

How to Cite

Endrawati, T., Sutjiatmo, B. P., Murti, A. K., Widodo, A., & Nawiyah, N. (2022). Technology-based HR management to optimize MSME product and service marketing. *International Journal of Business, Economics & Management*, 5(3), 143-150. <https://doi.org/10.21744/ijbem.v5n3.1913>

Technology-Based HR Management to Optimize MSME Product and Service Marketing

Titin Endrawati

Politeknik APP Jakarta, Indonesia

Corresponding author email: titinendrawati@gmail.com

Bayu Prabowo Sutjiatmo

Politeknik APP Jakarta, Indonesia

Email: bayups@gmail.com

Aji Kresno Murti

Politeknik APP Jakarta, Indonesia

Email: ajikresno@gmail.com

Anung Widodo

Politeknik APP Jakarta, Indonesia

anung4pp@gmail.com

Nawiyah

Politeknik APP Jakarta, Indonesia

Email: iyahapp79@gmail.com

Abstract---Technology-based human capital management, such as digital applications, is part of efforts to maximize the marketing of small business products and services. It discusses the management of science and technology-based marketing innovations that need to be encouraged. This study discusses the role of human resource management and its advantages in the technology sector to support the development of small business marketing so that people's businesses can continue to be sustainable and support the increase in the country's foreign exchange. This study also analyzes the data on the drivers of MSMEs based on technology innovation that we collect from various scientific reports and technology studies from various application contexts in the field. We collect data electronically from several scientific publications in the form of books and other literature, which we analyze with a phenomenological approach to get valid findings. We propose a technology-laden HR management model for business people, especially the marketing of small business products in Indonesia, transitioning from traditional marketing to innovative strategies that can be continuously supported. The results of this analysis will later assist in studying marketing innovation updates for small business products and services in future HR studies and training.

Keywords---HR management, optimizing marketing, SMEs, technology.

Introduction

Discussions of business product marketing models continue to attract more enthusiasts, ordinary researchers, academics, and business people (Suryana et al., 2013). However, studies of technological innovations in increasing sales of small and medium-sized business products based on data from reports and literature are very little done. Various studies show that MSMEs managed with management based on human resources and technology are more likely to succeed than small businesses or MSMEs managed by conventional marketing systems (Kim et al., 2021;

Hu & Wang, 2014; Brewster, 2004). This is possible because Indonesia's average MSME is still under traditional governance. However, in an era that is now increasingly easy to find technology in every individual, it is not wrong for MSME managers to be empowered and, in other words, train their human resources by leading to technology optimization in the form of marketing applications so that MSME management data in the era of all applications can be adopted into MSME governance in Indonesia today (Teece, 2010).

Adopting technology-based HR governance for MSME operations in Indonesia is believed that the percentage of successful MSMEs that adopt technology applications in marketing products will increase in the future (Shah et al., 2020). So finally, technology-based MSME HR management and the application of digital techniques can optimize the achievement of profits and the sustainability of small businesses in the country. Although there are many assumptions that HR governance is only essential for large-scale business operations, this is not true. Precisely with good HR management of a business, it is slowly becoming big and big, which was previously included in the list of small businesses, because of their success in HR management of their employees, they are finally included in the list of big businesses (Krishnan & Scullion, 2017). So the assumption above is just a myth and does not need to be used as a basis for thinking about MSMEs. The truth is that MSMEs have to move from a traditional business mindset that is run as-is to a business mindset with initiative thinking and big dreams with all its might to make small businesses big in the future.

