

# Optimization of Digital-Based MSME E-Commerce: Challenges and Opportunities in the New Normal Era of the Covid-19 Pandemic

Wanti Ernawati

Postgraduate Student, Department of Economics, Trisakti University, Jakarta, Indonesia

Corresponding Author: wantiernawati5@gmail.com

Date of Submission: 03-11-2021

Date of Acceptance: 29-11-2021

## ABSTRACT

The impact caused by the Covid-19 Pandemic on Micro and Small and Medium Enterprises (MSMEs) was so severe and fatal that not a few went out of business. The heavy burden is borne by MSME actors due to social restrictions imposed by the government, the declining purchasing power of the people, a product that continues to decline until capital runs out. Plus inadequate knowledge in carrying out marketing strategies and product innovations are the main trigger for the lack of enthusiasm for MSME actors as well as bankruptcy. MSME digitalization-based e-commerce is an opportunity and the right solution in dealing with the obstacles caused by the impact of Covid-19, as well as a challenge for MSME actors to design old ways in new ways through digital business.

**Keywords:** e-commerce, msme products, digital business, literacy, innovation, covid-19

## I. INTRODUCTION

The impact of the COVID-19 pandemic has been extraordinary, it has hit almost the entire world, including the MSME sector so that many of them are bankrupt. On the other hand, many MSMEs are adding to their abundant wealth coffers at this time by taking advantage of digital-based business opportunities (Dethine et al, 2020; Tolstoy et al, 2021). Utilizing technology and the internet of things (IoT) in expanding the market network changes the behaviour of MSMEs from conventional-manual to digitalization with the e-commerce model (Marcysiak & Pleskacz, 2021; Leu & Masri, 2019).

The use of the internet in the world has reached half of the earth's population (53%), and the first thing people see is the internet (Han et al, 2020; Rudd and Beidas, 2020; Rivza et al, 2019). According to Rudd and Beidas (2020) that 90% of adult internet users in America, even 96% of those have mobile phones. This is certainly very beneficial for MSMEs if the perpetrators can use the technology to become e-commerce (Louw & Nieuwenhuizen, 2020; Alraja et al, 2021).

In increasingly competitive and global business competition, MSME actors in this era of disruption need to use e-commerce creatively and innovatively (Priambodo & Sasmoko, 2021). Digital-based SMEs by utilizing the latest technology are certainly very useful (Awe and Ertemel, 2021). E-commerce by utilizing digital technology for large and small-scale businesses, such as MSMEs, is very effective and efficient in reducing operational costs (Hussain et al, 2020).

According to Lukonga and Joshi (2020), digital technology users have a great opportunity to become consumers. So the use of digital technology for MSME actors through e-commerce-based marketing is a challenge in this era of disruption in achieving profits and business sustainability (Costa & Castro, 2021). This paper intends to explain how to optimize the marketing of digital-based MSME products through e-commerce during the new normal period of the Covid-19 pandemic so that they can survive and even be able to sustain their business.

## II. METHODOLOGY

This article aims to describe how optimizing digital-based MSME marketing in the new-normal era of the COVID-19 pandemic is both a challenge and an opportunity. Data collection techniques through the study of 40 kinds of literature sourced from various updated journals between 2019 and 2021, indexed by Scopus, Elsevier, Springer, Emerald, Google Scholar, SSRN, and other international journals based on citations, abstracts, and keywords according to the theme then analyzed

inductively and descriptively-exploratively. Observations on 3 MSME actors in the batik market area and the kiosk located on the edge of the Plered, Cirebon highway access became key informants in open interviews.

### III. PRIOR APPROACH

Hasan and Mardhani (2021) consider that the presence of the internet in almost all parts of Indonesia coupled with the distribution of mobile phone users makes it easier for consumers to access to switch from analogue products to digital products. Business people in the MSME sector should also use this technology to market their products through e-commerce. Especially in the era of the Covid-19 pandemic, which is completely restricted to direct contact (Aziz, 2021).

