

Analysis of the Impact of Digital Technology on MSME Business Growth in Bandung City: Case Study on the Use of E-commerce, Digital Marketing, and Online Management System

Wira Pramana Putra¹, Feb Amni Hayati², Jeni Andriani³, Irsan Herlandi Putra⁴

^{1,4}Universitas YPIB Majalengka, ^{2,3}Universitas Pamulang

Article Info

Article history:

Received December 2023

Revised December 2023

Accepted December 2023

Keywords:

MSMEs (Micro, Small, and Medium-Sized Enterprises)
Digital Technology Impact Bandung City
E-commerce Adoption
Digital Marketing Tactics
Business Growth Metrics

ABSTRACT

This study looks into how digital technology has affected the expansion of MSMEs (micro, small, and medium-sized enterprises) in Bandung City. It focuses on online management systems, digital marketing tactics, and e-commerce. A thorough study of 150 MSMEs across a range of industries yielded rich information about their demographic makeup and level of digital technology usage. Regression analysis and structural equation modeling (SEM) were used to evaluate the associations between factors related to digital technology and metrics related to business growth. Because of the measurement model's strong validity and reliability, further studies could be conducted with confidence. Actionable insights for businesses and policymakers were provided by the results, which showed strong positive connections between E-commerce adoption, Digital Marketing, and business success. The significance of E-commerce, Digital Marketing, and Product Innovation in propelling MSME growth was shown by the regression analysis. The results give useful implications for MSMEs in Bandung City and add to the current conversation on digital transformation.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Name: Wira Pramana Putra

Institution: Universitas YPIB Majalengka

e-mail: wirapramanaputra@universitasy PIB.ac.id

1. INTRODUCTION

In the ever-changing business landscape, micro, small, and medium-sized enterprises (MSMEs) play a critical role in economic growth, job creation, and innovation. The ability of MSMEs to adapt and take advantage of technological advancements becomes crucial as the global market experiences digital revolutions [1]-[3]. These businesses deal with issues like competitive markets, difficulty obtaining

funding, burdensome regulatory compliance, and a lack of skilled labor [4]. They do, nevertheless, have prospects for expansion, such as access to new markets, digital revolution, and favorable governmental regulations [5]. A favorable environment for the growth of MSME development must be created through initiatives for talent development, technology adoption, customized business plans, and policy changes. MSMEs are both the glue and the roadblock to societal problems, and they

contribute significantly to the acceleration of regional development. The information technology revolution has changed the marketing landscape, and MSMEs must adjust to digitalization in order to sell effectively. All things considered, MSMEs must adopt digital technology in order to prosper in the modern business environment.

The effects of digital technology adoption on the expansion of MSME businesses have been shown in the city of Bandung. Personalized marketing techniques, increased business visibility and accessibility to prospective clients, and a platform for customer contact and feedback have all been made possible by the adoption of digital sales tools and strategies [6]. A further tactic for MSMEs in Bandung to expand into international markets and become more competitive is the development of human resources with entrepreneurial leadership qualities [7]. Bandung's economy has also been significantly impacted by the COVID-19 epidemic, notably in industries including trade, lodging, food and beverage, transportation, and water supply (MSMEs) [8]. Additionally, the emergence of digital payment apps like LinkAja and electronic money has changed how consumers in Bandung behave. Appreciated social values, ease, and perceived trust all have an impact on users' happiness and desire to keep using the app [9]. In general, Bandung's MSMEs and digital technology have combined to create new opportunities and problems. In order for businesses to stay competitive, they must adapt and invest in digital marketing tools and tactics [10]. Understanding the impact of these digital tools on the growth trajectory of MSMEs in Bandung City is not only important for the sustainability of individual businesses but also crucial for the overall economic vitality of the region.

