# Digital Leadership for Building Digital Entrepreneurship of MSMEs

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## ABSTRACT

This research aims to analyze the role of digital leadership and digital entrepreneurship indicators from various literatures that best suit creative MSMEs. This research analyzes the model and process of digital leadership in increasing digital entrepreneurship. This study is a qualitative research with the object of research on creative MSMEs in Daerah Istimewa Yogyakarta (DIY), Indonesia. Descriptive analysis was conducted using primary data obtained through interviews with informants. Informants consisted of: creative MSME owners, experts in business and management of creative MSMEs, and the government as a regulator. The results explain that digital leadership is able to improve digital entrepreneurship as an effort to achieve SDGs in creative MSMEs in Daerah Istimewa Yogyakarta (DIY), Indonesia. This research recommends digital leadership models and processes in improving digital entrepreneurship on creative MSMEs in Daerah Istimewa Yogyakarta (DIY), Indonesia.

**Keywords:** Digital leadership, digital entrepreneurship, MSMEs, digital transformation

## INTRODUCTION

Several literatures in the last ten years has argued that digitalisation for the business sector is imperative (Ritter & Pedersen, 2020; Ilcus, 2018; Caputo et al. 2021). Over time, the importance of digitalisation has become increasingly evident. Digitalisation opens up opportunities for innovation in products and services, allowing MSMEs to remain competitive and relevant in the market (Sestino et al. 2020). In addition, digital technology provides real-time access to market data and analyses, helping MSMEs to make better and faster decisions. Through fintech platforms, MSMEs can access a range of financial services such as online lending, digital payments, and investments that previously may have been difficult to reach through traditional financial institutions. In addition, the emergence of crowdfunding platforms allows MSMEs to obtain funds from various sources more easily and quickly (Reim et al. 2022; Franco et al. 2021). In order to achieve the SDG's goals of poverty alleviation (SDG1) and innovation and infrastructure (SDG 9), this research focuses on the importance of digital leadership and digital entrepreneurship.

Digitalisation must be harnessed for business purposes in order to improve business performance and sustainability. Optimising digital devices and platforms requires capital and qualified human resources (Eller et al. 2020). Therefore, creative MSMEs must be able to find funding sources or networks

that can help build digital infrastructure in the digitalisation process. Furthermore, creative MSMEs must prepare qualified human resources by participating in digital training, independently exploring digital platforms to support business performance and instilling a digital learning culture in human resources or employees. Broadly speaking, creative MSMEs must strive to make digital technology a business instrument and the main foundation in carrying out business processes ranging from supply chain management, data collection, cash recording, marketing, sales to capital searches. The concept is also introduced by various literatures as digital entrepreneurship (Olsson & Bernhard, 2021).

Entrepreneurship is always related to mentality (Ghasemi & Namdar, 2022; Franco et al. 2021; Floris & Dettori, 2023). A strong mentality can be the difference between success and failure in the business world. In this era, change happens so fast that the ability to adapt to market changes, new technologies, and unexpected challenges is essential (Franco et al. 2021). Likewise, building digital entrepreneurship also requires mental resilience and adaptability to change (Rodrigues et al. 2022). These abilities must be possessed by every member of the organisation in business. Therefore, the right leadership is needed to create digital entrepreneurship (Berman et al. 2023). One important aspect in building digital entrepreneurship is digital leadership (Zare & Pashaazadeh, 2023; Rodrigues et al. 2022; Berman et al. 2023). Digital leaders are able to see the opportunities offered by new technologies and develop a vision that drives innovation in business. Furthermore, digital leaders also create a clear and purposeful digital strategy, which includes the use of technology to achieve long-term business goals. By applying the principles of digital leadership, entrepreneurs can build businesses that are more adaptive, innovative and future-orientated. Effective digital leaders not only understand technology but are also able to inspire and guide their teams to make the most of it.

Discussions about digital leadership are quite diverse both in terms of definitions and indicators or dimensions of digital leadership (Benitez et al., 2012; Karakose et al., 2012). 2022; Karakose et al. 2021; Erhan et al. 2022; AlAjmi, 2022; Sarfraz et al. 2022). Benitez et al. (2022) emphasise digital leadership with more visionary and focus on business strategy and competitiveness. Meanwhile, Karakose et al. (2021) emphasises digital leadership on internal aspects such as the use of technology in the organisation, support for digital transformation, digital learning culture and digital leadership skills. Furthermore, Mihardjo et al. (2019) from a different perspective emphasise digital leadership on the characteristics and mindset of leaders who are creative, global and inquisitive.

Likewise, understanding digital entrepreneurship also includes many different aspects by several literatures (Elia et al. 2020; Kraus et al. 2019; Bican & Brem, 2020). Elia et al. (2020) explains digital entrepreneurship at the practical level and organisational actors. Meanwhile, Kraus et al. (2019) emphasise more on the strategic aspects of utilising digital technology. Meanwhile, Modgil et al. (2022) emphasise more on digital infrastructure and security in building digital entrepreneurship. On the other hand, there are still many points of view in understanding digital leadership and digital entrepreneurship, but there is no literature review that examines and classifies these aspects to determine the best steps in building digital entrepreneurship through digital leadership. Therefore, this research provides a study in determining the best aspects and the best model in digital leadership, especially for building digital entrepreneurship.

## LITERATURE REVIEW

### Digital Leadership

Digital leadership is the implementation of effective business strategies by leveraging digital technology and digital infrastructure in organisations to achieve goals (Karakose et al. 2021). Meanwhile, Mihardjo et al. (2019) explain digital leadership as a combination of digital competence and digital culture to optimise the functions and benefits of digital technology to improve performance. Zeike et al. (2019) emphasised that digital leadership is the leader's ability to manage digital potential in the organisation to achieve organisational goals.

Digital leadership is also defined as the ability to lead an organisation through digital transformation by leveraging technology to create value, improve efficiency, and spur innovation. Digital leaders not only understand technology but also have a strategic vision to integrate these technologies in their business operations and strategies (Erhan et al. 2022; Hamzah et al. 2021). Digital leadership emphasises the implementation of relevant technologies such as cloud computing, data analytics, AI, and IoT to improve operational efficiency and customer experience (Antonopoulou et al. 2020). On the other hand, digital leadership ensures that technology is used in a safe way and respects the privacy and rights of users (Sarfraz et al. 2022).

