

## **Rural 4.0 Research Trend**

**I Nyoman Sudapet, Agus Sukoco, Elok Damayanti, Ani Wulandari and Amrun Rosyid**

Department of Management, Narotama University, Surabaya, Indonesia

**Ronny Durrotun Nasihien and Muhammad Ikhsan Setiawan**

Department of Civil Engineering, Narotama University, Surabaya, Indonesia

[ikhsan.setiawan@narotama.ac.id](mailto:ikhsan.setiawan@narotama.ac.id)

**Mohd Idrus Mohd Masirin**

Department of Civil Engineering, Universiti Tun Hussein Onn Malaysia, Malaysia

**Muhammad Isradi**

Department of Civil Engineering, Universitas Mercu Buana, Jakarta, Indonesia

**Paisal Halim and Syamsiah Badruddin**

Universitas Nasional, Jakarta, Indonesia

### **Abstract**

Digital rural development aims to encourage rural development through technology-based or digital platforms. This research was conducted descriptively based on SCOPUS.COM data, which obtained 249 documents with the title digital rural for the last five years. The United States has the most research articles on digital villages, followed by the United Kingdom, Australia, and India. The University of Aberdeen (U.K.) has the most research articles on the digital villages, followed by the University of the West of England (U.K.) and Shanghai University of Finance and Economics (China). The field of social studies is the favorite research article on digital villages, followed by computer science and engineering. The U.K. Research and Innovation have the most research funding sponsors in the digital village, followed by the Engineering and Physical Sciences Research Council (U.K.) and the U.S. Department of Health and Human Services. So digital rural development research growing fast nowadays.

### **Keywords**

Digital rural development, digital platforms, technology-based, social studies, computer science

### **1. Introduction**

Digital rural development aims to encourage rural development through technology-based or digital platforms. This research was conducted descriptively based on scopus.com data, which includes more than 1.7 billion references. Researchers obtained 249 rural digital documents over the last five years, where each indexed paper has an average of 10-15% more citations than its closest competitor. More cited references have a broader analysis of bibliometric and historical trends, a complete author profile, and a better h-index measure for authors who started publishing before 1996. Scopus is an abstract and citation-neutral database, which curated by independent subject matter experts. It puts powerful discovery and analytical tools in the hands of researchers, librarians, institutional research managers, and funders. Scopus generates precise citation search results and auto-updated researcher profiles, creating more prosperous relationships between people, published ideas, and institutions. In addition to protecting the integrity of the scientific record, Scopus makes the performance, ranking, and reputation of institutional research better. The collection of literature that Scopus draws on in its search for green, innovative or sustainable construction covers a wide range of topics. Descriptions and testing of construction materials accounted for a quarter of publications in 2018. Indexing terms related to energy efficiency and project planning are less frequent. It shows

that the Internet of Things has shown significant improvement in the last four years. (M.I. Setiawan, Abdullah, Lestari, & Yuniningsih, 2019).

## 2. Literature Review

Based on years 2018-2020 research papers, include:

- 1) Sudapet, I.N., Nasihien, R.D., Ibrahim, M.H.B.W., Sukoco, A., Setiawan, M. I. (2020). Tourism 4.0, digital-based tourism to improve the welfare of people in east java. *Proceedings of the 5th N.A. International Conference on Industrial Engineering and Operations Management*
- 2) Sudapet, I.N., Sukoco, A., bin Wan Ibrahim, M. H., Setiawan, M. I., & Bon, A. T. (2019). Indonesia research in tourism and digital tourism. *Proceedings of the International Conference on Industrial Engineering and Operations Management, November*
- 3) Sudapet, I.N., Sukoco, A., Ibrahim, M. H. B. W., & Setiawan, M. I. (2019). Exploring the mediating role of supply chain management between logistic management, supplier selection, supply chain planning, and sustainability supported the tourism business in Indonesia. *International Journal of Supply Chain Management*, 8(6).
- 4) Sudapet, I.N., Sukoco, A., & Setiawan, M. I. (2019). Influence of supply chain integration, practices, and visibility on modular design and supply chain agility supported maritime and tourism business in Indonesia. *International Journal of Supply Chain Management*, 8(6).
- 5) Sudapet, I.N., Sukoco, A., Setiawan, M. I., & Bon, A. T. (2019). Tourism, marine research in the world, and its impact in Indonesia. *Proceedings of the International Conference on Industrial Engineering and Operations Management, November*.
- 6) Sudapet, I Nyoman, Durrotun Nasihien, R., Wan Ibrahim, M. H., Ikhsan Setiawan, M., Lin, C., & Wiwoho Mudjanarko, S. (2020). Tourism, Accommodations, Food Services, and Regional GDP. *IOP Conference Series: Earth and Environmental Science*, 498, 012110. <https://doi.org/10.1088/1755-1315/498/1/012110>
- 7) Sudapet, N., Sukoco, A., Setiawan, M. I., Halim, P., Badruddin, S., Tuswoyo, Hidayat, A., Napitupulu, D., Abdullah, D., & Saleh, A. A. (2018). Small and medium enterprises, Central Business District (CBD) for accelerating regional development. *International Journal of Engineering and Technology(UAE)*, 7(3.6 Special Issue 6).

