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Digital Technology Transformation of SMEs: Indonesian Case Study

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ABSTRACT

The transition to the industry 4.0 era has forced businesses worldwide, including Indonesia, to adapt to digital transformation. The problem faced by small and medium-sized businesses is the readiness to adopt digital technology. It is necessary to study the readiness of Small Medium Sized Enterprises (SMEs) to face changes so that information and needs from SMEs can be obtained to adapt to this new era. This paper aims to analyze SMEs' technological readiness to carry out digital transformation in Indonesia. The research method is quantitative, involving 150 SMEs in Manado City. North Sulawesi Province, Indonesia online. Data analysis with multiple regression. The research findings reveal the readiness of SMEs to carry out digital technology transformation in Indonesia. The implication of this research is to serve as a guide for the government, universities, and the industrial world so that SMEs in Indonesia can successfully transform digital technology.

INTRODUCTION

The digital era, especially industry 4.0, is an extraordinary era for running a business with the support of technological sophistication. New technologies, such as cloud services, big data, machine learning, and cognitive computing, provide opportunities to change the way business is done completely (Prasad *et al.*, 2018). Companies must build connections to thrive through interconnected relationships to gain access to resources and capabilities. These externally accessible resources can influence the performance of companies, including small businesses, which include micro, small and medium scale businesses, but are often called SMEs.

In Asia, SMEs cover 96% of all business in Asian countries and contribute to regional economic growth, as well as the progress of a country. A study from the World Economy Forum (The World Bank, 2018) found that companies that adopt and implement digital transformation have successfully weathered the Covid-19 crisis era.

Digital transformation is one of the main agendas of SMEs in Asia, including Indonesia. A survey from the DBS Digital Readiness Survey found several facts related to the challenges of digital transformation of SMEs in Indonesia (Baskoro, 2021): only 20% of SMEs that have a digital transformation strategy are still lagging compared to other Asian countries, SMEs are lagging in terms of digital readiness compared to companies only 40% of SMEs have a digital transformation plan. Some of the biggest challenges to digitalization adoption in SME businesses are (dbs.com, 2021): high costs for high technology adoption, availability of digital talent, and concerns about digital security.

From Microsoft's report, as many as 90% of Indonesian business people stated that they needed to carry out digital transformation to encourage company growth (Syauqi, 2018). The challenge is that only 27% of business people already have an overall strategy, 51% are still planning, and 22% still need the strategy. Digital transformation at the enterprise level cannot happen alone. Support from the government is certainly needed so that digital transformation can materialize in Indonesia.

The problem of digital transformation needs to be analyzed in SMEs by examining the technology readiness of SMEs to carry out digital transformation. This research was conducted in North Sulawesi, namely in Manado City. The reason for this research was to survey the technological readiness and digital transformation of SMEs in Manado City to enter the digital era and the industrial era 4.0. This research will have implications for creating competitive advantages for SMEs in this area to adapt and be sustainable in this new era.

LITERATURE REVIEW

Small and Medium Enterprises (SMEs)

Small business is a productive economic business that stands alone, which is carried out by individuals or business entities that are not subsidiaries or not branches of companies that are owned, controlled, or become part either directly or indirectly of medium or large businesses that meet the business criteria as referred to in this law (Cicea *et al.*, 2019). A business is categorized as a small business if the net worth is more than IDR 50 million to IDR 500 million, excluding land and buildings where the business is located. A business is called a small business if it has sales proceeds of more than IDR 300 million to a maximum of IDR 2.5 billion (Kawung *et al.*, 2019).

Meanwhile, medium-sized businesses are productive economic businesses that stand alone, and are carried out by individuals or business entities that are not subsidiaries or branches of companies that are owned, controlled, or become part of either directly or indirectly with small

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businesses or large businesses with a total net worth. Alternatively, annual sales results as regulated in this law. A business is categorized as a medium-sized business if the net worth is more than IDR 500 million to a maximum of IDR 10 billion, excluding land and buildings where the business is located. A business is called a medium-sized business if it has more than IDR 2.5 billion in sales to a maximum of IDR 50 billion (Kawung *et al*., 2019).

