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# The Use Of Information And Communication Technology (ICT) In Improving The Creative Industries: Lessons Learned From Nigeria And Indonesia

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***Abstract:*** *Creative Industries have been heavily influenced by the convergence of the internet, computing, telecommunication, and television technologies and their opportunities for digital storage, big data, linked data, manipulation, transmission, and reproduction of digital media. Therefore, this research tries to identify the essential success factors in adopting information and communication technology in the creative industries in Indonesia. This study was conducted using a qualitative descriptive approach. The technology acceptance model and Small Medium Enterprises leaders' strategies on information and communication technology in Nigeria were used as a framework in this study to explain information and communication technology adoption in creative sectors. In this study, informants in this study were the businessmen, government, society, universities, and the media. The total informant was 20 persons. Data collection techniques used were interviews with informants and observations at Bandung Creative Hub. The findings of this study recommend that communication, entrepreneurs, technology, regulation, and websites are five factors that need to be considered in adopting information and communication technology in the creative industries. An entrepreneur is a critical factor in adopting information and communication technology in creative industries, which is supported by good communication between stakeholders, technology, website presence, and regulations prepared by the government.*
***Keywords:*** *Communication, entrepreneurs, regulation, technology, website.*

## 1. INTRODUCTION

Modern civilization relies heavily on information and communication technology (ICT) in almost all aspects. (Okundaye et al., 2019). ICT has changed how we communicate, find important information, work, do business, interact with the government, and manage social life. ICT has an impact on macroeconomic growth by influencing people's daily lives (Montequin et al., 2014). In turn, this impacts society by enabling advances in infrastructure and living conditions. (Roztocki et al., 2019). ICT is used in a variety of fields, including administration, service delivery, organizational relations, education and training, and health care. ICT enables businesses to gain real-time information about consumer preferences and usage trends. Sustainability can benefit from ICT tools used for tracking and data collection at various phases of the product life cycle. (Villamil Velasquez et al., 2020). The use of ICT will also have an impact on increasing profits, communicating quickly, increasing productivity, and building new business opportunities. It can also be connected to global networks with international reach. Apart from that, ICT can minimize the expenses incurred by SMEs.

Several countries have implemented ICT, and it has had a big impact on SMEs, such as this country, which has a big influence on the SME performance system (Marhaeni et al., 2019). Apart from that, the government in the country is also making efforts to assist in the form of finance, technical training centers, and training centers. Infrastructure and regulations that encourage the use of ICT. Meanwhile, the use of ICT in Indonesia currently has support from the government, such as internet connections, telecommunications networks, competitive prices between operators and internet providers, and security in using ICT. However, the process of using ICT by SMEs in Indonesia cannot be said to be effective and efficient because there are still many SMEs who do not understand in more detail the use of ICT (Basri & Siam, 2019; Indriartiningtias et al., 2019). Limited human resources are one of the problems with the use of ICT and the lack of financial capabilities of SMEs (Albers et al., 2018; Horvat et al., 2021). From this, the use of ICT can have quite significant benefits. SMEs are an industry that has high creativity using ICT. The following is data on the creative economy sub-sector in Indonesia:

**Table 1. Creative Economy Sub-Sector**

| Number | Sub-Sector | Number | Sub-Sector |
|---|---|---|---|
| 1. | Game Developer | 10. | Photography |
| 2. | Architecture | 11. | Visual communication design |
| 3. | Design Interior | 12. | Television and Radio |
| 4. | Music | 13. | Craft |
| 5. | Art | 14. | Advertising |
| 6. | Product Design | 15. | Performing Arts |
| 7. | Fashion | 16. | Publishing |
| 8. | Culinary | 17. | Application |
| 9. | Movies, Animation, and Videos | | |

Source: Kementerian Pariwisata dan Ekonomi Kreatif (2018)