Researchers get information that Digital Rural Development in East Java, Indonesia, is multiplying nowadays from the above reference. Digital Rural Development supports supply chain management, logistics, supplier selection, supply chain planning, sustainability, small and medium enterprises, and Central Business District (CBD). Digital Rural Development research has shown significant improvement in the last five years.

## 3. Methods and Data Collection

Digital rural development aims to encourage rural development through technology-based or digital platforms. This research was conducted descriptively based on scopus.com data, which includes more than 1.7 billion references. Researchers obtained 249 rural digital documents over the last five years, where each indexed paper has an average of 10-15% more citations than its closest competitor. More cited references have a broader analysis of bibliometric and historical trends, a complete author profile, and a better h-index measure for authors who started publishing before 1996. Scopus is an abstract and citation-neutral database, which curated by independent subject matter experts. It puts powerful discovery and analytical tools in the hands of researchers, librarians, institutional research managers, and funders. Scopus generates precise citation search results and auto-updated researcher profiles, creating more prosperous relationships between people, published ideas, and institutions. In addition to protecting the integrity of the scientific record, Scopus makes the performance, ranking, and reputation of institutional research better. The collection of literature that Scopus draws on in its search for green, innovative or sustainable construction covers a wide range of topics. Descriptions and testing of construction materials accounted for a quarter of publications in 2018. Indexing terms related to energy efficiency and project planning are less frequent. It shows that the Internet of Things has shown significant improvement in the last four years. (M.I. Setiawan, Abdullah, Lestari, & Yuniningsih, 2019b). The analysis process uses (1) research country documents, (2) affiliation documents, (3) affiliation documents, and (4) funding sponsor documents



Figure 1. SCOPUS.COM the landscape

Figure 1 above shows the SCOPUS.COM landscape.

#### 4. Results and Discussion

First, the researcher obtained the state documents of the research. Most of the papers came from the United States with 48 articles, followed by Britain 31, Australia 27, India 27, China 25, Spain 14, South Africa 13, Canada 10, and Malaysia 10 documents. The United States has the most research articles on digital villages, followed by the United Kingdom, Australia, and India.

Documents by country or territory  
Compare the document counts for up to 15 countries/territories.

