

## The Role Of Leadership And Collaboration In Enhancing The Digital Skills Of Young Entrepreneurs In The Era Of The Covid-19 Pandemic

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### ABSTRACT

*The Covid-19 pandemic has upended global order by hastening digital transformation, forcing many entrepreneurs to undergo significant changes. The purpose of this research is to determine the impact of digital leadership and collaboration on the digital skills of young entrepreneurs in the Covid-19 pandemic era. Non-probability sampling was used in the empirical analysis, which yielded 147 millennial entrepreneurs. The data were analyzed using multiple linear regression analysis techniques after passing the reliability and validity tests. According to the findings, digital collaboration has a significant impact on the skills of young entrepreneurs. Meanwhile, digital leadership has no effect on digital skills.*

**Keyword:** Leadership, Collaboration, Digital Skills, Young Entrepreneurs, Covid-19 Pandemic, Introduction

### INTRODUCTION

The Covid-19 pandemic has disrupted the global establishment by accelerating digital transformation. The Covid-19 pandemic is forcing many organizations to undergo significant transformations, rethinking their business to maintain constantly changing guidelines and procedures (Dwivedi et al., 2020). The digitalization of the world of work has provided both opportunities and challenges for business people. The fact is that digital technology has had a significant impact on economic growth. The positive impact of digital technology on economic growth is triggered by the combination of digital technology and entrepreneurial orientation (Zarrouk et al., 2020; Sariwulan et al., 2020; Muafi et al., 2021) which created a new concept called digital entrepreneurship. Therefore digital technology must be utilized, especially for the millennial generation, because this generation is a human resource asset of high value for a country (Siegel & Wright, 2015; Rippa & Secundo, 2019).

Digital skills, digital leadership and digital collaboration are important elements that must be owned and mastered by millennial entrepreneurs in carrying out their business activities. According to Geissinger et al., (2019); Muafi et al., (2021), in principle digital entrepreneurship facilitates the exchange, transfer and acquisition of knowledge, as well as starting new methods or ways of doing business. In principle, digital entrepreneurship such as digital leadership and digital collaboration are important elements that can improve millennial digital entrepreneurial skills. Digital leadership is very important for organizations to survive in the new digital era by adapting

and changing business strategies (Araujo et al., 2021). According to Zeike et al., (2019), digital leadership is an important factor in managing challenges and has become a key skill in the digital transformation era. Therefore, knowledge and human resources as the main sources of digital entrepreneurship development must be fostered and managed as well as possible, so that digital entrepreneurship can be optimally realized (Ngoasong, 2018). According to Elijah (2020), emerging technology paradigms harness the potential of collaboration and collective intelligence to design and launch more robust and sustainable entrepreneurial initiatives

Some research results that have examined the use of digital media in supporting business activities have previously been carried out by Elijah et al., (2020); Muafi et al., (2021); Saputra & Nugroho (2021); Abidin (2022). From some of the results of these studies have been able to present models and conceptual frameworks as well as provide a variety of information. However, previous research studies only covered broad and still limited discussions, especially those examining the importance of digital leadership and digital collaboration in increasing digital acceleration and capabilities for young entrepreneurs in carrying out their business activities. Thus this study aims to determine the direct impact of digital leadership and digital collaboration on the digital abilities of young entrepreneurs. Thus, this study will provide new insights in understanding the role of digital leadership and digital collaboration on the digital abilities of young entrepreneurs.

## **LITERATURE REVIEW**

### **A. Digital skills**

Digital media which increasingly has an impact on business productivity in various economic sectors (Funes et al., 2018) and contribute to productivity growth in many companies. Therefore, the emergence of policies to support digital adoption must go hand in hand with increasing digital skills (Gal et al., 2019). In facing the industrial revolution 4.0, digital skills are demands that entrepreneurs must master in developing their businesses. Other studies have found evidence that top-level managers with lower digital leadership skills are more likely to have low psychological well-being.

