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Digital Skills, Digital Entrepreneurship, Job Satisfaction, and Sustainable Performance of MSMEs: A Survey on MSMEs in Indonesia

Muafi[1*], Zuraidah Mohd Sanusi[2], Ratna Roostika[1]

[1] Department of Management, Faculty of Business and Economics, Universitas Islam Indonesia, Yogyakarta 55283, Indonesia
[2] Institut Kepemimpinan dan Pembangunan, University Technologi MARA, Selangor 40450, Malaysia

Corresponding Author Email: muafi@uii.ac.id

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ABSTRACT

The digital era brings significant changes in improving business performance for MSMEs. The purpose of this study is to examine and analyze the relationship pattern between Digital skills, Digital Entrepreneurship, Job satisfaction, and the sustainable performance of MSME entrepreneurs. The population in this study is creative MSME entrepreneurs in West Java and Special Region of Yogyakarta with a target sample of 260 MSME entrepreneurs. This study uses purposive sampling technique. The MSME entrepreneurs who return the questionnaire are 229 MSMEs. The data processing technique uses Partial Least Square. The results find that digital skills do not have significant positive effect on the performance of MSME entrepreneurs but have significant positive effect on job satisfaction. Digital entrepreneurship has positive effect on the sustainable performance of MSME entrepreneurs. In addition, job satisfaction has positive effect on the sustainable performance of MSME entrepreneurs. Furthermore, job satisfaction mediates the effect of Digital Skills on the sustainable performance of MSME entrepreneurs.

1. INTRODUCTION

The digital era has brought major changes in the business world both service and manufacturing companies [1, 2]. It requires companies to have fast and flexible strategic agility [3]. Changes in consumer tastes and lifestyles inevitably have to be followed up with changes in digital-based technology for companies who want to survive and develop [4]. Digital technology can be widely utilized and optimized, especially in the business sector. Digital-based technology has become an economic and social force. It also can shape and produce new models and strategies by abandoning conventional approaches. This has an impact on fundamental changes in the organizational structure and business processes that have implications for the human resource aspect. Digital technology is believed to be able to accelerate business growth even more [1, 4, 5].

Currently, MSMEs are faced with a fact that distance, space, and time are no longer being obstacles to interact with consumers and world community. Digital communication is a demand for someone to always train their digital skills so that their performance continues to improve. Besides being able to improve performance, it can also have an impact on a person's overall life quality [6]. Likewise, digital skills increase positive outcomes for individuals [7, 8], and the competitiveness and sustainability of companies in the long term [9]. In the MSMEs context, skills gap can be occured because of uneven infrastructure, lack of literacy, and difficulty in accessing digital training. Access to digital technology has played a major role for MSMEs to be able to thrive in digital entrepreneurship [10]. Unfortunately, field observations show that some companies are still faced with several obstacles, especially in human resources aspect [4, 5] in the context of MSMEs [11]. In Indonesia, especially West Java and the Special Region of Yogyakarta (DIY), have some constrained from the aspect of digital skills and digital entrepreneurship so that it is predicted to have an impact on job satisfaction and the performance of MSME entrepreneurs.

The obstacles faced by MSMEs in Indonesia in terms of the implementation of business digitization, besides human resources, are as follows: lack of infrastructure and adequate information system, relational capital, as well as social and behavioral problems of MSMEs [12-16]. These obstacles are expected to have significant impact in various activities, such as: (a) change in customer service from offline to online; (b) the uneven spread of internet infrastructure network which has negative impact to the business sustainability; (c) increase in capital for IT and business investment; (d) the need for digital literacy improvement for MSMEs, which on average are still operating conservatively. It becomes a strategic issue for both business actors, the government, and universities to participate in solving these problems. It seems that digital technology has change the MSMEs entreprenurial business model to be more digitally-based.

Many study results prove that digital skills and digital entrepreneurship create entrepreneurship opportunities at more affordable cost and wider market [4, 5, 17], besides being able to increase satisfaction [7, 8] and entrepreneur performance [9, 18]. This study is carried out to fill the research gaps and brought the novelty for the literature with these reasons:

1. Lack of research that bring out digital skills and digital entrepreneurship topics in the context of MSMEs in Asia, especially in Indonesia [17, 19, 20]. This study also connects

the dots with job satisfaction, which is still rarely explored [7, 8] and sustainable performance of MSMEs entrepreneurs [9, 18].