According to Abdul Aziz et al (2020); and Yi and Brief (2020) that the rapid growth of information and communication technology provides opportunities for business people. Electronic commerce, which is abbreviated as e-commerce, is a new direction in the development of digital-based small and medium businesses in this era of disruption. Hussain et al (2021) emphasized that the acceleration of digital-based technology with a business to business e-commerce model plays a very important role in improving business performance, including MSMEs.

Gavrila and Ancillo (2021) in their research stated that business opportunities in the Industrial Era 4.0 and Society 5.0 are very broad in marketing for small and large businesses when utilizing the digitization of their business models. This is because the potential effects of digitization on the modern world are inevitable. They even show some research results that support their opinion, as can be seen in the following table.

Table of Researchers Digital Business Opportunities in the Age of Disruption in the time of Covid-19

Reference	Source	Main Contribution
<b>1. Industry 4.0 Context, Digitization and Digitalization</b>		
(Arnold et al., 2016)	Research	Industry 4.0 digital enablers transform companies' business model and internal organization, together with the relationship between partners and customers, under a cost-efficient paradigm.
(Fitzgerald et al., 2014)	Research	Digital transformation success is strongly linked with technological dissemination, organizational aspects and leadership qualities.
(Davenport and Prusak, 1998; Porter and Heppelmann, 2015)	Research	The transition from data to information and knowledge sets the baseline for the digital transformation, and information is a key asset that feeds the internal IT systems to support business operations and continuity.
(Delgado et al., 2010; Autio et al., 2018)	Research	Entrepreneurship and start-up success is connected to its technological foundation and its capacity to transform data into knowledge.
<b>2. Changing Communication Channels</b>		
(McCorke et al., 2013; Guberti, 2015)	Research	Factors such as technological availability, ease of interaction, openness to advertisement, personalization and incentives aspects, have evolved the SMS from a personal communication function to a key marketing tool.
(Hartemo, 2016; Reimers et al., 2016)	Research	Equivalent to SMS, permission-based e-mail marketing provides potential for greater customer involvement and

		engagement, while empowering their decisions (opt-in / opt-out).
<b>(Church and de Oliveira, 2013; Modak and Mambo, 2014)</b>	Research	Mobile chatting applications provide companies with a cost-effective (compared to SMS) and more interactive (compared to e-mail) alternative channel.
<b>(Al-Suwaidi, 2013)</b>	Research	Social networks have changed customer behaviour and privacy concerns favouring a more connected and exposed personal life in terms of opinions, brands or product preferences.
<b>3. Changing Customers' Habits, Personalization and Customization</b>		
<b>(Dholakia et al., 2004)</b>	Research	Social network community groups can bias customers' shopping preferences due to the group belonging and bonding feeling, as well as to the social behaviour pattern of "influencers and followers".
<b>(Palmer and Ponsonby, 2002)</b>	Research	"Prosumers" (users that consume and generate their social content) show a positive outcome regarding the effects of the social network to indirectly promote and advertise brands or products.
<b>(Oh and Teo, 2010)</b>	Research	Hybrid online and offline selling channel approaches demonstrate a positive effect on the overall personalized customer experience (integrated product and price information), as well as an increase in the perceived service quality.
<b>(Haas et al., 2015)</b>	Research	The circular economy is considered an actionable way for companies (generating new business models and opportunities) and consumers (more conscious behaviour and personalization) to reduce the waste generated and pollution.
<b>(Chung et al., 2016)</b>	Research	Social networks' pattern-based recommendation algorithms may provide customers with a more accurate product personalization than the actual self-customization approach.
<b>4. Technological Barriers</b>		
<b>(Safari et al., 2015)</b>	Research	Companies relying on Software-as-a-Service or cloud-based solutions provide substantial opportunities for the business operations, such as cost reduction, agile decision making and scalability.
<b>(Devaraj et al., 2002)</b>	Research	Customers choose to buy from the online or offline channel based on platform familiarity, cost and service quality criteria.
<b>(Kim et al., 2003)</b>	Research	The CRM software success is linked to a customer-oriented model fed by continuous data sources, such as offline sales data, online sales data, online customer interactions, inventories and existing products.