### **B. Digital leadership**

It is undeniable that in the era of the Covid-19 Pandemic, the development of digital technology has arrived and is able to play an important role in supporting all activities related to business activities. According to Hamid et al., (2021), business owners have utilized digital technology media as an effective solution to support their business activities amid the Covid-19 Pandemic. This condition has provided a clear picture that a business owner must have leadership, digital knowledge and skills to carry out his business activities. Digital leadership is digital leadership that emerges as a result of developments in a technology-based

environment. Digital leadership is a key skill that needs to be possessed in the digital transformation era (Zeike et al., 2019). The most significant characteristics that differentiate digital leaders from other leaders include personal skills, attitudes, knowledge, and experience (Araujo et al., 2021). Digital leadership can be applied at both organizational and individual levels (Antonopoulou et al., 2021). The classic leadership style is not enough to answer the opportunities and challenges that arise at this time. Leadership style focuses on the character of the leader in uplifting the morale of the workforce as the application of technology in the organization (Omar & Ismail, 2020). Digital leaders don't just rely on input from trusted people in making decisions. They also use data as a determinant of decision making. The importance of digital leadership in the development of digitalization is an opportunity that entrepreneurs must make the best use of in the era of digital transformation.

Based on the research conducted Antonopoulou et al., (2021), leadership has positive correlation with transformational leadership. In principle, transformational leadership as long as it is equipped with the appropriate digital skills will be able to be more effective in completing a whole series of work activities. According to El Sawy (2016), digital leadership means thinking differently about business strategies, business models, mindsets and expertise which includes skills, experimentation and innovation as well as digital knowledge. Thus it can be said that digital leadership is closely related to digital skills in a person in carrying out and completing a whole series of business activities. According to Abidin (2022), *digital leadership* significant impact on digital skills. From this statement the hypothesis can be formulated:

**H1:** digital leadership has a significant effect on digital skills

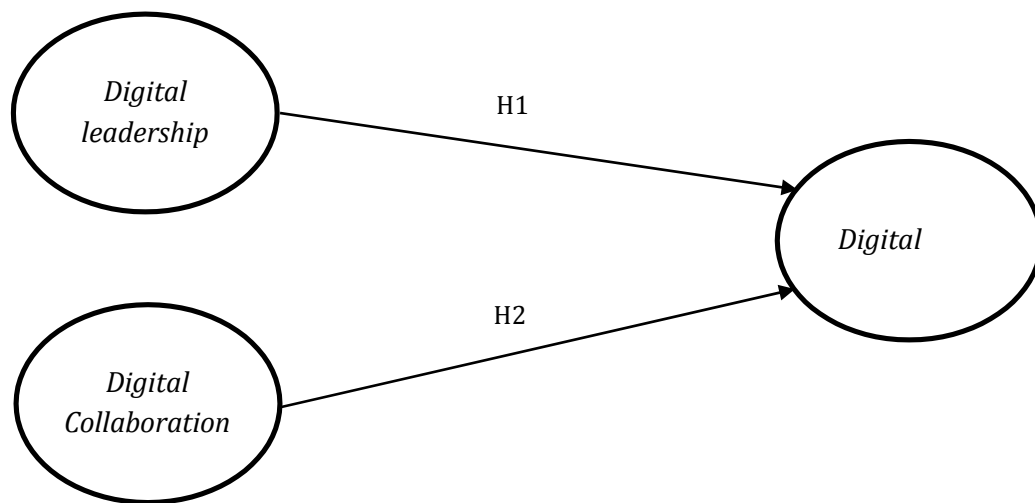
### **C. Digital collaboration**

Digital technologies enable new forms of collaboration and communication (Hatlevik et al., 2015; Midtlund et al., 2021). Digital collaboration is a pattern of cooperation that is built as an effort to develop information media in achieving common goals. Digital collaboration also plays an important role in driving understanding of the enhancement and application of technology as a relational support (Fuller et al., 2021). Effective team collaboration is an important prerequisite for achieving optimal management in business organizations (Temelkova, 2018). Collaborative dynamics based on digital tools can support knowledge sharing and facilitate the recognition of opportunities (Sahut et al., 2021). In running a business during the Covid-19 Pandemic, micro, small and medium enterprises need to collaborate by utilizing digital platforms. This of course aims to maintain business continuity and increase the competitiveness of products and services offered to consumers. Thus, collaborative business partnerships are very urgent things to do during the Covid-19 Pandemic in order to maintain

the sustainability and growth of the business climate. Empirically, previous research data stated that there was a positive and significant effect of digital collaboration on digital skills (Saputra & Nugroho, 2021; Abidin, 2022). From this statement a hypothesis can be formulated;

**H2:** digital collaboration has a positive and significant effect on digital skills

Based on review of the literature and articles referred to above, it is known that digital skills are an important factor in the development of entrepreneurship. This positive value is a useful opportunity for digital leaders by utilizing digital collaboration with collaborative patterns for the development of digital information media.