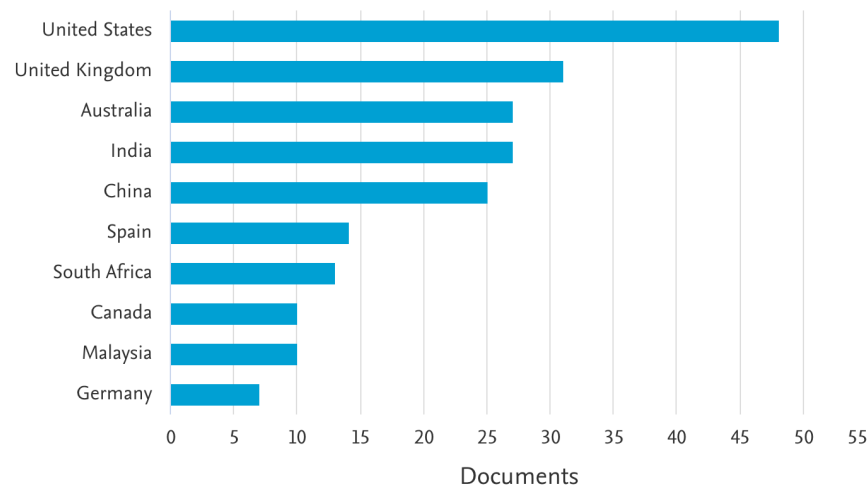


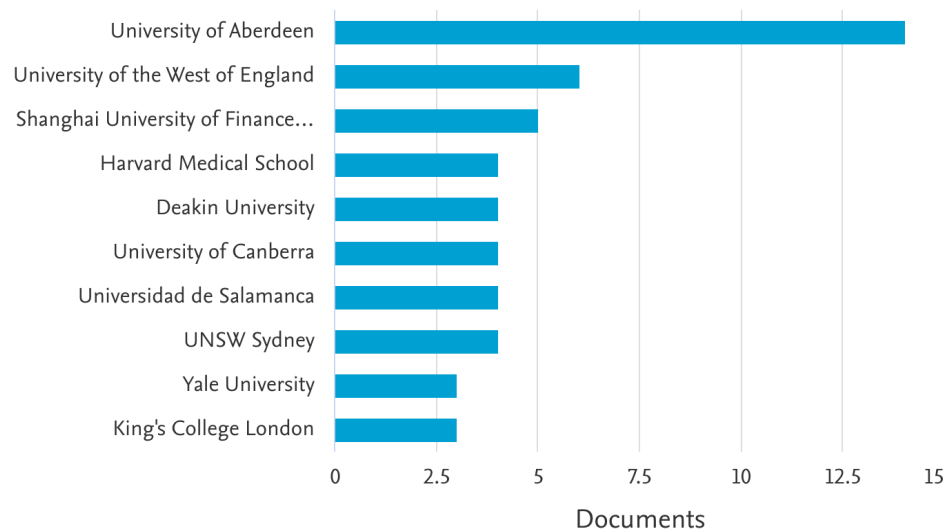
Figure 2. the documents of the research country

Figure 2 above shows the SCOPUS.COM the documents of the research country about Digital Rural Development Research.

Second, the researcher obtained affiliation documents. The University of Aberdeen contributed 14 papers. It was followed by the University of the West of England 6 documents, Shanghai University of Finance and Economics 5, Harvard Medical School 4, Deakin University 4, the University of Canberra 4, Universidad de Salamanca 4, and UNSW Sydney 4 documents. The University of Aberdeen (U.K.) has the most research articles on the digital villages, followed by the University of the West of England (U.K.) and Shanghai University of Finance and Economics (China).

### Documents by affiliation

Compare the document counts for up to 15 affiliations.

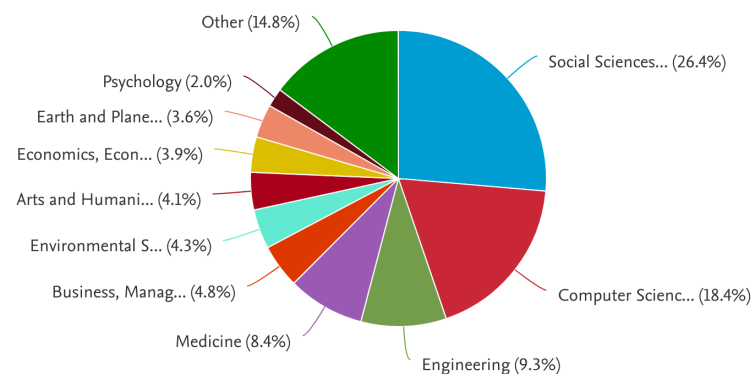


**Figure 3. the documents of the affiliation**

Figure 3 above shows the SCOPUS.COM the documents of the affiliation about Digital Rural Development Research.

Third, the researcher obtained the document of the field of study. Social Sciences contributed 116 documents, Computer Science 81, Engineering 41, Medicine 37, Business, Management and Accounting 21, Environmental Science 19, Arts and Humanities 18, Economics, Econometrics and Finance 17, and Earth and Planetary Sciences 16 documents. The field of social studies is the favorite research article on digital villages, followed by computer science and engineering.