Small businesses in many developed countries such as Europe, the USA, and the Middle East are still managed by extensive business management that emphasizes HR management for employees who can work (Lin et al., 2009; Gardiner et al., 2002). The fact is that in the country, the number of small businesses is enormous compared to large companies such as state-owned enterprises, which are managed with rigorous management, must get the deal to be significant by implementing small business management, which must get attention from many parties such as the government or non-government organizations. So that this small community business is also backed up with the management of its employee resources so that the growth and support of its human resources can be improved (Ng et al., 2012). In economic practice, when employee HR management mistakes are considered trivial, this is the forerunner of losing the opportunity to become a big business in the future (Krishnan et al., 2022). Many business people in Indonesia do not understand the importance of managing HR for their employees; they do not even want to know that all big businesses that grew were started by proper employee HR management. Many business success stories that previously became big are sometimes not imitated by small business managers, especially in maintaining human resources with potential employees with the skills they have to support their small business operations (Wang, 2013).

This clarifies that the worth of even private ventures is essential in the financial chain, and HRM rehearses, when associated with limited scope associations, can aid the enrollment and inspiration of the best ability in the business. HRM goes about as an aide for organizations to make fantastic expert associations with workers. Un linkage among the board and representatives creates disarray and an absence of understanding. HRM assuages all administration worries by assuming the liability of recruiting representatives and guaranteeing that they work following the assumptions for the business. It additionally guarantees that the standards set by various observing associations (private or public) are followed by the organization (Anand et al., 2021).

Esteem HRM and respect for people is an important issue. HRM goes about as an aide for organizations to make fantastic expert associations with representatives. Un linkage among the executives and representatives creates disarray and an absence of understanding. HRM assuages all administration worries by assuming the liability of recruiting representatives and guaranteeing that they work following the assumptions for the business (Eggers, 2020; Consoli, 2012; Lin & Lin, 2016). It likewise guarantees that the organization follows the guidelines and standards set by various checking associations, whether private or public (AlQershi et al., 2020). The following justification for why SMEs are hard to create is because of low and restricted administration limits and HR or HR. Many elements can influence the limit of the board and HR; for example, in making business plans and budgets, a reasonable arrangement should be made when owners need to maintain a specific business, for example, an SME. This incorporates how much capital, creation, venture, and benefit must be arranged appropriately. This plan is vital to avoid misfortunes and get financial backers, so a decent, alluring, and precise marketable strategy and financial plan should be finished. If the arrangement is not possessed, then, at that point, the business is run will likewise be challenging to create (Adla et al., 2019).

Another reason for SMEs' low performance is low tech capability. These days, innovation has grown quickly and meaningfully affects numerous things, including SMEs. With the advancement of innovation, the web, and cutting-edge business, many individuals will utilize the executive's framework. On the off chance that a business entertainer does not can do computerized showcasing or IT, it will unquestionably have an adverse consequence, like trouble in creating. There are so many things that should be possible utilizing innovation, for example, growing organizations,

creating organizations to expanding showcasing. Thus, fostering their SMEs will be troublesome when business entertainers cannot exploit innovation (Nura et al., 2012). Based on the preliminary explanation above and the identification of problems that occur in technology-based HR management of MSME employees to optimize the marketing of their products and services, we carry out this study to find scientific evidence that has been published from various contexts of application of small business HR governance based on technology in both academic and industrial contexts (Selwyn,2003; Roure & Keeley, 1990). So considering that there are quite a several MSME drivers in Indonesia who still carry out their traditional MSME operations, that is, with little involvement in promotions and operational systems that are supported by various digital applications, which today are not only used in business, but these digital applications also penetrate business or personal needs technology, users (Bissola & Imperatori, 2013). So the capacity factor for digital-based HR managers to maximize sales through marketing and services for MSMEs requires in-depth studies and discussions by reviewing various scientific publications in the form of business success stories and management best practices among large and small business people both inside and outside the country whose findings they found has been made public in various journals and book publications (Adla et al., 2019). So to make it easier to prove the problem of this study, how important is the HR management of MSME employees based on digital applications, the steps we take are to review and analyze many literature and information related to the two variables, namely technology-based HR governance management and efforts to maximize profit and sustainability of MSMEs in the form of marketing their products and services (Sudarmo, 2020). So once again, we understand that the purpose of this study is to gain a deep understanding of what and how the management of human resources for MSME employees based on modern technology is an effort to maximize profits and sustainability of MSMEs, especially the promotion of their products and services (Prasanna et al., 2019).

