

# DIGITAL ENTREPRENEURSHIP STRATEGY IN THE TOURISM BUSINESS OF THE TOURISM 4.0 ERA

**Poni Sukaesih Kurniati**

Department of Government Science, Universitas Komputer Indonesia, Indonesia

**Suryanto Suryanto**

Department of Business Administration, Universitas Padjadjaran, Indonesia

## ABSTRACT

This research analyzes digital entrepreneurship strategies by tourism industry players in Tourism 4.0. The research method used in this research is descriptive with a qualitative approach. Primary data sources come from the results of in-depth interviews with informants. In comparison, secondary data sources are obtained from the search results of research results and statements of informants published in the media. The data that has been obtained is triangulated before being analyzed. The study results stated that digital entrepreneurship in the Indonesian tourism industry is multiplying. Several factors that support the growth of digital entrepreneurship include internet penetration, large population demographics, and digitization in the tourism industry. Digital entrepreneurship actors in the tourism industry are implementing several strategies to survive during and after the Covid-19 pandemic and entering the era of Tourism 4.0. This strategy successfully attracts tourists to continue to carry out tourism activities.

**Keywords:** digital entrepreneurship; tourism 4.0; nomadic; staycation; storynomics

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## INTRODUCTION

Digital entrepreneurship utilizes digital transformation in running a business (Ghosh et al, 2021). Even though they have used digital transformation, digital entrepreneurship still requires an entrepreneurial spirit. The entrepreneurial spirit is the spirit to use limited resources to create added value by capturing business opportunities and managing resources to make it happen (Suryanto, 2019; Hermanto & Suryanto, 2020). The fundamental change in digital entrepreneurship lies in business activities connected to a digitally literate society. Digital entrepreneurship can make

business faster, easier, more effective, and more efficient, reach more consumers, and create many collaboration opportunities (Avriyanti, 2021). The digital world offers a vast new resource for entrepreneurs to leverage, from an exponentially growing collection of open data, content, code, and services to the online contributions of users and communities worldwide (Suryanto et al, 2022). The digital world also provides new ways to combine these resources. Small businesses can use large advertising networks, Artificial Intelligence-based chatbots, global freelancers, or language translation with just a few clicks or lines of code (Anderson & Rainie,

2020).

Digital entrepreneurship has become necessary for all business sectors in the era of the Industrial Revolution 4.0 (Lee et al, 2018). The new industrial paradigm in the Industrial Revolution 4.0 era must encourage future industrial development by utilizing the latest technological elements (Kurniati & Suryanto, 2022). The latest technological elements in the Industrial Revolution 4.0 era has succeeded in disrupting various business sectors (Jones & Pimdee, 2017). The tourism sector as a business sector has also experienced the impact of disruptive effects of the Industrial Revolution 4.0 with the emergence of the term Tourism 4.0 (Ozturk, 2021). Tourism 4.0 is an adaptation of the tourism industry sector following the eruption of the Industrial Revolution 4.0. The development of Tourism 4.0 allows the tourism industry to be able to provide more comprehensive, diverse, and intelligent tourism information. In the era of Tourism 4.0, tourism activities can provide convenience for tourists and entrepreneurs (Stankov & Gretzel, 2020).

The Indonesian tourism industry is currently experiencing problems due to the Covid-19 pandemic. Various economic activities, including tourism, were forced to close their businesses (Wirawan et al, 2020). These activities support the government's policy of implementing social distancing. This policy resulted in the breaking of the tourism industry chain (Sharma et al, 2021). The government limits the movement of people through large-scale social restrictions and restrictions on the movement of people's activities. The policy limits the mobility of the people and requires the closure of tourist attractions in various tourist destinations in Indonesia. Although community movement activities have been relaxed and tourist attractions have been reopened, the government has implemented various requirements for people who will travel. People using air, sea, rail, land, and crossing transportation modes must have a vaccine card requirement and a negative PCR test result or antigen result.

The impact of COVID-19 and other government regulations on the tourism sector affects the industry's ability to continue operating and the number of visitors it

receives. Micro, Small, and Medium Enterprises (MSMEs), particularly those who make souvenirs and culinary delights, hotels, transportation providers, restaurants, vacation rental companies, and local guides, cannot survive in the tourism industry. (Sunarsi et al., 2020). Meanwhile, the decline in foreign tourists in 2020 reached 75.03 percent. The number of foreign tourists in 2019 amounted to 16.11 million; in 2020, it fell to 4.02 million (BPS, 2021). Due to the decline in the number of tourists, the economy is disrupted. Tourism is an important sector supporting the Indonesian economy (Suryanto & Kurniati, 2020). The contribution given to the Indonesian economy reached 4.7% of Gross Domestic Product (GDP) in 2019 and has decreased since the Covid-19 pandemic to 4.1% in 2020 (Triwibowo, 2021)

