competitive Advantage

Understanding the sources of sustainable competitive advantage has become a major issue in strategic management. RBV theory stipulates that in strategic management the fundamental sources and drivers for a firm’s competitive advantage and superior performance of firms are mainly related to
their resource attributes which are valuable and expensive to imitate or copy (J. Barney, 1991). Thus, in order to achieve a level of competitive advantage that will not only be able to at least rival their business competitors but will also be able to exceed the industry average performance, business organizations must initially seek an understanding of the degree of the relative relationship between their organization's internal resources, competitive advantage and performance. By having important information about the relative internal strengths and weaknesses of the organization's resources, management can be directed in the strategic business decision-making process to improve the position of their organization as a whole.

**MSME Performance**

In general, performance is the result or assessment of industrial work that has been achieved by a person or group with the division of activities in the form of tasks and positions at a certain time with guidelines from the industry that have been determined (Ongesa et al., 2014). Meanwhile, the understanding of MSME performance was conveyed by Wahyudiati, (2017) who states that the performance of MSMEs is the result of a process or output that has been achieved thoroughly and then compared with the targets, targets and criteria that have become guidelines and mutually agreed upon in an industry where assets and turnover have been determined according to the criteria in the applicable law. Next Wahyudiati, (2017) explained that the performance of MSMEs can be influenced by two types of factors, namely internal factors consisting of financial aspects, aspects of production or operational techniques, aspects of human resources and aspects of markets and marketing as well as from external parties consisting of aspects of government policies, socio-cultural and economic aspects, aspects of production or operational techniques, as well as aspects of the role of related institutions.

As digital transformation accelerates, companies can achieve improved customer offerings through greater customization, increased customer satisfaction and reduced cost of sales (Brynjolfsson & Hitt, 2000; Mithas, Krishnan, & Fornell, 2005). Previous studies on the implications of digital technology have shown that digitization can positively affect a company's performance. Companies that use more digitally embedded business processes benefit from the higher performance from their information technology capabilities (Brynjolfsson & Hitt, 2000). Furthermore, it was also found that many SOEs that have been privatized in Indonesia utilize digital technology because they seek to improve performance through the transformation of customer-side business operations and synchronization of data, information, and ideas (Widjajanti, 2009).

The increasing intensity to digitally transform their business activities, product innovation, process innovation and organizational innovation based on information and technology believes that digital transformation has forced them to establish their digital strategy in order to create and maintain their competitive advantage (Zhou, 2019). Digital strategies that can be used to improve internal business processes as well as to create new business models are always directed at creating superior value for customers (Muditomo & Wahyudi, 2021). Similar research results were also found by (Widjajanti, 2009) in the context of privatization of SOEs and in the MSME sector (Sylvana & Awałuddin, 2017). Other findings also support that when a business person carries out information technology-based transformation, it can automatically increase their competitiveness (Adietya, Miyasto, & Sugianto, 2016).

Therefore, the hypothesis is as follows:

H1: There is a positive relationship between digital transformation and MSME performance in Bali.

H2: There is a positive relationship between digital transformation and the competitive advantage of SMEs in Bali.

Business performance can be interpreted as a result of the success of a business in a market share with the ability to offer an acceptable new value in that market share (Chittithaworn, Islam, Keawchana, & Muhd Yusuf, 2011). This statement supports the opinion of (Widnyani et al., 2021) which states that digital strategies and innovations can be used as factors that increase the competitive advantage of SMEs. Therefore, MSME actors must analyze and understand market conditions which then adjust according to consumer demand. That way, MSME actors can create a competitive advantage for their own business which will have an effect on improving their business performance. A business that has a competitive advantage is an added value for a business itself because the performance of a business is influenced by the competitiveness of a business (Herman et al.,...
III. METHOD

This study uses quantitative methods to solve problems related to the phenomenon of low MSME performance due to the Covid-19 pandemic. Data was collected using a questionnaire instrument, which is distributed randomly to MSME managers throughout the province of Bali. The province of Bali was chosen because Bali is the center of tourism destinations in Indonesia so that with the Covid-19 pandemic, Bali tourism has become threatened which ultimately has an impact on the MSME sector as a tourism supporter. The number of MSMEs recorded at the Bali Province Cooperatives and MSMEs Service is 326,000 spread across all regencies/cities. The number of samples is determined by the slovin formula at an error threshold of 5% obtained a sample of 400 SMEs.