Research Method

Based on the preliminary explanation above and the identification of problems that occur in technology-based HR management of MSME employees to optimize the marketing of their products and services, we carry out this study to find scientific evidence that has been published from various contexts of application of small business HR governance based on technology in both academic and industrial contexts. So considering that there are quite a several MSME drivers in Indonesia who still carry out their traditional MSME operations, that is, with little involvement in promotions and operational systems that are supported by various digital applications, which today are not only used in business, but these digital applications also penetrate business or personal needs technology users (Moeuf et al., 2017).

We have structured this study with a structure, among others; in this method section, we describe research steps focusing on technology-based HR governance to increase productivity and marketing services for MSMEs. We describe the explanations of digital-based MSME governance technology innovation models based on a review of many literature sources, books, and scientific articles that discuss digital technology-based MSME employee HR governance issues (Purbaningsih et al., 2021). This section also explains how we get information and literature electronically from literature sources. Then we select based on problem identification to get the essence of understanding that answers the content of the problems of this study by considering valid and convincing data findings (Indrawati, 2020).

Furthermore, in this section, we also explain the analysis process, which involves data coding techniques to analyze in-depth and evaluate the data qualitatively, and finally, we can make it a study found. This study entirely depends on secondary data from publications, as we mentioned above. In searching data, we use keywords such as digital applications for marketing MSME products and application techniques that can innovate the marketing of business products. In compiling the final report, we summarize the findings by looking at examples of reports that have been carried out in various publications of literature review articles. Thus this paper goes through the stages of data collection, analysis, and reporting results (Eze et al., 2019).

Result and Discussion

In this section, the study will present the results of a review of several publications, both good and bad, books, scientific articles, and other literature sources related to the issue of governance of digital marketing applications to increase the effectiveness and benefits of MSME governance, especially the marketing of other products and services.

Technological uses trends in business practice

The first finding is that since digital technology has become a trend among business people such as MSMEs, business work is slowly being called a digital economic governance pattern influenced by the arrival of a global pandemic (Kurniawati et al., 2021). Since then, the MSME drivers in Indonesia and other countries have experienced a period of change or business transformation because small businesses in Indonesia are still run as they are. So, since digital transformation has become something phenomenal, the readiness of MSMEs to manage human resources has become one of the determinants of business success. Another problem is how MSMEs can prioritize technology during the pandemic.

Then the attitude and willingness of MSME managers toward digital-based promotional and marketing applications are one of the determining factors, meaning that not all MSME actors are ready to adopt marketing mechanisms from conventional to technology (Aziz, 2019). Likewise, other difficulties that change the business management pattern must adapt to technology acceptance so that changes and the phenomenon of digital-based application transformation for marketing business products and services continue to innovate their business. The conclusion of their study, among others, is that technology that innovates marketing is an absolute must among small businesses. Most small business drivers are very receptive to the arrival of technology, but due to limitations, they cannot fully adopt it into their business. So small business actors will find obstacles, namely the difficulty of adapting and combining both digital and conventional marketing, so their business can survive even in difficult times due to the impact of the pandemic (Rosmadi et al., 2019).

Furthermore, increasing small businesses is the primary goal of the economy in Indonesia and other countries. However, because today's business must be run with expertise and understanding, the quality of human resources for business managers is a priority (Vedhathiri, 2020). This is because of the existence of small businesses that are run by the community and are entrepreneurial, so support in many ways is highly expected, namely support for strengthening digital application-based human resources that can renovate businesses that focus on technology-based marketing management governance because they understand that technology can accelerate and able to compete with other companies operating in an increasingly advanced world. So the issue of human resource development technology in the MSME arena is an issue that must be planned and also evaluated to see how far the human resource management of MSME managers has been able to solve problems such as their difficulty in adopting technology into business governance, especially in the marketing and marketing and promotion department so that the existence of their business, although small, is believed to continue to grow (Behl et al., 2022).