Research related to digital entrepreneurship has been conducted several times with different focuses and locus. Davidson & Vaast (2010) conclude that digital entrepreneurship pursues new business opportunities from new internet media and technologies. Sartori et al. (2013) stated that the existence of digitalization in entrepreneurship could affect company productivity both socially and economically. The success factors of digital entrepreneurship are determined by the business founders themselves, networks, and social capital (Spiegel et al., 2016). Another researcher, Sussan & Acs (2017), concluded that all organizations could carry digital entrepreneurship, whether commercial, social, or government. In fact, according to Farani et al. (2017), the convenience of digital entrepreneurship has attracted much interest from millennial businessmen, especially in universities. According to research by Richter et al. (2017), digital entrepreneurship aims to gain market share. These business opportunities make money and strive to be innovative, radical, and risk-takers. Meanwhile, Hair et al. (2012) and Le Dinh et al. (2018) concluded that traditional entrepreneurship could turn into digital entrepreneurship if the company digitizes all its physical aspects, products, and distribution channels.

Different from the previous research, this research explores digital entrepreneurship in the tourism industry because in Tourism 4.0,

information related to tourism is needed quickly, carefully, and comprehensively. This study aims to describe several digital entrepreneurship strategies carried out by the tourism industry in welcoming the era of Tourism 4.0.

## LITERATURE REVIEW

### Digital Entrepreneurship

Entrepreneurship experienced a change in the concept after the development of digital technology. The combination of digital technology and entrepreneurial orientation gave birth to a new concept of digital entrepreneurship (Zarrouk et al, 2020). Initially, entrepreneurship was divided into two, namely, technology entrepreneurship and digital entrepreneurship (Giones & Brem, 2017). Technology entrepreneurship is more focused on the niche market. Meanwhile, digital entrepreneurship has a more global market share using internet networks. With the development of digital technology, the two concepts have merged into Digital Technology Entrepreneurship. Digital Technology Entrepreneurship produces products based on information and communication technologies. The product made is an innovative product that can access the Internet of Things (IoT). The target market of digital technology entrepreneurship sees the attractiveness and growth of the market itself (Kraus et al., 2018). Digital technology entrepreneurship is better known as digital entrepreneurship (Muafi et al, 2021).

Digital entrepreneurship is a phenomenon that emerges through technological assets such as the Internet and information technology (Le Dinh et al, 2018). Any entrepreneurial activity that transfers assets, services, or a significant part of the business to digital can be categorized as digital entrepreneurship (Richter et al., 2017). Digital entrepreneurship is no longer focused on the entrepreneur's function but, more importantly, on an excellent digital ecosystem (Davidson & Vaast, 2010). The occurrence of reciprocity in the digital ecosystem related to products, services, and locations is a factor that shapes digital entrepreneurial activity (Kopalle et al, 2020).

Digital entrepreneurship is growing more towards the discovery of new methods and technologies. The technology is designed to make consumers more flexible in using

applications (Nadia & Youssef, 2019); (Ghezzi & Cavallo, 2020). Most of today's business sectors have started implementing digital entrepreneurship. This phenomenon shows that people are starting to believe in digital entrepreneurial activities. The market share of digital entrepreneurship is getting wider and is increasingly reaching all levels of society (Sia et al, 2016). The business sector that needs to be digitized faster is believed to be abandoned by its consumers. At the same time, digitalization in company operations can complement traditional business models (Elia et al, 2020).

Digital entrepreneurship has tremendously impacted company development (Urbach et al, 2019). Digital entrepreneurship is the right place to facilitate virtual access between buyers and sellers without place or time restrictions (Gangeshwer, 2013). This process is more effective for use in everyday life because the public can make transactions online without spending money and time. Therefore, many MSME actors use digital entrepreneurship to improve performance (Yin et al, 2019).