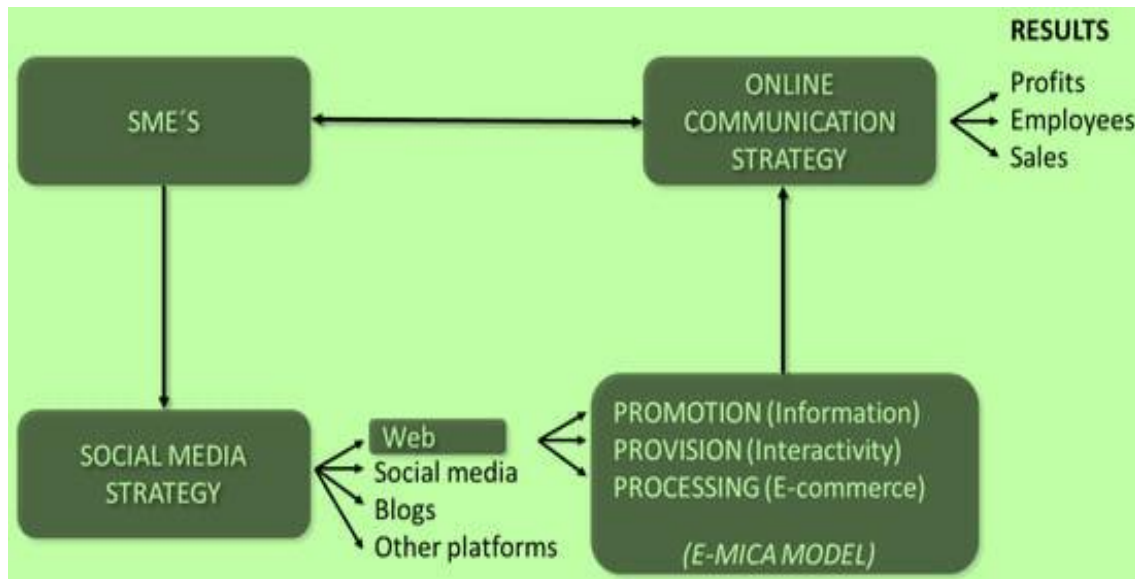
<b>(Berson et al., 2000)</b>	Book	General ERP and CRM software provide SMEs with cross-correlation of sales and customer data functionality to obtain information regarding SMEs' customer habits.
<b>5. Environmental Constraints on the Business Activity</b>		
<b>(Haanpää, 2007)</b>	Research	There is global consumer pressure on SMEs for a circular economy and a greener business activity footprint.
<b>(Herbig and Milewicz, 1993; Karaosmanoglu and Melewar, 2006)</b>	Research	In addition to regulations, companies must adapt to the consumers' demands as they require to publicly express a waste reduction commitment through Corporate Social Responsibility (CSR) and facts.
<b>References Specific to Spanish environment</b>		
<b>(MINCOTUR, 2020)</b>	Website	Governments can have a strong positive impact on the local business ecosystem by providing companies with access to Industry 4.0 information, technologies and financial credit facilities.
<b>(MINCOTUR, 2019)</b>	Report	Spanish Government report pointing out that online commerce has been cannibalizing offline market share and that future investment in business digitization is essential.
<b>(ONTSI, 2018, ONTSI, 2019)</b>	Report	Spanish Government report pointing to the barriers of SMEs towards digitalization and the related business issues derived from the lack of appropriate ICTs.
<b>(FAEDPYME, 2018)</b>	Report	Report on Spanish SMEs' digitalization achievement, Corporate Social Responsibility (CSR) and Environmental Management, as well as the investment situation in ICTs.
<b>(San-Martín and Jiménez, 2017)</b>	Research	Them-commerce-based strategy is found to provide Spanish SMEs with a direct selling channel where the customer obtains a personalized value proposition, under a cost-efficient paradigm.
<b>(Cid, 2012; Casas, 2020)</b>	Articles	More restrictive regulations against mass texting and associated costs push Spanish companies to explore new channels, such as mobile marketing or social networks.
<b>(INCIBE, 2017, 2018b)</b>	Report	Spanish Government report regarding SMEs' cybersecurity threats, vulnerabilities and investments in ICTs.
<b>(INCIBE, 2018a)</b>	Report	Spanish Government report regarding SMEs' and customers' privacy adherence to GDPR.