In developing countries such as Indonesia, the creative industries make a significant contribution to economic development. Based on Table 1 above, there are 17 sub-creative industries in Indonesia, which shows that Indonesia already has a sector in the creative industry. This creative industry will have a significant influence on community economic development efforts. The creative economy is defined as a new economic concept that intensifies information and creativity by relying on ideas and knowledge from human resources as the main production factor (Casadei & Lee, 2020; Si, 2017). In addition, the creative industries are influenced by the convergence of internet, computing, telecommunications, and television technologies and the opportunities they offer for storing large and linked data and manipulating, transmitting, and reproducing digital media. Many creative industry processes greatly influence several aspects of life (Hanan & Hemanto, 2020; Ramos et al., 2018a). Apart from that, the use of ICT will make it easier to create a more modern creative industry. The use of ICT also influences several aspects, such as education, training, administration, organizational interactions, project management, service delivery, and even medical care. According to (Ashraf et al., 2016), aspects of ICT planning have the aim of improving the quality of life.

Given Indonesia's very high contribution to state revenue, this study attempts to identify the key to the creative industry's success in adapting to the use of increasingly rapid information and communication technology. The study's results will be compared with Okundaye's findings in Nigeria. Lessons learned from Indonesia and Nigeria will then be compared with the results of mapping previous studies with the keywords creative industry and ICT.

## 2. METHOD

By the research aims, this study was conducted using a qualitative descriptive approach. The technology acceptance model (TAM) was used as a framework in this study to explain ICT adoption in creative sectors as well as SME leaders' ICT strategies in Nigeria. (Okundaye et al., 2019). The TAM establishes a link between perceived utility, perceived ease of use, attitude toward computer use, and intention to use technology.

In this study, respondents and informants were determined based on the Penta-Helix Model (Muhyi et al., 2017), which includes five types of stakeholders: the business world, government, society, universities, and the media. Interviews were conducted with informants to obtain a picture of the adoption of ICT in creative industries. The research location is determined based on the number of creative industries that are the most and continue to grow. President Joko Widodo or Jokowi stated that Bandung is the readiest creative hub or center for creative industries in Indonesia. Because the industry is growing rapidly in this city (Florentin, 2018). Craft is the highest number of creative industries in Bandung City. Based on this information, the research location is the city of Bandung. Therefore, in this study, observations were made on the profile and website of *PT Matoa Digdaya Indonesia*, which is one of the creative industries in the city of Bandung with superior products of wooden watches that have been exported abroad. *PT Matoa Indonesia Digdaya* is an Eco Watch innovation or environmentally friendly clock created by Lucky Perdana Aria born in Bandung, on March 23, 1986. Lucky, together with *Matoa* succeeded in bringing *Matoa* to be known and sought after by the citizens of the world. Eco Watch is an environmentally friendly watch product. So, the following table shows the informants in this study.

**Table 3. The Number of Informants**

| Institution | Number of People |
|---|---|
| Bandung Information and Communication Office | 3 |
| Bandung Tourism Office | 2 |
| Bandung Creative Hub (BCH) | 5 |
| IPDN | 3 |
| Society | 4 |
| Media | 3 |
| Total | 20 |

Interview data were analyzed using NVIVO software. NVIVO is a software package produced by QSR International, has many advantages, and can significantly improve the quality of research. Analysis of qualitative data is made easier and produces more professional results. This software can reduce a large number of manual assignments and give researchers more time to find trends, recognize themes, and draw conclusions. (Hilal & Alabri, 2013).

## 3. FINDINGS AND DISCUSSIONS

The interview data were mapped using NVIVO 12 PLUS software so that they are more useful and can be categorized according to research needs. The first step is to import interview transcripts in Word format into the NVIVO application. The next stage is to determine the most common concerns raised by stakeholders about the use of ICT in the creative industries. Five challenges that frequently emerge while using NVIVO 12 PLUS software include communication, entrepreneurs, technology, regulation, and website (see Figure 2). The five issues were then used as nodes in the following process, which examines the connections between issues and the components that make up each issue in greater depth. This process is called coding.


**Figure 2. Word Frequency Query in the Use of ICT in the Creative Industries**

Communication is separated into two groups based on the coding process: social media and socializing. Because social media is used for virtually all communications between creative industry actors and stakeholders, it has a greater influence. Infrastructure, appropriate technology, and environmentally responsible waste management are the three categories of technology. In the use of ICT in creative industries, communication, and technology are the two most important variables. The relationship between the components is depicted in Figure 3.