### Documents by subject area

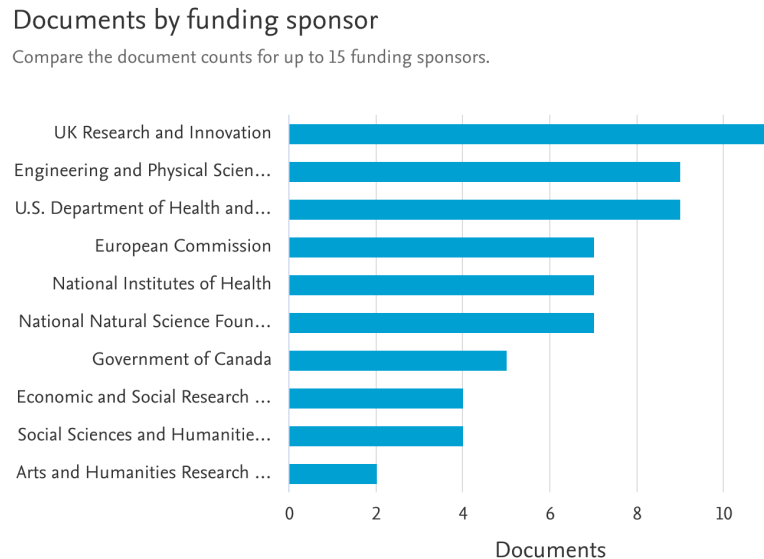


**Figure 4. the documents of the subject area**

Figure 4 above shows the SCOPUS.COM the documents of the subject area about Digital Rural Development Research.

Finally, researchers obtained funding sponsor documents—the U.K. Research and Innovation produced 11 documents, Engineering and Physical Sciences Research Council (U.K.) 9, U.S. Department of Health and Human

Services 9, European Commission 7, National Institutes of Health 7, National Natural Science Foundation of China 7, Government of Canada 5, Economic and Social Research Council (U.K.) 4, and the Social Sciences and Humanities Research Council of Canada 4 documents. The U.K. Research and Innovation have the most research funding sponsors in the digital village, followed by the Engineering and Physical Sciences Research Council (U.K.) and the U.S. Department of Health and Human Services.



**Figure 5. the documents of the funding sponsor**

Figure 5 above shows the SCOPUS.COM the documents of the funding sponsor about Digital Rural Development Research.

## 5. Conclusion

Digital rural development aims to encourage rural development through technology-based or digital platforms. This research was conducted descriptively based on SCOPUS.COM data, which obtained 249 documents with the title digital rural for the last five years. The United States has the most research articles on digital villages, followed by the United Kingdom, Australia, and India. The University of Aberdeen (U.K.) has the most research articles on the digital villages, followed by the University of the West of England (U.K.) and Shanghai University of Finance and Economics (China). The field of social studies is the favorite research article on digital villages, followed by computer science and engineering. The U.K. Research and Innovation have the most research funding sponsors in the digital village, followed by the Engineering and Physical Sciences Research Council (U.K.) and the U.S. Department of Health and Human Services. So digital rural development research growing fast nowadays.

## Acknowledgments

The authors thank to Direktorat Jenderal Pendidikan Tinggi Kementerian Pendidikan dan Kebudayaan Republik Indonesia, for their Grants Financial Support, Penelitian Terapan Unggulan Perguruan Tinggi scheme, 2021

## References

- Setiawan, M.I., Abdullah, D., Lestari, V. N. S., & Yuniningsih. (2019). Supply chain and sustainable fisheries development of portable inflated solar power cold storage house technology in Indonesia, bibliometric analysis. *International Journal of Supply Chain Management*, 8(6).
- Sudapet, I.N., Nasihien, R.D., Ibrahim, M.H.B.W., Sukoco, A., Setiawan, M. I. (2020). Tourism 4.0, digital-based tourism to improve the welfare of people in east java. *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management*, 3927–3933.
- Sudapet, I.N., Sukoco, A., bin Wan Ibrahim, M. H., Setiawan, M. I., & Bon, A. T. (2019). Indonesia research in tourism and digital tourism. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, November.