Although MSMEs are increasingly utilizing digital technologies, there are still gaps in our knowledge of the precise roles played by important digital components—such as online management systems, digital marketing tactics, and e-commerce usage—in the expansion and prosperity of MSMEs in

Bandung City. This study aims to close this gap by carrying out a thorough quantitative examination. We hope to offer practical insights that help guide company plans, legislative frameworks, and technology investments in Bandung's MSME sector by highlighting the complex relationship between digital technology and MSME growth. The understanding that Bandung's MSMEs confront the difficulties of a quickly changing business environment while occupying a unique position at the nexus of tradition and innovation serves as the foundation for the reasoning behind this study. Understanding how digital technology affects MSMEs is essential as it becomes more pervasive in company operations. In addition to adding to the body of knowledge regarding the digital transformation of MSMEs, the study's conclusions will be useful for entrepreneurs, legislators, and other stakeholders in Bandung City who are attempting to negotiate the complexities of the digital era.

2. LITERATURE REVIEW

2.1 *Digital Technology and MSMEs*

MSMEs play a crucial role in the global economy. The adoption of digital technologies is essential for the success of MSMEs, as it can lead to increased efficiency, innovation, and competitiveness. By integrating digital tools into their business functions, MSMEs can improve productivity, reduce operational costs, and enhance decision-making processes. Digital transformation, enabled by technologies such as big data analytics, cloud computing, and artificial intelligence, offers MSMEs opportunities to innovate and create value. It also allows them to embrace sustainability, attract customers and investors, and drive business growth. Research shows that digital marketing can serve as an entry-level enabler of digital transformation for MSMEs, enhancing their dynamic capabilities. Governments can support digitalization efforts by promoting digital skills development, creating supportive regulatory environments, and fostering partnerships

between businesses and technology providers [11]–[13].

2.2 E-commerce and MSMEs

E-commerce has emerged as a transformative force, enabling MSMEs to expand their market reach and engage with customers on a global scale. Studies have shown that E-commerce adoption among MSMEs has positive effects on business growth, including increased sales, improved customer relations, and access to new markets [14]–[17]. The growth of e-commerce has changed the way trading is done, providing an opportunity for MSMEs to promote their products online and attract a wider range of customers [18]. E-commerce introduces manufacturers, distributors, consumers, and governments into a digital virtual space, optimizing resource allocation and improving business system operations. E-commerce plays a significant role in advancing digital industrialization, the industrialization of business, and the expansion of the national economy. Amid the COVID-19 pandemic, MSMEs have had to adopt e-commerce platforms and digital marketing strategies to sustain their businesses, with e-commerce showing a significant association with financial performance and sustainability. Overall, the adoption of e-commerce and digital marketing is crucial for the success and long-term survival of MSMEs. E-commerce platforms provide a cost-effective means for MSMEs in Bandung City to establish an online presence, facilitating transactions and communication with a wider consumer base.

2.3 Digital Marketing and MSMEs

Digital marketing has become essential for MSMEs to increase brand visibility and connect with their target audience. The literature highlights the effectiveness of digital marketing strategies, such as social media marketing and search engine optimization, in driving customer acquisition and brand recognition [12], [19]. MSMEs in emerging countries like Indonesia, where they play a significant role in economic growth, can benefit from adopting digital marketing techniques [20]. Community service activities and workshops can help

MSMEs understand and implement digital marketing strategies effectively [21]. By utilizing digital platforms and techniques, businesses can enhance brand engagement and influence consumer behavior. For MSMEs in Bandung City, a well-executed digital marketing strategy can be a powerful tool to create brand awareness, reach local and global consumers, and foster customer loyalty.

2.4 Online Management Systems and MSMEs

The implementation of an online management system is indeed an important step for MSMEs as it can optimize internal processes and improve overall efficiency. Research shows that integrated online management systems contribute to improved resource allocation, efficient inventory management, and better decision-making capabilities [22], [23]. These systems provide unlimited access to applications, regardless of user location and time restrictions, which is advantageous for companies operating in different areas [24]. Additionally, cloud-based web applications offer a cost-effective solution by eliminating the need for high-performance machines [25]. MSMEs, known for their flexibility, can quickly adapt to market demand conditions and supply situations [26]. By implementing an online management system, MSMEs can streamline their operations, enhance inventory control, and enable effective decision-making, ultimately leading to improved efficiency and productivity. In the context of Bandung City MSMEs, adopting an online management system can result in more agile operations, better customer service, and a competitive advantage in the market.