Source: Gavrilu and Ancillo (2021)

In the table above, the researchers agree that the role of MSMEs that utilize the use of digital technology is very significant in increasing their business. Even the transformation from the manual business model to DT can change the

behaviour of MSME actors to be modern and professional. Kääriäinen et al (2021) in their research on 19 MSMEs in Northern Finland confirmed that with the digital transformation (DT) in their business they provide customer clustering and can identify their needs.

Garcia, Carrillo-Durá & Maia (2021) in their findings on 361 MSMEs in Portugal explained that digital-based e-commerce depends on the maturity of the websites they manage. The effectiveness of installing a website as an official MSME website can make it easier for e-commerce to work to serve customer orders. This can be seen in Figure 1 below:



Source: Garcia, Carrillo-Durá & Maia (2021)

Figure-1: The Role of MSME Websites in Social Media Strategy in Business

In the picture above the internet-based social media strategy in the functioning of the MSME Website can be information, interaction and even e-commerce that is important in the development of MSMEs and product innovation with the market price. According to Noris (2020), the important role of the website on social media is very meaningful for MSMEs in rural areas so that they can prevent disparities between urban and rural MSMEs alike. This fact he evaluated on 14 MSMEs in Rural Wales. Agreeing with that, Eusebio and Patrizia (2021) stated that MSMEs using e-commerce could increase by 4 points (27%) compared to the previous year (2019) with a digital payment rate of 36%, an increase of > 5 points. Thus, there is no reason if in the era of the Covid-19 pandemic all MSME businesses failed, this challenge provides a great opportunity to increase productivity and income through optimizing digital-based e-commerce.

#### IV. OUR APPROACH

As a result of the Covid-19 pandemic which led to a multidimensional crisis, now there is a great opportunity for the growth and development of MSMEs in particular and other businesses in general. That opportunity is the emergence of more than 100 million digital application users in Indonesia (Ma'rifa and Rohmah, 2019). MSME actors can transform from the old model into a new model by digitizing through E-commerce. Product innovations that are packaged with digital branding along with the transparency of the listed prices make it easier for people to buy interest wherever they are (Khai et al., 2020).

Menurut Tong and Gong (2020), (2020), during Covid-19 from 70% of existing MSMEs there was a sharp decline of 50%. On the other hand, online-based businesses increased very sharply (53%). In the catering and food sector, digitally it reaches the range of 144%, with 61% of online users. Therefore, it is not surprising that MSMEs in every country are very important, including in Indonesia. This business can become a contributor to state revenue. Thrassou et al (2020) emphasize that although the challenges are also great, MSMEs have a wide opportunity to become a leading sector in economic growth if they can face global competition by increasing their competitiveness, professionally with digital marketing transformation.

The striking difference in the sales and income of MSME actors that the author met when surveying the Cirebon Batik Plered Market, for example. One batik seller by relying on an on-site kiosk, say A and another seller in the same place while using e-commerce, call it to name B, the difference is very sharp. B in addition to selling at kiosks, he also uses digital