The MSME performance variable is measured using an instrument consisting of 5 indicators, namely 1) Sales growth 2) Capital growth 3) Addition of labor every year 4) Market and marketing growth 5) Profit / operating profit growth (Wahyudiati, 2017).

The digital transformation variable is measured in 3 dimensions, namely 1) IT-based product innovation 2) IT-based process innovation 3) IT-based organizational innovation (Sylvana & Awaluddin, 2017; Tang, 2021; Muditomo & Wahyudi, 2021).

Brahmanthara & Yasa (2017) prove that there is a positive relationship between competitive advantages mediating product innovation on the performance of Angkringan SMEs in Denpasar City. Hajar & Sukaatmadja (2016) shows that there is an influence of competitive advantage mediating the relationship between entrepreneurial orientation and company performance at boutique SMEs in Denpasar City. Dewi & Putri Ekawati (2017) shows that competitive advantage is able to mediate the relationship between market orientation and business performance in small and medium enterprises in South Kuta, Badung Regency. Therefore, the hypothesis is as follows:

H4: Competitive Advantage can mediate a positive relationship between digital transformation and MSME performance in Bali.

Figure 1. Research Concept Framework
The research hypothesis was tested using the PLS-SEM approach with the help of SmartPLS V.3.2.9 software. The main reason for using PLS-SEM is because this study uses a questionnaire instrument where the variables used are multivariate and latent in this case digital transformation, competitive advantage and MSME performance. The process of testing data using the PLS-SEM approach with the help of the SmartPLS V.3.2.9 software.

**IV. RESULT AND DISCUSSION**

**Characteristics of Research Respondents**

This research was conducted using a survey method on 400 respondents who are MSME actors throughout the province of Bali. Based on age and gender, most of the respondents were aged 31 to 40 years around 64.8% and males around 53%. Furthermore, based on the level of education and length of business, respondents were dominated by high school/vocational education levels as many as 307 respondents or about 78.6% with a length of business between 7-9 years as many as 216 respondents or about 54%.

**Table 1.** PLS confirmatory factor analysis and cross-loadings

<table>
<thead>
<tr>
<th>COMPETITIVE ADVANTAGE</th>
<th>MSME PERFORMANCE</th>
<th>DIGITAL TRANSFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.1</td>
<td>0.774</td>
<td>0.498</td>
</tr>
<tr>
<td>M.2</td>
<td>0.757</td>
<td>0.508</td>
</tr>
<tr>
<td>M.3</td>
<td>0.771</td>
<td>0.350</td>
</tr>
<tr>
<td>M.4</td>
<td>0.793</td>
<td>0.375</td>
</tr>
<tr>
<td>M.5</td>
<td>0.793</td>
<td>0.372</td>
</tr>
<tr>
<td>M.6</td>
<td>0.730</td>
<td>0.390</td>
</tr>
<tr>
<td>M.8</td>
<td>0.792</td>
<td>0.400</td>
</tr>
<tr>
<td>M7</td>
<td>0.705</td>
<td>0.381</td>
</tr>
<tr>
<td>X1.1</td>
<td>0.565</td>
<td>0.516</td>
</tr>
<tr>
<td>X1.2</td>
<td>0.499</td>
<td>0.509</td>
</tr>
<tr>
<td>X1.3</td>
<td>0.480</td>
<td>0.419</td>
</tr>
<tr>
<td>X1.5</td>
<td>0.546</td>
<td>0.516</td>
</tr>
<tr>
<td>X1.6</td>
<td>0.385</td>
<td>0.480</td>
</tr>
<tr>
<td>X1.7</td>
<td>0.363</td>
<td>0.529</td>
</tr>
<tr>
<td>Y1</td>
<td>0.509</td>
<td>0.802</td>
</tr>
<tr>
<td>Y2</td>
<td>0.345</td>
<td>0.796</td>
</tr>
<tr>
<td>Y3</td>
<td>0.286</td>
<td>0.669</td>
</tr>
<tr>
<td>Y4</td>
<td>0.415</td>
<td>0.735</td>
</tr>
<tr>
<td>Y5</td>
<td>0.455</td>
<td>0.788</td>
</tr>
</tbody>
</table>