Digital leaders are able to see the opportunities offered by new technologies and develop a vision that drives innovation in business. Furthermore, digital leaders also create a clear and purposeful digital strategy, which includes the use of technology to achieve long-term business goals (de Araujo et al. 2021). By applying the principles of digital leadership, entrepreneurs can build businesses that are more adaptive, innovative and future-orientated. Effective digital leaders not only understand technology but are also able to inspire and guide their teams to make the most of it.

Tabel 1. Apects of Digital Leadership

| Digital Leadership | |
|---|---|
| Authors | Aspects of Digital Leadership |
| Benitez et al. (2022) | 1. Exploit new IT trends<br>2. Innovate strategic business<br>3. IT applications and services to improve competitiveness<br>4. Leading inter-disciplinary staff |
| Karakose et al. (2021) | 1. Digital Technology Usage<br>2. Suport for Digital Transformation<br>3. Support for Technology Based Professional Development<br>4. Support for Digital Learning Culture<br>5. Digital Leadership Skills |
| Zeike et al. (2019) | 1. Attitude<br>2. Digital Expert<br>3. Digital Knowledge<br>4. Driving Digital Transformation<br>5. Clear Idea for digital structure |
| Mihardjo et al. (2019) | 1. Creative<br>2. Global<br>3. Inquisitive<br>4. Profound<br>5. Though |
| Tigre et al. (2023) | 1. People Focus (Cpmmunication, Trust Based relationship)<br>2. Personal Aspect (Ethic, Adaptability)<br>3. Long Term Orientation (Innovation, Vision and Direction)<br>4. Task Achievement (Digital Savvy, Collaborative Work) |

Table 1 shows several aspects of digital leadership from the five literatures with the most citations published in Scopus indexed journals in the last 5 years. The discussion of digital leadership is quite diverse both in terms of definitions and indicators or dimensions of digital leadership (Benitez et al. 2022; Karakose et al. 2021; Erhan et al. 2022; AlAjmi, 2022; Sarfraz et al. 2022). Benitez et al. (2022) emphasise digital leadership with more visionary and focus on business strategy and competitiveness. Meanwhile, Karakose et al. (2021) emphasises digital leadership on internal aspects such as the use of technology in the organisation, support for digital transformation, digital learning culture and digital

leadership skills. Furthermore, Mihardjo et al. (2019) from a different perspective emphasise digital leadership on the characteristics and mindset of leaders who are creative, global and inquisitive.

**Digital Entrepreneurship**

Digital entrepreneurship is the process of digitising several aspects of entrepreneurship to increase value and competitiveness in business (Elia et al. 2020). Digital entrepreneurship is also defined as the creation of a business or business by utilising digital technology and digital networks (Kraus et al. 2019). Furthermore, Kraus et al. (2019) concluded that digital entrepreneurship is a reconciliation of traditional entrepreneurship in running a business and entrepreneurship in the digital era. Therefore, due to the rapid development of digital technology, fostering digital entrepreneurship is a requirement in maintaining business in this era.

Entrepreneurship is always related to mentality (Ghasemi & Namdar, 2022; Franco et al. 2021; Floris & Dettori, 2023). A strong mentality can be the difference between success and failure in the business world. In this era, change happens so fast that the ability to adapt to market changes, new technologies, and unexpected challenges is essential (Franco et al. 2021). Likewise, building digital entrepreneurship also requires mental resilience and adaptability to change (Rodrigues et al. 2022). These abilities must be possessed by every member of the organisation in business. Therefore, the right leadership is needed to create digital entrepreneurship (Berman et al. 2023).

Digital entrepreneurship allows MSMEs to be more competitive and adapt quickly to market and technological changes. By utilising digital technology, MSMEs can achieve sustainable growth and increase their contribution to the economy (Fard et al. 2021). Digital technology provides many opportunities in developing businesses, including through e-commerce and marketplaces, allowing MSMEs to sell products and services online through e-commerce platforms and marketplaces, so that they can reach customers outside the local geographic area.

Tabel 2. Aspects of Digital Entrepreneurship

| Digital Entrepreneurship | |
|---|---|
| **Authors** | **Aspects of Digital Entrepreneurship** |
| Elia et al. (2020) | 1. Digital activities<br>2. Digital Actors<br>3. Digital Motivation<br>4. Digital Organization |
| Kraus et al. (2019) | 1. Digital business models<br>2. Digital entrepreneurship<br>3. Process<br>4. Platform strategies<br>5. Digital ecosystem<br>6. Entrepreneurship education<br>7. Social Digital entrepreneurship |
| Bican & Brem (2020) | 1. Digitral technology<br>2. Digital Business Model<br>3. Digital Innovation<br>4. Digital Transformation |
| Modgil et al. (2022) | 1. Educational technoogy<br>2. Financial technology<br>3. Cybersecurity |
| Satalkina & Steiner (2020) | 1. Digital capabilities<br>2. Adoption of digital drivers<br>3. Digital facilities |

| Digital Entrepreneurship | |
|---|---|
| **Authors** | **Aspects of Digital Entrepreneurship** |
| | 4. Digital business tendencies |

Table 2 shows some aspects of digital entrepreneurship from the five most cited literatures published in Scopus-indexed journals in the last 5 years. The discussion of digital entrepreneurship covers many different aspects by several literatures (Elia et al. 2020; Kraus et al. 2019; Bican & Brem, 2020). Elia et al. (2020) explains digital entrepreneurship at the level of practical and organisational actors. Meanwhile, Kraus et al. (2019) emphasise more on the strategic aspects of utilising digital technology. Meanwhile, Modgil et al. (2022) emphasise more on digital infrastructure and security in building digital entrepreneurship.

