



Database Management Infrastructure, Human Resources, Financing, and Equipment in The Sustainable Management of The Covid-19 Pandemic

Andjar Prasetyo¹(✉), Abdul Hamid², Bekti Putri Harwijayanti⁴, Herrukmi Septa Rinawati², Tri Weda Raharjo², Heri Wahyudianto³, Agustinus Hartopo³

¹Regional Development Planning Agency of Magelang City, Magelang, Indonesia
studidaerah@gmail.com

²Research and Development Agency of East Java Province, Surabaya, Indonesia

³Regional Development Planning Agency of Papua Province, Jayapura, Indonesia

⁴Poltekkes Kemenkes Semarang, Semarang, Indonesia

Abstract. Governance is one of the key priorities to suppress and document the statistical dynamics of the Covid-19 pandemic. However, poor governance increases the rate of the spread of COVID-19 and hinders the goal of suppressing COVID-19. The purpose of this paper is to place governance as a lever to improve the performance of the health sector, especially during the Covid-19 pandemic, and to strengthen the relationship between governance interventions and the health system's performance. Secondary statistical data in the form of Covid-19 parameters were presented in sequence for 463 days in 35 city districts in East Java Province, Indonesia which were analyzed with tiered data source governance parameters. Four pillars for analysis in the form of a database/mapping of Covid-19 infrastructure and services; Basic data of human resources; Information on the financing of Covid-19 services; and a database of equipment, supplies, and commodities, developed as a continuation of the handling of covid-19. The findings of this paper are that conceptualization in the form of a Covid-19 data source governance model needs to be driven by stakeholders sustainably as a strong safeguard against suppressing the Covid-19 rate. Further research is needed to explore and develop the conceptual thinking behind Health governance on a wider scale.

Keywords: Infrastructure, Human Resources, Financing, Sustainable Management, Covid-19 Pandemic.

1 Introduction

Governance in an organization is an important part of maintaining the continuity of the process so that the organization [1]–[3] runs efficiently and effectively concerning pre-determined plans and targets to be achieved. Scientific interest in governance already had its portion long before the emergence of the Covid-19 Pandemic [4]–[7], even though it was in a heterogeneous realm, for example, governance is viewed with an ethical factor approach, a process of maturing an organization, governance inhibiting factors, how innovation intervenes in organizational governance. Then from the per-

© The Author(s) 2024

Z. B. Pambuko et al. (eds.), *Proceedings of the 4th Borobudur International Symposium on Humanities and Social Science 2022 (BIS-HSS 2022)*, Advances in Social Science, Education and Humanities Research 778,

https://doi.org/10.2991/978-2-38476-118-0_20

spective of psychology, the emergence of the character of knowledge hiding in organizations. The importance of external factors [8], [9], besides the internal context within the organization, especially those that will lead to the development of innovation [10]–[17]. Budgetary participation and compensation indirectly influence government performance through organizational commitment, and efforts to increase employee organizational loyalty are increasingly the focus of research efforts and are recognized as important factors for effective talent management and organizational development. Organizations are also beginning to suggest necessary mechanisms to provide an appropriate regulatory environment for talent and leadership growth. In global developments, governance has a significant role, for example, in the Covid-19 Pandemic.

The Covid-19 pandemic has shocked all parts of the world, causing drastic changes to behavior and models of interaction between humans. Many aspects can be learned as a result of the Covid-19 Pandemic, humans are required to be able to survive and get through the storm of the Covid-19 Pandemic by seeking practical and systemic solutions. become one of the key priorities for suppressing and documenting the statistical dynamics of the Covid-19 pandemic. However, poor governance has contributed to increasing the rate of spread of COVID-19 and hindering the goal of suppression of COVID-19.

The purpose of this paper is to position governance as a lever to improve health sector performance, especially during the Covid-19 pandemic, and to strengthen the relationship [18] between governance interventions and health system performance, through a qualitative descriptive research method approach.

2 Method

This study uses a description of the quality of data obtained from secondary sources. Secondary statistical data in the form of Covid-19 parameters are presented sequentially for 463 days in thirty-five urban districts in East Java Province, Indonesia. Analyze with tiered data source governance parameters. The four pillars of analysis are database/mapping of Covid-19 infrastructure and services; basic data of human resources; information on Covid-19 service financing; and a database of equipment, supplies, and commodities, developed as a continuation of the response to Covid -19. Previously it was also described the quantity of Covid-19 victims in East Java Province, Indonesia which was categorized in the number of positive victims exposed to Covid-19, the number of victims recovered due to exposure to Covid-19, the number of victims who died due to Covid-19 and the number of victims in recovery due to exposure to Covid-19.

3 Result and Discussion

Handling a pandemic that is occurring globally requires interaction [8], [19], [20] both internally and externally with the organization [21]–[25], in addition to that, it needs coordination and communication from relevant stakeholders to find solutions, especially from the health, economic, and management side in planning, organization, implementation, and evaluation on an ongoing basis.