**Figure 1.**

*Research Model Framework*

## **METHOD**

This study aims to explain the influence between variables through hypothesis testing and explain between variables, so this research is an explanation research. Furthermore, this study uses a quantitative approach with data collection instruments such as interviews, questionnaires, and direct observation of business actors.

### **A. Population and sample**

The population of this research is young entrepreneurs in North Luwu. Considering the unknown sample population, it is not possible to apply the use of sample probability in this study to obtain a random and representative sample. With these considerations, in this study we used non-probability sampling to collect data. Use of non-probability samples if the number of respondents is very large and uncountable (Latan et al., 2020). Furthermore, the minimum sample size must be 10 times the number of measurement items (Hair et al., 2017). Therefore This study used 147 samples, with a total sample of 110 samples that met the requirements and above the minimum limit.

## **B. Items and measurement scales**

Quantitative research that uses scales and measurement items often has an impact on research results. Therefore, an important element in research is determining the scale and measurement items that are appropriate to the research. The use of this scale and measurement items to obtain quantitative data. The use of this measurement item is considered good compared to the previous measurement. Using existing measurement items is generally considered better practice than developing new ones, given the complexity of developing the scale (Fowler, 2013;Latan et al., 2020). For digital leadership (DL) variables, digital collaboration (DS) variables and digital skill (DS) variables were measured using a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree).

This study uses the operational definition of variables by having two independent variables and one dependent variable. The digital leadership variable is the ability possessed by millennial entrepreneurs in developing all employees in utilizing digital technology to support business goals and activities. The measurement indicators used are visionary leadership, digital age learning culture, excellence in professional excellence, systemic improvement and Digital Citizenship (Omar & Ismail, 2020). Furthermore, the digital collaboration variable is a pattern of collaboration built by millennial entrepreneurs as an effort to develop information media in achieving goals and business activities. The measurement indicators used are Sharing Resources, Sharing Intensity and Social Innovation Capital (Chierici et al., 2020). The digital skill variable is a millennial entrepreneur's ability to understand, operate, use, and utilize technology to access and manage information to support business activities. The measurement indicators used are access of digital services, usage of digital services and state of digital economy (Maji & Laha, 2020).

## **C. Data analysis method**

To ensure the quality of all statement items used in this study, validity and reliability tests were carried out. Validity test is used to measure the validity or validity of a questionnaire (Ghozali, 2017). The validity test used in this study is Confirmatory Factors Analysis (CFA). According to Sugiyono (2017), CFA can be used to confirm the most dominant indicators in a construct. This study used the Kaiser Meyer Olkin Measure of Samling (KMO) technique and the Bartlett Test of Sphericity with the help of SPSS Version 24 Software. The rule of thumb value used was  $KMO > 0.5$ . Furthermore, to test the reliability of the measurement instrument, the Cronbach's Alpha procedure was used with reference to the rule of thumb ( $\alpha > 0.60$ ; Malhotra, 2010). Furthermore to test the research hypothesis that is using multiple linear regression analysis.

## **RESULTS AND DISCUSSION**

### **A. General description of respondent demographics**

Based on the results of the analysis and information obtained, it can be presented regarding the demographic data of the respondents (Table 1). The results of the data grouping in Table 1 show that the respondents in this study totaled 147 MSME entrepreneurs consisting of 79 people (52.6%) women and 71 people (47.3%). There are more female culinary business commodities than men, because women are more skilled at cooking. The type of business is dominated by culinary businesses as much as 51.3%, then skills/services as much as 20.6%, then general trading 20%, then fashion 7.3%, and automotive 0.6%. Culinary business makes entrepreneurs not only act as owners, but also as workers and sellers. This is because the processing processes such as buying ingredients, cooking, and serving food are still being done alone.