Digital Technology

Digital technology prioritizes activities carried out on a computer/digital basis rather than using human power (Berger, 2020). Nevertheless, it tends to be a more automatic and sophisticated operating system with a computerized system/format that a computer can read. Digital technology is a fast computing system that processes all forms of information as numerical values. The development of this technology brings changes to the quality and efficiency of the data capacity created and transmitted, such as; the image becoming clearer due to better quality, more efficient capacity, and faster delivery processes (Daugherty, 2019).

Technology Readiness

Technology readiness refers to the tendency of people to embrace and use new technologies to achieve goals in their home and work life. The construct can be seen as the overall state of mind resulting from the triggers and blockers of mental gestalt that collectively determine a person's propensity to use new technology (Parasuraman, 2000). This study's measurement of technology readiness refers to the Network Readiness Index (NRI) with four main pillars: technology, people, government, and impact. The model of this NRI can be seen in the Figure 1.

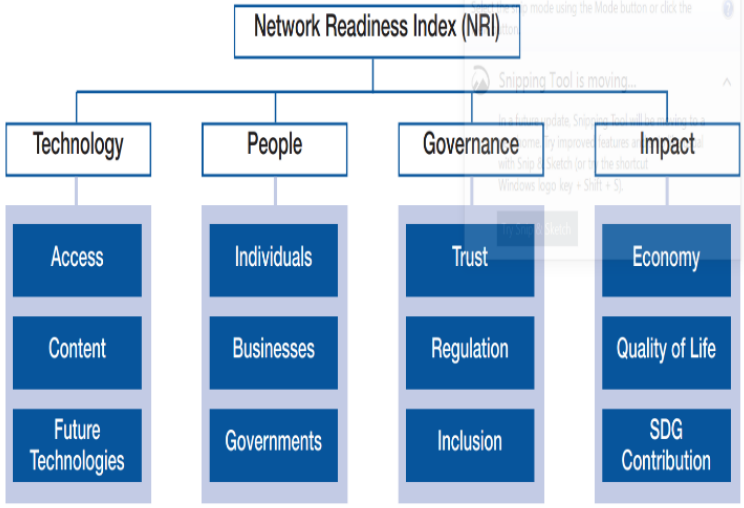

Figure 1: Technology Readiness Refers to the Network Readiness Index (NRI)
Source: (The Network Readiness Index, 2019)

Digital Transformation

The term transformation refers to a change in the organization that significantly impacts the organizational structure itself. Digital transformation is defined as the use of digital technology that can radically improve and achieve the expected performance and goals of the company (Royyana, 2020). Digital transformation can also be interpreted as a process that aims to improve an entity by triggering significant changes in its properties by adopting information technology, computing, communication, and connectivity (Putri & Utami, 2017). Based on Westerman's research (Westerman *et al*., 2011), digital transformation touches on three main parts of the organization: customer experience, operational processes, and business models. With digital transformation, companies certainly need the proper infrastructure, technology, and platforms to implement.

Based on Westerman's research (Westerman *et al*., 2011) on SMEs in Bulgaria, the digital transformation of their business is very important to build a competitive advantage and maintain market competitiveness, both locally and internationally. However, the main difficulty and obstacle in the digital transformation process is not technology, but the human factor itself, such as employee resistance to change, lack of employee digital knowledge and experience, and lack of motivation. Royyana's research (Royyana, 2020) also concludes that employees' digital experience has a significant effect on companies that carry out digital transformation.

MATERIALS AND METHODS

This paper is a quantitative research method using online surveys as a data collection technique. The quantitative approach was carried out by conducting a survey of 100 SMEs in the city of Manado with survey instruments coupled with questions similar to interviews embedded in the research questionnaire to obtain information that can be processed quantitatively and qualitatively.