The technological challenge in business operational

On the other hand, we also find that MSMEs experience challenges in running their businesses, even though the state recognizes that small businesses are the spearhead of the national economy. Policies to respond to the pandemic where business activities such as MSME operations must be carried out remotely or assisted by digital applications that are indeed high-tech for small business actors. So the discussion in their study about the challenges of MSMEs is that they want to know the extent to which digital marketing innovations can be applied (Affandi et al., 2020). They consider that a business that is managed by relying on data or marketing that relies on digital applications is a job that requires a relatively long adaptation process, such as working on data analysis, presenting data, and evaluating how the business faces challenges, which means that it is not only hands-on mastery of technology applications. However, another challenge arising in Indonesia is the issue of finances. So here, the challenges faced are very diverse, from the ability to apply technology to the ability to finance because MSMEs are affected or affected by the pandemic (Susila et al., 2022).

Furthermore, to increase the productivity of MSME businesses, which are currently experiencing reasonably rapid growth, opportunities are needed to train employees to improve and even create job vacancies to look for other jobs (Singh, 2019). On the other hand, with the emergence of technology that continues to accelerate and make competition in the small business sector even more unstoppable, these MSMEs need to be protected so that they can continue to move forward with a situation of concern about the critical role played by MSMEs in improving the economy in Indonesia. So, the government and other private sectors can provide solutions to small businesses to survive increasingly competitive challenges (Ausat & Suherlan, 2021). Many other studies say that mastery of information technology is essential to improving the performance of MSMEs in Indonesia. So here we can understand that in helping MSMEs prevent failure but achieve success, the implementation of technology that can innovate small business operations and marketing needs to be continued because understanding is the most valuable in the dimensions of implementing digital marketing applications where businesses must have a technology-based

work system. Which they can adopt into MSMEs so that profits and sustainability can be expected (Islami et al., 2020).

Small businesses as a source of state revenue

Next, we understand from several analyzes of the existence of MSMEs, including stating that MSMEs are the pillars of the national economy in Indonesia, where MSMEs are essential contributors to increasing GDP (Anatan, 2021). Because the existence of MSMEs is proven to provide up to 90% of employment even when a pandemic hits Indonesia. However, in the era of technology, many MSMEs expect that MSMEs can be saved from the challenges they have, especially in the ability to adopt technology for promotion and other operations. For small businesses to survive, they are required not only to improve their performance and solid competitive ability, but they also have to be ready to compete in business, in other words, using technology. So it can be said that being a small business in this technological revolution era is an opportunity to upgrade the abilities of MSME entrepreneurs to continue with their knowledge. In the end, we also understand that the knowledge they have from various sources must be able to support MSMEs to be successful and sustainable (Purnamawati & Yuniarta, 2021).

There is a subsequent analytical study; the author also finds that small businesses in Indonesia are businesses that support the smooth running of the national economy. However, it is unfortunate that they still operate conventionally, so they cannot compete with larger businesses because most small businesses have been unable to optimize their capabilities and performance due to their weak ability to apply technology (Lumunon et al., 2021). This happens because of the weak support from the government for the existence of MSMEs in an era where the economy is increasingly liberalizing due to globalization, forcing MSMEs to move in place. So we found that for MSMEs to survive, they need to be supported by the latest innovations and technologies, primarily to facilitate operations and marketing. This is important because technology is a way of working for SMEs that can quickly respond to problems and break through the market. In the end, we see that it is essential to apply technology to MSMEs so that they can compete. In other words, the determining factor for the success of MSMEs is the ability to adopt technological innovations and collaborations that allow MSME management governance to coexist and compete. That is, among other things, what determines MSMEs to survive in the global era and a very liberal economy in Indonesia (Singh et al., 2015).