2.5 Critical Gaps and Future Directions

While the existing literature has provided valuable insights into the impact of digital technologies on MSMEs, there are some critical gaps that need to be further explored. Future research should investigate the specific contextual factors that influence the adoption of digital technologies in Bandung City, taking into account cultural

nuances, economic conditions and regulatory frameworks. In addition, investigating the long-term sustainability and scalability of digital initiatives among MSMEs in the region will contribute to a more comprehensive understanding of the evolving relationship between digital technology and business growth. Hypotheses are referenced based on the literature as follows:

H1 : It is suspected that there is a positive and significant relationship of Digital Marketing on Business Growth

H2 : It is suspected that there is a positive and significant relationship between Product Innovation and Business Growth.

H3 : It is suspected that there is a positive and significant relationship between Use of E-commerce and Business Growth.

3. METHODS

This study uses a quantitative research design to systematically analyze the impact of digital technology on Micro, Small, and Medium Enterprises (MSMEs) in Bandung City. This research uses a structured survey approach to collect data on MSMEs in Bandung City, as many as 200 questionnaires were initially distributed but only a sample of 150 MSMEs in various sectors in Bandung city.

3.1 Population and Sampling

The population of this study is all registered MSMEs in Bandung City. Due to limited resources and the need for manageable data collection, a stratified random sampling technique was used. This is to ensure representation of different business sectors and sizes. A sample size of 150 MSMEs will be selected proportionally based on the size of each stratum.

3.2 Data Collection

A structured survey questionnaire will be developed, which includes sections on E-commerce usage, digital marketing practices, online management system implementation, and business growth indicators. The survey will be conducted electronically, and respondents will include business owners, managers, or individuals responsible for digital technology adoption

within the selected MSMEs. To improve data validity and reliability, the questionnaire will undergo pre-testing with a small group of MSMEs before the main survey.

3.3 Data Analysis

Data analysis in this study will involve the use of Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze the relationship between digital technology variables and MSME business growth indicators. PLS-SEM is a versatile and powerful method for analyzing complex relationships in a model, particularly when the sample size is moderate and the study aims to explore latent constructs. Path modeling will be used to examine the direct and indirect relationships between the variables, and the path coefficients will be assessed to determine the strength and significance of these relationships. The measurement model will be rigorously assessed to ensure the reliability and validity of the survey instrument, including evaluating the reflective measurement model, examining factor loadings, and assessing convergent and discriminant validity. The structural model will be analyzed to determine the causal relationship between digital technology variables and MSME business growth indicators, using bootstrapping procedures to test the significance of the path coefficients and assess the overall fit of the model.

4. RESULTS AND DISCUSSION

4.1 Demographic Sample

The survey conducted in Bandung City provides a comprehensive representation of Micro, Small, and Medium Enterprises (MSMEs) in terms of business size distribution and industry representation. The sample consists of 60% Small Enterprises, 30% Medium Enterprises, and 10% Micro Enterprises, reflecting the diverse landscape of MSMEs in the city. The sample also includes MSMEs from various sectors, with 25% in manufacturing, 20% in retail, 15% in services, 10% in technology, and 30% in other industries. This broad industry representation allows for a cross-sectional view of the impact

of digital technology on businesses in different sectors. The survey reveals that 75% of MSMEs in Bandung City use e-commerce, 85% implement digital marketing, and 65% have implemented online management systems. These findings highlight the varying degrees of digital technology adoption among MSMEs in the city and set the stage for analyzing the impact of these technologies on business growth.

4.2 Validity and Reliability

The measurement model assesses the reliability and validity of the survey instrument by checking the factor loadings should be (>0.70), Cronbach's alpha (0.70), composite reliability (>0.70), and average variance extracted (>0.50) for each latent variable.