The variables used to refer to technology readiness taken from the network readiness index (NRI), including (The Network Readiness Index, 2019): Digital Technology (X1): technology used in digital transformation, with several indicators, namely: access, content, and future technology; People (X2): are humans who use technology

to carry out digital transformation, with several indicators, namely: individuals, businesses, government; Governance (X3) is leadership that directs digital technology transformation with several indicators, namely: trust, regulation, and inclusion; Impact (X4) is the impact arising from digital transformation with several indicators, namely: economy, quality of life, contribution to SDG (sustainable development goals). Digital Transformation (Y) is the readiness to embrace and use new technology, namely digital technology, with several indicators: active usage metrics, user engagement and participation level, adoption and performance metrics, workforce productivity, and cost of digital initiatives.

RESULTS AND DISCUSSION

In Table 1 below are the characteristics of the research respondents.

Based on the survey, the majority of respondents are male (54%), aged between 41-50 years (42%), the latest education is high school (39%), only entrepreneur (48%), income per month outside of business is between 2 million – 5 million rupiah (69%). Data analysis and hypothesis testing has been summarized in the Table 2.

Table 1: Summary of Respondent Characteristics

Desc	Info	Tot	%
Gender	Male	54	54
	Female	46	46
Age (Years)	<20	3	3
	21-30	17	17
	31-40	29	29
	41-50	42	42
	>50	9	9
Education	Elementary	6	6
	Junior High	5	5
	Senior High	39	39
	Vocational	15	15
	Bachelor	33	33
	Post Graduate	2	2
Other Work (Outside Business)	Only Entrepreneur	48	48
	Univ. Students	4	4
	Employee	11	11
	State Employee	6	6
	Self Employee	7	7
	Housewife	9	9
	Other	15	15
Income Outside Business (IDR millions)	1-2	18	18
	2-5	69	69
	5-7	9	9
	7-10	3	3
	>10	1	1
Total		**100**	**100**

Source: Data Processed (2022)

The regression equation formed is:

$$Y = 8.633 + 0.241\ X1 + 0.393\ X2 + 0.040\ X3 + 0.002\ X4 + e$$

The regression equation above shows the independent variables Digital Technology (X1), People (X2), Governance (X3), and Impact (X4) in the regression model can be stated if one independent variable changes by 1 (one) and the other is constant , then the change in the dependent variable Digital Transformation (Y) is equal to the coefficient value (b) of the independent variable value. A constant (α) of 8.633 means that if the value of the independent (independent) variables Digital Technology (X1), People (X2), Governance (X3), and Impact (X4) is constant, the magnitude of Digital Transformation (Y) is 8.633 units.

Table 2: Multiple Linear Regression and Hypothesis Testing

Model	Unstandardized Coefficients		t	Sig.	Hyp
	B	Std. Error			
1 (Const)	8.633	4.640	1.860	0.008	Supp
Digital Technology	0.241	0.142	2.981	0.006	Supp
People	0.393	0.135	2.907	0.005	Supp
Governance	0.040	0.104	2.386	0.001	Supp
Impact	0.002	0.104	2.015	0.008	Supp

Source: Data Processed (2022)

If the value of b1 which is the regression coefficient of Digital Technology (X1) is 0.241, which means it has a positive influence on the dependent variable (Y), it means that if the Digital Technology variable (X1) increases by 1 unit, Digital Transformation (Y) will also increase of 0.241 units assuming other variables remain constant.

If the value of b2 which is the regression coefficient of Human (X2) is 0.393, which means it has a positive influence on the dependent variable (Y), it means that if the Human variable (X2) increases by 1 unit, Digital Transformation (Y) will also increase by 0.393 units assuming other variables remain or are constant.

If the b3 value, which is the regression coefficient of Governance (X3), is 0.040, which means it has a positive influence on the dependent variable (Y), it means that if the Governance variable (X3) increases by 1 unit, Digital Transformation (Y) will increase by 0.040 units assuming other variables remain constant or constant.

If the b4 value, which is the regression coefficient of Impact (X4), is 0.002, which means it has a positive influence on the dependent variable (Y), it means that if the Impact variable (X4) increases by 1 unit, Digital Transformation (Y) will also increase by 0.002 units assuming other variables remain or are constant.