3.1 Covid in East Java Province

The Covid-19 Task Force for East Java Province, like other regions in Indonesia, also globally, has documented the dynamics of Covid-19 daily, at least consisting of positive victims exposed, recovered, and died. The complexity in handling Covid-19 in East Java Province is marked by a wave of efforts made by the government and related stakeholders. The graph of covid-19 cases in East Java can be seen in Fig. 1. The spike in positive victims exposed to Covid-19 occurred starting in June 2020 has reached 9,019 people compared to May 2020 which reached 2,841 people, meaning an increase of 341%. The number of positive victims exposed to Covid-19 continued to increase until May 2022 which reached 585,375 people.

However, the increase in the number of positive victims exposed to Covid-19, with tiered and joint efforts, can cure and reduce the number of positive victims exposed to Covid-19. The number of victims who recovered from exposure to Covid-19 began to be linear in August 2020 with a ratio of 82% between the number of victims who were positively exposed to Covid-19 and the number of victims who recovered from exposure to Covid-19. Even though there was a spike in the death toll from Covid-19 in July 2022.

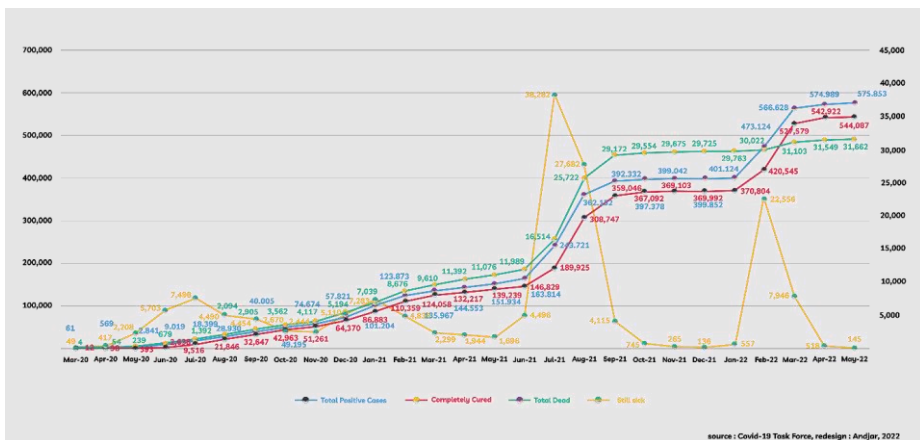


Fig. 1. Total Positive Cases, Total Recoveries, Total Deaths, Still Sick Due to Covid-19 in East Java Province from Mar-2020 to May-2022

The efforts of the East Java Provincial government in dealing with Covid-19 refer to provisions from the central government. Various policies [2], [26]–[38] and programs were launched in overcoming Covid-19 as well as the impact caused by Covid-19. Policies related to the prevention and control of the Covid-19 pandemic are carried out by the central government. It was first announced on March 2, 2020, followed up by the government establishing a Covid-19 national disaster on March 14 2020 in Presidential Decree Number 7 of 2020 concerning the Task Force for the Acceleration of Handling Covid-19. The formation of a task force for accelerating the handling of Covid-19 was then formed, with controllers from the National Disaster Management Agency, which was complemented by four elements of ministries as directors, namely the Coordinating

Ministry of Human Development and Culture, Coordinating Minister for Political, Legal, and Security Affairs, Minister of Health, and Minister of Finance. The formation of this task force was followed up in East Java Province. This context provides an initial reference for health protocols, working from home, and adaptation to new habits. In addition, organizational-based innovation emerged, and research in various important areas of expertise was carried out in anticipating the spread of Covid-19.

The most important rescue and healing efforts are the availability of referral hospitals in handling Covid-19. Referral hospitals in the handling of Covid-19 have been prepared to spread across regencies/cities in East Java Province in a total of ninety-nine locations. Referral hospitals are also integrated with the community [39]–[44] through the Covid-19 Task Force online by providing information related to the capacity and capacity of the hospital. Meanwhile, to increase public immunity, vaccination [45] is carried out in stages with priority categories of vaccine recipients that have been standardized by the government.

3.2 Database Management Infrastructure, Human Resources, Financing, and Equipment

The governance [46]–[50] perspective in this study is limited to Covid-19 infrastructure and services; basic data of human resources; Covid-19 service financing information; and a database of equipment, supplies, and commodities that have the potential to be developed as a continuation of the handling of Covid-19.

Infrastructure [51]–[54] and services [53], [55]–[61] for Covid-19 are characterized by the existence of a tiered list of national, provincial, and urban districts based on information technology regarding public and private sector health facilities. Each health facility has been assigned a unique identifier code that allows the aggregation of facility data. Technical aspects eg global positioning satellite coordinates are included in the facility database [45], [62]–[64] for most facilities. Services handled are based on human resources and equipment that periodically maintain and update databases and maps. Data age assurance is important in maintaining the accuracy and validity of information, national facility databases are updated in various timeframes, less than one year ago, two to three years ago, and more than three years ago. In more detailed conditions, such as in districts/cities, maps are available showing the location of health infrastructure, health workers, and main health services. Coordination and communication [65]–[73] within national and regional scale organizations in evaluating physical access to services by linking information about the location of health facilities and health services with population distribution is an important aspect.