Entrepreneurs use social media as a marketing tool. The media used were Facebook as much as 40.6%, WhatsApp as much as 30.6% and Instagram as much as 28%. Facebook is a marketing medium that is more widely used, because it appears earlier than the initial media with the majority of productive age users. The education level of MSME entrepreneurs is 0.6% SD/MI, 58% SMA/SMK, 8.6% SMP/MTS, 32% D3/S1, and 0.6% Masters. Education influences the perspective and mindset of entrepreneurs. The higher the entrepreneur's education, the more knowledge that can be applied to business.

Entrepreneurs have owned a business for 1-5 years as many as 50% of people, 5-10 years as many as 8.6% of people, 10 years and over 35.3% of people, and 1 year and below 6% of people. The length of business has an influence on turnover receipts. The turnover obtained by entrepreneurs is at most 1-5 million per month for 53.3% of people, then a turnover of 5-10 million per month for 22% of people, a turnover of 10-20 million per month for 4.6% of people, a turnover of 20 million to above as many as 6% of people and turnover of 1 million and below as many as 14% of people. Capital used by entrepreneurs is the most in the range of 5-10 million as many as 30% of people, then capital of 1-5 million is as much as 28% of people, then capital of 20 million and above is as much as 25.3% of people, capital of 10-20 million is as much as 8.6% people and capital with 1 million and below is at least used by entrepreneurs with 8% people.

**Table 1.**  
*Respondent Identity*

No	Information	Amount	Percentage	
<b>1</b>	<b>Type of business</b>			
	Culinary	77	51,3	
	Fashion	11	7,3	
	Skills/Services	31	20,6	
	General trading	30	20	
	Automotive	1	0.6	
<b>2</b>	<b>Gender</b>			
	Man	71	47,3	
	Woman	79	52,6	
<b>3</b>	<b>Digital Media Types</b>			
	WhatsApp	46	30,6	
	Facebook	62	41,3	
	Instagram	42	28	
<b>4</b>	<b>Length of Business</b>			
	<1 Year	53	35,3	
	1-5 Years	75	50	
	5-10 Years	13	8,6	
	>10 Years	9	6	
<b>5</b>	<b>Venture capital</b>			
	< IDR 1 Million	12	8	
	IDR 1 Million – IDR 5 Million	42	28	
	IDR 5 Million - IDR 10 Million	45	30	
	IDR 10 Million - IDR 20 Million	13	8,6	
	> IDR 20 Million	38	25,3	
	<b>6</b>	<b>Business Turnover</b>		
		< IDR 1 Million	21	14
IDR 1 Million – IDR 5 Million		80	53,3	
IDR 5 Million - IDR 10		33	22	

	Million		
	IDR 10 Million - IDR 20	7	4,6
	Million		
	> Rp. 20,000,000	9	6
<b>7</b>	<b>Last education</b>		
	SD/MI	1	0.6
	SMP/MTs	13	8,6
	SMA/SMK	87	58
	D3/S1	48	32
	S2	1	0.6

Source: primary data processed

## B. Validity and Reliability Test

The results of testing the validity and reliability for the variables used in this study are as follows:

**Table 2.**  
*Validity and Reliability Test Results*

Contract	Items	Anti-imag e	KMO	Alpha Cronbach's	Information
Digital Leadership	DL1	0.668	0.642	0.650	Valid and Reliable
	DL2	0.675			
	DL3	0.595			
	DL4	0.688			
	DL5	0.582			
Digital Collaboration	DC1	0.788	0.685	0.714	Valid and Reliable
	DC2	0.820			
	DC3	0.685			
Digital Skills	DS1	0.621	0.610	0.615	Valid and Reliable
	DS2	0.704			
	DS3	0.658			

Source: primary data processed

On Table 2 it can be seen that all statement items for the digital leadership, digital collaboration, and digital skills variables are stated to be valid because. For the results of the reliability test of the digital leadership, digital collaboration, and digital skills variables, it can be concluded that all statement items are reliable because the value of Cronbach's alpha for all variables >0.60.



### C. Hypothesis testing

This coefficient of determination test is used to measure how far the independent variables explain the dependent variable. Based on table 4 of the results of the coefficient of determination ( $R^2$ ) above, an R square value of 0.064 is obtained. This means that digital skills can be influenced by digital leadership and digital collaboration variables of 6.4%. While the remaining 93.6% is influenced by other variables that are not included in this research model. Furthermore (Table 3) also provides information on the magnitude of the F Square value of 0.268 or 26.8%.