## METHOD

This research is a qualitative study with the object of research on MSMEs, especially the creative industry in Daerah Istimewa Yogyakarta (DIY), Indonesia. The analysis was conducted using descriptive analysis with primary data obtained through interviews with 10 informants consisting of MSME owners, experts in business and MSME management and the government as a regulator. Furthermore, as a research data validation step, data triangulation was carried out. By triangulating data sources, researchers explore the truth of certain information through several informants. The core purpose of using source triangulation is to increase data credibility and reliability. So that later the results of each informant will correct each other's results. This research uses five sources of data from the category of research informants which include MSME owners, experts in business and MSME management and the government as a regulator By conducting data triangulation, this research has good validity and reliability of research data (Eisenhardt, 1989; Yin, 2009).

## RESULTS

Digital leadership is a topic that is widely discussed by various business and organisational literature in this era. From various discussions related to digital leadership, there are several aspects and measurements in describing digital leadership. In the previous explanation, it was explained that there are several different measurements in understanding digital leadership. This means that digital leadership can be seen and studied from various perspectives. Table 1 shows some aspects of digital leadership from the five literatures with the most citations published in Scopus indexed journals in the last 5 years. Table 1 is then analysed to classify the most suitable aspects for creative MSMEs based on the results of interviews with informants in this study.

Table 3. Informant Responses to Aspects of Digital Leadership

| | Digital Leadership | IN1 | IN2 | IN3 | IN4 | IN5 | IN6 | IN7 | IN8 | IN9 | IN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Exploit new IT trends | 40% | 35% | 38% | 36% | 37% | 42% | 41% | 43% | 44% | 46% |
| 2 | Innovate strategic business | 50% | 55% | 53% | 54% | 53% | 58% | 59% | 59% | 61% | 62% |
| 3 | IT applications and services | 80% | 85% | 83% | 84% | 83% | 88% | 89% | 89% | 91% | 92% |
| 4 | Leading inter-disciplinary staff | 90% | 85% | 88% | 86% | 87% | 92% | 91% | 93% | 94% | 96% |
| 5 | Digital Technology Usage | 90% | 80% | 85% | 83% | 84% | 89% | 88% | 90% | 91% | 93% |
| 6 | Suport for Digital Transformation | 85% | 90% | 88% | 89% | 88% | 93% | 94% | 94% | 96% | 97% |

| | Digital Leadership | IN1 | IN2 | IN3 | IN4 | IN5 | IN6 | IN7 | IN8 | IN9 | IN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Support for Digital Learning Culture | 75% | 80% | 78% | 79% | 78% | 83% | 84% | 84% | 86% | 87% |
| 8 | Attitude | 80% | 75% | 78% | 76% | 77% | 82% | 81% | 83% | 84% | 86% |
| 9 | Digital Knowledge | 60% | 50% | 55% | 53% | 54% | 59% | 58% | 60% | 61% | 63% |
| 10 | Clear Idea for digital structure | 55% | 60% | 58% | 59% | 58% | 63% | 64% | 64% | 66% | 67% |
| 11 | Creative | 65% | 60% | 63% | 61% | 62% | 67% | 66% | 68% | 69% | 71% |
| 12 | Global | 40% | 45% | 43% | 44% | 43% | 48% | 49% | 49% | 51% | 52% |
| 13 | Inquisitive | 80% | 75% | 78% | 76% | 77% | 82% | 81% | 83% | 84% | 86% |
| 14 | People Focus | 60% | 50% | 55% | 53% | 54% | 59% | 58% | 60% | 61% | 63% |

Table 3 shows informants' responses to aspects of digital leadership in creative MSMEs. The responses in Table 3 are given in terms of the percentage level of informants' needs for competence in each aspect of digital leadership in developing MSMEs. This study classifies the 7 most needed aspects with the highest percentage and there are 7 aspects that are excluded from the analysis because they have a low percentage. The following are the 7 aspects most needed by creative MSMEs in building digital leadership:

1. IT Application and service: Leaders must be able to optimise the IT function in the organisation. The utilisation of information technology is done by identifying the type of business and target market then choosing the right platform and technology to improve the performance of both human resources and general business performance. Furthermore, creative MSMEs must also be able to provide digital services ranging from digital payments, digital marketing to monitoring online reviews from consumers.

2. Leading inter-diciplinary staff: This aspect is the leader's ability to manage various staff with various backgrounds and expertise. This is needed because the digital era is a disruptive and dynamic era that requires high adaptability. Leaders must understand the characteristics and expertise of their employees well so that it is easy and flexible to make the necessary changes.

3. Digital technology usage: Digital leaders must be able to encourage the use of digital technology in business processes and activities. The use of technology is intended to optimise the function of technology and produce more effective performance in business.

4. Support for digital transformation: Leaders are expected to be able to encourage digital transformation in creative MSMEs by providing a clear strategic plan and delegating the right HR to create a digital ecosystem that can drive business performance and HR performance. Digital transformation must be carried out with careful consideration and supported by an extensive network of leaders.

5. Support for digital learning culture: Digital leaders must also be able to create a learning culture, especially in learning digiotal technology. IT will always develop from time to time, and HR must prepare for it by continuing to learn and develop skills in operating and utilising digital technology.

6. Attitude: Digital leaders must also set an example of good attitude and behaviour in using digital technology. Providing moral values and clear boundaries in utilising digital technology and creating a good culture and ethics in the use of digital technology. This is also a step to prevent deviations and misuse of digital technology and provide a data security system.