Basic data on human resources [74]–[80] is characterized by the availability of a unified and integrated national human resources (HR) database that tracks the number of health professionals, both the main professional categories working in the public or private sectors, the professional categories in both the public and private sectors, the professional categories but only those who work in the public sector or private sector need to be provided regularly and lead to a more complete professional HR database. Within institutional [81] boundaries, there is a national database that tracks the annual number of graduates from all Health training institutions. In managing the HR database, it is necessary to maintain and update the national HR database regularly. In time limit, national HR database statistics on the number of public sector health professionals were

last updated less than one year ago, two three years ago, four to five years ago and six years ago or more.

Covid-19 service financing [82]–[85] information is characterized by financial accountability and transparency available for general government spending on health, private spending on health (and its components), and external spending on health. In maintaining the continuity of financing information, information technology [23], [86]–[90] interventions are also ensured, in the form of a system to track budgets and expenditures from all financial sources (general government including social [47], [91]–[95] security and local government, donors, health insurance, foreign aid, grants). An integrated system capable of presenting tiered financial accuracy and validity based on the national, provincial, and district/city levels. Handling efforts to maintain the continuity of information are ensured that it is handled by long-term professionals who meet the requirements and in sufficient numbers, regularly devoted to handling information on Covid-19 service financing, referring to sources, agents, providers, and the information function of Covid-19 service financing. Categories for the character of Covid-19 victims, for example, positive exposure, positive recovery, death, and still recovering are converted with information about health expenditures based on the character of the victim, the area of handling Covid-19 health vaccinations, geographical area, and/or target population.

The equipment, supplies, and commodity [96]–[98] databases are characterized by the obligation of facility managers to regularly report on the inventory and status of physical equipment and infrastructure. In the reporting process, accurate and valid information is presented, including reporting stocks of health commodities (medicines, vaccines, supporting tools for handling Covid-19, supplies to support handling Covid-19) periodically by standardized policies. The technical aspects are handled with certainty by human resources who are skilled enough to manage the logistics of equipment, supplies, and commodities. Governance includes the periodicity and completeness of reporting on physical equipment and infrastructure, the periodicity and completeness of reporting on Health commodities is a priority in an integrated management arrangement in this database.

4 Conclusion

The findings of this paper are that the covid-19 that occurred in East Java Province is linear with the conditions of other regions in Indonesia, the number of positive exposure to Covid-19, the number recovered from exposure to Covid-19, the number who died from Covid-19 and the number of victims in the healing of Covid -19 indicates conditions are getting better. The acceleration of the government and related stakeholders in handling Covid-19 has consequences and benefits for the management of handling Covid-19 which relatively still needs to be improved. Conceptualization in the form of a governance model for Covid-19 data sources needs to be encouraged by stakeholders on an ongoing basis as a strong safeguard to reduce the rate of Covid-19. There is a lot of governance in handling the Covid-19 pandemic, but at least these four aspects become literacy in handling Covid-19 and have the potential in handling other pandemics that are not expected to occur in the future. The four aspects are Covid-19 infrastructure and services; basic data of human resources; Covid-19 service financing information;

and a database of equipment, supplies, and commodities that have the potential to be developed as a continuation of the handling of Covid-19.

Further research is needed to explore and develop the conceptual thinking behind Health governance on a broader scale. The potential to mature governance in handling Covid-19 can be a model used for anticipating and handling pandemics. The limitations of this study open up the potential for more in-depth studies and analysis of parameters in a quantitative context that facilitates governance in the health sector and other fields.