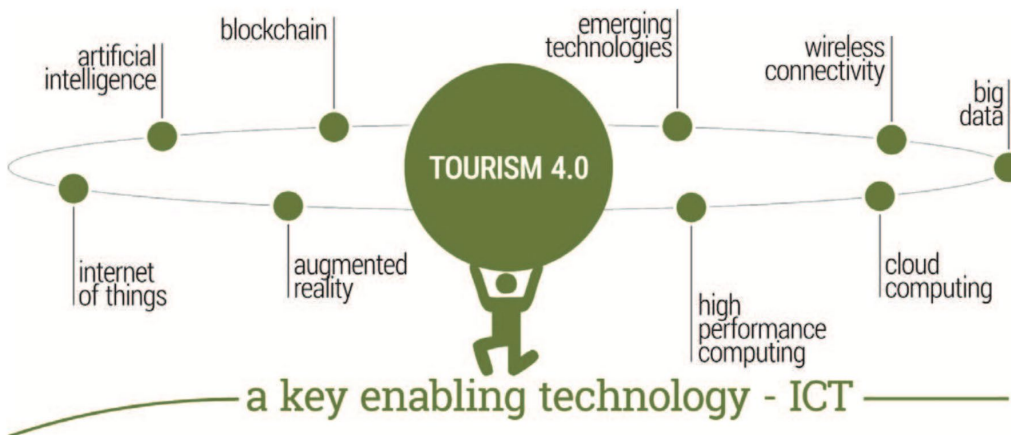
### Tourism

The concept of Tourism 4.0 elaborates on the development of the Industrial Revolution 4.0, which was adopted by the tourism industry (Ozturk, 2021). Therefore, Tourism 4.0 allows the tourism industry to become more innovative and provides convenience for tourists and entrepreneurs because they can take advantage of technological developments (Stankov & Gretzel, 2020). Government, experts, and practitioners created and expanded Tourism 4.0 (Zarrouk et al, 2020). In contrast to smart tourism and smart destinations, which have developed among academics through more research than Tourism 4.0 (González-Reverté, 2019).

At the implementation level, the development of Tourism 4.0 starts from European countries. Portugal was the first country to use the term Tourism 4.0 in 2016. Italy, Finland, Turkey, and Spain are the other countries to use this term. Meanwhile, only Spain is the most successful among several countries that have developed Tourism 4.0. Spain has implemented Tourism 4.0 in several of its main destinations by building a digital ecosystem from inspiration, arrival, and destination to post-trip, reflecting the era of

Tourism 4.0 (Korže, 2019). Apart from Europe, several countries in Southeast Asia have also used the term Tourism 4.0, such as Thailand, Malaysia, and Indonesia (Wahyono & Razak, 2020). The development of Tourism 4.0 requires elements in the technology

ecosystem. Figure 1 illustrates the elements of the technology ecosystem that are the enablers for tourism development 4.0.



**Figure 1:** Elements of The Technological Ecosystem.

Source: (Peceny et al, 2019)

These technological elements include the Internet of Things, artificial intelligence, blockchain, big data, emerging technology, wireless connectivity, cloud computing, high-performance computing, and augmented reality. These technological elements need to be built in parallel to support Tourism 4.0.

## METHODOLOGY

This study uses a qualitative approach with descriptive analysis research methods. A qualitative process is carried out to solve the investigated problem by describing or describing the observed facts. Data sources used in the study came from in-depth interviews with key informants, research results, and informants' statements published in the media. We developed each component to be analyzed and obtained from primary data. The data that has been obtained is triangulated to obtain valid and credible data. Furthermore, the data is analyzed according to the problem at hand. Then explains the strategies carried out by digital entrepreneurship actors.

## RESULTS AND DISCUSSION

### Building Digital Entrepreneurship in the Tourism Industry

The tourism industry must face various challenges by transforming and adapting during and after the COVID-19 pandemic. Digital entrepreneurship is one of the solutions to face challenges and open up opportunities. One of the future industries that will significantly benefit from the growth of the Indonesian economy is the digital economy. This growth is attributable to the growing importance of information technology in business. Additionally, social media's influence in the framework of the digital economy is rapidly playing a role in creating new commercial options for the neighborhood. That is a sign that digital entrepreneurship is beginning to bloom.

When further investigated, the term "digital entrepreneurship" appears to be traced to the term "technopreneur," which combines the terms "technology" and "entrepreneur." Thus, digital entrepreneurship is an effort to utilize information technology and business that the community is increasingly cultivating. Therefore, it is normal if, every day, many digital-based startups and online shops are

founded and provided various innovative options to the community. Some digital-based Indonesian startups have also painted the new dynamics of people's lives in the digital economy era.

Entrepreneurs in the tourism industry have started digitizing. Moreover, the COVID-19 pandemic has also accelerated the digitalization process to revive this industry immediately. Several stages are carried out in building digital entrepreneurship in the tourism industry. They first assisted in using websites, social media, and Google MyBusiness for promotions and reservations. The website aims to create stories about tourist destinations as a form of promotion. Websites must be responsive and accessible and have literacy and informative stories. The content on the website must be informative because it is often the primary reference for tourists before making a decision. Social media has the same function as the website as a promotional medium. Some social media platforms that are effectively used in promotion and have many users include Facebook, Instagram, Twitter, and TikTok.