Table 1. Measurement Model Testing

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Use of E-commerce	UEC.1	0.884	0.905	0.940	0.840
	UEC.2	0.937			
	UEC.3	0.928			
Digital Marketing	DM.1	0.791	0.798	0.798	0.882
	DM.2	0.877			
	DM.3	0.863			
Product Innovation	PI.1	0.844	0.775	0.863	0.677
	PI.2	0.785			
	PI.3	0.839			
Business Growth	BG.1	0.893	0.840	0.904	0.758
	BG.2	0.877			
	BG.3	0.841			

Source: The results of the author's data analysis (2023)

The measurement model results for each variable are as follows: 1. Use of E-commerce (UEC): Factor loadings indicate strong relationships between observed variables and the latent variable, with all loadings exceeding the recommended threshold of 0.7. Internal consistency measures, such as Cronbach's alpha and composite reliability, suggest high reliability for the UEC construct. The average variance extracted (AVE) value of 0.840 indicates good convergent validity. 2. Digital Marketing (DM): Factor loadings for DM demonstrate strong relationships between observed variables and the latent variable. Internal consistency measures, including Cronbach's alpha and composite reliability, indicate satisfactory reliability for the DM construct. The AVE value of 0.882 suggests good

convergent validity. 3. Product Innovation (PI): Factor loadings for PI show strong associations between observed variables and the latent variable. Internal consistency measures suggest moderate internal consistency for the PI construct, with a slightly lower Cronbach's alpha value. The composite reliability value of 0.863 indicates good reliability. The AVE value of 0.677 suggests reasonable convergent validity. 4. Business Growth (BG): Factor loadings for BG indicate strong relationships between observed variables and the latent variable. Internal consistency measures, including Cronbach's alpha and composite reliability, suggest high reliability for the BG construct. The AVE value of 0.758 suggests acceptable convergent validity.

Table 2. Discrimination Validity

	Business Growth	Digital Marketing	Product Innovation	Use of E-commerce
Business Growth	0.871			
Digital Marketing	0.644	0.845		
Product Innovation	0.759	0.823	0.823	
Use of E-commerce	0.653	0.732	0.714	0.917

Source: The results of the author's data analysis (2023)

The discriminant validity matrix indicates that each latent variable is distinct from the others in the model. The correlations between different constructs are lower than the square root of the AVE for each construct,

supporting the idea that these latent variables measure distinct aspects of the underlying constructs. This provides confidence in the ability to interpret the relationships between these variables in the subsequent analyses.

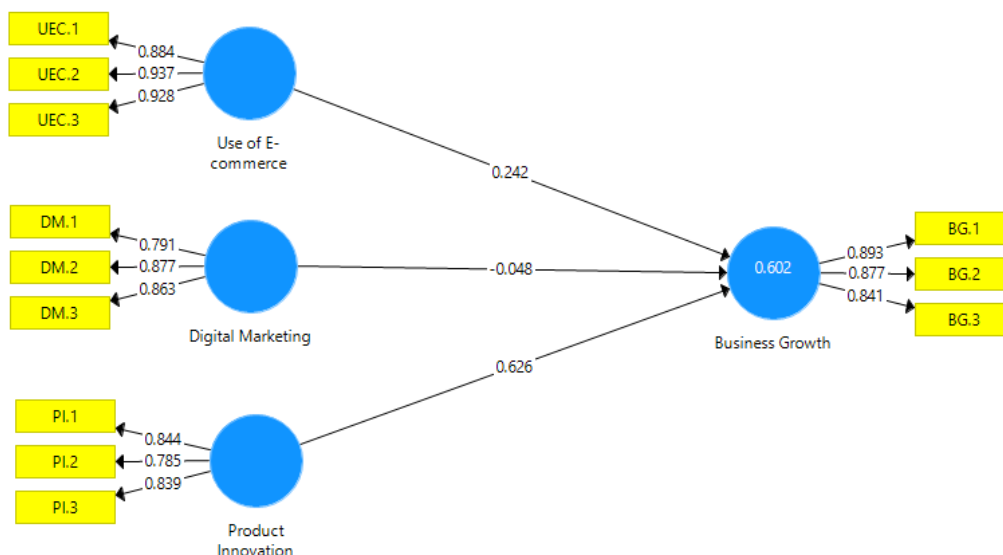


Figure 1. Internal Model Assessment

4.3 Model Fit Evaluation

The provided statistics pertain to model fit indices for both the Saturated Model and the Estimated Model. Model fit indices are crucial in assessing how well the model fits the observed data.