7. Inquisitive: Digital leaders must have high curiosity in order to be able to read market opportunities and be able to anticipate changes that occur in the business environment. This attitude includes high intelligence, critical attitude, broad knowledge and vigilance and sensitivity to the business environment.
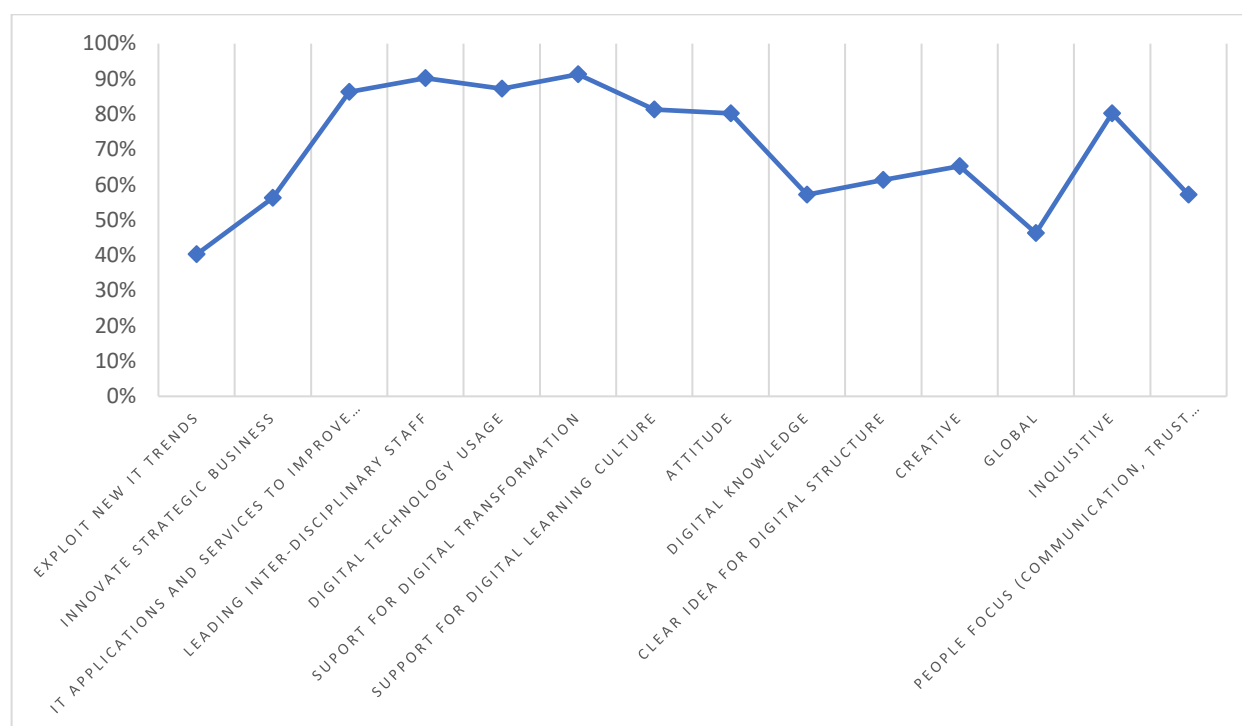
Figure 1. Graph of Respondents' Responses on Aspects of Digital Leadership

Figure 1 shows respondents' responses to the level of need for aspects of digital leadership to develop creative MSMEs. In figure 1, it is known that there are several aspects that are superior, namely leading inter-disciplinary staff, support for digital transformation and inquisitive. These three aspects are needed by leaders in creative MSMEs because the first thing that must be improved in creative MSMEs is the quality of human resources. To build the quality of human resources, leaders must have curiosity and good analytical skills as well as the ability to identify, manage and optimise employee talents or skills. Furthermore, these talents and skills are used to carry out digital transformation so as to create good digital performance.

One of the roles of digital leadership in creative MSMEs is to improve digital skills in human resources and create a digital environment in business processes. Broadly speaking, one of the goals of digital leadership is to create digital entrepreneurship in MSMEs. Digital entrepreneurship allows creative MSMEs to be more competitive and adapt quickly to market and technological changes. By utilising digital technology, creative MSMEs can achieve sustainable growth and increase their contribution to the economy. Digital technology provides many opportunities in developing businesses, including through e-commerce and marketplaces, allowing creative MSMEs to sell products and services online through e-commerce platforms and marketplaces, so that they can reach customers outside the local geographic area.

Table 2 shows some aspects of digital entrepreneurship from the five literatures with the most citations published in Scopus indexed journals in the last 5 years. Table 2 is then analysed to classify the most suitable and most needed aspects for creative MSMEs based on the results of interviews with informants in this study. These aspects become guidelines and references in building digital entrepreneurship in creative MSMEs.

Table 4. Informant Responses to Aspects of Digital Entrepreneurship

|   | Digital Entrepreneurship | IN1 | IN2 | IN3 | IN4 | IN5 | IN6 | IN7 | IN8 | IN9 | IN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Digital activities | 45% | 40% | 43% | 41% | 42% | 47% | 46% | 48% | 49% | 51% |
| 2 | Digital Actors | 50% | 55% | 53% | 54% | 53% | 58% | 59% | 59% | 61% | 62% |
| 3 | Digital Motivation | 80% | 85% | 83% | 84% | 83% | 88% | 89% | 89% | 91% | 92% |
| 4 | Digital Organization | 55% | 50% | 53% | 51% | 52% | 57% | 56% | 58% | 59% | 61% |

| | Digital Entrepreneurship | IN1 | IN2 | IN3 | IN4 | IN5 | IN6 | IN7 | IN8 | IN9 | IN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Digital business models | 85% | 90% | 88% | 89% | 88% | 93% | 94% | 94% | 96% | 97% |
| 6 | Digital ecosystem | 90% | 85% | 88% | 86% | 87% | 92% | 91% | 93% | 94% | 96% |
| 7 | Entrepreneurship education | 60% | 50% | 55% | 53% | 54% | 59% | 58% | 60% | 61% | 63% |
| 8 | Digital Innovation | 80% | 85% | 83% | 84% | 83% | 88% | 89% | 89% | 91% | 92% |
| 9 | Educational technoogy | 55% | 60% | 58% | 59% | 58% | 63% | 64% | 64% | 66% | 67% |
| 10 | Financial technology | 75% | 80% | 78% | 79% | 78% | 83% | 84% | 84% | 86% | 87% |
| 11 | Cybersecurity | 90% | 85% | 88% | 86% | 87% | 92% | 91% | 93% | 94% | 96% |
| 12 | Digital capabilities | 90% | 95% | 93% | 94% | 93% | 98% | 99% | 99% | 96% | 97% |

Table 4 shows informants' responses to aspects of digital entrepreneurship in MSMEs. The responses in Table 4 are given in terms of the percentage of the level of need of informants for competence in each aspect of digital entrepreneurship in developing MSMEs. This study classifies the 7 most needed aspects with the highest percentage and there are 7 aspects that are excluded from the analysis because they have a low percentage. The following are the 7 aspects most needed by creative MSMEs in building digital entrepreneurship:

1. Digital motivation: Digital motivation is the drive in individuals and organisations to adopt digital technologies effectively to improve individual and organisational performance. Digital motivation fosters persistence and seriousness to learn digital technology and upgrade skills within a certain period of time. Therefore, digital motivation is the main capital for an organisation or business to build digital entrepreneurship.