**Table 3.**

*Hypothesis testing*

<i>Hypothesis</i>	<i>Relationships</i>	<i>Path Coefficients</i>	<i>Q statistic</i>	<i>R Squares</i>	<i>F Squares</i>	<i>P values</i>
H1	DL → DS	0.063	0.009 <sup>ns</sup>	0.064	0.268	0.993 <sup>ns</sup>
H2	DC → DS	0.081	2,849 <sup>**</sup>			0.005 <sup>**</sup>

*Note:* \*\* statistically significant at the 5 percent. ns not significant

DL = Digital Leadership. DC = Digital Collaboration. DS = Digital Skills.

Based on the SPSS output results (table 4) can be obtained information, namely first, the digital leadership variable partially has no significant effect on digital skills where the calculated t value is smaller than the t table value ( $0.009 < 1.978$ ) and the probability value ( $0.993 > 0.05$ ). Second, the digital collaboration variable partially has a significant effect on digital skills with a calculated t value that is greater than the t table value ( $2,849 > 1.978$ ) and a probability value ( $0.005 < 0.05$ )

## **DISCUSSION**

This study proves that digital leadership has no effect on digital skills so that the first hypothesis is rejected. Digital leadership theory states that someone with digital leadership competence has the ability to decide direction, exert influence and have the ability to influence and is proficient in building relationships in anticipating the challenges of changing business environments faced by organizations. Thus digital leadership has not been able to produce behavior that supports attachment to work in realizing company goals for young entrepreneurs (Millennials) in North Luwu Regency, so it has not been able to motivate employees to develop to be more competitive in contributing to company success. The results of the study are not in line with what was stated by (El Sawy, 2016), that leadership (digital leadership) includes skills and innovation as well as digital knowledge possessed by a person in completing his work activities.

This study confirms that digital collaboration has a significant effect on digital skills. In theory, digital collaboration states a mutually beneficial relationship from collaboration with the use of digital technology between business partners and between workers, in this context the ability to build collaboration and cooperation between business partners and workers among young entrepreneurs (millennials) in North Luwu Regency has an impact and a positive contribution to the development and performance of the company's organization is reflected in the skills of young entrepreneurs in the characteristics of work teams, well-specified types of work, having good quality in collaborating, oriented towards the use of digital technology, as well as digital infrastructure and a digital mindset in improving company performance and growth amid the Covid-19 Pandemic. The research results are in line with the results of research conducted by Saputra & Nugroho (2021), that the digital collaboration approach based on empirical facts has proven effective in developing digital skills which include digital literacy, generic skills for the workforce, as well as specific skills for information technology professionals involved in digital collaboration. Thus, the information we find can provide new practical insights in understanding the relationship between digital leadership, digital collaboration and digital skills.

### **A. Practical implications**

The practical implications of this research are factually that digital leadership and digital collaboration can motivate young entrepreneurs so they can increase business activities. The study results provide meaningful input for practitioners and policy makers. First, practitioners need to understand that digital leadership is useful for managing business activities, the ability to utilize technology, especially digital assets, and increase opportunities to increase business revenue. Second, practitioners and policy makers need to be aware that there are effective laws to protect consumer privacy; secure electronic transaction services are easily available and affordable, and the nature of business data requires a secure

communication medium. The validation results show that digital collaboration has a positive and significant impact on the performance of young entrepreneurs. This is because the use of social media has a positive impact on business development and sustainability. Social media is the most accessible means for all groups because of its many users. Third, practitioners and Policy makers need to keep abreast of developments regarding digital technology and Internet-related business practices.

## **B. Limitations**

Some limitations in this study. First, research we only focus on the group of young entrepreneurs which means that the respondents are homogeneous. future researchers should consider using a larger and more widely diverse sample. Second, this research was only conducted in one area, namely North Luwu. For further research, it is recommended to expand the reach not only at the regional level but at the national to international level. Third, the R Square value is still in the weak category, so it is very possible to do further studies. Digital leadership is an interesting contribution to the theoretical framework for future researchers, because its relationship with digital skills has not been well explained in this research. Future researchers can add new constructs to the research model, for example self motivation. Fourth, The number of samples in this study uses a minimal sample. Further research is recommended to use a sample size ranging from 300 to 500. In general, many researchers recommend that a minimum sample size of 300 is good (Chatterjee & KumarKara, 2020).