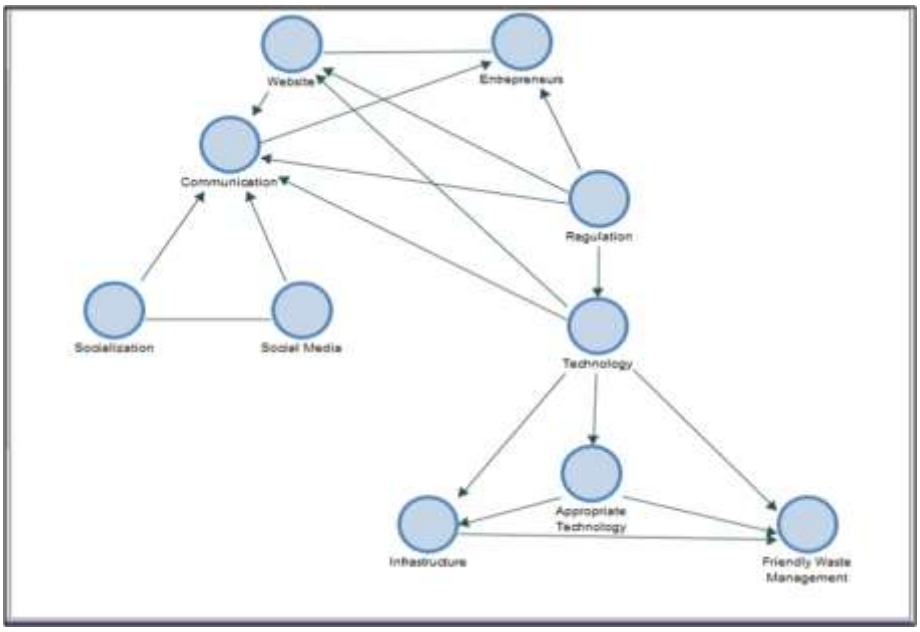


**Figure 3. Relationship Between Factors in the Use of ICT in the Creative Industries**

Based on Figure 3 above, it can be concluded that entrepreneurs are the key factor in the use of ICT in the creative industries. That is, the creative industries will be able to survive in the era of the all-digital industry revolution if entrepreneurs can keep up with environmental changes through innovation and creativity. Moreover, the craft industry is a creative industry that is very dependent on the creativity of the entrepreneur. For example, *Matoa* wooden watches can go international and have quite a lot of customers. Lucky Perdana can convert wood waste that was originally useless into a product that has a very large added value. The results of this study are in line with Hermanson et al.'s (2018) writings on contrasting experienced and non-experienced entrepreneurs in the Swedish fashion industry and Wang & Keane (2020) Wrote that entrepreneurs have become the driving force of China's economy over the past few decades.

The website has an associated relationship with entrepreneurs, as seen in Figure 6. Entrepreneurs, in other words, require the media to expose all ideas and production methods that are accessible to the public. This can be accomplished with the help of a comprehensive and trustworthy website. The establishment of a website necessitates technological assistance as well as regulatory compliance with Indonesian standards. The *Matoa* website, for example, is both aesthetically and content-wise quite good. This website serves as a one-stop shop for all things related to *matoa* wooden timepieces. Everything a customer needs to know is available on the internet (Zhang et al., 2020).

Communication is the factor most often cited in connection with the use of ICT in the creative industries. That is, the use of ICT is more dominant in establishing communication between stakeholders for various needs, ranging from the procurement of raw materials, the production process, distribution, and marketing, to after-sales services. Communication is also carried out with banks for tax and investment matters. Likewise, with the local government, communication is the key to the success of the creative industries. The quality of communication is also supported by the existence of the website, technology, and regulation. In practice, communication is done through social media which is inherent in everyone today. Some of the most widely used social media include WhatsApp, Instagram, Facebook, and Twitter. Social media can also be used as a medium for socialization among stakeholders. The use of social media in the creative industry is discussed in Casadei & Lee (2020) writing with the object of the fashion industry. Meanwhile, Sha & Basri (2019) discussed the use of social media in small and medium-sized companies.