2. Digital business model: Digital business model in creative MSMEs includes various ways to utilise digital technology to create value, improve efficiency and expand markets. Creative MSMEs must optimise the use of digital technology to achieve the goals of both revenue and HR performance. By adopting the right digital business model, creative MSMEs can improve operational efficiency, reach a wider market, and increase competitiveness in the digital era.

3. Digital ecosystem: The digital ecosystem in creative MSMEs is an environment consisting of various digital components that are interconnected and work together to support the operations, growth, and competitiveness of creative MSMEs. This ecosystem includes technologies, platforms, tools, and services used by creative MSMEs to manage their businesses digitally. By optimising the digital ecosystem, creative MSMEs can improve operational efficiency, expand market reach, and improve customer satisfaction, which will ultimately support sustainable business growth.

4. Digital innovation: Digital innovation in creative MSMEs includes the application of new technologies and methods to improve operational efficiency, expand markets, and enhance competitiveness. By applying digital innovation, creative MSMEs can improve efficiency, expand market reach, and provide added value to customers, which will ultimately support business growth and competitiveness.

5. Financial technology: Financial technology (fintech) in creative MSMEs plays an important role in improving financial efficiency, access to capital, and financial management. Financial technology in creative MSMEs includes e-wallets, digital platforms, digital crowdfunding, online training and other instruments that can be utilised by creative MSMEs depending on the sector and type of business. By integrating fintech, creative MSMEs can improve operational efficiency, access capital more easily, and manage finances better, which will ultimately support business growth and sustainability.

6. Cybersecurity: Cybersecurity is critical for creative MSMEs to protect business and customer data, prevent financial losses, and maintain business reputation. While MSMEs may not have the same resources as large enterprises, there are various practical steps and strategies that can be taken to improve cybersecurity. By implementing the right security measures, creative MSMEs can protect themselves from cyber threats, maintain data integrity, and ensure business

continuity. Education, the right tools, and strong security policies are key to achieving an adequate level of security.

7. Digital capabilities: Digital capabilities in creative MSMEs encompass a range of skills, knowledge, and technologies that enable small and medium-sized businesses to operate, thrive, and compete in the digital age. Building these digital capabilities is critical to improving efficiency, reaching a wider range of customers, and maintaining competitiveness. By developing digital capabilities, creative MSMEs can improve operational efficiency, reach a wider market, and provide a better customer experience, which will ultimately support business growth and sustainability.
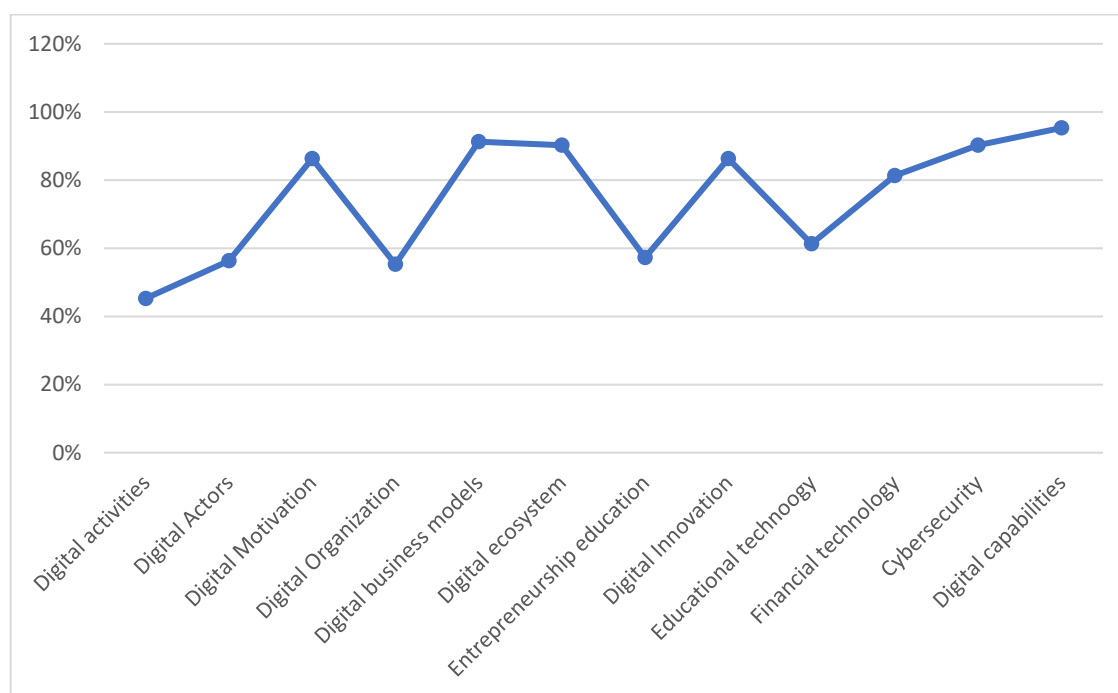


Figure 2. Graph of Respondents' Responses on Aspects of Digital Entrepreneurship

Figure 2 shows the average respondents' assessment of the aspects of digital entrepreneurship. The percentage in the graph shows the level of importance of certain aspects for creative MSMEs according to the informants. There are several aspects that received higher ratings than other aspects, namely digital capabilities, digital business model and digital ecosystem. Digital capabilities in creative MSMEs include various skills, knowledge and technologies that enable small and medium-sized businesses to operate, develop and compete in the digital era. The digital business model in creative MSMEs includes various ways to utilise digital technology to create value, increase efficiency, and expand markets. Furthermore, the digital ecosystem in creative MSMEs is an environment consisting of various digital components that are interconnected and work together to support the operations, growth, and competitiveness of MSMEs. These aspects show that growing digital entrepreneurship requires a digital environment and culture as well as digital business strategies that are strengthened and built from individuals who have good digital capabilities.