## **C. Conclusion**

Based on the results of the research conducted by the researchers, it was concluded that digital competence is urgently needed and more urgently needed during the Covid-19 Pandemic as it is today in ensuring existence and surviving in the midst of difficulties to increase employee productivity and professional performance (millennial entrepreneurs). So that the empirical evidence generated from this research confirms that digital leadership has not fully become the behavior of some young entrepreneurs in the North Luwu district. However, in contrast to digital leadership, digital collaboration significantly affects the existence of young entrepreneurs by institutionalizing cooperation between employees who are employed and with strategic alliance partners in MSME activities that establish partnerships by involving digital collaboration in responding to challenges and changes in the rapidly changing business environment, and requiring digital expertise in its implementation. Based on the statistical analysis described previously, it can be concluded that digital leadership has no effect on digital skills. Meanwhile, the digital collaboration variable has a significant effect on digital skills.

## REFERENCES

- Abidin, A. Z. (2022). The Influence of Digital Leadership and Digital Collaboration On The Digital Skill Of Manufacturing Managers In Tangerang. *International Journal of Artificial Intelligence Research*, 6(1). <https://doi.org/10.29099/ijair.v6i1.330>
- Amels, J., Krüger, M. L., Suhre, C. J. M., & van Veen, K. (2020). The effects of distributed leadership and inquiry-based work on primary teachers' capacity to change: testing a model. *School Effectiveness and School Improvement*, 31(3), 468–485. <https://doi.org/10.1080/09243453.2020.1746363>
- Antonopoulou, H., Halkiopoulou, C., Barlou, O., & Beligiannis, G. N. (2021). Transformational leadership and digital skills in higher education institutes: during the COVID-19 pandemic. *Emerging science journal*, 5(1), 1-15.
- Araujo, L. M. de, Priadana, S., Paramarta, V., & Sunarsi, D. (2021). Digital leadership in business organizations. *International Journal of Educational Administration, Management, and Leadership*, 2(1), 5–16. <https://doi.org/10.51629/ijeamal.v2i1.18>
- Chatterjee, S., & Kumar Kar, A. (2020). Why do small and medium enterprises use social media marketing and what is the impact: Empirical insights from India. *International Journal of Information Management*, 53(December 2019), 102103. <https://doi.org/10.1016/j.ijinfomgt.2020.102103>.
- Chierici, R., Tortora, D., Del Giudice, M., & Quacquarelli, B. (2020). Strengthening digital collaboration to enhance social innovation capital: an analysis of Italian small innovative enterprises. *Journal of Intellectual Capital*, 22(3), 610–632. <https://doi.org/10.1108/JIC-02-2020-0058>
- Dwivedi, Y. K., Hughes, D. L., Coombs, C., Constantiou, I., Duan, Y., Edwards, J. S., Gupta, B., Lal, B., Misra, S., Prashant, P., Raman, R., Rana, N. P., Sharma, S. K., & Upadhyay, N. (2020). Impact of COVID-19 pandemic on information management research and practice: Transforming education, work and life. *International Journal of Information Management*, 55(July), 102211. <https://doi.org/10.1016/j.ijinfomgt.2020.102211>
- Dacholfany, M. I., Khataybeh, A. M., Lewaherilla, N. C., Yusuf, M., Sihombing, H. B. M., & Chang, M. L. (2022). APPLICATION OF THE BALANCED SCORE CARD CONCEPT AS A HUMAN RESOURCE PERFORMANCE MEASUREMENT TOOL AT THE MINISTRY OF HIGHER EDUCATION IN INDONESIA. MULTICULTURAL EDUCATION, 8(04), 1-13.
- Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and Social Change*, 147, 119791.
- Fowler Jr, F. J. (2013). *Survey research methods* (5th ed.). Sage publications.
- Fuller, R. M., Paul, S., & Zhou, L. (2021). Special Issue: Digital Collaboration. *International Journal of Electronic Commerce*, 25(1), 3–6. <https://doi.org/10.1080/10864415.2021.1846850>
- Funes, J. M., Aguirre, F., Deeg, F., & Hoefnagels, J. (2018). Skill for tomorrow: How to address the digital skill gap. *Policy*, 3.