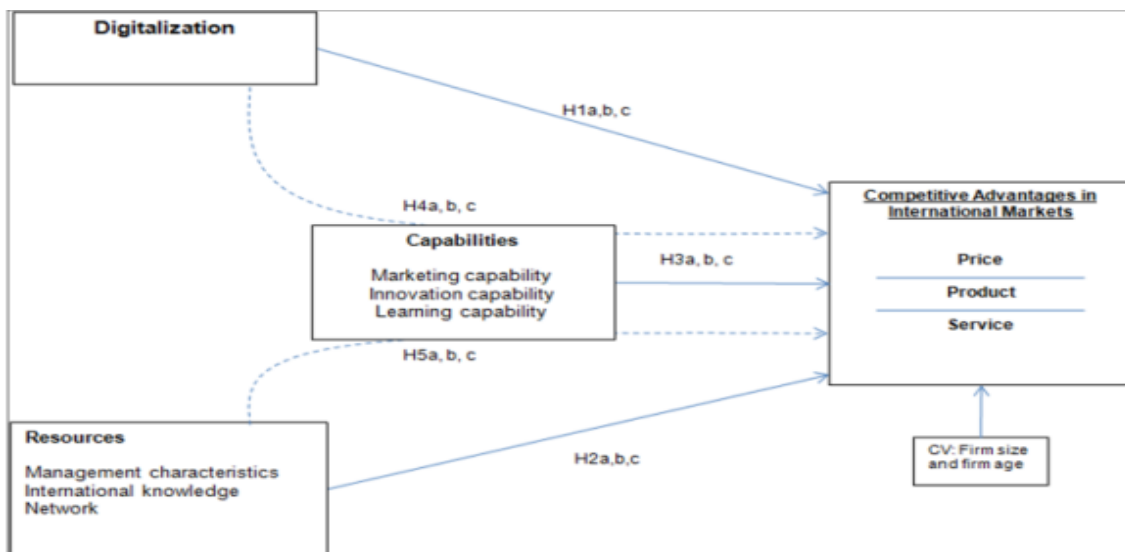
applications and almost every day there are messages and deliveries online. Meanwhile, A, which only sells on the spot (Kiosk) by just waiting for buyers, is not selling well. And when asked, why not use digital applications with e-commerce like B, A replied that he did not understand and did not know how to use digital applications. The result is sales of A in a day less than 10, sometimes even no buyers at all. Meanwhile, in B, every day there are orders and the intensity of delivery of goods online is getting higher.

From the above case, according to the theory of Garcia et al (2021) that it turns out that online communication strategies using social media through website features made for sales contribute to increasing sales volume. The author also visited a batik entrepreneur, an MSME actor in Trusmi Cirebon along with the closing of his batik stall. An MSME actor named H said that since the covid-19 pandemic, his shop could not continue to open because of the lack of buyers and customers. He only does his batik business face-to-face, and word of mouth without going online.

The same thing was also found by small business actors by selling on the side of the highway, marketing Cirebon speciality snacks. Call it D, he told me that during the Covid-19 pandemic his merchandise did not sell, even though previously he could sell between 20-40 pcs a day. These business actors do not try to use digital applications by utilizing information and communication technology. Business actors of this model are certainly very vulnerable to risk, relying only on local consumers and their market share is limited.

In contrast to e-commerce, where products can be installed on digital applications with clearly stated prices, accompanied by innovative branding and packaging, they can open up wider market share opportunities, even to foreign countries. Moreover, internet network users and mobile phone users, which are more than 100 million in Indonesia and more than one billion in the world, are a very open marketplace (Ma'rifa and Rohmah, 2019; Noris, 2020; Eusebio and Patrizia, 2021; Awe and Ertemel, 2021).

According to Lee and Falahat (2019) in their research on 143 MSMEs, they emphasized that digital applications with e-commerce indirectly trigger MSME competitive advantages but contribute strongly to services and products. It even becomes the internationalization of local products to a wider range of foreign countries. As explained in Figure 2 above.



Source: Lee and Falahat (2019)

Lee dan Falahat (2019) want to emphasize that digitalization factors and resources supported by management characteristics, global knowledge, and extensive networks can directly or indirectly contribute to competitive advantage in international markets, especially in price competitiveness, products and services. From these findings, MSME actors can use IT effectively and utilize digital technology for applicable e-commerce. Moreover, social media strategies can take advantage of community networks and so on (Hánell et al., 2019). Nonetheless, Rasheed et al (2019) argue that not all MSMEs in every country are the same where digitalization plays an important role in strengthening economic growth, but how to reduce the cost of using digital financial services while strengthening the portfolio of financial products on digital platforms.

Meier (2021) based on his findings also explains that not all MSME actors are well-established, so the threat from large companies is very possible, even among MSMEs based on digital business models. Therefore, the MSME community that is already established with the use of digitalization through e-commerce (Witek-Hajduk & Grudecka, 2021) needs to accompany

the small ones who are not yet established. Mutual support and mutual assistance between MSMEs is very necessary, especially in the era of disruption and the Covid-19 pandemic. Joint training and education are needed to realize resource professionalism, competitive advantage, product innovation and packaging need to be improved. This is a challenge as well as an opportunity in the MSME business sector.