Entrepreneurs with technological skills

Furthermore, Susanti (2017), highlight how to empower small businesses to become entrepreneurs with technological skills so they can compete and work together in business. In her study, Susanti evaluated the workability of small businesses in Indonesia and found various weaknesses and obstacles in 8 small businesses in Indonesia. He revealed that the gaps that occur among small businesses are a barrier to the success of small businesses, where he explained the weaknesses of small businesses, for example, the availability of business premises, then the ability of employees, as well as operational and financial problems as well as building business networking. With several problems they face, this finding recommends that the government has a high strategic policy to help small businesses in Indonesia expand their business and manage their human resources. They have become more flexible in funding and, finally, small businesses in Indonesia. They can slowly survive and become successful. These are among the weaknesses that the average small business in Indonesia has in an increasingly advanced era where digital marketing-based data management skills are essential (Pujiati, 2021).

Next, our review of the findings of Purnamawati et al. (2022), was another issue in technological innovation. They examine the influence of human capital, business structure, and consumer capital on the ability to earn business profits in the era of technology and innovation. The ability to master and apply technology in their business can accelerate business continuity and endurance. So the study carried out by Purnamawati and friends revealed that skills in innovation and other technologies strongly support HR governance tasks so businesses can create competitive advantage and sustainability with an orientation towards achieving the goal of profitable and sustainable business. Their findings are closely related to the study by (Zamora, 2010).

Finally, we reviewed the study of Yu et al. (2001), who raised the relation of health in the nuances of business and its impact on small businesses because business drivers have limited funding and human resources caused to the pandemic. According to them, to help MSMEs improve their business resilience, this study recommends the use of collaboration to build a technology-based business eco, namely social media, to manage marketing as well as connect and find sponsors by ensuring that their business has HR governance based on technological innovation (Paulina et al., 2022). Their paper also proposes a new model of MSME governance to build performance-based

online technology and independent text analytics tools to improve promotions and analyze innovative marketing systems. According to them, through collaboration on social media and analysis of advanced technology, MSMEs can become reliable businessmen who can increase resilience in the face of competition in the COVID era and appear as businesses that survive in the era of the financial crisis. Finally, they also said that the adoption of technology in social media would create understanding and innovation capabilities that can boost MSMEs to build high performance through social media and technology-based data analysis so businesses can be profitable and survive in all financial crisis conditions (Cueto et al., 2022).

Conclusion

Arriving at the cognitive section, this paper will conclude the essential points that we have obtained from a series of tracing some books and published articles to answer the main problem of this study, namely the understanding of technology-based human resource governance, which is part of optimizing the marketing of MSME products and services. In Indonesia. A review of many scientific publications literature that discusses issues of human resource-based technology for MSMEs, especially efforts to promote and market products, we are confident that the data we have collected is valid considering that we also backed up these friends with scientific evidence presented by various experts and their perspectives. As for the essential points we have explained in the results section, technology issues have challenged operational mechanisms since the covid disaster hit the business. This is due to the government's policy in responding to the pandemic outbreak in which the government closed several shopping centres and asked businesses to manage breakfast, perhaps remotely, thus impacting the ability of MSMEs to run their businesses. Previously, MSMEs persisted with the old operational method, namely with little technology adoption, but after government policies responded to the pandemic, MKM governance and services became more challenging due to the adoption of digital technology, especially in marketing and other operations. In another section, the study also explains that the main objective of improving the national economy is strengthening small businesses or MSMEs.

On the other hand, today's business is not only affected by the pandemic but also because the business is run in the era of globalization, so it demands the flexibility of MHM managers to switch to business methods based on digital innovation slowly. So automatically, MKN drivers will have difficulties where previously they used to run conventionally; since technology has penetrated all sectors of life, MSME human resource managers must think about how their staff has exceptional skills, namely MSME governance, mainly digital technology-based marketing. On the other hand, we also understand that the existence of MSMEs in Indonesia is the same as in other countries, namely as pillars of the national economy. However, due to the government's limitations in supporting the majority of MHMs and the inability to adapt themselves as part of technology-based operations, not many MSMEs are capable of self-education, meaning that the era of globalization and economic liberalization continues. In contrast, MSMEs continue to have difficulty surveying, let alone competing, because the business world is now, especially business. Large companies have adopted innovative ways, namely adopting technology in all sectors, operational marketing, or collaboration with other businesses. This is the conclusion of the analysis and strengthening of technology-based HR governance, especially the marketing of MSMEs in Indonesia. We realize that in addition to the advantages, this situation also has weaknesses in problem formulation and management of data retrieval methods and analysis and reporting of results

Acknowledgements

We understand that in carrying out this study, we received financial assistance from the government. Therefore, we are grateful for this assistance. Likewise, feedback, important input, and assistance from the support authority so that we have carried out this study as expected.