2. Lack of implementation of business digitization by MSMEs in Indonesia due to number of obstacles faced by the organization, which requires readiness to change in terms of the adoption and diffusion of business digitization in the context of MSMEs in emerging markets [12-16].

3. The volatile and hostile change in business environment, especially from the digital aspects, which requires MSMEs to be able to create high quality products and excellent service, so that it can lead to sustainable performance of MSMEs entrepreneurs in the long term [21-24].

Therefore, this study examines and analyzes the pattern of relationships between Digital skills, Digital Entrepreneurship, Job satisfaction, and Performance of MSME entrepreneurs.

2. LITERATURE REVIEW

2.1 Digital skills on the sustainable performance of MSME entrepreneurs

Digital skills are assets that can improve employee performance [17, 19, 20]. The main point that to develop digital skills with digital literacy. Digital literacy is a strategic and significant concept in assessing the types of skills and the extent to which an understanding must be possessed by individuals. Ferrari [25] explained that digital literacy consists of information management, collaboration, communication and sharing, knowledge and content-making, responsibility and ethics, evaluation and problem solving, and technical operations. In this matter, increasing the expertise of technology and information media requires information literacy, media literacy, as well as information and communication technology literacy. These three literacies become important so that digital literacy of individuals can be increased [26]. Santoso et al. [20] find that the higher the digital literacy possessed by the employee, the better the innovation he created in developing the company. Prezioso and Margherita [27] propose efforts to develop digital skills through fast integration of information and communication technologies (ICTs). It is important to make it easier for employees to train digital skills, so that there is no gap in digital skills between employees. However, in a company, there are many obstacles in efforts to improve digital skills which have resulted in widening gaps such as lack of training programs and managerial support [17]. Some literature agrees that the cause of the slow performance or company development is low digital skills and vice versa. When companies are able to develop HR digital skills, it would improve individual and organizational performance [9, 19, 28-30]. Bergdahl [31] assert that there is no time limit to stop learning technology. Technology is a science that continues to develop and to keep pace with its development. Companies can also apply Technology-Enhanced Learning (TEL). TEL applies technology adoption and diffusion that makes it a work culture so that employees have work engagement. Digital skills are also important and must be met by employees in order to maintain the company's survival [18] and organizational performance [9]. There is a linkage between individual performance and organizational performance, which in this study is MSMEs. When the management is able to manage individual performance to achieve organizational outcomes, then the assessment of organizational can be carried out. This is because the accumulation of individual performance can lead to MSMEs performance [32, 33]. Organizational performance is the effectiveness for achieving organizational goals, efficiency which consieres the relationship between output and input needed to achieve the output, and adaptation whcih reflects the organizational capability to adapt to environmental changes which provide the contribution to achieve superior organizational performance [34].

H1. Digital skills have positive effect on the sustainable performance of MSME entrepreneurs

2.2 Digital Entrepreneurship and sustainable performance of MSME entrepreneurs

Currently, the world has a big agenda as the main driver of new industrial order based on industry 4.0 [35]. Digital entrepreneurship can be used as an effort to address this agenda [35-40]. The digital business-oriented business model has provided a very attractive opportunity for demanding business people to explore digital entrepreneurship [1, 4, 10, 31, 41]. Some business people already have digital platforms that are applied to the fields of marketing, finance, and other business transactions [4, 42]. In addition, Elia et al. [4] state in generating new businesses, business people can develop digital entrepreneurship by utilizing digital technology. In addition, the researches of [1, 2, 43, 44] state that the transformation from conventional business to digital can be done by exploring entrepreneurial business processes. This can be an effective strategy to align with business demands in the current global era and has grown rapidly throughout the world [10, 42, 45]. Yin et al. [46] conclude that digital entrepreneurship can be used to improve employee performance and company performance [5, 47]. Business people can freely develop business models associated with internet media and digital platforms in a more agile manner by implement digital entrepreneurship [3, 4, 48]. More specifically, the researches of [4, 48] grouping digital entrepreneurship which is associated with digital business models, digital platform strategies, digital ecosystems, digital entrepreneurship, and digital social processes. All of which expected to have an impact on the business people performance. This effort must also be supported by the exchange, transfer, and knowledge acquisition that have an impact on the acquisition of new unique resources and generate new products and service offerings that are supported by the digital environment [10, 49, 50].