References

1. H. Supriadi, "ORGANISASI PEMBELAJARAN (LEARNING ORGANIZATION)," no. 1996. Lembaga Administrasi Negara, Jakarta, p. 6, 2021.
2. P. Chiu, G. G. Cummings, S. Thorne, and K. Schick-Makaroff, "Policy Advocacy and Nursing Organizations: A Scoping Review," *Policy Polit Nurs Pract*, vol. 22, no. 4, pp. 271–291, 2021, doi: 10.1177/15271544211050611.
3. C. Alaimo and J. Kallinikos, "Organizations Decentered: Data Objects, Technology and Knowledge," *Organization Science*, vol. 33, no. 1, pp. 19–37, 2022, doi: 10.1287/ORSC.2021.1552.
4. N. Petrosillo, G. Viceconte, O. Ergonul, G. Ippolito, and E. Petersen, "COVID-19, SARS and MERS: are they closely related?," *Clinical Microbiology and Infection*, vol. 26, no. 6, pp. 729–734, 2020, doi: 10.1016/j.cmi.2020.03.026.
5. C. W. Purnomo, W. Kurniawan, and M. Aziz, "Technological review on thermochemical conversion of COVID-19-related medical wastes," *Resour Conserv Recycl*, vol. 167, no. December 2020, p. 105429, 2021, doi: 10.1016/j.resconrec.2021.105429.
6. F. ur Rehman, H. Ismail, B. M. al Ghazali, M. M. Asad, M. S. Shahbaz, and A. Zeb, "Knowledge management process, knowledge based innovation: Does academic researcher's productivity mediate during the pandemic of covid-19?," *PLoS One*, vol. 16, no. 12 December, pp. 1–20, 2021, doi: 10.1371/journal.pone.0261573.
7. D. P. Bruns, N. V. Kraguljac, and T. R. Bruns, "COVID-19: Facts, Cultural Considerations, and Risk of Stigmatization," *Journal of Transcultural Nursing*, vol. 31, no. 4, pp. 326–332, 2020, doi: 10.1177/1043659620917724.
8. A. Prasetyo, B. Putri Harwijayanti, M. N. Ikhwan, M. Lukluil Maknun, and M. Fahlevi, "Interaction of Internal and External Organizations in Encouraging Community Innovation," *Front Psychol*, vol. 13, Jul. 2022, doi: 10.3389/fpsyg.2022.903650.
9. B. I. Ehikioya, A. E. Omankhanlen, G. O. Osuma, and O. I. Inua, "Dynamic relations between public external debt and economic growth in African countries: A curse or blessing?," *Journal of Open Innovation: Technology, Market, and Complexity*, vol. 6, no. 3, Sep. 2020, doi: 10.3390/JOITMC6030088.
10. M. M. D. C. Bermúdez and M. D. Fernández, "Innovation-oriented government management: Context and characterization of the model," *Universidad y Sociedad*, vol. 13, no. 1, pp. 6–16, 2021.
11. X. Tao and Y. Li, "Innovation-supporting effect of government versus private venture capital: Evidence from Chinese listed companies," *African and Asian Studies*, vol. 19, no. 3, pp. 245–281, 2020, doi: 10.1163/15692108-12341459.
12. P. Rondé and C. Hussler, "Innovation in regions: What does really matter?," *Res Policy*, vol. 34, no. 8, pp. 1150–1172, Oct. 2005, doi: 10.1016/J.RESPOL.2005.03.011.
13. S. S. Makgopa, "Drivers of Service Innovation in Service Organisations," *Academic Journal of Interdisciplinary Studies*, vol. 10, no. 2, pp. 45–53, 2021, doi: 10.36941/ajis-2021-0037.
14. A. Prasetyo, H. Asmoro, H. Sipahutar, D. Nuryadin, and C. S. Wibowo Budi, "Human Resource Productivity Development Strategy in the Regional Innovation Process," *Atlantis Press*, 2020.

15. A. Prasetyo, B. Putri Harwijayanti, M. N. Ikhwan, M. Lukluil Maknun, and M. Fahlevi, "Interaction of Internal and External Organizations in Encouraging Community Innovation," *Front Psychol*, vol. 13, Jul. 2022, doi: 10.3389/fpsyg.2022.903650.
16. G. Pushpananthan and M. Elmquist, "Joining forces to create value: The emergence of an innovation ecosystem," *Technovation*, vol. 115, no. January, p. 102453, 2022, doi: 10.1016/j.technovation.2021.102453.
17. H. Jiang, S. Gao, S. Zhao, and H. Chen, "Competition of technology standards in Industry 4.0: An innovation ecosystem perspective," *Syst Res Behav Sci*, vol. 37, no. 4, pp. 772–783, 2020, doi: 10.1002/sres.2718.
18. A. Prasetyo, H. Wahyudianto, and A. Hartopo, "Measurement of Partnerships, External Relations and Networks in Building Districts in Jayapura Regency," *Advances in Social Science, Education and Humanities Research Proceedings of the 3rd Borobudur International Symposium on Humanities and Social Science 2021 (BIS-HSS 2021)*, Dec. 2022, doi: 10.2991/978-2-494069-49-7_28.
19. O. Wulandono, E. Rustiadi, and M. Ardiansyah, "Spatial Interaction Based on Sub-District Development Index in Pandeglang Regency," *Economics Development Analysis Journal*, vol. 10, no. 1, pp. 1–11, 2021, doi: 10.15294/edaj.v10i1.40708.
20. L. Georgeson, M. Maslin, and M. Poessinouw, "The global green economy: a review of concepts, definitions, measurement methodologies and their interactions," *Geo: Geography and Environment*, vol. 4, no. 1. Blackwell Publishing Ltd, Jan. 01, 2017. doi: 10.1002/geo2.36.
21. C. Martin-rios, C. Poretti, and G. B. Derchi, "Three anchoring managerial mechanisms to embed sustainability in service organizations," *Sustainability (Switzerland)*, vol. 14, no. 1, 2022, doi: 10.3390/su14010265.
22. S. Pradhan and V. Nanniyur, "Large scale quality transformation in hybrid development organizations – A case study," *Journal of Systems and Software*, vol. 171, Jan. 2021, doi: 10.1016/j.jss.2020.110836.
23. F. Awamleh and A. Ertugan, "The Relationship Between Information Technology Capabilities, Organizational Intelligence, and Competitive Advantage," *Sage Open*, vol. 11, no. 2, 2021, doi: 10.1177/21582440211015201.
24. W. Kucharska, "Leadership, culture, intellectual capital and knowledge processes for organizational innovativeness across industries: the case of Poland," *Journal of Intellectual Capital*, vol. 22, no. 7, pp. 121–141, 2021, doi: 10.1108/JIC-02-2021-0047.
25. [25] A. Prasetyo, D. Gartika, A. Hartopo, B. P. Harwijayanti, S. Sukamsi, and M. Fahlevi, "Capacity Development of Local Service Organizations Through Regional Innovation in Papua, Indonesia After the COVID-19 Pandemic," *Frontiers in Psychology*, vol. 13. Frontiers Media S.A., May 30, 2022. doi: 10.3389/fpsyg.2022.912692.
26. A. V. Das, "People to policy: The promise and challenges of big data for India," *Indian J Ophthalmol*, vol. 69, no. 11, pp. 3052–3057, Nov. 2021, doi: 10.4103/ijo.IJO_1045_21.
27. L. Ekman Burgman, "What sewage sludge is and conflicts in Swedish circular economy policymaking," *Environ Sociol*, vol. 8, no. 3, pp. 292–301, 2022, doi: 10.1080/23251042.2021.2021603.
28. C. Leuz, "Evidence-based policymaking: promise, challenges and opportunities for accounting and financial markets research**," *Accounting and Business Research*, vol. 48, no. 5, pp. 582–608, Jul. 2018, doi: 10.1080/00014788.2018.1470151.
29. J. M. Lewis, M. McGann, and E. Blomkamp, "When design meets power: Design thinking, public sector innovation and the politics of policymaking," *Policy Polit*, vol. 48, no. 1, pp. 1–20, 2020, doi: 10.1332/030557319X15579230420081.
30. N. Schmid, S. Sewerin, and T. S. Schmidt, "Explaining Advocacy Coalition Change with Policy Feedback," *Policy Studies Journal*, vol. 48, no. 4, pp. 1109–1134, 2020, doi: 10.1111/psj.12365.