Meanwhile, Google MyBusiness is a free application provided by Google to manage the existence of a tourist attraction/our business service. Google MyBusiness can also enhance the relationship between hosts and potential travelers online. The benefits of using Google MyBusiness include the following:

- i) Tourist attractions are becoming more popular and easily accessible to potential tourists.
- ii) Make it easier for tourists to find and go to tourist attraction locations because Google MyBusiness will list visiting hours, products sold, telephone numbers, and tourist attraction locations.
- iii) Make it easy for tourists to assess and provide an assessment or input on the tourism objects we manage.
- iv) Facilitate tourism destination managers in analyzing travel trends
- v) Increase sales and tourist visits.

Meanwhile, tourism industry players who still need the means of blogs, social media, and Google MyBusiness are provided with manufacturing facilities.

The second stage is establishing partnerships

with various parties. The tourism industry can never be up and running on its own. Tourism is in dire need of cross-sectoral collaboration so that the sustainability of its business continues. Collaboration can be done with local governments to develop a one-stop digital platform and create digital promotional content for regional tourism. Collaboration can also involve potential partners such as community photographers, travel bloggers, travel vloggers, Instagrammers, and partners with B2B (Business to Business) concepts—for example, online ticketing services, digital transactions (e-money), and marketplace cooperation models.

Third, the establishment of the Wonderful Startup Academy (WSA). The WSA program is a program for business startups in the tourism sector to develop their businesses. WSA is a business startup incubation program in the tourism sector in Indonesia. One of the program's goals is to create a tourism ecosystem that makes it easy for local and foreign tourists. This program includes education, mentoring, knowledge sharing, and market and business feasibility validation. In addition, this program can also help establish cooperation with investors, policymakers, fellow tourism businesses, and direct consumers. This program is the result of collaboration between several parties, such as the Ministry of Tourism and Creative Economy; the Ministry of Cooperatives and Small and Medium Enterprises; the International Council for Small Business (ICSB) Indonesia; Indigo Creative Nation; and several other foundations concerned with the development of startup businesses.

WSA has a short, solid, and effective program duration consisting of three stages. In the first stage, startups will receive one month of assistance in co-working (creative camp), then one month of incubation (creative center), and finally, one month of acceleration (creative capital). The benefits for startups who participate in this program are assistance from mentors. Mentors who are involved come from business people, government agencies, or academics who understand the startup world and small and medium industries that focus on the tourism sector. In addition, participants will also be exposed to networks and market access facilitated by the institutions that are members of the collaboration above.

The implementation of the WSA program is

carried out with a batch system. Each batch of this program improved the curriculum and requirements of startup participants. The requirements for startups that can participate in the WSA program include running a business for 1-2 years, having reasonably good transactions, and having products worth selling related to the tourism industry.

### Digital Entrepreneurship Strategy

The digitization of the tourism industry has become necessary for all industry players in the tourism era 4.0. In this era, all business fields related to tourism must be able to adapt according to the development of the industrial revolution 4.0 (Sudapet et al, 2021). Business development in the field of tourism in the Tourism 4.0 era is under the statements of Pereira & Romero (2017), and Peceny et al. (2019) must already use elements of technology as the main factor, such as IoT (Internet of Things), use of big data, Mobile Technology, Artificial Intelligent (AI), and others.

The era of Tourism 4.0 provides many conveniences through the use of technology. Therefore, a more suitable strategy is to work on millennial or Generation Y tourists in this era. The millennial generation usually wants all facilities done through applications, from booking travel tickets and hotels to tourist destinations. Based on demand opportunities, this segment is quite exciting. However, no infrastructure network is available from the destination or supply side. The Internet and wifi networks are not evenly distributed in every tourist destination, so there are still blank spots. In this era, all tourist needs must be accessible via smartphones (Nitsche et al, 2014). Tourists should be made easy when getting to tourist sites. Convenience must start from ordering travel tickets, choosing transportation, determining accommodation, to finding information about the intended tourist destination. In addition, convenience must also occur in the payment system through a cashless environment payment system or digital payments that can be made via smartphones. Digital entrepreneurship actors can easily carry out various facilities offered in the Tourism 4.0.

Digital entrepreneurship is multiplying due to the increasing number of internet users. Early in 2021, 202.6 million internet users in Indonesia increased 15.5 percent from the previous year.

Currently, Indonesia has a population of 274.9 million people. This increase indicates that Indonesia will have a 73.7 percent internet penetration rate in early 2021 (Kemp, 2021). Digital entrepreneurship is also growing due to the significant demographic factor of Indonesia's population. The large population becomes a potential market share for digital entrepreneurship actors.