H2. Digital entrepreneurship has positive effect on the performance of MSME entrepreneurs

2.3 Digital skill and job satisfaction

The business world is experiencing rapid technological developments where social activities are starting to move to the digital world era. The emergence of the COVID-19 pandemic has also encouraged the use of digital technology more intensively due to restrictions on physical interaction between humans [51, 52]. Therefore, everyone who works in the company is required to be able to master digital technology in order to be able to keep up with the rapid technological advances [53, 54]. Humans are currently entering a new era with a new lifestyle due to very complex technological developments. The current average employee also has a new

work method, namely remote work [55]. This demands employees to have digital skills in order to maintain the company's competitiveness in the midst of the digital technology development [27, 55, 56].

Some literature states that the ability of human resources in mastering digital technology is referred to as digital skills [9, 18, 57]. Van Laar et al. [53] state that digital skills include several skills including information, communication, collaboration, critical thinking, creativity, and problem solving. On the other hand, the development of digital technology must also adjust to the characteristics of the company's human resources. Sukma and Wijaya [51] divide several aspects that must be met by digital technology in order to be able to provide satisfaction for its users, namely ease of use, quality of information, useful function, clarity of language, and aesthetics. Digitization is expected to be able to facilitate human work so that it have an impact on job satisfaction [7, 8]. There are other things that must also be considered in adopting digital technology so that employees continue to get job satisfaction, namely salaries, job promotions, supervision, rewards, colleagues, work environment, and work communication [58, 59]. In addition, Carlisle et al. [18] state that employee job satisfaction is strongly supported by digital technology. Employees will get higher job satisfaction with digital skills [51, 58, 59]. In the MSMEs context, it seems that this study is more focused on the manager and strategic planner level [60, 62]. It is important considering that the study which links job satisfaction of MSMEs entrepreneurs and sustainable performance of MSMEs entrepreneurs is needed to be explored further.

H3. Digital skills have positive effect on job satisfaction of MSME entrepreneurs

2.4 The effect of job satisfaction on the performance of MSME entrepreneurs

Satisfaction is defined as an "affective or emotional response of a person to work". Employees like or dislike their work, perhaps even with the employee's condition [62]. This definition has important implications that a person can be relatively satisfied with one aspect or even dissatisfied with another aspect. Job satisfaction is one of the central points and strategies used by companies to improve one's performance [63]. Companies often face important and serious problems in increasing job satisfaction. When someone faces problems related to the workload and work environment as well as changes in technology, it can reduce job satisfaction so that performance will decrease [64]. Jex et al. [65] adds that someone who has an affection for work and the work environment will have an impact on their attitude towards their work. This affective attitude will be closely related to other components, namely cognitive and behavior. Someone who has high performance is usually characterized by being able to work efficiently and effectively, has minimal job breakdown, low absenteeism, and decreased turnover [66-68]. The researches of [69, 70] conclude that job satisfaction can improve one's performance. Someone who has high job satisfaction will have a high level of involvement in his work.

H4. Job satisfaction has positive effect on the sustainable performance of MSME entrepreneurs

2.5 The mediating role of job satisfaction

The mediating role of job satisfaction is a crucial aspect to be discussed, as it can lead to the increase of individual performance and even organizational performance as a whole. Job satisfaction matters considering that when job satisfaction increase, it will also increase organizational performance. The study from [71] concluded that job satisfaction is proven to be a mediator in the relationship between organizational learning and organizational performance. This finding is strengthened by Na-Nan et al. [72] which mentioned that job satisfaction is beneficial mediate the antecedent variable in increasing their organizational performance. In addition, in the context of MSMEs in emerging markets, Mustafa et al. [61] proved that job satisfaction turns out to be a crucial aspect that is necessary to improve innovative work behavior. When there is a change in the organization, they should pay serious attention to the job satisfaction of the entrepreneurs, managers, and strategic planners. This is important as it can have an impact to the ups and downs of organizational performance. Job satisfaction can be a crucial mediator in the interrelationship of organizational change and organizational performance [60]. In addition, the results of the study which are more focused to the competency aspects proved that job satisfaction can be a mediator in the relationship between competency or skills with organizational performance [73].