31. [31] E. Bell, A. H. Fryar, and T. Johnson, "Exploring public perceptions of nonprofit policy advocacy," *Nonprofit Policy Forum*, vol. 12, no. 2, pp. 311–340, 2021, doi: 10.1515/npf-2019-0052.
32. D. Mauliana, A. Razak, M. Arie, F. Patittingi, and S. Sulawesi, "Discretion and Decentralization: Framing Government Policy in Regional Innovation Policies," *Journal of Law, Policy and Globalization*, vol. 97, no. 2014, pp. 30–37, 2020, doi: 10.7176/jlpg/97-05.
33. Erna Irawati, "Membuat policy brief yang efektif." Lembaga Administrasi Negara, Jakarta, 2021.
34. A. Prasetyo and H. Sipahutar, "Impact of Policy and Economy on Market Aspects in Regional Competitiveness in Central Java," *The 4th International Conference on Regional Development Rural Development in Urban Age: Do Rural-Urban Linkages Matter?*, 2020.
35. A. Prasetyo *et al.*, "Comparison of Innovation Processes In The Perspective of Local Government Policy and Regional Competitiveness," *Riset Ekonomi Pembangunan*, vol. 5, no. 1, 2020, doi: 10.31002/rep.v5i1.
36. A. Prasetyo and D. Gartika, "Spatial Economy Approach to Assess the Effectiveness of Poverty Treatment Policy Models and Regional Economic Impacts," in *IOP Conference Series: Earth and Environmental Science*, Nov. 2021, vol. 887, no. 1. doi: 10.1088/1755-1315/887/1/012019.
37. H. Lundin and L. Geschwind, "Exploring tuition fees as a policy instrument of internationalisation in a welfare state—the case of Sweden," *European Journal of Higher Education*, vol. 0, no. 0, pp. 1–19, 2021, doi: 10.1080/21568235.2021.1994867.
38. K. Maharjan and D. Chaudhary, "Scenario and policy of Decent Nutrition and Food Security in the Post-Covid-19 in Nepal," *Journal La Sociale*, vol. 2, no. 1, pp. 10–17, 2021, doi: 10.37899/journal-la-sociale.v2i1.251.
39. L. Jungsberg *et al.*, "Key actors in community-driven social innovation in rural areas in the Nordic countries," *J Rural Stud*, vol. 79, no. September 2018, pp. 276–285, 2020, doi: 10.1016/j.jrurstud.2020.08.004.
40. C. Bradley, "The Role of Institutional Repositories in the Dissemination and Impact of Community-Based Research," *Evid Based Libr Inf Pract*, vol. 16, no. 3, pp. 18–31, 2021, doi: 10.18438/eblip29972.
41. A. Setiawan and Y. Christiani, "Integrated Health Post for Child Health (Posyandu) As A Community-Based Program in Indonesia: An Exploratory Study," *Jurnal Keperawatan Indonesia*, vol. 21, no. 3, pp. 150–158, 2018, doi: 10.7454/jki.v21i3.600.
42. E. M. Dunne *et al.*, "Investigation and public health response to a COVID-19 outbreak in a rural resort community—Blaine County, Idaho, 2020," *PLoS One*, vol. 16, no. 4 April, pp. 1–12, 2021, doi: 10.1371/journal.pone.0250322.
43. P. Heins, L. M. M. Boots, W. Q. Koh, A. Neven, F. R. J. Verhey, and M. E. de Vugt, "The effects of technological interventions on social participation of community-dwelling older adults with and without dementia: A systematic review," *J Clin Med*, vol. 10, no. 11, 2021, doi: 10.3390/jcm10112308.
44. [44] R. Indra Priambada, R. Hidayat, and W. Purwanto, "Evaluation of Community Empowerment Program Based on Community Satisfaction Index," *E3S Web of Conferences*, vol. 232, 2021, doi: 10.1051/e3sconf/202123201009.
45. E. Mathieu *et al.*, "A global database of COVID-19 vaccinations," *Nat Hum Behav*, vol. 5, no. 7, pp. 947–953, 2021, doi: 10.1038/s41562-021-01122-8.
46. J. S. Winter, "AI in healthcare: Data governance challenges," *Journal of Hospital Management and Health Policy*, vol. 5, no. March. AME Publishing Company, Mar. 01, 2021. doi: 10.21037/jhmhp-2020-ai-05.
47. L. M. Kyazze, I. N. Nkote, and J. Wakaisuka-Isingoma, "Cooperative governance and social performance of cooperative societies," *Cogent Business and Management*, vol. 4, no. 1, 2017, doi: 10.1080/23311975.2017.1284391.