**Table 2.** Discriminant Validity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Digital transformation</th>
<th>Competitive advantage</th>
<th>MSME Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital transformation</td>
<td>0.811</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive advantage</td>
<td>0.590</td>
<td>0.765</td>
<td></td>
</tr>
<tr>
<td>MSME Performance</td>
<td>0.611</td>
<td>0.536</td>
<td>0.760</td>
</tr>
</tbody>
</table>

**Measurement Model and Construct Validity**

This study performs various forms of testing related to the psychometric properties of the measurement model. Confirmatory Factor Analysis (CFA) was performed for all latent variables in the structural model. The results of the CFA test show that all indicators have an outer loading above 0.60 as suggested by Ghozali (2021), an indication that the items are representative of their respective constructs at Table 1. Furthermore, item loading was found to be much higher than all crossloads.

Convergent validity was assessed by testing the significant loading factor for each construct. Discriminant validity was tested by testing factor correlations and whether the square root of the average variance extracted (AVE) for each construct was greater than its correlation with other factors (Ghozali, 2021). Table 2 presents the correlation matrix among all constructs and shows that the square root of the AVE of each construct is greater than the correlation between the constructs and all other constructs. Thus, Table 2 presents sufficient evidence of the discriminant validity of the constructs.
Structural Model Testing

In PLS analysis, structural model testing is performed by testing the structural path and R2 scores of endogenous variables to assess the explanatory power of the structural model. The bootstrap procedure was performed with 400 cases and 5,000 resamplings used to test the significance of all pathways in the research model (Hair, Black, Babin, & Anderson, 2013). The results of the structural model are shown in Figure 2. The results show that the model is able to explain 41.8% of the variation in firm performance. Overall, all hypotheses are supported. To support hypothesis 1, digital transformation has a significant positive effect on MSME performance ($\beta = 0.453$, $p < 0.000$). Similarly, to support hypothesis 2, digital transformation has a positive and significant effect on competitive advantage ($\beta = 0.590$, $p < 0.000$), then hypothesis 3 states that competitive advantage has a positive and significant effect on MSME performance, this hypothesis is supported ($\beta = 0.269$, $p < 0.0010$).

The Direct Effect of Digital Transformation on MSME Performance

Hypothesis 1 predicts that there is a positive relationship between digital transformation and MSME performance. The results of data processing support the hypothesis of this study. The findings of this study indicate that MSME managers who implement digital transformation at a high level, MSME performance tends to increase which is reflected in sales growth, capital growth, additional workforce, market growth and profit growth compared to its competitors. As an alternative to the lower implementation of digital transformation by MSME managers, MSME performance tends to experience a decline which is reflected in the form of sales growth, capital growth, additional workforce, market growth and profit growth compared to its competitors.

The reason for the acceptance of this research hypothesis can explain that in the midst of the COVID-19 pandemic, the government issued a policy of social distancing (social distancing) so as to trigger changes that have occurred in the needs and behavior of customers who are currently more inclined to use digital as a device to interact, so they want to Don't want this to be a triggering factor for accelerating digital transformation for MSME managers (Widyani et al., 2021), (Muditomo & Wahyudi, 2021). Furthermore, the perception of MSME managers who have carried out various product innovations, process innovations and information and technology-based organizational innovations believes that with increasing digital transformation, companies can achieve increased customer offerings through greater customization, increased customer satisfaction and reduced sales costs (Mubarak et al., 2019). These findings also successfully support the results of previous research that the application of digital transformation can positively affect company performance that companies that use more digitally embedded business processes gain higher performance benefits (Popović-Pantić et al., 2019), (Freitas Junior, José Carlos Cabral & Brinkhues, 2020), (Avirutha, 2018).

The Direct Effect of Digital Transformation on MSME Competitive Advantage

Hypothesis 2 predicts that there is a positive relationship between digital transformation and competitive advantage. The
results of data processing support the hypothesis of this study. The findings of this study indicate that MSME managers who implement digital transformation at a high level have a competitive advantage that tends to increase, which is reflected by superior in price, superior in price and superior in service. As an alternative to the lower implementation of digital transformation by MSME managers, the competitive advantage of MSMEs tends to decrease which is reflected in the form of superior in price, superior in price and superior in service.