H5. Job satisfaction mediates the effect of digital skills on the sustainable performance of MSME entrepreneurs

3. METHOD

This study uses a quantitative approach because it uses primary data through the provision of questionnaires and interviews with several key respondents. The study examines aspects related to the performance of MSME entrepreneurs related to digital skills, digital entrepreneurship, and job satisfaction of MSME entrepreneurs. Furthermore, the pattern of the relationship is tested and analyzed by statistical procedures to generalize the predictive theory [74, 75]. Entrepreneurs (owners and managers) of creative MSMEs in West Java and Special Region of Yogyakarta are used as the population. The target sample in this study is 260 MSME entrepreneurs by using purposive sampling technique. After further checking, it turned out that 229 MSME entrepreneurs returned the questionnaire. Purposive technique is done by sorting the sample with the following characteristics: (1) MSMEs have at least 4 years of operation, (2) MSMEs have a creative product business, (3) MSMEs have a net profit of IDR 15 million per month. The Likert scale technique for digital skills, digital entrepreneurship, and job satisfaction is used with a choice of scores: a score of 5 (strongly agree) to a score of 1 (strongly disagree). Especially for the performance of MSME entrepreneurs, they have a choice of scores; a score of 5 (very high) to a score of 1 (not high). Researchers use Partial Least Square (PLS) in testing the statistical technique of this research hypothesis. Furthermore, the indicators and questionnaire items are adopted and developed from existing sources to facilitate the measurement of variables.

The measurement of the sustainable performance of MSMEs entrepreneurs is adopted from the study carried out by the studies of [9, 52], which consists of 5 items. The example of the items are "MSMEs entrepreneur is able to improve their competitive advantage among the competitors" and "MSMEs entrepreneur is able to improve the brand image of the company". Digital skills are measured with the items adopted from the studies of [19, 55] which consists of 8 items.

The example of the items are “We can operate internal and external communications through digital platform and sharing” and “We carry out social media engagement through planning, promoting, and monitoring projects by connecting with our social channels”. Digital entrepreneurship is measured with the items adopted from the studies of [1, 49] with 5 items. The example of the items are “Adapting digital entrepreneurship in my business will give more good things to happen” and “I believe that digital entrepreneurship will help my business to achieve success”. Finally, job satisfaction is measured with the items adopted from the studies of [64, 76] which consists of 5 items. The examples of the items are “this job meets most of my expectations” and “I would again accept this job if it is offered without any hesitation or doubt”.

The author first carried out pilot test to ensure the feasibility though the validity and reliability of the questionnaire item. Furthermore, the results of the validity and reliability tests are analyzed with the PLS technique and the results can be explained in detail in the sub-research results.

4. RESULT

4.1 Respondent characteristics

Characteristics of respondents are divided into several categories, namely gender, age and education which can be seen in the Table 1. The majority of respondents in this study are male (82.1%); have age of 20-30 years old (37.1%) and have diploma education (95.2%) . This means that the respondents are on the productive age. Furthermore, according to their education, they have the knowledge and information that makes them capable to run a business.

Table 1. Respondent characteristics

Characteristics	Result
Gender	Male: 187 respondents (82%)
	Female: 42 respondents (18%)
Age	20-30 years old: 85 respondents (37%)
	31-40 years old: 76 respondents (33%)
	More than 40 years old: 68 respondents (30%)
Education Background	Diploma/Bachelor: 217 respondents (95%)
	Master: 12 respondents (5%)

4.2 Outer model evaluation

Outer model analysis is conducted to test the validity and reliability of the constructs. Validity testing uses convergent validity and construct validity. Convergent validity requires an indicator to have a loading factor value of 0.7 so that it can be called a valid indicator. The construct validity requires an AVE value 0.5 so that it can be said to be a valid construct. The reliability value refers to the composite reliability value which is required to have a value of 0.7. The test results are shown in Table 2.

Table 2 shows the process of evaluating the outer model in this study. The first analysis shows that in the evaluation of convergent validity, two indicators are not valid because they have a loading factor value of <0.7, namely SAT3 and DE4 so they have to be dropped from the analysis. After removing the invalid indicators, it is found that all indicators have a loading factor value of >0.7 or they are valid. Construct validity analysis is also shown in Table 2 where the AVE value on all variables has a value >0.5 so that it is concluded that all variables have met the validity standard. Reliability analysis is also needed in this study by referring to the composite reliability value. The value of composite reliability on all variables shows a value of >0.7 so it can be concluded that it is reliable.