48. T. H. Oliver *et al.*, “Knowledge architecture for the wise governance of sustainability transitions,” *Environ Sci Policy*, vol. 126, no. March, pp. 152–163, 2021, doi: 10.1016/j.envsci.2021.09.025.
49. S. Y. Tan and A. Taeiagh, “Smart city governance in developing countries: A systematic literature review,” *Sustainability (Switzerland)*, vol. 12, no. 3, 2020, doi: 10.3390/su12030899.
50. Z. Xu, “Social Governance Structure Construction and Resource Allocation Methods under the Management Mode of the Internet of Things,” *Wirel Commun Mob Comput*, vol. 2021, 2021, doi: 10.1155/2021/7963311.
51. I. Aviv, I. Hadar, and M. Levy, “Knowledge management infrastructure framework for enhancing knowledge-intensive business processes,” *Sustainability (Switzerland)*, vol. 13, no. 20, 2021, doi: 10.3390/su132011387.
52. I. Bartomeus and L. v. Dicks, “The need for coordinated transdisciplinary research infrastructures for pollinator conservation and crop pollination resilience,” *Environmental Research Letters*, vol. 14, no. 4, 2019, doi: 10.1088/1748-9326/ab0cb5.
53. M. Ersoy Mirici, “The Ecosystem Services and Green Infrastructure: A Systematic Review and the Gap of Economic Valuation,” *Sustainability (Switzerland)*, vol. 14, no. 1, 2022, doi: 10.3390/su14010517.
54. B. Ozaydin, F. Zengul, N. Oner, and S. S. Feldman, “Healthcare Research and Analytics Data Infrastructure Solution: A Data Warehouse for Health Services Research,” *J Med Internet Res*, vol. 22, no. 6, pp. 1–16, 2020, doi: 10.2196/18579.
55. S. Potra, A. Pugna, R. Negrea, and M. Izvercian, “Customer Perspective of Value for Innovative Products and Services,” *Procedia Soc Behav Sci*, vol. 238, pp. 207–213, 2018, doi: 10.1016/j.sbspro.2018.03.025.
56. D. D’Amato, M. Rekola, M. Wan, D. Cai, and A. Toppinen, “Effects of industrial plantations on ecosystem services and livelihoods: Perspectives of rural communities in China,” *Land use policy*, vol. 63, pp. 266–278, Apr. 2017, doi: 10.1016/j.landusepol.2017.01.044.
57. D. R. Singh *et al.*, “Impact of COVID-19 on health services utilization in Province-2 of Nepal: a qualitative study among community members and stakeholders,” *BMC Health Serv Res*, vol. 21, no. 1, pp. 1–14, 2021, doi: 10.1186/s12913-021-06176-y.
58. A. G. Suleiman, S. S. Umar, Z. S. Babandi, A. A. Olorukooba, and U. M. Umar, “Assessing the capacity of primary health care centres to provide tuberculosis services in Kaduna State, North-Western Nigeria,” *Int J Community Med Public Health*, vol. 8, no. 9, p. 4155, 2021, doi: 10.18203/2394-6040.ijcmph20213512.
59. A. A. Allam, A. N. AbuAli, F. M. Ghabban, O. Ameerbakhsh, I. M. Alfadli, and A. S. Al-raddadi, “Citizens Satisfaction with E-Government Mobile Services and M-Health Application during the COVID-19 Pandemic in Al-Madinah Region,” *Journal of Service Science and Management*, vol. 14, no. 06, pp. 636–650, 2021, doi: 10.4236/jssm.2021.146040.
60. J. Farokhzadian, N. Dehghan Nayeri, and F. Borhani, “The long way ahead to achieve an effective patient safety culture: Challenges perceived by nurses,” *BMC Health Serv Res*, vol. 18, no. 1, Aug. 2018, doi: 10.1186/s12913-018-3467-1.
61. D. O’Neill, J. de Vries, and C. M. Comiskey, “Leadership and community healthcare reform: a study using the Competing Values Framework (CVF),” *Leadership in Health Services*, vol. 34, no. 4, pp. 485–498, 2021, doi: 10.1108/LHS-01-2021-0007.
62. J. Felipe and S. Fullwiler, “Adb covid-19 policy database: A guide,” *Asian Dev Rev*, vol. 37, no. 2, pp. 1–20, 2020, doi: 10.1162/adev_a_00147.
63. J. A. Teixeira da Silva, P. Tsigaris, and M. Erfanmanesh, “Publishing volumes in major databases related to Covid-19,” *Scientometrics*, vol. 126, no. 1, pp. 831–842, 2021, doi: 10.1007/s11192-020-03675-3.
64. R. Butcher, M. Sampson, R. J. Couban, J. E. Malin, S. Loree, and S. Brody, “The currency and completeness of specialized databases of COVID-19 publications,” *J Clin Epidemiol*, vol. 147, pp. 52–59, 2022, doi: 10.1016/j.jclinepi.2022.03.006.