The reason for the acceptance of this research hypothesis can explain that in the midst of the COVID-19 pandemic the government issued a policy of social distancing (social distancing) so as to trigger changes that have occurred in the needs and behavior of customers who are more inclined to use digital as a device to interact, so like it or not. Do you want this to be a triggering factor for accelerating digital transformation for MSME managers? (Widnyani et al., 2021). Furthermore, the perception of MSME managers who have carried out various product innovations, process innovations and organizational innovations based on information and technology believe that digital transformation has forced them to establish their digital strategies in order to create and maintain their competitive advantage (Zhou, 2019). Digital strategies that can be used to improve internal business processes as well as to create new business models are always directed at creating superior value for customers (Muditomo & Wahyudi, 2021). The findings of this study prove the results of research which found that the application of business digital transformation can increase competitiveness in the privatization of SOEs (Widjajanti, 2009) and in the MSME sector (Andi Sylvana & Awaluddin, 2017). Other findings also support that when a business person carries out information technology-based transformation, it can automatically increase their competitiveness (Adietya et al., 2016).

Competitive Advantage Mediation Effect

To examine the mediating effect, we used the method Developed Variance Accounted For (VAF) Preacher & Hayes, (2008) in Ghozali (2021). The steps of the testing procedure are as follows: 1) First, the direct effect of the independent variable on the dependent variable must be significant, 2) Second, the indirect effect must be significant, each path of the independent variable on the mediating variable and the mediating variable on the dependent variable must be significant to meet this condition. This indirect effect is obtained by the formula for the effect of the independent variable on the mediating variable multiplied by the effect of the mediating variable on the dependent variable. If the indirect effect is significant, then this indicates that the mediating variable is able to absorb or reduce the direct effect in the first test. If the VAF value is above 80%, this shows the role of Z1 and Z2 as full mediation (Ghozali, 2021).

The Effect of Competitive Advantage on MSME Performance

Hypothesis 3 predicts that there is a positive relationship between competitive failure and MSME performance. The results of data processing support the hypothesis of this study. The findings of this study indicate that MSME managers who have a high competitive advantage are believed to increase the company's performance. As an alternative, the lower the performance of MSMEs tends to decrease. It can be explained that competitive advantage is the extent to which an organization is able to create a position where it can maintain the market as long as there are competitors. Firms create competitive advantage through competitive capabilities or priorities which are defined as strategic preferences or dimensions by which the firm chooses to compete in its targeted market. Organizational performance is building multi-dimensional starting from financial performance or market performance in each company unit to organizational performance in the company as a whole. Competitive advantage can be the key to driving better organizational performance. This means that if a business has a competitive advantage, the resistance of the brand and the quality of its products will be strong and able to survive in the market (Isaboke, 2018), (Buul & Omundi, 2017) which shows that competitive advantage has a positive effect on organizational performance.
Based on the results of the path analysis test in Table 1 and Figure 3, it is found that all assumptions in the VAF test have been met, namely all paths, both direct and indirect effects, are significant. The VAF calculation is then carried out as follows: 

\[ VAF = \frac{(p1*p2)}{(p1*p2) + p3} = \frac{(0.590*0.453)}{(0.590*0.453) + 0.269} = 0.49 \]

The VAF value is 0.49, it can be concluded that the competitive advantage variable partially mediates the relationship between digital transformation and is a partial mediating variable.

V. CONCLUSION

Based on the results obtained from this study, it can be drawn the conclusion that the effect of competitive advantage is tested using a survey of 400 MSME managers throughout the province of Bali. Consistent with our proposed model, this study finds that digital transformation has a positive effect on competitive advantage and also the performance of MSMEs. This research study also finds empirical support regarding the impact of competitive advantage on MSME performance. Surrounded by the emergence of so many digital technologies from social media to mobile platforms to big data, MSME managers can boost performance by using digital technology to encourage convergence for people, businesses, and society. In addition, this study reveals that competitive advantage plays a partial role in mediating the effect of digital transformation and MSME performance. MSME managers must realize the importance of digital transformation and how to take advantage of the influence of technology and information capabilities in creating and encouraging competitive advantage and MSME performance. This finding is very interesting because it pays attention to the importance of digital transformation and competitive advantage in supporting and encouraging MSME performance. Companies that invest in digital transformation can harmonize digital knowledge about customers as well as business processes that are always innovating to improve MSME performance.

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