Table 2. Validity analysis

Indicators	Loading Factor	Validity	Loading Factors	AVE	Composite Reliability
BP1	0.840	Valid	0.832		
BP2	0.893	Valid	0.891		
BP3	0.806	Valid	0.811	0,722	0,928
BP4	0.851	Valid	0.853		
BP5	0.855	Valid	0.860		
DE1	0.731	Valid	0.839		
DE2	0.705	Valid	0.814		
DE3	0.704	Valid	0.771	0,641	0,877
DE4	0.685	Invalid	Dropped		
DE5	0.803	Valid	0,778		
DS1	0.745	Valid	0.743		
DS2	0.832	Valid	0.832		
DS3	0.843	Valid	0.843		
DS4	0.852	Valid	0.852	0,683	0,945
DS5	0.839	Valid	0.839		
DS6	0.861	Valid	0.862		
DS7	0.831	Valid	0.830		
DS8	0.801	Valid	0.802		
SAT1	0.795	Valid	0.802		
SAT2	0.721	Valid	0.733		
SAT3	0.618	Invalid	Dropped	0,607	0,860
SAT4	0.744	Valid	0.750		
SAT5	0.801	Valid	0.827		

4.3 Inner model evaluation

Testing of the inner model or structural model is conducted to predict causal relationships between variables or test hypotheses. Hypothesis testing is done by bootstrap. The results of the PLS bootstrap output in this research model are shown in Figure 1.

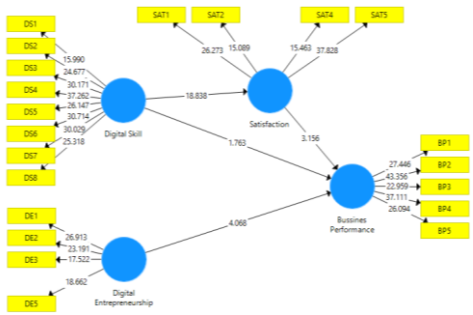

Figure 1. Inner model research result

4.3.1 R square

The coefficient of determination can be seen in the R-square table by multiplying the R-square value by 100%, if the result is more than 67% then it indicates a good coefficient of determination, if the result is less than 67% but more than 33% indicates a moderate coefficient of determination, and if less than 33% but more than 19% indicates a weak coefficient of determination [77]. The coefficient of determination test results show that all variables have a good coefficient of determination as shown in Table 3.

Table 3. R-Square

Endogenous Variables	R Square
Bussines Performance	0.285
Satisfaction	0.475

Table 3 shows the R-Squared value on the bussines performance variable is 0.285 or 28.5% based on the [77] category, the results are categorized as weak values. The satisfaction variable has an R Square value of 0.475 or 47.5% which is categorized in the medium value. It can be understood that the effect of exogenous variables on business performance variables is still weak, while the effect of exogenous variables on satisfaction variables is moderate.

4.3.2 Goodness of FIT

PLS can also identify global optimization criteria to determine the goodness of fit (GoF) model. The Gof index is calculated from the square root of the average communality index and the average R-squared value. GoF = 0.1 means small, GoF = 0.25 means medium, GoF = 0.36 means large. GOF value can be calculated using the formula Goodness of fit = (Communality X R^2) . The calculation results are shown in Table 4.

Table 4. Results of Goodness of Fit Model (GoF)

Construct	Communality	R Square
Bussines Performance	0,577	0,285
Digital Entrepreneurship	0,390	
Digital Skill	0,581	
Satisfaction	0,347	0,475
Average	0,473	0,380
Gof	0,448	

Based on Table 4, it can be seen that the GoF value of the model reaches 0.423 which is greater than 0.36 so that the model is included in the large category.

4.4 Hypothesis Test

The results of hypothesis testing are shown in Table 5. The results in Table 4 show that all hypotheses are accepted (H2, H3, H4 and H5) except H1 is rejected.

Table 5. Path coefficients

		Original Sample (O)	T Statistics (|O/STDEV|)	P Values
H1	Digital Skills -> Bussiness Performance	-0.290	1.763	0.079
H2	Digital Entrepreneurship -> Bussiness Performance	0.509	4.068	0.000*
H3	Digital Skills -> Satisfaction	0.689	18.838	0.000*
H4	Satisfaction -> Bussiness Performance	0.304	3.156	0.002*
H5	Digital Skills -> Satisfaction -> Bussiness Performance	0.209	2.993	0.003*