- Gal, P., Nicoletti, G., Renault, T., Sorbe, S., & Christina, T. (2019). *Digitalisation and productivity: In search of the holy grail. 1533.*
- Geissinger, A., Laurell, C., Sandström, C., Eriksson, K., & Nykvist, R. (2019). Digital entrepreneurship and field conditions for institutional change: Investigating the enabling role of cities. *Technological Forecasting and Social Change*, 146(41), 877–886. <https://doi.org/10.1016/j.techfore.2018.06.019>
- Ghozali, I. (2017). Analisis Multivariate dengan program SPSS. *Semarang: Badan Penerbit Universitas Diponegoro.*
- Hamid, R. S., Iqbal, M., & Ar-Rashid, M. H. (2021). The Covid-19 Pandemic in Indonesia: Problems Identification and Solutions for Micro, Small and Medium Enterprises (MSMEs). *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(4), 8308-8315
- Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd Editio).
- Hatlevik, O. E., Throndsen, I., & Loi, M. (2015). Kartlegging av digitale ferdigheter. In O. E. Hatlevik & I. Throndsen (Eds.), *Læring av IKT. Elevenes digitale ferdigheter og bruk av IKT i ICILS 2013* (pp. 49–78). Universitetsforlaget. <https://doi.org/https://doi.org/10.18261/9788214725902-2015>
- Jumardi, R., Farokhah, L., & Maghfirah, M. (2020). Kolaborasi Digital Signage dan Chatbot Messenger Sebagai Layanan Penyedia Informasi Akademik. *Jurnal Media Informatika Budidarma*, 4(2), 347. <https://doi.org/10.30865/mib.v4i2.2061>
- Latan, H., Chiappetta Jabbour, C. J., & Lopes de Sousa Jabbour, A. B. (2021). Social Media as a Form of Virtual Whistleblowing: Empirical Evidence for Elements of the Diamond Model. *Journal of Business Ethics*, 174(3), 529–548. <https://doi.org/10.1007/s10551-020-04598-y>
- Maji, S. K., & Laha, A. (2020). State of digital economy in Asia-Pacific region: Delineating the role of digital skill. *International Journal of Public Administration in the Digital Age*, 7(2), 38–54. <https://doi.org/10.4018/IJPADA.2020040103>
- Malhotra, Naresh K. 2010. Riset Pemasaran (Marketing Research) (Edisi 4 Jilid 1). New Jersey, Indonesia: PT. Indeks
- Midtlund, A., Instefjord, E. J., & Lazareva, A. (2021). Digital communication and collaboration in lower secondary school. *Nordic Journal of Digital Literacy*, 16(2), 65-76.
- Muafi, M., Syafri, W., Prabowo, H., & Nur, S. A. (2021). Digital Entrepreneurship in Indonesia: A Human Capital Perspective. *The Journal of Asian Finance, Economics and Business*, 8(3), 351-359.
- Ngoasong, M. Z. (2018). Digital entrepreneurship in a resource-scarce context. *Journal of Small Business and Enterprise Development*, 25(2), 483–500. <https://doi.org/10.1108/JSBED-01-2017-0014>
- Nurilahi, A., Hidayati, D., Hidayat, A., Usmar, R. J., Pendidikan, M., & Ahmad, U. (2022). *Kepemimpinan Kepala Sekolah Instruksional dalam Peningkatan Literasi Digital Guru*. 6, 441–448.