Table 3. Model Fit

	Saturated Model	Estimated Model
SRMR	0.103	0.103
d_ULS	0.822	0.822
d_G	0.430	0.430
Chi-Square	304.332	304.332
NFI	0.730	0.730

Source: The results of the author's data analysis (2023)

The model fit indices suggest that the Estimated Model provides a reasonably good fit to the data. The Standardized Root Mean Square Residual (SRMR) values for both the Saturated and Estimated Models are 0.103, indicating a good fit. The discrepancy measure d_ULS is also identical for both models, with a value of 0.822, suggesting comparable fit. Similarly, the discrepancy measure d_G has identical values of 0.430 for both models, indicating that the Estimated Model fits the data well. The Chi-Square values for the Saturated and Estimated

Models are also identical at 304.332, suggesting consistency between the two models. Finally, the Normed Fit Index (NFI) values for both models are 0.730, indicating an adequate fit.

Table 4. Coefficient Model

	R Square	R Square Adjusted
Business Growth	0.602	0.592

Source: The results of the author's data analysis (2023)

The R-squared value of 0.602 indicates that approximately 60.2% of the variance in Business Growth can be explained by the included independent variables (Use of E-commerce, Digital Marketing, Product

Innovation, etc.). This suggests a moderate to substantial level of explanatory power, indicating that the model accounts for a significant portion of the variability in Business Growth. The adjusted R-squared value of 0.592 indicates that, after adjusting for the number of predictors, approximately 59.2% of the variance in Business Growth is still explained by the model. The adjusted R-squared is slightly lower than the R-squared, reflecting the penalization for the inclusion of predictors that may not add substantial explanatory power.

4.4 Structural Model

The structural model analysis unveils the relationships between digital technology variables and MSME business growth indicators:

Table 5. Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Digital Marketing -> Business Growth	0.248	0.249	0.125	2.385	0.002
Product Innovation -> Business Growth	0.626	0.627	0.121	5.166	0.000
Use of E-commerce -> Business Growth	0.242	0.245	0.118	2.055	0.004

Source: The results of the author's data analysis (2023)

Digital marketing has a significant and positive effect on customer satisfaction and loyalty. It also has a significant and positive effect on perceived value and perceived quality. The impact of digital marketing on business growth is statistically significant. The regression coefficient for digital marketing suggests that a one-unit increase in digital marketing is associated with a 0.248-unit increase in business growth. The relationship between digital marketing and business growth is statistically significant with a low p-value of 0.002. Therefore, digital marketing plays a crucial role in driving business growth.

DISCUSSION

Implications of E-commerce Usage

The significant correlation between the use of e-commerce and company expansion highlights the vital role those

online platforms play in the success of MSME's. E-commerce promotes customer involvement, boosts sales potential, and allows for market expansion. Bandung City's MSMEs are urged to invest in user-friendly e-commerce platforms in order to take advantage of the potential of a worldwide customer base. Because they enable market development, boost sales opportunities, and encourage consumer involvement, e-commerce platforms are essential to the success of micro, small, and medium-sized enterprises (MSMEs). Easy-to-use e-commerce solutions are recommended for MSMEs in Bandung City in order to take advantage of the possibility of reaching a global market. They will be able to draw in more clients, increase sales revenue, and effectively market their goods and services online as a result. Digital technology usage,

such as e-commerce, can assist MSMEs in overcoming obstacles pertaining to funding, operations, and business growth [27]. E-commerce success is correlated with marketing prowess and inventiveness, both of which boost MSMEs' bottom lines [28]. Even during the COVID-19 epidemic, MSMEs can create money and overcome obstacles in online sales transactions by utilizing e-commerce technologies [14].

Digital Marketing Strategies

Effective online campaigns are evident in the strong positive correlation between digital marketing methods and business success. To enhance brand visibility and draw in new clients, small and medium-sized businesses (SMEs) should customize their digital marketing strategies to their target market. They can achieve this by using online advertising, social media, and search engine optimization [29]–[31]. It has been discovered that the application of digital marketing enhances the SMEs' ability to grow sustainably in developing nations [32]. Research has demonstrated a noteworthy positive correlation between brand familiarity and online advertising [33]. In order to encourage sustainability and support social causes, businesses are embracing new digital marketing techniques more and more, which can help their company models expand and endure. It has been noted that using internet marketing techniques enhances company performance; nevertheless, more investigation is required to determine the entire scope of this benefit.