The use of ICT cannot be separated from the supporting technology, both software and hardware. Technology is also closely related to information and communication technology infrastructure that must be prepared by local governments for industry needs. According to Abbasi et al. (2017) research findings, future

research related to the technology roadmap of creative industries should focus on technologies that facilitate greater personalization, enhanced user interaction and user engagement and immersion, creative online (co)working, collaborative content production and automated (online) production, new streamlined ways of content production, consumption, storage and infrastructure, archiving, and digital presupposition. The proposed innovative technological developments in the Creative Industries were evaluated based on their technological maturity.

No less important in the use of ICT in the creative industries is regulation as a legal umbrella in various aspects. Regulations that must be prepared by local governments include the policy of providing networks and electronic transactions that are derived from the Information and Electronic Transactions Law (ITE Law). This legal umbrella is very important as a guide for all parties, ranging from entrepreneurs, customers, banks, and e-commerce actors, such as *Buka Lapak*, *Toko Pedia*, *Lazada*, *Blibli*, and so forth. With clear and complete regulation, the business climate in the era of the Industrial Revolution 4.0 will be increasingly conducive, without doubt, and fear, in the end, it can improve the welfare of society in general.

Overall, the results of this study are an elaboration of the results of Okundaye et al., (2019) research which states two critical roles in the successful adoption and use of ICT were the role of SME leaders and the role of the government. Five important factors that are the results of this study, namely: entrepreneur, website, communication, technology, and regulation, are an elaboration of the role of company leaders and the role of government. Company leaders as entrepreneurs need a website as a means of communication, and the government prepares technology infrastructure and regulations as a legal umbrella for running the creative industry in Indonesia. Table 4 shows the relationship between the results of this study and previous research conducted by Okundaye et al. (2019) in Nigeria.

**Table 4. Comparison of Research Results in Nigeria and Indonesia**

| Title | Country | Object | Important Factors |
|---|---|---|---|
| Impact of information and communication technology in Nigerian small-to-medium-sized enterprises | Nigeria | small-to-medium-sized enterprises | 1. the role of SME leaders<br>2. the role of the government |
| Important success factors in the adoption of information and communication technology in Indonesian creative industries | Indonesia | creative industries | 1. entrepreneur,<br>2. website,<br>3. communication,<br>4. technology, and<br>5. regulation |

Meanwhile, related codes of the important success factors in the adoption of information and communication technology in Indonesian creative industries and also in Nigerian small-to-medium-sized enterprises can be seen in Figures 4 and 5 below. Entrepreneurs, communication methods, and website development are the roles of creative industry or SME leaders (see Figure 4). While regulation and technology development are the responsibility of the government (Figure 5). Thus, there is a close relationship between the results of Okundaye's research in Nigeria and the results of research in Indonesia. Of course, it is wide open for testing the relationship between these two studies in further research.