In addition to these two factors, digital entrepreneurship is growing due to digitalization in the tourism industry. The digitization of the tourism industry makes company operations more effective and efficient. Even the digitization of the tourism industry has also increased social and economic productivity (Sartori et al, 2013; Farani et al, 2017). The process of digitizing the tourism industry pays excellent attention to comparative, competitive, and cooperative advantages. Comparative advantage emphasizes that companies use unique resources to be the best. Companies with unique resources can achieve the best value and compete domestically and internationally. Competitive advantage emphasizes that the company focuses on managing the tourism portfolio, providing excellent service to tourists, and differentiation in providing tourism services. Meanwhile, cooperative advantages emphasize more on partnerships between tourism industry players.

Although several factors become advantages in the growth of digital entrepreneurship in the tourism industry, a strategy is still needed to survive amid the situation and post-pandemic Covid-19. The strategies carried out by digital entrepreneurs in the tourism industry include the development of nomadic tourism, staycations, and storynomics tourism. Nomadic tourism is traveling to a tourist destination by staying for some time with portable and moveable amenities (Ab et al, 2020). This style of travel can be implemented if the tourist destination is potential enough, but the facilities and supporting capacity of amenities still need to be improved. Therefore, this nomadic tourism strategy is a solution for tourism industry managers.

The development of nomadic tourism is effortless and inexpensive. Procurement of access and amenities can be done using movable raw materials, but it is necessary to have



attractive tourist attractions. The mechanism of nomadic tourism can be a glam camp (glamorous camping), live onboard caravan, or home pod (Prabawa & Pertiwi, 2020). Glam camp is a form of modern camping that combines the essence of nature and adequate facilities. Glam camp provides as comfortable accommodation as staying at a five-star hotel. Another form of nomadic tourism is caravans. A caravan in the form of a hotel is designed to use a car. Caravans are mobile according to the wishes of tourists, with durations that can be daily or weekly. Hotels in the form of "caravans" can move to find the most beautiful tourist destination spots.

Meanwhile, the third nomadic tourism strategy is the home pod with characteristics similar to a caravan. The home pod is a house like an egg that has a rigid frame weighing up to two tons. Home Pod offers the concept of moving overnight, but the term can last six months or even a year.

The following strategy carried out by digital entrepreneurs is a staycation. Staycation is a strategy to attract tourists who need refreshment amid their busy work. Tourists can still work with the facilities of staying at the hotel. A staycation can also be an alternative to holiday trends amid a safe Covid-19 pandemic because it does not require tourists to visit crowded places. Staycation must be supported by safety and comfort factors (Belinda, 2020). The hotel must own safety and comfort standards. The hotel must have a globally recognized certificate so tourists can stay peacefully and comfortably.

The last strategy undertaken is storynomics tourism. This strategy prioritizes narrative, creative content, living culture, and the strength of culture as the destination's DNA. Storynomic tourism does not only introduce but also spreads the beauty of tourism widely (Bec et al, 2021). Storynomics tourism allows tourists to see a tourist attraction through images and videos that can present and turn on the imagination of tourists as if experiencing and feeling the actual situation (Waraney et al, 2017). Storynomic tourism can provide an overview of the beauty of Indonesia's natural and cultural charm in an exciting story.

Storynomics tourism is helpful for tourists to get information about tourist destinations before they visit directly. Storynomics tourism

can make potential tourists feel like they are in a destination they want (Huang et al, 2013). The Storynomics tourism strategy is a giant leap for the tourism sector in Indonesia. Because storynomics tourism indirectly makes people more literate and participates in adapting to technological developments. Storynomics tourism is also helpful for tourists who long to visit beautiful places in Indonesia and want to learn about various cultures in Indonesia.

## CONCLUSION AND RECOMMENDATION

Digital entrepreneurship in Indonesia is developed through several stages, including (1) Assistance in the use of websites, social media, and Google MyBusiness for promotions and reservations; (2) Establishing partnerships with various parties; and (3) Establishing the Wonderful Startup Academy. These three stages have produced new startups supporting the Tourism 4.0 era. Tourism 4.0 is the result of the adaptation of the Industrial Revolution 4.0 in the tourism sector, which makes the sector smarter to provide convenience and valuable experiences for tourists. In the era of Tourism 4.0, the Indonesian tourism industry experienced various problems. However, digital entrepreneurship actors have started to rise again by carrying out several strategies: nomadic tourism, virtual tourism, and staycation.