Referring to the results of the t test in the table above, it can be seen that the Digital Technology variable (X1) p-value = 0.006 <0.05, it can be concluded that Ha is accepted and rejects H0 or Digital Technology (X1) has a significant effect on Digital Transformation (Y).

Referring to the results of the t test in the table above, it can be seen that the People variable (X2) p-value = 0.005 <0.05, it can be concluded that Ha is accepted and rejects H0 or People (X2) has a significant effect on Digital Transformation (Y).

Referring to the results of the t test in the table above, it can be seen that the Governance variable (X3) p-value = 0.005 <0.01, it can be concluded that Ha is accepted and rejects H0 or Governance (X3) has a significant effect on Digital Transformation (Y).

Referring to the results of the t test in the table above, it can be seen that the Impact variable (X4) p-value = 0.008 <0.05, it can be concluded that Ha is accepted and rejects H0 or Impact (X4) has a significant effect on Digital Transformation (Y).

For the value of the correlation coefficient, namely R, it produces a value of 0.467, which means that the four independent variables have a fairly strong relationship with Digital Transformation. As for the value of the coefficient of determination, namely R Square, it produces a value of 0.218 or 21.8%. This means that the influence of all independent variables on the Digital Transformation variable is 0.218 or 21.8%, while the rest is influenced by other variables outside the variables in this study, namely 0.782 or 78.2%.

CONCLUSIONS

The transformation and strengthening of the digital ecosystem will be essential to be implemented in the country. The acceleration of digitization from cities to villages is the key to efforts to accelerate recovery and increase the competitiveness of the national economy, including increasing the productivity and performance of MSMEs. The role of MSMEs is enormous in the national economic recovery. Currently, there are 64.2 million MSMEs that contribute 61% of Indonesia's GDP (Databoks, 2020). In terms of workforce, MSMEs can also absorb 97% of the total workforce in this country, or around 119.6 million people. However, only about 17.5 million MSME players enter the digital ecosystem and use e-commerce. By optimally using digital technology in running their business, MSMEs can gain several benefits, including reaching a more extensive consumer base, increasing income, facilitating monitoring of business activities, and reducing costs, especially marketing, logistics, and shipping costs.

In the results of a survey from OVO and CORE Indonesia in 2021 (Burhan, 2021), it was stated that 84% of MSME partners felt helped by the existence of digital payment facilities or e-wallets during the pandemic. In fact, 70% of them have experienced an increase in daily income since using digital financial services, 68% have access to broader financial services, 71% have recorded more regular sales transactions, and 51% claimed to have a better understanding of using technology to maintain their business. Thus, digitalization has supported programs to increase financial inclusion, especially for MSMEs.

Although the development of entrepreneurship for MSMEs in Indonesia is very rapid, there are problems in the form of the digital transformation of SMEs in Indonesia, which still needs to be improved. Compared to other countries, the digital transformation of SMEs in Indonesia has only reached 13 percent, while countries such as China and Japan have reached 48 percent and 54 percent, respectively. To understand and bridge these problems, this study seeks to examine the factors driving the digital transformation of SMEs in Indonesia with a study in Manado, North Sulawesi.

This study takes digital transformation indicators from the Network Readiness Index (NRI) developed by the Portulans Institute based in Washington, DC, United States. Based on the NRI, the digital transformation of a business is driven by four main dimensions: digital technology, people, governance, and impact.

Humans and digital technology are the dimensions that have the most significant influence on the digital transformation of SMEs, followed by governance and impact. In this study, the four dimensions of transformation affect the digital transformation of SMEs in Manado City. These results indicate that these four dimensions affect the digital transformation of SMEs in Indonesia.

This research implies that the digital transformation of SMEs can be accelerated by increasing the role of humans in digital transformation and increasing the quantity and quality of digital technology used by SMEs. Furthermore,

the government needs to improve governance for digital transformation and create a better impact to encourage the digital transformation of SMEs in the context of accelerating digitalization and digital transformation of SMEs in Indonesia.

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