- Sudapet, I.N., Sukoco, A., Ibrahim, M. H. B. W., & Setiawan, M. I. (2019). Exploring mediating role of supply chain management between logistic management, supplier selection and planning of supply chain and sustainability, supported tourism business in Indonesia. *International Journal of Supply Chain Management*, 8(6).
- Sudapet, I.N., Sukoco, A., & Setiawan, M. I. (2019). Influence of supply chain integration, it practices and visibility on modular design and supply chain agility, supported maritime and tourism business in Indonesia. *International Journal of Supply Chain Management*, 8(6).
- Sudapet, I.N., Sukoco, A., Setiawan, M. I., & Bon, A. T. (2019). Tourism, maritime research in the world and its impact in Indonesia. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, November.
- Sudapet, I Nyoman, Durrotun Nasihien, R., Wan Ibrahim, M. H., Ikhsan Setiawan, M., Lin, C., & Wiwoho Mudjanarko, S. (2020). Tourism, Accommodations, Food Services, and Regional GDP. *IOP Conference Series: Earth and Environmental Science*, 498, 012110. <https://doi.org/10.1088/1755-1315/498/1/012110>
- Sudapet, N., Sukoco, A., Setiawan, M. I., Halim, P., Badruddin, S., Tuswoyo, Hidayat, A., Napitupulu, D., Abdullah, D., & Saleh, A. A. (2018). Small and medium enterprises, Central Business District (CBD) for accelerating of regional development. *International Journal of Engineering and Technology(UAE)*, 7(3.6 Special Issue 6).

## Biographies

**I Nyoman Sudapet** received his Bachelor of Economics (1986) from Universitas Surabaya, Indonesia, and Master of Management (2011) from Universitas Narotama, Surabaya, Indonesia. He is currently an Assistant Professor at the Department Management, Narotama University, Indonesia. He leads a research team in Sustainable, Digital Tourism and Regional Economic, a grant from Indonesia's Ministry of Education. He is also a Director of SURABAYA TV, Indonesia. He has been recognized as a professional broadcast and multimedia consultant with over 40 years of experience

**Agus Sukoco** is an Assistant Professor at the Faculty of Economics and Business, Universitas Narotama, Surabaya, Indonesia. He earned a Bachelor of Marine Engineering in faculty naval engineering from Institut Teknologi Sepuluh Nopember (1996), Master of Management Business from Narotama University (2006), and Doctoral of Management Business from STESIA Indonesia (2021). He has been recognized as a professional management business consultant with over 18 years of experience working with closely-held businesses. He is also Editor in Chief of IJEBD International Journal of Entrepreneurship and Business Development, indexed International DOAJ, as Head of Department Management, Narotama University, Indonesia.

**Elok Damayanti** graduated at Universitas Surabaya, Indonesia and then continued her study at Sekolah Tinggi Ilmu Ekonomi YAPAN, Surabaya, Indonesia. She completed her Master's Degree of Management at Narotama University, Surabaya, Indonesia. She focuses in Human Resources Management, Business English, Business Management and Business Administration. Previously she was a Head of Treasury at Public Service Commission, a government-own organization. At present she is a Lecturer at the Economy and Business Faculty at Narotama University. In addition, she is a Head of ASEAN Study Centre, responsible for the ASEAN cooperation, information and studies. Also as a Head of National Partnership, responsible for the domestic cooperation at the University.

**Ani Wulandari** received her Bachelor of Literature from Airlangga University (2008), Surabaya, Indonesia and Master of Management from Narotama University (2015), Indonesia. At present she is a lecturer of Management Major & Director of International Relations Office and International Class of Narotama University since 2011. Her forte in strategic management has led her into various researches in management and business field indexed in national and international journals. Her professional contributions expand Narotama University global outreach as well as international student management within the university.

**Amrun Rosyid** received his Bachelor of Mechanical Engineering (2002) from Sepuluh Nopember Institute of Technology (ITS), Surabaya, Indonesia and Master of Management (2018) from STIE YAPAN Surabaya. He is currently a Lecturer at the Faculty of Business and Management, Narotama University, Indonesia, and a Mendeley advisor and often gives workshops on reference managers. His research interests include Human Resource

Management, Strategic Management, and Tourism. He is also an International Journal Editor and often offers workshops on writing papers for international publications.

**Ronny Durrotun Nasihien** is an Assistant Professor at Faculty of Engineering, Universitas Narotama, Surabaya Indonesia. He earned a Bachelor of Architecture from Institut Teknologi Adhi Tama Surabaya, Indonesia (1997), Master of GIS from Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia (2011) and Doctoral of Management Business from STESIA Indonesia (2021). He has been recognized as a professional architecture and construction management consultant with over 20 years of experience.