Cirebon is one of the cities nicknamed a thousand MSMEs with its culinary jargon "Nasi Jamblang", and "Empal Gentong", as well as a tourism destination with its 3 palaces which are still intact, and the city of Wali as its uniqueness and distinction, has a great opportunity to internationalize products. through efforts to transform digital technology while reducing digital finance and services as well as increasing innovation and productivity, as well as strengthening the product portfolio by increasing digital platforms or finalizing a strategy for digitizing business processes (Adomako et al., 2021). Especially in the new-normal period of the Covid-19 pandemic which is still haunting the world community, including MSME actors.

## V. CONCLUSION

The impact of the Covid-19 pandemic which has now entered the second wave with prevention efforts through vaccination until the second phase is over with a participation rate of more than 100 million people in Indonesia, and the whole world is also taking this activity, but mass crowds and direct contact are still using masks, as well as social restrictions began to be relaxed. This does not mean that business activities will immediately return to normal, but that it is still a recovery that leads to adaptation.

This challenge is certainly a trigger for MSME actors to immediately rise and be confident in facing a better future. Moreover, there are slogans "where there is a difficulty there will be ease", and "the storm will pass" needs to be a motto in life as well as motivation for MSME actors. As a result of the Covid-19 tsunami, which caused disaster and catastrophe in all sectors in the world, there must be a lesson behind it. One of those lessons is the engineering of Industry 4.0 and Society 5.0 with the use of information and communication technology where the internet for all (Internet of Things) both on YouTube, Android, Mobile, Twitter, Facebook, Gadgets, and the like can be used for online business.

MSME actors must use it to promote products and increase sales, streamline services, price transparency and visibility, operational cost efficiency, and increase other competitive advantages in a competitive and superior manner. The transformation from conventional business methods to digital technology through e-commerce, e-business, mobile applications, cloud computing, and so on (Saleh and Manjunath, 2020; Putri and Priyandari, 2019; Okfalisa et al., 2021; Yusoff et al., 2021; and Shettima & Sharma, 2020) is the right and useful step to reach promising business opportunities in this era of disruption.

## REFERENCES

1. Adomako, S., Amankwah-Amoah, J., Tarba, S. Y., & Khan, Z. (2021). Perceived corruption, business process digitization, and SMEs' degree of internationalization in sub-Saharan Africa. *Journal of Business Research*, 123, 196-207. Available at: <https://doi.org/10.1016/j.jbusres.2020.09.065>.
2. Alraja, M. N., Hussein, M. A., & Ahmed, H. M. S. (2021). What affects the digitalization process in developing economies? A piece of evidence from the SMEs sector in Oman. *Bulletin of Electrical Engineering and Informatics*, 10(1), 441-448. Available at: <https://doi.org/10.11591/eei.v10i1.2033>.
3. Awe, Y. N., & Ertemel, V. A. (2021). Enhancement of micro small businesses in the gambia through digitalization: Investigating youth entrepreneurs perception, use and inhibitor of e-commerce technology. *Working Paper Series*, 2(3), 25-42.
4. Aziz, A. (2021). *Promising business opportunities in the industrial age 4.0 and the society era 5.0 in the new-normal period of the covid-19 pandemic (preprint)*. DOI: 10.32474/SJPBS.2021.05.000216.
5. Abdul Aziz, A. Z., & Laeliah, L. (2020). *E-Commerce perilaku gaya hidup konsumtif mahasiswa muslim survey pada mahasiswa IAIN syekh nurjati cirebon*. [Google Scholar].
6. Costa, J., & Castro, R. (2021). SMEs must go online—E-commerce as an escape hatch for resilience and survivability. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(7), 3043-3062. Available at: <https://doi.org/10.3390/jtaer16070166>.
7. Dethine, B., Enjolras, M., & Monticolo, D. (2020). Digitalization and SMEs' export management: impacts on resources and capabilities. *Technology Innovation Management Review*, 10(4).