## REFERENCES

- Ab, A., Hasbi, A., Ridwan, M., Eppang, B. M., & Khalid, I. (2020). Optimization of Pencong Hot Springs Area in Gowa Regency of South Sulawesi, Indonesia. *Culture, People and Technology: The Driving Forces for Tourism Cities Proceedings of 8th ITSA Biennial Conference 2020*, 489.
- Anderson, J., & Rainie, L. (2020). Many tech experts say digital disruption will hurt democracy. *Pew Research Center*, 22.
- Avriyanti, S. (2021). Strategi Bertahan Bisnis di Tengah Pandemi Covid-19 Dengan Memanfaatkan Bisnis Digital (Studi Pada UKM yang Terdaftar Pada Dinas Koperasi, Usaha Kecil dan Menengah Kabupaten Tabalong). *Jurnal PubBis*, 5(1), 60–74. <https://doi.org/10.35722/pubbis.v5i1.380>
- Bec, A., Moyle, B., Schaffer, V., & Timms, K. (2021). Virtual reality and mixed reality for second chance tourism. *Tourism*

- Management*, 83, 104256.  
<https://doi.org/10.1016/j.tourman.2020.104256>
- Belinda, F. (2020). Culture Based Tourism Study in New Normal Era in Badung District. *International Review of Humanities Studies*, 5(2).
- BPS. (2021). Jumlah kunjungan wisman ke Indonesia bulan Desember 2020 mencapai 164,09 ribu kunjungan. *Berita Resmi Statistik*, 11/02/Th. XXIV, 1 Februari 2021.
- Davidson, E., & Vaast, E. (2010). Digital entrepreneurship and its sociomaterial enactment. *2010 43rd Hawaii International Conference on System Sciences*, 1–10.  
<https://doi.org/10.1109/HICSS.2010.150>
- 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.  
<https://doi.org/10.1016/j.techfore.2019.119791>
- Farani, A. Y., Karimi, S., & Motaghd, M. (2017). The role of entrepreneurial knowledge as a competence in shaping Iranian students' career intentions to start a new digital business. *European Journal of Training and Development*. <https://doi.org/10.1108/EJTD-07-2016-0054>
- Gangeshwer, D. K. (2013). E-commerce or Internet Marketing: A business Review from Indian context. *International Journal of U-and e-Service, Science and Technology*, 6(6), 187–194.  
<http://dx.doi.org/10.14257/ijunesst.2013.6.6.17>
- Ghezzi, A., & Cavallo, A. (2020). Agile business model innovation in digital entrepreneurship: Lean startup approaches. *Journal of Business Research*, 110, 519–537.  
<https://doi.org/10.1016/j.jbusres.2018.06.013>
- Ghosh, S., Hughes, M., Hughes, P., & Hodgkinson, I. (2021). Corporate Digital Entrepreneurship: Leveraging Industrial Internet of Things and Emerging Technologies. *Digital Entrepreneurship*, 183.  
[https://doi.org/10.1007/978-3-030-53914-6\\_10](https://doi.org/10.1007/978-3-030-53914-6_10)
- Giones, F., & Brem, A. (2017). Digital technology entrepreneurship: A definition and research agenda. *Technology Innovation Management Review*, 7(5).  
<https://doi.org/10.22215/timreview/1076>
- González-Reverté, F. (2019). Building sustainable smart destinations: an approach based on the development of Spanish smart tourism plans. *Sustainability*, 11(23), 6874.  
<https://doi.org/10.3390/su11236874>
- Hair, N., Wetsch, L. R., Hull, C. E., Perotti, V., & Hung, Y.-T. C. (2012). Market orientation in digital entrepreneurship: advantages and challenges in a Web 2.0 networked world. *International Journal of Innovation and Technology Management*, 9(06), 1250045.  
<https://doi.org/10.1142/s0219877012500459>
- Hermanto, B., & Suryanto, S. (2020). Business ecosystem policy for micro , small. *Academy of Entrepreneurship Journal*, 26(4), 1–7.  
<https://doi.org/10.5901/mjss.2017.v8n1p110>
- Huang, Y.-C., Backman, S. J., Backman, K. F., & Moore, D. (2013). Exploring user acceptance of 3D virtual worlds in travel and tourism marketing. *Tourism Management*, 36, 490–501.  
<https://doi.org/10.1016/j.tourman.2012.09.009>
- Jones, C., & Pimdee, P. (2017). Innovative ideas: Thailand 4.0 and the fourth industrial revolution. *Asian International Journal of Social Sciences*, 17(1), 4–35.  
<https://doi.org/10.29139/aijss.20170101>
- Kemp, S. (2021). Digital 2021: The latest insights into the 'State of Digital.' *We Are Social, Hootsuite. Pridobljeno s Https://Wearesocial.Com/Blog/2021/01/Digital-2021-the-Latestinsights-into-the-State-of-Digital*.
- Kopalle, P. K., Kumar, V., & Subramaniam, M. (2020). How legacy firms can embrace the digital ecosystem via digital customer orientation. *Journal of the Academy of Marketing Science*, 48(1), 114–131.  
<https://doi.org/10.1007/s11747-019-00694-2>
- Korže, S. Z. (2019). From Industry 4.0 to Tourism 4.0. *Innovative Issues and Approaches in Social Sciences*, 12(3), 541–1855.  
<https://doi.org/10.12959/issn.1855-0541.iiass-2019-no3-art3>
- Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. (2018). Digital entrepreneurship: A research agenda on new business models for the twenty-first century. *International*