65. M. Gordeladze, "What Is 'Strategic Communications'?" *Vectors of Social Sciences*, vol. 1, no. 1, pp. 100–114, 2021, doi: 10.51895/vss1/gordeladze.
66. D. Y. Bazarkina and E. N. Pashentsev, "Brics strategic communication: The present and the future," *Russia in Global Affairs*, vol. 19, no. 3, pp. 64–93, 2021, doi: 10.31278/1810-6374-2021-19-3-64-93.
67. D. Tamitiadini, W. W. Asmara Dewi, and I. Adila, "Inovasi Model Mitigasi Bencana Non Struktural Berbasis Komunikasi, Informasi, Koordinasi Dan Kerjasama," *Jurnal Komunikasi*, vol. 13, no. 1, pp. 41–52, 2019, doi: 10.21107/ilkom.v13i1.5216.
68. A. Špoljarić, "Managing Crisis Communication Via Social Media," *Naše gospodarstvo/Our economy*, vol. 67, no. 1, pp. 23–32, 2021, doi: 10.2478/ngoe-2021-0003.
69. R. Palmieri and S. Mazzali-Lurati, "Strategic Communication with Multiple Audiences: Polyphony, Text Stakeholders, and Argumentation," *International Journal of Strategic Communication*, vol. 15, no. 3, pp. 159–176, 2021, doi: 10.1080/1553118X.2021.1887873.
70. S. FRUNZA and I. GRAD, "The Role of Ethical Factors in Organizational Communication," *Postmodern Openings*, vol. 11, no. 1, pp. 178–194, 2020, doi: 10.18662/po/114.
71. D. Gupta, N. Jai P, and J. S. Yadav, "Strategic Communication in Health and Development: Concepts, Applications and Programming," *J Health Manag*, vol. 23, no. 1, pp. 95–108, 2021, doi: 10.1177/0972063421994943.
72. C. Kearns and N. Kearns, "The role of comics in public health communication during the COVID-19 pandemic," *J Vis Commun Med*, vol. 43, no. 3, pp. 139–149, 2020, doi: 10.1080/17453054.2020.1761248.
73. G. H. Seo, M. Itoh, and Z. Li, "Strategic Communication and Competitive Advantage: Assessing CEO Letters of Global Airline Alliances," *Foundations of Management*, vol. 13, no. 1, pp. 57–72, 2021, doi: 10.2478/fman-2021-0005.
74. L. Muñoz-Pascual, J. Galende, and C. Curado, "Contributions to sustainability in smes: Human resources, sustainable product innovation performance and the mediating role of employee creativity," *Sustainability (Switzerland)*, vol. 13, no. 4, pp. 1–20, 2021, doi: 10.3390/su13042008.
75. "Human Res Mgmt Journal - 2021 - Collings - Leading through paradox in a COVID-19 world Human resources comes of age.pdf."
76. A. R. Yusefi, M. Sharifi, N. sadat Nasabi, E. R. Davarani, and P. Bastani, "Health human resources challenges during COVID-19 pandemic; evidence of a qualitative study in a developing country," *PLoS One*, vol. 17, no. 1 1, pp. 1–20, 2022, doi: 10.1371/journal.pone.0262887.
77. L. Tomčíková, N. Svetozarovová, J. Cocolová, and Z. Danková, "The impact of the global covid-19 pandemic on the selected practices of human resources management in the relationship to the performance of tourism companies," *GeoJournal of Tourism and Geosites*, vol. 35, no. 2, pp. 525–530, 2021, doi: 10.30892/GTG.35233-680.
78. A. S. Adikaram, H. P. R. Priyankara, and N. P. G. S. I. Naotunna, "Navigating the Crises of COVID-19: Human Resource Professionals Battle Against the Pandemic," *South Asian Journal of Human Resources Management*, vol. 8, no. 2, pp. 192–218, 2021, doi: 10.1177/23220937211018021.
79. E. Bazant *et al.*, "Effects of a performance and quality improvement intervention on the work environment in HIV-related care: A quasi-experimental evaluation in Zambia," *Hum Resour Health*, vol. 12, no. 1, pp. 1–11, 2014, doi: 10.1186/1478-4491-12-73.
80. M. R. Azizi, R. Atlasi, A. Ziapour, J. Abbas, and R. Naemi, "Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach," *Heliyon*, vol. 7, no. 6, p. e07233, 2021, doi: 10.1016/j.heliyon.2021.e07233.
81. A. Prasetyo, H. Wahyudianto, and A. Hartopo, "Strategy for Developing Institutional Service Models for Regional Innovation in Indonesia," *Advances in Social Science, Education and Humanities Research Proceedings of the 3rd Borobudur International Symposium on*