8. Effendi, M. I., Sugandini, D., & Istanto, Y. (2020). Social media adoption in SMEs impacted by COVID-19: The TOE model. *The Journal of Asian Finance, Economics, and Business*, 7(11), 915-925. Available at: <https://doi.org/10.13106/jafeb.2020.vol7.no11.915>.
9. Eusebio, D. M., Patrizia, D., & Francesco, S. (2021). The digitization of the SMEs during the Pandemic. *International Journal of Business Management & Economic Research*, 12(2).
10. Gavrilu, S. G., & de Lucas Ancillo, A. (2021). Spanish SMEs' digitalization enablers: E-receipt applications to the offline retail market. *Technological Forecasting and Social Change*, 162, 120381. Available at: <https://doi.org/10.1016/j.techfore.2020.120381>.
11. García-García, M., Carrillo-Durán, M. V., & Maia, J. (2021). The maturity of corporate websites as a digital communication channel in portuguese SMEs' process of adopting e-commerce. *Sustainability*, 13(21), 11972. Available at: <https://doi.org/10.3390/su132111972>.
12. Han, L., Boniface, E. R., Han, L. Y., Albright, J., Doty, N., & Darney, B. G. (2020). The abortion web ecosystem: Cross-sectional analysis of trustworthiness and bias. *Journal of Medical Internet Research*, 22(10), e20619. DOI: 10.2196/20619.
13. Hånell, S. M., Nordman, E. R., Tolstoy, D., & Özbek, N. (2019). "It's a new game out there": e-commerce in internationalising retail SMEs. *International Marketing Review*. Available at: <https://doi.org/10.1108/IMR-03-2018-0107>.
14. Hasan, A., & Mardhani, M. (2021, March). An overview of e-commerce adoption in Indonesian SMEs. In *Journal of Physics: Conference Series*, 1811(1), 012104. IOP Publishing.
15. Hussain, A., Shahzad, A., & Hassan, R. (2020). Organizational and environmental factors with the mediating role of e-commerce and SME performance. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 196. Available at: <https://doi.org/10.3390/joitmc6040196>.
16. Hussain, A., Shahzad, A., Hassan, R., & Doski, S. A. (2021). COVID-19 impact on B2B e-commerce: A multi-group analysis of sports and surgical SME's. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 15(1), 166-195.
17. Kääriäinen, J., Pussinen, P., Saari, L., Kuusisto, O., Saarela, M., & Hänninen, K. (2021). Applying the positioning phase of the digital transformation model in practice for SMEs: toward systematic development of digitalization. *International Journal of Information Systems and Project Management*, 8(4), 24-43.
18. Khai, K. G., Onn, Y. W., Zulkifli, R. B., Kandasamy, S., & Ahmad, A. B. (2020). The necessity to digitalize SMEs business model during the covid-19 pandemic period to remain sustainable in Malaysia. *Korea*, 99, 47-7.
19. Lee, Y. Y., & Falahat, M. (2019). The impact of digitalization and resources on gaining competitive advantage in international markets: Mediating role of marketing, innovation and learning capabilities. *Technology Innovation Management Review*, 9(11).
20. Leu, J. F., & Masri, R. (2019). The dilemma of SMEs in business digitization: A conceptual analysis of retail SMEs in Malaysia. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 10, 925-936. DOI: 10.14456/ITJEMAST.2019.88.
21. Lukonga, I., & Joshi, B. (2020). Harnessing digital technologies to promote SMEs in the MENAP region. *IMF Working Papers*, 2020(135). Available at: <https://doi.org/10.5089/9781513550770.001>.
22. Louw, C., & Nieuwenhuizen, C. (2020). Digitalization strategies for SMEs: A cost vs. skill approach for website development. *African Journal of Science, Technology, Innovation and Development*, 12(2), 195-202.
23. Marcysiak, A., & Pleskacz, Ż. (2021). Determinants of digitization in SMEs. *Entrepreneurship and Sustainability Issues*, 9(1), 300.
24. Ma'rifah, A. N., & Rohmah, U. (2019). The development of SME in the digital era in the national economy. In: *Prosiding Seminar Nasional Fakultas Ekonomi Untidar*.
25. Meier, A. (2021). Systematic review of the literature on SME digitalization: Multi-sided pressure on existing SMEs. *Digitalization*, 257-276. DOI: 10.1007/978-3-030-69380-0\_14.
26. Norris, L. (2020). The spatial implications of rural business digitalization: case studies from Wales. *Regional Studies, Regional Science*, 7(1), 499-510. Available at: <https://doi.org/10.1080/21681376.2020.1841674>.
27. Priambodo, I. T., Sasmoko, S., Abdinagoro, S. B., & Bandur, A. (2021). E-Commerce readiness of creative industry during the COVID-19 pandemic in Indonesia. *The Journal of Asian Finance, Economics and Business*, 8(3), 865-873. Available at: <https://doi.org/10.13106/jafeb.2021.vol8.no3.0865>.