- Journal of Entrepreneurial Behavior & Research*. <https://doi.org/10.1108/ijebr-06-2018-0425>
- Kurniati, P. S., & Suryanto, S. (2022). The Role of the Indonesian Government in the Era of Banking Disruption Innovation. *Journal of Eastern European and Central Asian Research (JEECAR)*, 9(1), 93–100. <https://doi.org/10.15549/jeecar.v9i1.881>
- Le Dinh, T., Vu, M. C., & Ayayi, A. (2018). Towards a living lab for promoting the digital entrepreneurship process. *International Journal of Entrepreneurship*, 22(1), 1–17.
- Lee, M., Yun, J. J., Pyka, A., Won, D., Kodama, F., Schiuma, G., Park, H., Jeon, J., Park, K., & Jung, K. (2018). How to respond to the fourth industrial revolution, or the second information technology revolution? Dynamic new combinations between technology, market, and society through open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 4(3), 21. <https://doi.org/10.3390/joitmc4030021>
- Muafi, M., Syafri, W., Prabowo, H., & Nur, S. A. (2021). Digital Entrepreneurship in Indonesia: A Human Capital Perspective. *Journal of Asian Finance, Economics and Business*, 8(3), 351–359. <https://doi.org/10.13106/jafeb.2021.vol8.no3.0351>
- Nadia, A., & Youssef, J. (2019). The typology of digital entrepreneurship in Morocco. *Indian Journal of Science and Technology*, 12(31), 1–6. <https://doi.org/10.17485/ijst/2019/v12i31/147274>
- Nitsche, P., Widhalm, P., Breuss, S., Brändle, N., & Maurer, P. (2014). Supporting large-scale travel surveys with smartphones—A practical approach. *Transportation Research Part C: Emerging Technologies*, 43, 212–221. <https://doi.org/10.1016/j.trc.2013.11.005>
- Ozturk, H. M. (2021). Technological Developments: Industry 4.0 and Its Effect on the Tourism Sector. In *Research Anthology on Cross-Industry Challenges of Industry 4.0* (pp. 1464–1487). IGI Global.
- Peceny, U. S., Urbančič, J., Mokorel, S., Kuralt, V., & Ilijaš, T. (2019). Tourism 4.0: challenges in marketing a paradigm shift. In *Consumer Behavior and Marketing*. IntechOpen.
- Pereira, A. C., & Romero, F. (2017). A review of the meanings and the implications of the Industry 4.0 concept. *Procedia Manufacturing*, 13, 1206–1214. <https://doi.org/10.1016/j.promfg.2017.09.032>
- Prabawa, I. W. S. W., & Pertiwi, P. R. (2020). The Digital Nomad Tourist Motivation in Bali: Exploratory Research Based on Push and Pull Theory. *Athens Journal of Tourism*, 7(3). <https://doi.org/10.30958/ajt.7-3-3>
- Richter, C., Kraus, S., Brem, A., Durst, S., & Giselbrecht, C. (2017). Digital entrepreneurship: Innovative business models for the sharing economy. *Creativity and Innovation Management*, 26(3), 300–310. <https://doi.org/10.1111/caim.12227>
- Sartori, R., Favretto, G., & Ceschi, A. (2013). The relationships between innovation and human and psychological capital in organizations: a review. *The Innovation Journal*, 18(3), 2. <https://doi.org/10.3389/fpsyg.2018.00313>
- Sharma, G. D., Thomas, A., & Paul, J. (2021). Reviving tourism industry post-COVID-19: A resilience-based framework. *Tourism Management Perspectives*, 37, 100786. <https://doi.org/10.1016/j.tmp.2020.100786>
- Sia, S. K., Soh, C., & Weill, P. (2016). How DBS Bank Pursued a Digital Business Strategy. *MIS Quarterly Executive*, 15(2).
- Spiegel, O., Abbassi, P., Zylka, M. P., Schlagwein, D., Fischbach, K., & Schoder, D. (2016). Business model development, founders' social capital and the success of early stage internet startups: a mixed-method study. *Information Systems Journal*, 26(5), 421–449. <https://doi.org/10.1111/isj.12073>
- Stankov, U., & Gretzel, U. (2020). Tourism 4.0 technologies and tourist experiences: a human-centered design perspective. *Information Technology & Tourism*, 22(3), 477–488. <https://doi.org/10.1007/s40558-020-00186-y>
- Sudapet, I. N., Nasihien, R. D., Setiawan, M. I., & Zulkifli, C. Z. (2021). e-Wisata Android App Designed for Tourism, Regional Gdp, and Tax of Regional Government Budget in Indonesia: The Context of Industrial Revolution 4.0. *International Journal of*