## Discussion

Changes in the business environment are dominated by digital factors. Digital development happens so fast that it almost does not provide space to learn and explore a certain technology for a long time because upgrade and change appear very quickly. In the context of business organisations, the role of leaders is very important to encourage employees and members of the organisation to digitalise and adapt to the

digital environment. Digital leadership in MSMEs refers to the ability of business leaders to utilise digital technology to drive the company towards growth, efficiency and competitiveness.

This research provides a more detailed explanation of the aspects that build digital leadership in creative MSMEs. Seven aspects that are considered to have an important role in digital leadership are digital technology usage, support for digital transformation, support for digital learning culture, IT application, leading intra-disciplinary staff, attitude and inquisitive. These seven aspects build digital leadership that can encourage the growth of MSMEs. In practice, the emergence of these aspects cannot take place at once or simultaneously but gradually with a long process depending on the capacity and conditions in each MSME. The stages needed in building digital leadership are due to the limited financial capital and human resource competency skill capital for creative MSMEs in building a digital environment. These stages are illustrated in this research in Figure 3.
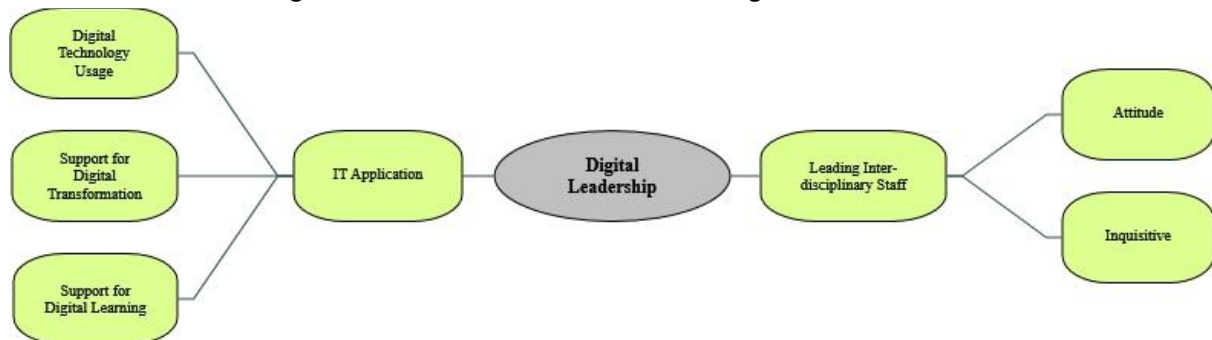


Figure 3. Stages in Building Digital Leadership in MSMEs

The stages in improving digital leadership start from two sides, namely the external side of the individual leader and the internal side of the individual leader. On the first side, leaders must have good character, understand and obey the rules and are required to have high curiosity and creativity. Attitude and inquisitive aspects are the basis for building digital leadership on the internal side of the leader. With a good attitude and inquisitive attitude, it will foster the ability to manage staff from various backgrounds and various skills. Leaders who are effective in managing diverse teams can drive innovation, improve operational efficiency, and create a dynamic work environment. Teams consisting of various disciplines bring diverse perspectives, which can foster innovation and creative solutions. Furthermore, combining different expertise can lead to brighter new ideas and more effective solutions to complex problems.

Attitude is a key factor in managing employees from different disciplines. A positive and open attitude towards diversity can increase collaboration, innovation, and productivity in interdisciplinary teams. Furthermore, an inquisitive attitude also encourages leaders to dig deeper into the skills and character of employees so as to develop the hidden potentials of employees. This is needed because digital adoption requires the ability to learn and develop quickly. This process can encourage the creation of digital leadership.

On the other hand, from the aspect of leadership's attitude towards the organisation, digital leaders must have the ability to procure and encourage the use of digital technology in business processes. Furthermore, leaders must support and carry out digital transformation. Digital transformation in creative MSMEs is the process of integrating digital technology into all aspects of business operations to increase efficiency, optimise processes, and improve customer experience. This process involves changes in technology, culture, and business processes. By evaluating business needs, investing in technology, developing digital skills, optimising business processes, using data and analytics, improving customer experience, and ensuring security, creative MSMEs can succeed in their digital transformation journey.

Furthermore, leaders are expected to create a digital learning culture within the organisation. Creating a digital learning culture in creative MSMEs is an important step to ensure employees continue to grow and can adapt quickly to technological changes. Creating a digital learning culture in creative MSMEs requires commitment from leaders, access to learning resources, integration of learning in work

processes, collaboration and recognition. By setting clear learning objectives, providing the right infrastructure, structuring relevant training programmes, and encouraging continuous learning, creative MSMEs can ensure their employees continue to grow and be ready to face the challenges of ever-changing technology. The process can foster digital capabilities in employees and create the concept of true digital leadership.
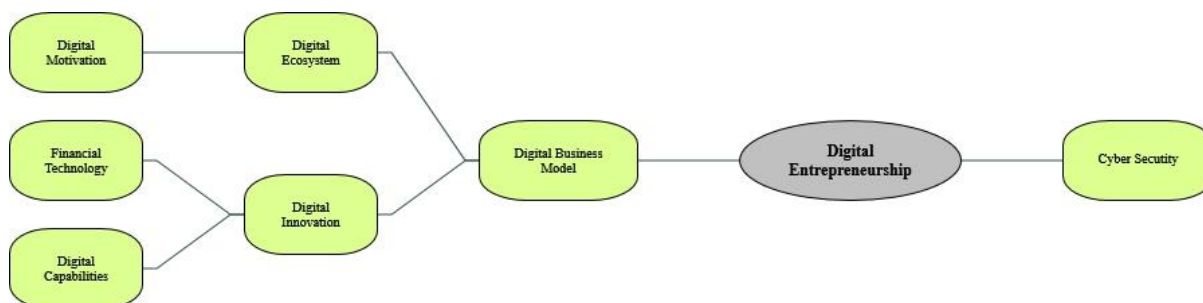


Figure 4. Stages in Building Digital Entrepreneurship in creative MSMEs

Furthermore, this research also examines the stages for creative MSMEs in building digital entrepreneurship through selected aspects of digital entrepreneurship. Digital entrepreneurship refers to the practice of utilising digital technology to start, manage and grow a business. In creative MSMEs, digital entrepreneurship plays an important role in opening up new opportunities, improving operational efficiency, and expanding market reach. By developing a digital vision and strategy, building the right technology infrastructure, developing digital skills, and implementing appropriate digital solutions, creative MSMEs can leverage technology to improve operational efficiency, expand market reach, and provide a superior customer experience. While there are challenges to be faced, with the right approach, creative MSMEs can succeed in their digital transformation journey.