References

- Adla, L., Gallego-Roquelaure, V., & Calamel, L. (2019). Human resource management and innovation in SMEs. *Personnel Review*, 49(8), 1519-1535.
- Affandi, A., Sarwani, A. S., Erlangga, H., Siagian, A. O., Purwanto, A., Effendy, A. A., & Juhaeri, G. (2020). Optimization of MSMEs empowerment in facing competition in the global market during the COVID-19 pandemic time. *Systematic Reviews in Pharmacy*, 11(11), 1506-1515.
- AlQershi, N. A., Mokhtar, S. S. M., & Abas, Z. B. (2020). CRM dimensions and SME performance in Yemen: The moderating role of human capital. *Journal of Intellectual Capital*.
- Anand, A., Muskat, B., Creed, A., Zutshi, A., & Csepregi, A. (2021). Knowledge sharing, knowledge transfer, and SMEs: Evolution, antecedents, outcomes, and directions. *Personnel Review*.

- Anatan, L. (2021). Interorganizational knowledge transfer practices toward MSMEs 4.0: A proposed conceptual framework. *Review of Integrative Business and Economics Research*, 10, 409-418.
- Ausat, A. M. A., & Suherlan, S. (2021). Obstacles and solutions of MSMEs in electronic commerce during a covid-19 pandemic: Evidence from Indonesia. *BASARA: Journal of Business and Entrepreneurship*, 4(1), 11-19.
- Aziz, R. A. (2019). The opportunities for MSMEs in industrial technology. Paper presented at the *Proceeding International Conference on Information Technology and Business*, 272-286.
- Behl, A., Gaur, J., Pereira, V., Yadav, R., & Laker, B. (2022). Role of extensive data analytics capabilities to improve the sustainable competitive advantage of MSME service firms during COVID-19—A multi-theoretical approach. *Journal of Business Research*, 148, 378-389.
- Bissola, R., & Imperatori, B. (2013). Facing e-HRM: the consequences on employee attitude towards the organisation and the HR department in Italian SMEs. *European Journal of International Management*, 7(4), 450-468.
- Brewster, C. (2004). European perspectives on human resource management. *Human Resource Management Review*, 14(4), 365-382. <https://doi.org/10.1016/j.hrmr.2004.10.001>
- Consoli, D. (2012). Literature analysis on determinant factors and the impact of ICT in SMEs. *Procedia-social and behavioral sciences*, 62, 93-97. <https://doi.org/10.1016/j.sbspro.2012.09.016>
- Cueto, L. J., Frisnedi, A. F. D., Collera, R. B., Batac, K. I. T., & Agaton, C. B. (2022). Digital innovations in MSMEs during economic disruptions: Experiences and challenges of young entrepreneurs. *Administrative Sciences*, 12(1), 8.
- Eggers, F. (2020). Masters of disasters? Challenges and opportunities for SMEs in times of crisis. *Journal of business Research*, 116, 199-208. <https://doi.org/10.1016/j.jbusres.2020.05.025>
- Eze, S. C., Chinedu-Eze, V. C., Bello, A. O., Inegbedion, H., Nwanji, T., & Asamu, F. (2019). Mobile marketing technology adoption in service SMEs: a multi-perspective framework. *Journal of science and technology policy management*.