- EBusiness and EGovernment Studies*, 13(1), 202–219. <https://doi.org/10.1088/1755-1315/498/1/012110>
- Sunarsi, D., Suryani, N. L., & Jati, W. (2020). Covid-19 Pandemic Analysis Toward Productivity Giving Layoffs Effect in The Company of Industrial Sector around South Tangerang. *Prosiding ICoISSE*, 1(1), 472–481.
- Suryanto. (2019). Analysis of entrepreneurship ecosystem at university. In *Journal of Entrepreneurship Education* (Vol. 22, Issue 4).
- Suryanto, S., & Kurniati, P. S. (2020). Tourism Development Strategy in Indonesia. *Academy of Strategic Management Journal*, 19(6), 1–8. <https://doi.org/10.4108/aei.25-10-2019.2300545>
- Suryanto, S., Muhyi, H. A., Kurniati, P. S., & Mustapha, N. (2022). Banking financial performance in the industry financial technology era. *Journal of Eastern European and Central Asian Research (JEECAR)*, 9(5), 889–900. <https://doi.org/10.15549/jeecar.v9i5.1075>
- Sussan, F., & Acs, Z. J. (2017). The digital entrepreneurial ecosystem. *Small Business Economics*, 49(1), 55–73. <https://doi.org/10.1007/s11187-017-9867-5>
- Triwibowo, W. (2021). *Wonderin.id, Mendukung Digitalisasi Industri Pariwisata Indonesia*. Digitalbisa.Id. <https://www.digitalbisa.id/artikel/memajukan-pariwisata-indonesia-lewat-wonderinid-Nom2h>
- Urbach, N., Ahlemann, F., Böhm, T., Drews, P., Brenner, W., Schaudel, F., & Schütte, R. (2019). The impact of digitalization on the IT department. *Business & Information Systems Engineering*, 61(1), 123–131. <https://doi.org/10.1007/s12599-018-0570-0>
- Wahyono, Z., & Razak, M. A. A. (2020). Islamic Tourism in Southeast Asia: The Concept and its Implementation. *International Journal of Halal Research*, 2(2), 90–105. <https://doi.org/10.18517/ijhr.2.2.90-105.2020>
- Waraney, S. P. F., Tulenan, V., & Sinsuw, A. A. E. (2017). Pengembangan Virtual Tour Potensi Wisata Baru Di Sulawesi Utara Menggunakan Teknologi Video 360 Derajat. *Jurnal Teknik Informatika*, 12(1). <https://doi.org/10.35793/jti.12.1.2017.17851>
- Wirawan, P. E., Pujiastuti, S., Astuti, S., & Nyoman, N. (2020). Strategi Bertahan Hotel Di Bali Saat Pandemi Covid-19. *Jurnal Kajian Bali (Journal of Bali Studies)*, 579–602. <https://doi.org/10.24843/jkb.2020.v10.i02.p11>
- Yin, Z., Gong, X., Guo, P., & Wu, T. (2019). What drives entrepreneurship in digital economy? Evidence from China. *Economic Modelling*, 82, 66–73. <https://doi.org/10.1016/j.econmod.2019.09.026>
- Zarrouk, H., Sherif, M., Galloway, L., & El Ghak, T. (2020). Entrepreneurial orientation, access to financial resources and SMEs' business performance: The case of the United Arab Emirates. *The Journal of Asian Finance, Economics, and Business*, 7(12), 465–474. <https://doi.org/10.13106/jafeb.2020.vol7.no12.465>

#### ABOUT THE AUTHORS

Poni Sukaesih Kurniati, email:  
[poni.sukaesih@email.unikom.ac.id](mailto:poni.sukaesih@email.unikom.ac.id)

**Poni Sukaesih Kurniati**, Government Studies, Faculty of Social and Political Science, Universitas Komputer Indonesia, Bandung, Jawa Barat, Indonesia.

**Suryanto Suryanto**, Department of Business Administration, Faculty of Social and Political Science, Universitas Padjadjaran, Jawa Barat, Indonesia.