Note *=sign 0.05

5. DISCUSSION AND IMPLICATION

This study finds that digital skills do not have positive effect on the performance of MSME entrepreneurs (**H1 is rejected**). This finding does not support the previous studies from [17, 19, 20]. Based on observations and interviews in the field, it is found that in general there are still MSME entrepreneurs who do not have good digital skills. Even ironically, some of them are less able to anticipate technological changes in the business world because MSMEs that improve the skills of their employees from the digital side do not yet have a commitment to allocate other resources in order to support each other. Even though some empirical evidence explains that the number of jobs and business activities related to digital continues to increase. Of course, this situation and condition must be captured by MSMEs as an exciting opportunity. The need for digital literacy is also an important aspect that cannot be underestimated [20]. One's low digital skills will be able to reduce individual performance and even organizational performance [9, 19, 28, 29]. It must be realized that currently digital skills have become a necessity for employees and managers so that MSMEs can maintain long-term survival.

The results also prove that digital entrepreneurship has positive effect on the performance of MSME entrepreneurs (**H2 is accepted**). These results support [5, 40, 47] MSMEs in West Java and the Special Region of Yogyakarta (DIY) must be able to harmonize all their business activities with digital technology. Volatile and hostile business demands, especially from the digital side of business, make MSMEs in Special Region of Yogyakarta and West Java increasingly have the

expertise to develop their entrepreneurship through mastering digital entrepreneurship. Since several digital platforms have been offered from various channels from upstream to downstream [2, 43, 44]. Various fields already exist in each service such as finance, marketing, operations, and other services. All of them are intended to simplify and improve services that can satisfy customers. Actually, it is not easy to develop a business if there is no commitment, hard work and smart work from MSME actors in Special Region of Yogyakarta and West Java. MSME business players must be able to develop a digital-based business model that strengthened by digital platform strategies and policies that can increase customer satisfaction and loyalty.

This study also produces findings that digital skills have positive effect on job satisfaction of MSME entrepreneurs (**H3 is accepted**). Currently, remote work has hit all the business world. Digital skills are a very important and strategic aspect so that when someone can conduct his business activities with his digital skills, the employee tends to be satisfied and has high self-efficacy. Hecker et al. [55] offer several concepts related to digital skills. *First*, digital skills are missing pieces of the puzzle and must be completed immediately. *Second*, closing the digital skills gap which is a must for the company for employees. *Third*, companies must intensify education and training in operating and utilizing digital technology. *Fourth*, divide employee groups into older groups who are less able to keep up with digital developments and younger groups who are able to keep up with digital developments. Therefore, the ability of business people and managers related to these digital skills must continue to be improved so that they are satisfied with their work [51, 58, 59]. Companies like MSMEs must also pay attention to other aspects including compensation, non-financial rewards, and other remuneration programs as well as a digital work environment that can support each other.

The results also prove that job satisfaction has positive effect on the performance of MSME entrepreneurs (**H4 is accepted**). This also supports the previous studies where job satisfaction can improve work performance both in terms of work performance, process performance [64, 70] and organizational performance [78, 79]. Managers are sometimes faced with problems of unexpected behavior and unqualified performance. Although unpleasant, it becomes unattractive when the organization cannot overcome these problems. Companies can implement negative reinforcement to eliminate unwanted behavior and poor performance.Some managers and researchers argue that there is no justifiable reason for the use of negative reinforcement in an organizational environment. Other views argue that there are times when negative reinforcement is the most efficient and effective way to modify behavior, apart from being able to implement positive reinforcement. It is important because when job satisfaction increases, a person tends to be able to properly explore all his potential and abilities to be able to develop his business even though there are very heavy challenges in the current era. The results prove that job satisfaction mediates the effect of Digital Skills on the performance of MSME entrepreneurs (**H5 is accepted**). MSME entrepreneurs who have good digital skills will be able to improve their performance through job satisfaction. The aspect of job satisfaction is a crucial aspect so that companies must really pay attention to and have programs and policies related to job satisfaction.

6. RESEARCH LIMITATIONS AND FUTURE RESEARCH AGENDA

1. This study uses purposive sampling technique with samples from MSMEs in Special Region of Yogyakarta and West Java. These two provinces have a very large number of creative MSMEs, so there are concerns that they will not be able to generalize the population. In the future, researchers should conduct sample clusters in each province by also grouping creative industries more specifically.
2. Topics related to digital skills are very appropriate to do in the current era but should be applied to medium to upper companies that use digital technology-based services.
3. The model can be developed by considering other variables which are expected in the long term to have an impact on business sustainability and the company's competitive advantage.

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