**Muhammad Ikhsan Setiawan** received his Bachelor of Civil Engineering (1998) from Universitas Merdeka, Malang, Indonesia, and Master of Civil Engineering (2000) from Universitas Indonesia before pursuing a Doctor of Philosophy (Civil Engineering) at Universitas Tarumanagara, Indonesia (2018). He is currently an Assistant Professor at the Faculty of Civil Engineering, Narotama University, Indonesia, and registered as Engineer Expert Certified. He leads a research team in Sustainable and Digital for Transportation, Tourism, and Regional Economic, a grant from Indonesia's Ministry of Education. His research interests include Smart City and Sustainability. He is also a Chairman of WORLD CONFERENCE. I.D., IPEST commerce, SONGSONG ridt, member of IEEE, editors, and reviewers of some journals indexed in SCOPUS, DOAJ, CROSSREF, and GOOGLE. He is a Vice-Rector of Narotama University, Indonesia

**Mohd Idrus Mohd Masirin**, born in Kajang, Selangor, Malaysia on 7 April 1960. Mohd Idrus is a Professor in Transportation and Highway Engineering at Universiti Tun Hussein Onn Malaysia (UTHM). He received his Bachelor degree, BSc(Hons) Civil Eng. from Hanyang University, Seoul, South Korea in 1988 with a project 'Underground Structures for Railway Engineering. He then pursued his masters degree in Transportation and Highway Engineering (1995) at University of East London (UEL) on a project jointly researched with Imperial College and a PhD in Geotechnical Highways Engineering (2007) jointly researched with RAWELL LTD (Liverpool) also at UEL with a project titled 'Performance of Encapsulated Road Pavement on difficult ground condition'. He has a wide experience in lecturing at universities and polytechnics pertaining to subjects in the field of transportation, highways, geotechnics, railway engineering, construction, geo-environment, geomatics, traffic engineering and management.

**Muhammad Isradi**, born in Kandangan on 18 August 1972. He is the secretary of the Civil Engineering Department at Mercu Buana University. He earned a degree in Civil Engineering from Universitas Muhammadiyah Malang in 1998 with the thesis entitled "One-Way Flat Plate Planning at Ratu Plaza Madiun. He then obtained a Master's degree in Civil Engineering, Transportation Concentration from Brawijaya University in 2001 with a thesis entitled "Family Movement Awakening Model in Sawojajar Housing Area, Malang." He also teaches several subjects such as Pavement Planning, Geometric Road Planning, Transportation Planning, and Environmental Engineering.

**Paisal Halim** received a bachelor's degree in Social Science Education – Pancasila Moral Education (1985) from the Indonesian Teacher Training and Education Institute (IKIP), Masters in Humanities in 1997 from Hasanuddin University Makassar Indonesia, Doctor of Social Science Philosophy (Sociology) 2008 Hasanuddin University, Makassar Indonesia. Currently, he is a lecturer and professor in the postgraduate government administration study program at the National University of Jakarta, Indonesia. Actively providing various training and mentoring for young lecturers in writing journals, books and other scientific works related to the fields of sociology, government science and public policy at several universities in Indonesia. Currently, he is the President of IPEST (an international association of economic, social and technology researchers and founder of various e-journals: JILPR Indonesia Law and Policy Policy, IJESS International Journal of Education and Social Science. His research interests include Human Resource Management, development sociology, public policy, leadership, government science and tourism

**Syamsiah Badruddin** received her Bachelor of Education Administration (1987) from Institut Keguruan dan Ilmu Pendidikan (IKIP) Ujung Pandang, Indonesia and Master of Population And HR Development from Universitas Hasanuddin, Indonesia (1997) , before pursuing Doctor of Social Science at Universitas Hasanuddin, Indonesia (2004). She currently an Professor at Faculty of Social Science and Political Science, National University, Indonesia and registered as Certified International Human Capital Managemen (CIHCM). She currently leads a research team in Community Social Network As Engineering WFD (Work Form Dieng) The Economy During The

Implementation Of PPKM During The Covid-19 Pandemic, grant from National University, Indonesia. Her research interests include Social Entrepreneurship, Management and Supply Chain, Social Engineering and Tourism. She also a Member of IPEST commerce, ADRI, editors and reviewers some Journal of National University indexed GOOGLE, also until now as Chairman of Indonesian Institute of Public Policy Studies (LKKPI), South Sulawesi Province, Indonesia and as Head of International Journal and Publication Clinic at Faculty of Social Science and Political Science, National University, Indonesia.