- Humanities and Social Science 2021 (BIS-HSS 2021)*, Dec. 2022, doi: 10.2991/978-2-494069-49-7_27.
82. H. H. Omar and M. E. Yusoff, "Central bank impact on practicing Mudarabah financing in Islamic banks: The case of Tanzania," *Banks and Bank Systems*, vol. 14, no. 1, pp. 81–93, 2019, doi: 10.21511/bbs.14(1).2019.08.
 83. M. Behzadifar, M. K. Ghanbari, A. Bakhtiari, M. Behzadifar, and N. L. Bragazzi, "Ensuring adequate health financing to prevent and control the COVID-19 in Iran," *Int J Equity Health*, vol. 19, no. 1, pp. 4–7, 2020, doi: 10.1186/s12939-020-01181-9.
 84. E. Robert, V. Ridde, D. Rajan, O. Sam, M. Dravé, and D. Porignon, "Realist evaluation of the role of the Universal Health Coverage Partnership in strengthening policy dialogue for health planning and financing: A protocol," *BMJ Open*, vol. 9, no. 1, pp. 1–9, 2019, doi: 10.1136/bmjopen-2018-022345.
 85. M. A. Afandi, "Contribution of Islamic Commercial Bank Financing to East Java Economic Growth in the Era of Branchless Banking," *Journal of Economics Research and Social Sciences*, vol. 5, no. 1, pp. 1–12, 2021, doi: 10.18196/jerss.v5i1.10926.
 86. A. Kouvonen, L. Kemppainen, E. L. Ketonen, T. Kemppainen, A. Olakivi, and S. Wrede, "Digital information technology use, self-rated health, and depression: population-based analysis of a survey study on older migrants," *J Med Internet Res*, vol. 23, no. 6, 2021, doi: 10.2196/20988.
 87. R. Sepahvand, M. A. Aciny, and M. H. Azadi, "The effect of strategic learning on information capital strengthening with the mediating role of organizational knowledge architecture case study: Knowledge base companies of Tehran science and technology park," *Iranian Journal of Information Processing and Management*, vol. 36, no. 3, pp. 893–920, 2021, doi: 10.52547/jipm.36.3.893.
 88. M. M. Ziezo, J. O. Osakwe, U. Martin, and G. Iyawa, "Challenges of Implementing Big Data Technology in Higher Institutions," *Journal of Information Systems and Informatics*, vol. 3, no. 3, 2021, [Online]. Available: <http://journal-isi.org/index.php/isi>
 89. A. Suliman and J. Rankin, "Maturity-based mapping of technology and method innovation in off-site construction: Conceptual frameworks," *Journal of Information Technology in Construction*, vol. 26, no. February, pp. 381–408, 2021, doi: 10.36680/j.itcon.2021.021.
 90. A. Lefebvre, B. Bakhtiari, and M. Spruit, "Exploring research data management planning challenges in practice," *IT - Information Technology*, vol. 62, no. 1, pp. 29–37, Feb. 2020, doi: 10.1515/itit-2019-0029.
 91. K. Onitsuka, "How social media can foster social innovation in disadvantaged rural communities," *Sustainability (Switzerland)*, vol. 11, no. 9, 2019, doi: 10.3390/su11092697.
 92. M. Berg-Weger and T. Schroepfer, "COVID-19 Pandemic: Workforce Implications for Gerontological Social Work," *J Gerontol Soc Work*, vol. 63, no. 6–7, pp. 524–529, 2020, doi: 10.1080/01634372.2020.1772934.
 93. S. Jeong *et al.*, "Correlations between forgetfulness and social participation: Community diagnosing indicators," *Int J Environ Res Public Health*, vol. 16, no. 13, 2019, doi: 10.3390/ijerph16132426.
 94. N. N. Yuliarmi, M. Dunggio, and I. N. M. Yasa, "Improving public welfare through strengthening social capital and cooperative empowerment," *Cogent Business and Management*, vol. 7, no. 1, 2020, doi: 10.1080/23311975.2020.1841075.
 95. T. M. Klein, V. Andrees, N. Kirsten, K. Protz, M. Augustin, and C. Blome, "Social participation of people with chronic wounds: A systematic review," *Int Wound J*, vol. 18, no. 3, pp. 287–311, 2021, doi: 10.1111/iwj.13533.
 96. A. K. Andaneswari and Q. Rohmadiena, "The Disruption of Personal Protection Equipment Supply Chain: What Can We Learn from Global Value Chain in the Time of Covid-19 Outbreak?," *Global South Review*, vol. 2, no. 2, p. 171, 2021, doi: 10.22146/globalsouth.63287.
 97. C. Sundgren, "Circular supply chain relationships for food redistribution," *J Clean Prod*, vol. 336, no. December 2021, p. 130393, 2022, doi: 10.1016/j.jclepro.2022.130393.

98. V. Zikria, "Area Analysis of Commodity and Contribution of Coffee to Regional Development in Central Aceh Regency," *Jurnal Social Economic of Agriculture*, vol. 9, no. 2, p. 92, 2020, doi: 10.26418/j.sea.v9i2.42966.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