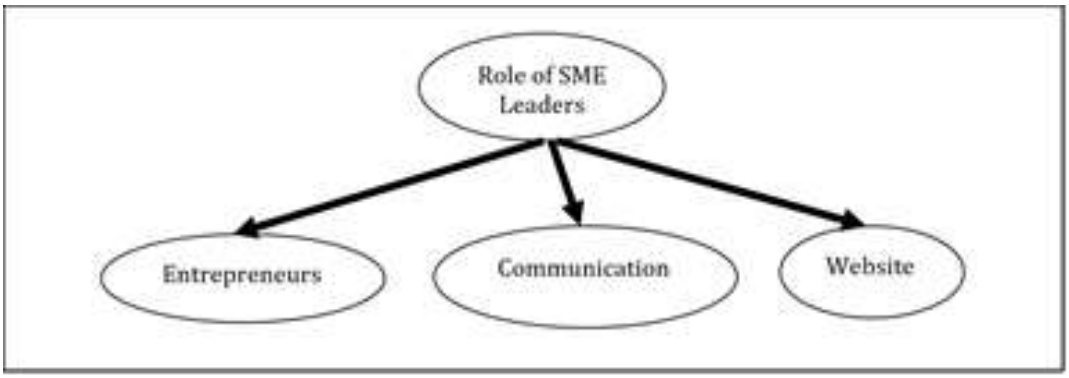


**Figure 4. Role of SME Leaders in the Adoption of ICT**

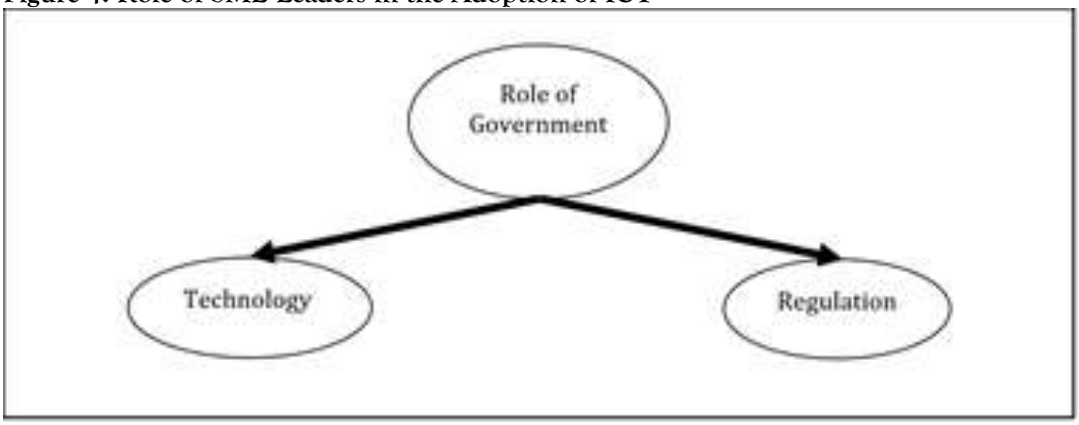


**Figure 5. Role of Government in the Adoption of ICT**

The results of this study also were compared with the results of a theoretical review related to the factors that most often appear in previous research with the keywords ICT and creative industries. The top ten terms in a row are creative industry, information, development, cultural, technology, industry, ICT, communication, innovation, and role. By ignoring the creative industries and ICT, eight factors that are considered important were obtained, namely: information, development, cultural, technology, industry, communication, innovation, and role. The following table shows the comparison of the important factors in ICT adoption in creative industries.

**Table 5. The Important Factors of ICT Adoption in Creative Industries**

| Results of a Theoretical Review | Results of This Study |
|---|---|
| 1. information,<br>2. development,<br>3. cultural,<br>4. technology,<br>5. industry,<br>6. communication,<br>7. innovation, and<br>8. role. | 1. entrepreneurs,<br>2. communication,<br>3. website,<br>4. technology,<br>5. regulation. |

Based on Table 5 above, it can be seen that there were two important factors in both the results of the literature review and research results, namely communication, and technology. That is, in adopting ICT these two factors are important because they play an important role. The role of technology in carrying out various activities in the creative industry is very important, starting from the procurement of raw materials to product distribution to consumers. The role of technology will be felt in the creative industries engaged in multimedia

and games (Abbasi et al., 2017). Communication between stakeholders is also an important factor in running the creative industry. This was in line with research conducted in Spain on the factors that cause success and failure in the use of ICT in projects that have limited time and resources. One of the determining factors for the successful use of ICT in projects is frequent and fluent communication among stakeholders (Montequin et al., 2014).

## 4. CONCLUSION

Based on the research conducted in Bandung City (Indonesia), there are five important success factors in the adoption of information and communication technology in creative industries, namely communication, technology, regulation, entrepreneurs, and websites. An entrepreneur is a key factor in the adoption of information and communication technology in creative industries, which is supported by good communication between stakeholders, technology, website presence, and regulations prepared by the government. This research complements the results of (Okundaye et al., 2019) study in Nigeria which states that the determining factors for the successful use of information and communication technology are the role of SME Leaders and the role of government leaders. The results of this study show that the entrepreneurial spirit, good communication, and the availability of a website are the keys to success inherent in creative industry leaders. While the availability of regulations and technology is the authority of the government.

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