There are seven important aspects in developing digital entrepreneurship, namely digital motivation, digital business model, digital ecosystem, digital innovation, financial technology, cybersecurity and digital capabilities. The development of digital entrepreneurship starts with improving three aspects, namely digital motivation, utilisation of financial technology and development of digital capabilities. The first is digital motivation. Fostering digital motivation in creative MSMEs is crucial to ensure employees and business leaders are passionate about using digital technology and continuously improving their skills. Digital motivation can be fostered by holding training and education for creative MSME players to create awareness of the importance of mastering digital technology, then giving awards and incentives to MSME players as motivation to be more active in exploring and learning digital technology. Other stages include education and awareness, a clear vision, rewards and incentives, training and skills development, a supportive work environment, mentorship programmes, and involving employees in decision-making. With these strategies, creative MSMEs can create a work culture that drives digital technology adoption and optimises their business performance.

Digital motivation will encourage organisational members or employees in the company to be enthusiastic in using digital technology repeatedly. This can encourage the creation of a digital ecosystem in the work environment. Furthermore, the utilisation of financial technology is the right first step in shaping digital entrepreneurship. Financial technology includes the use of e-wallets and digital business records that can foster attractiveness for consumers and employees to see the convenience obtained through the use of digital technology. Starting from this will trigger repeated use and will foster better ability to use digital technology.

The existence of a good digital ecosystem and supported by digital capabilities will create digital entrepreneurship. More complete digital entrepreneurship is accompanied by the provision of good cybersecurity. Cybersecurity is essential for creative MSMEs to protect business and customer data, prevent financial losses, and maintain business reputation. While creative MSMEs may not have the same resources as large enterprises, there are various practical steps and strategies that can be taken to

improve cybersecurity. By implementing the right security measures, creative MSMEs can protect themselves from cyber threats, maintain data integrity, and ensure business continuity.
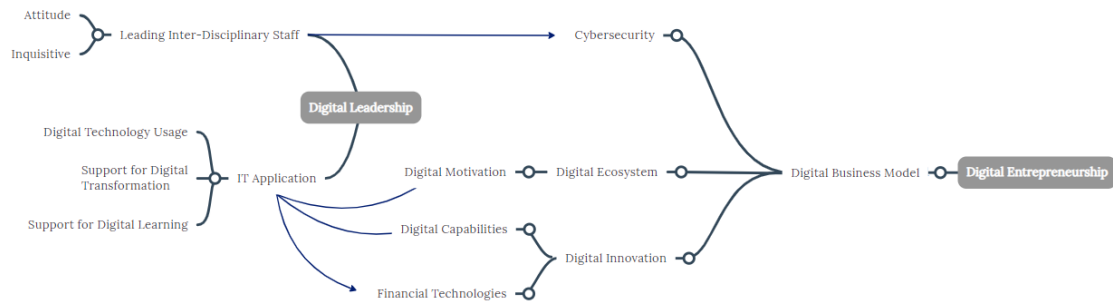


Figure 5. The Process of Digital Entrepreneurship Formation through Digital Leadership

In digital leadership, there are two aspects that are the main support for the formation of digital leaders, namely leading inter-disciplinary staff and IT applications to improve competitiveness. Leading inter-disciplinary staff allows leaders to recruit human resources with broad and diverse capacities, one of which is human resources with cybersecurity expertise. Therefore, the leader's ability to manage various disciplines owned by his staff encourages the creation of good and reliable cybersecurity, so that it will help in the formation of digital business models and create digital entrepreneurship.

Furthermore, another aspect of digital leadership, namely IT Application, is able to foster three aspects of digital entrepreneurship, namely digital motivation, financial technology usage and digital capabilities. Information Technology (IT) applications in MSMEs can foster digital motivation by making business processes more efficient, increasing employee engagement, and opening up new opportunities. The use of IT applications such as inventory management software, point-of-sale (POS) systems, and collaboration tools can automate routine tasks and reduce manual workload. On the other hand, IT applications provide easy access to business data and analytics, allowing creative MSME owners to make decisions based on accurate and up-to-date information. With the right strategy, creative MSMEs can utilise technology to drive innovation, improve performance, and remain competitive in the digital era.

Furthermore, IT applications in digital leadership are also able to improve digital capabilities and financial technology in creative MSMEs. This includes increasing operational efficiency, improving employee digital skills, and increasing business competitiveness. IT applications can automate various business processes such as inventory management, payroll, accounting, and customer service. Then use accounting software such as QuickBooks or Xero to automate financial recording and reporting. With the right strategy in identifying business needs, selecting the right applications, providing training and support, and conducting continuous evaluation, creative MSMEs can utilise technology to improve their efficiency, productivity, and competitiveness in the digital era. The process will help creative MSMEs to create a digital business model and thus digital entrepreneurship.

## CONCLUSION

This study found seven aspects that are considered to have an important role in digital leadership in creative MSMEs, namely digital technology usage, support for digital transformation, support for digital learning culture, IT application, leading intra-disciplinary staff, attitude and inquisitive. Furthermore, this study also found seven important aspects in developing digital entrepreneurship, namely digital motivation, digital business model, digital ecosystem, digital innovation, financial technology, cybersecurity and digital capabilities.

The aspects of digital leadership were found to be able to encourage the formation of aspects of digital entrepreneurship in creative MSMEs. Starting with the attitude and inquisitive in the leadership will create the ability to manage inter-disciplinary staff who are able to build cybersecurity and develop digital business models so as to create digital entrepreneurship. Furthermore, other aspects of digital

leadership include digital technology usage, digital transformation and digital learning culture to create IT applications that can foster three aspects of digital entrepreneurship, namely digital motivation, financial technology usage and digital capabilities. These three aspects are able to create a digital business model and grow digital entrepreneurship in creative MSMEs.