28. Putri, A. R. T., Priyandari, Y., & Liquiddanu, E. (2019, Aug). Design of e-commerce competency Improvement program for batik SMEs in Surakarta. In: *IOP Conference Series: Materials Science and Engineering*, 598(1), 012067. IOP Publishing. DOI: 10.5267/j.dsl.2021.1.002.
29. Okfalisa, O., Angraini, W., Nawanir, G., Saktioto, S., & Wong, K. (2021). Measuring the effects of different factors influencing on the readiness of SMEs towards digitalization: A multiple perspectives design of decision support system. *Decision Science Letters*, 10(3), 425-442.
30. Rasheed, R., Siddiqui, S. H., Mahmood, I., & Khan, S. N. (2019). Financial inclusion for SMEs: Role of digital micro-financial services. *Review of Economics and Development Studies*, 5(3), 571-580. Available at: <https://doi.org/10.26710/reads.v5i3.686>.
31. Rivza, B., Kruzmetra, M., Gudele, I., & Foris, D. (2019). *Digitalization is an essential growth factor contributing to SME development (experience of Latvia and Romania)*. Available at: <https://doi.org/10.15159/ar.19.030>.
32. Rudd, B. N., & Beidas, R. S. (2020). Digital mental health: the answer to the global mental health crisis?. *Jamir Mental Health*, 7(6), e18472. doi:10.2196/18472.
33. Saleh, M. A. K., & Manjunath, K. R. (2020). Moving towards digitalization in small and medium enterprises in the least developed countries, Review of the case of Yemen. *International Journal for Modern Trends in Science and Technology*, 6(8), 233-239. [Google Scholar]
34. Shettima, M., & Sharma, N. (2020). *Impact of Digitalization on small and medium enterprises in Nigeria*. [Google Scholar]
35. Tolstoy, D., Nordman, E. R., Hånell, S. M., & Özbek, N. (2021). The development of international e-commerce in retail SMEs: An effectuation perspective. *Journal of World Business*, 56(3), 101165. Available at: <https://doi.org/10.1016/j.jwb.2020.101165>.
36. Tong, A., & Gong, R. (2020). The impact of COVID-19 on SME digitalisation in Malaysia. *The London School of Economics and Political Science*.
37. Thrassou, A., Uzunboylu, N., Vrontis, D., & Christofi, M. (2020). Digitalization of SMEs: A review of opportunities and challenges. *The Changing Role of SMEs in Global Business*, 179-200. DOI: 10.1007/978-3-030-45835-5\_9.
38. Witek-Hajduk, M. K., Grudecka, A. M., & Napiórkowska, A. (2021). E-commerce in the internet-enabled foreign expansion of Polish fashion brands owned by SMEs. *Journal of Fashion Marketing and Management: An International Journal*. Available at: <https://doi.org/10.1108/JFMM-10-2020-0225>.
39. Yi, V. Z. (2020). The struggle of Malaysian SMEs during the COVID-19 pandemic. *Policy Brief. KSI Strategic Institute for the Asia Pacific*.
40. Yusoff, M. N. H. B., Zainol, F. A., Ridzuan, R. H., Ismail, M., & Afthanorhan, A. (2021). Psychological Traits and Intention to Use E-Commerce among Rural Micro-Entrepreneurs in Malaysia. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), 1827-1843. Available at: <https://doi.org/10.3390/jtaer16050102>