- O. El Sawy, P. Kræmmergaard, H. Amsinck, A. Vinther. (2016). How LEGO built the foundations and enterprise capabilities for digital leadership. *Mis Quarterly Executive*, 15(2), 141- 166.
- Omar, M. N., & Ismail, S. N. (2020). Mobile Technology Integration in the 2020s: The impact of technology leadership in the Malaysian context. *Universal Journal of Educational Research*, 8(5), 1874–1884. <https://doi.org/10.13189/ujer.2020.080524>
- Rippa, P., & Secundo, G. (2019). Digital academic entrepreneurship: The potential of digital technologies on academic entrepreneurship. *Technological Forecasting and Social Change*, 146(44), 900–911. <https://doi.org/10.1016/j.techfore.2018.07.013>
- Sahut, J. M., Iandoli, L., & Teulon, F. (2021). The age of digital entrepreneurship. *Small Business Economics*, 56(3), 1159-1169.
- Saputra, N., & Nugroho, R. (2021). Pengaruh Digital Leadership dan Digital Collaboration terhadap Digital Skill Semasa COVID-19. *Aksara: Jurnal Ilmu Pendidikan Nonformal*, 7(3), 977-986.
- Sariwulan, T., Suparno, D., Ahman, E., & Suwatno, M. (2020). Entrepreneurial performance: The role of literacy and skills. *Journal of Asian Finance, Economics, and Business*, 7(11), 269–280. <https://doi.org/10.13106/jafeb.2020.vol7.no11.269>
- Saepudin, A., & Yusuf, M. (2022). THE EFFECTIVENESS OF VILLAGE FUND POLICY ON INFRASTRUCTURE DEVELOPMENT. LITERACY: *International Scientific Journals of Social, Education, Humanities*, 1(3), 172-180
- Salim, N. A., Sutrisno, S., Maango, H., Yusuf, M., & Haryono, A. (2022). Employee Performance And The Effects Of Training And The Workplace. *Jurnal Darma Agung*, 30(2), 549-558.
- Sutaguna, I. N. T., Sampe, F., Dima, A. F., Pakiding, D. L., & Yusuf, M. (2022). Compensation and Work Discipline's Effects on Employee Achievement at Perumda Pasar Juara. *YUME: Journal of Management*, 5(3), 408-428.
- Soukotta, A., Sampe, F., Putri, P. A. N., Cakranegara, P. A., & Yusuf, M. (2022). FINANCIAL LITERACY AND SAVINGS BEHAVIOR FEMALE ENTREPRENEURS IN KIARACONDONG MARKET, BANDUNG CITY. *Jurnal Darma Agung*, 30(2), 652-662.
- Siegel, D. S., & Wright, M. (2015). Academic entrepreneurship: Time for a rethink? *British Journal of Management*, 26(4), 582–595. <https://doi.org/10.1111/1467-8551.12116>
- Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta
- Temelkova, M. (2018). Skills for digital leadership-Prerequisite for developing high-tech economy. *International Journal of Advanced Research in Management and Social Sciences*, 7(12), 50-74.
- Pudjowati, J., Cakranegara, P. A., Pesik, I. M., Yusuf, M., & Sutaguna, I. N. T. (2021). THE INFLUENCE OF EMPLOYEE COMPETENCE AND LEADERSHIP ON THE ORGANIZATIONAL COMMITMENT OF PERUMDA PASAR JUARA EMPLOYEES. *Jurnal Darma Agung*, 30(2), 606-613.
- Yusuf, M., Haryono, A., Hafid, H., Salim, N. A., & Efendi, M. (2022). Analysis Of Competence, Leadership Style, And Compensation In The Bandung City Pasar Bermartabat. *Jurnal*

Darma Agung, 30(1), 524-2.

Yusuf, M., Sutrisno, S., Putri, P. A. N., Asir, M., & Cakranegara, P. A. (2022). Prospek Penggunaan E-Commerce Terhadap Profitabilitas Dan Kemudahan Pelayanan Konsumen: Literature Review. *Jurnal Darma Agung*, 30(1), 786-801.

Yusuf, M., Fitria, H., & Mulyadi, M. (2020). The Influence of Teacher's Supervision and Professionalism on Teacher's Performance. *Journal of Social Work and Science Education*, 1(3), 234-240.

Zarrouk, H., Sherif, M., Galloway, L., & El Ghak, T. (2020). Entrepreneurial orientation, access to financial resources, and SMEs' business performance: The case of the United Arab Emirates. *Journal of Asian Finance, Economics, and Business*, 7(12), 465–474.  
<https://doi.org/10.13106/jafeb.2020.vol7.no12.465>

Zeike, S., Bradbury, K., Lindert, L., & Pfaff, H. (2019). Digital Leadership Skills and Associations with Psychological Well-Being. *International Journal of Environmental Research and Public Health*, 16(14), 2628. <https://doi.org/10.3390/ijerph16142628>