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## REFERENCES

AlAjmi, M. K. (2022). The impact of digital leadership on teachers' technology integration during the COVID-19 pandemic in Kuwait. *International Journal of Educational Research*, *112*, 101928.

Antonopoulou, H., Halkiopoulos, C., Barlou, O., & Beligiannis, G. N. (2020). Leadership types and digital leadership in higher education: Behavioural data analysis from University of Patras in Greece. *International Journal of Learning, Teaching and Educational Research*, *19*(4), 110-129.

Benitez, J., Arenas, A., Castillo, A., & Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management*, *59*(2), 103590.

Berman, T., Stuckler, D., Schallmo, D., & Kraus, S. (2023). Drivers and success factors of digital entrepreneurship: A systematic literature review and future research agenda. *Journal of Small Business Management*, 1-29.

Bican, P. M., & Brem, A. (2020). Digital business model, digital transformation, digital entrepreneurship: Is there a sustainable "digital"?. *Sustainability*, *12*(13), 5239.

Caputo, A., Pizzi, S., Pellegrini, M. M., & Dabić, M. (2021). Digitalization and business models: Where are we going? A science map of the field. *Journal of business research*, *123*, 489-501.

de Araujo, L. M., Priadana, S., Paramarta, V., & Sunarsi, D. (2021). Digital leadership in business organizations. *International Journal of Educational Administration, Management, and Leadership*, 45-56.

Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review*, *14*(4), 532–550.

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*, *150*, 119791.

Eller, R., Alford, P., Kallmünzer, A., & Peters, M. (2020). Antecedents, consequences, and challenges of small and medium-sized enterprise digitalization. *Journal of Business Research*, *112*, 119-127.

Erhan, T., Uzunbacak, H. H., & Aydin, E. (2022). From conventional to digital leadership: exploring digitalization of leadership and innovative work behavior. *Management Research Review*, *45*(11), 1524-1543.

Fard, M., Kabaranzad Ghadim, M. R., & Haghighat Monfared, J. (2021). Empowering small and medium-sized knowledge-based companies using digital entrepreneurship development. *Business Intelligence Management Studies*, *9*(35), 99-128.

Floris, M., & Dettori, A. (2023). Entrepreneurship in the Digital Era. A Systematic Literature Review. *Industry 4.0 and the Digital Transformation of International Business*, 33-68.

Franco, M., Godinho, L., & Rodrigues, M. (2021). Exploring the influence of digital entrepreneurship on SME digitalization and management. *Small Enterprise Research*, *28*(3), 269-292.

Ghasemi, M., & Namdar Joyami, E. (2022). Identify and Categorize the Mentality of Startup Managers to Digital Entrepreneurship Using Q Methodology. *Public Management Researches*, *15*(55), 207-245.

Hamzah, N. H., Nasir, M. K. M., & Wahab, J. A. (2021). The Effects of Principals' Digital Leadership on Teachers' Digital Teaching during the COVID-19 Pandemic in Malaysia. *Journal of Education and E-Learning Research*, *8*(2), 216-221.

Ilcus, A. M. (2018). Impact of digitalization in business world. *Revista de Management Comparat Internaţional*, *19*(4), 350-358.

Karakose, T., Polat, H., & Papadakis, S. (2021). Examining teachers' perspectives on school principals' digital leadership roles and technology capabilities during the COVID-19 pandemic. *Sustainability*, *13*(23), 13448.

Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. (2019). Digital entrepreneurship: A research agenda on new business models for the twenty-first century. *International Journal of Entrepreneurial Behavior & Research*, *25*(2), 353-375.

Mihardjo, L., Sasmoko, S., Alamsjah, F., & Elidjen, E. (2019). Digital leadership role in developing business model innovation and customer experience orientation in industry 4.0. *Management Science Letters*, *9*(11), 1749-1762.

Modgil, S., Dwivedi, Y. K., Rana, N. P., Gupta, S., & Kamble, S. (2022). Has Covid-19 accelerated opportunities for digital entrepreneurship? An Indian perspective. *Technological Forecasting and Social Change*, *175*, 121415.

Olsson, A. K., & Bernhard, I. (2021). Keeping up the pace of digitalization in small businesses–Women entrepreneurs' knowledge and use of social media. *International Journal of Entrepreneurial Behavior & Research*, *27*(2), 378-396.

Reim, W., Yli-Viitala, P., Arrasvuori, J., & Parida, V. (2022). Tackling business model challenges in SME internationalization through digitalization. *Journal of Innovation & Knowledge*, *7*(3), 100199.

Ritter, T., & Pedersen, C. L. (2020). Digitization capability and the digitalization of business models in business-to-business firms: Past, present, and future. *Industrial marketing management*, *86*, 180-190.

Rodrigues, M., FRANCO, M., & Silva, R. (2022). Digitalisation And Innovation In Smes: Influences On The Advantages Of Digital Entrepreneurship. *International Journal of Innovation Management*, *26*(08), 2250066.

Sarfraz, M., Ivascu, L., Abdullah, M. I., Ozturk, I., & Tariq, J. (2022). Exploring a pathway to sustainable performance in manufacturing firms: The interplay between innovation capabilities, green process, product innovations and digital leadership. *Sustainability*, *14*(10), 5945.

Satalkina, L., & Steiner, G. (2020). Digital entrepreneurship and its role in innovation systems: A systematic literature review as a basis for future research avenues for sustainable transitions. *Sustainability*, *12*(7), 2764.

Sestino, A., Prete, M. I., Piper, L., & Guido, G. (2020). Internet of Things and Big Data as enablers for business digitalization strategies. *Technovation*, *98*, 102173.

Tigre, F. B., Curado, C., & Henriques, P. L. (2023). Digital leadership: A bibliometric analysis. *Journal of leadership & organizational studies*, *30*(1), 40-70.

Yin, Z., Gong, X., Guo, P., & Wu, T. (2019). What drives entrepreneurship in digital economy? Evidence from China. *Economic Modelling*, *82*, 66-73.

Zare, R., & Pashazadeh, Y. (2023). The impact of strategic flexibility and digital leadership on digital transformation and exploratory innovation with the mediation role of digital entrepreneurial orientation. *Innovation Management in Defensive Organizations*, *6*(4), 99-126.

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.