- Gardiner, S. C., Hanna, J. B., & LaTour, M. S. (2002). ERP and the reengineering of industrial marketing processes: A prescriptive overview for the new-age marketing manager. *Industrial Marketing Management*, 31(4), 357-365. [https://doi.org/10.1016/S0019-8501\(01\)00167-5](https://doi.org/10.1016/S0019-8501(01)00167-5)
- Hu, Z., & Wang, X. T. (2014). Trust or not: Heuristics for making trust-based choices in HR management. *Journal of Business Research*, 67(8), 1710-1716. <https://doi.org/10.1016/j.jbusres.2014.02.017>
- Indrawati, H. (2020). Barriers to technological innovations of SMEs: How to solve them? *International Journal of Innovation Science*.
- Islami, N. N., Wahyuni, S., & Tiara, T. (2020). The effect of digital marketing on organizational performance through intellectual capital and perceived quality in micro, small and medium enterprises. *Jurnal Organisasi Dan Manajemen*, 16(1), 59-70.
- Kim, J., Dibrell, C., Kraft, E., & Marshall, D. (2021). Data analytics and performance: The moderating role of intuition-based HR management in major league baseball. *Journal of Business Research*, 122, 204-216. <https://doi.org/10.1016/j.jbusres.2020.08.057>
- Krishnan, C. S. N., Ganesh, L. S., & Rajendran, C. (2022). Entrepreneurial Interventions for crisis management: Lessons from the Covid-19 Pandemic's impact on entrepreneurial ventures. *International Journal of Disaster Risk Reduction*, 72, 102830. <https://doi.org/10.1016/j.ijdrr.2022.102830>
- Krishnan, T., & Scullion, H. (2017). Talent management and dynamic view of talent in small and medium enterprises. *Human Resource Management Review*, 27(3), 431-441.
- Kurniawati, E., Idris, I., Handayati, P., & Osman, S. (2021). Digital transformation of MSMEs in Indonesia during the pandemic. *Entrepreneurship and Sustainability Issues*, 9(2), 316.
- Lin, C. T., Lee, C., & Wu, C. S. (2009). Optimizing a marketing expert decision process for the private hotel. *Expert Systems with Applications*, 36(3), 5613-5619. <https://doi.org/10.1016/j.eswa.2008.06.113>
- Lin, F. J., & Lin, Y. H. (2016). The effect of network relationship on the performance of SMEs. *Journal of Business Research*, 69(5), 1780-1784. <https://doi.org/10.1016/j.jbusres.2015.10.055>
- Lumunon, D. F., Massie, J. D., & Trang, I. (2021). The effect of training, digital transformation, and work motivation on employee performance during the covid-19 period: A study on culinary UMKM employees in Manado city. *Central Asian Journal of Literature, Philosophy, and Culture*, 2(8), 22-37.
- Moeuf, A., Lamouri, S., Pellerin, R., Eburdy, R., & Tamayo, S. (2017). Industry 4.0 and the SME: A technology-focused review of the empirical literature. Paper presented at the *7th International Conference on Industrial Engineering and Systems Management IESM*,
- Ng, H. S., Kee, D. M. H., & Mui, D. (2012). Development of intangible factors for SME success in a developing country. *International Journal of Academic Research in Business and Social Sciences*, 2(12), 198-213.

- Nura, A. A., Kumar, M. D., & Osman, N. H. (2012). Employer's attitude towards E-human resource management adoption: Research on higher educational institutions in Sokoto state, Nigeria. *Skyline Business Journal*, 7(1).
- Paulina, J., Junianto, P., Fauzan, I., Irdiana, S., & Mirlana, D. E. (2022). Understanding virtual MSME product marketing strategy: A study of management and business economics. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 5(1)
- Prasanna, R., Jayasundara, J., Naradda Gamage, S. K., Ekanayake, E., Rajapakshe, P., & Abeyrathne, G. (2019). Sustainability of SMEs in the competition: A systemic review on technological challenges and SME performance. *Journal of Open Innovation: Technology, Market, and Complexity*, 5(4), 100.
- Pujiati, R. (2021). Financial management information system to improve south Tangerang MSME performance. *HUMANIS (Humanities, Management and Science Proceedings)*, 2(1).
- Purbaningsih, Y., Mursalin, A., & Satriadi, S. (2021). Why SMEs manager truth the digital technology in managing marketing services. *International Journal of Business, Economics & Management*, 4(3), 461-468. <https://doi.org/10.31295/ijbem.v4n3.1748>
- Purnamawati, I. G. A., & Yuniarta, G. A. (2021). Loan Restructuring, Human Capital and Digital towards MSME Performance in the COVID-19 Pandemic. *APMBA (Asia Pacific Management and Business Application)*, 10(2), 177-192.
- Purnamawati, I. G. A., Jie, F., Hong, P. C., & Yuniarta, G. A. (2022). Analysis of maximization strategy intangible assets through the speed of innovation on knowledge-driven business performance improvement. *Economies*, 10(6), 149.
- Rosmadi, M. L. N., Herlina, H., Widiastuti, E., & Tachyan, Z. (2019). The Role of Indonesian Human Resources in Developing MSMEs Facing the Industrial Revolution 4.0. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 2(1), 193-199.
- Roure, J. B., & Keeley, R. H. (1990). Predictors of success in new technology based ventures. *Journal of business venturing*, 5(4), 201-220. [https://doi.org/10.1016/0883-9026\(90\)90017-N](https://doi.org/10.1016/0883-9026(90)90017-N)
- Selwyn, N. (2003). Apart from technology: understanding people's non-use of information and communication technologies in everyday life. *Technology in society*, 25(1), 99-116. [https://doi.org/10.1016/S0160-791X\(02\)00062-3](https://doi.org/10.1016/S0160-791X(02)00062-3)
- Shah, N., Michael, F., & Chalu, H. (2020). Conceptualizing challenges to adopting electronic, human resource management (e-HRM): A case of small and medium enterprises (SMEs) in Tanzania. *Asian Journal of Business and Management*, 8(4)
- Singh, D. (2019). Implementing technology innovation in MSMEs in India: A case study in select firms from the northern region. *Journal of Science and Technology Policy Management*,
- Singh, D., Khamba, J. S., & Nanda, T. (2015). I am exploring the determinants of technology innovation in MSMEs. Paper presented at the *International Journal of Engineering Research in Africa*, 13 103-115.
- Sudarmo, S. (2020). Human resources management and leadership for public services in the 21st century. *International Journal of Business, Economics & Management*, 3(1), 219-225. <https://doi.org/10.31295/ijbem.v3n1.211>
- Suryana, Y., Bayu, K., & Jatnika, D. (2013). Promotion and product marketing models of small and medium enterprises (SMEs) through e-commerce. *Advances in Management and Applied Economics*, 3(4), 149.
- Susanti, H. (2017). Empowering business incubators in creating technology-based entrepreneurs. *Competition and cooperation in economics and business* (pp. 239-248) Routledge.
- Susila, E., Yulianti, L., & Pratminingsih, S. A. (2022). Analysis of digital marketing utilization for MSMEs in dayeuhluhur district. *Central Asia and the Caucasus*, 23(1)
- Teece, D. J. (2010). Business models, business strategy, and innovation. *Long Range Planning*, 43(2-3), 172-194.
- Vedhathiri, T. (2020). Collaborative dissertation based on the human resources needs of MSMEs to improve their competitiveness and overcome the disruption. *Procedia Computer Science*, 172, 551-558.
- Wang, X. (2013). The research on the human resources competitiveness evaluation index system of technology-based SME-based on the view of ecology. *Contemporary Logistics*, (10), 48.
- Yu, J., Pauleen, D. J., Taskin, N., & Jafarzadeh, H. (2021). Building social media-based knowledge ecosystems for enhancing business resilience through mass collaboration. *International Journal of Organizational Analysis*.
- Zamora, E. A. (2010). Management of technology framework for MSME success and sustainability. *Philippine Management Review*, 17.