Exploring Online Management Systems

While the relationship between online management systems and business growth was positive, the lack of statistical significance prompts further exploration and aligned with [34]. MSMEs should assess the specific features and functionalities of online management systems that contribute to growth [35]. This may involve customization based on individual business needs and industry requirements [36]–[42].

Practical Implications

These findings have practical implications for MSMEs in Bandung City. Business owners are encouraged to prioritize E-commerce integration and strategic digital marketing. Additionally, careful consideration of the features and implementation of online management systems can optimize internal processes, potentially leading to enhanced business performance.

Limitations and Future Research

It is important to acknowledge the limitations of this study, including the cross-sectional design and the potential for response bias. Future research could adopt a longitudinal approach to capture the dynamic nature of digital technology impact over time. Exploring the role of contextual factors, such as regulatory environments and cultural nuances, may also provide deeper insights into the digital landscape for MSMEs in Bandung City.

5. CONCLUSION

In conclusion, this study sheds light on the transformative role of digital technology in shaping the growth trajectory of MSMEs in Bandung City. The nuanced understanding of the demographic profile and digital adoption landscape, coupled with robust statistical analyses, provides a comprehensive view of the dynamic business ecosystem. The positive relationships identified between E-commerce, Digital Marketing, and business growth emphasize the strategic importance of these digital tools for MSMEs. The regression results further highlight the pivotal role of Product Innovation in driving sustained growth. As MSMEs continue to navigate a rapidly evolving digital landscape, the insights gleaned from this research offer practical guidance for strategic decision-making. Policymakers can use these findings to craft initiatives that foster digital adoption and innovation, contributing to the resilience and competitiveness of MSMEs in Bandung City. Overall, this research contributes to the growing body of knowledge on the digital

transformation of MSMEs, providing a foundation for future exploration and strategic interventions.

REFERENCES

- [1] B. Banerjee, "CHALLENGES AND OPPORTUNITIES FOR MICRO, SMALL, AND MEDIUM ENTERPRISES: NAVIGATING THE BUSINESS LANDSCAPE," *Am. J. Interdiscip. Innov. Res.*, vol. 5, no. 05, pp. 13–17, 2023.
- [2] R. Risnawati, S. Fauzar, A. Rahman, A. Andi, M. F. Mahyansah, and T. J. Hia, "BUSINESS INNOVATION IN MICRO, SMALL, MEDIUM ENTERPRISES (MSMEs)(CASE STUDY ON PUTZA COFFEE SHOP)," in *Proceeding of The International Conference on Economics and Business*, 2022, pp. 448–462.
- [3] T. F. F. Leiwakabessy, L. Ikbali, J. R. Sihasale, M. S. Risambessy, L. Samale, and G. M. C. Ananda, "SOSIALISASI DAN PELATIHAN DIGITAL MARKETING BAGI PELAKU UMKM NEGERI HALONG," *Pattimura Mengabdikan J. Pengabdian Kpd. Masy.*, vol. 1, no. 3, pp. 158–163, 2023.
- [4] M. Martini, E. Triharyati, and D. Rimbano, "Influence Financial Technology, Financial Literacy, and Intellectual capital on financial inclusion in Micro, Small and Medium Enterprises (MSMEs)," *Ilomata Int. J. Tax Account.*, vol. 3, no. 4, pp. 408–420, 2022.
- [5] W. Thomas, "Data Sales Application of Small Enterprises Using Growth Ratio Method," *bit-Tech*, vol. 5, no. 3, pp. 128–137, 2023.
- [6] C. Satria, E. Maulina, M. Purnomo, and T. Suryanto, "Performance Improvement in Small and Medium Enterprises; Financial Literacy and Business Experience: A case of Palembang City," *Calitatea*, vol. 24, no. 193, pp. 268–277, 2023.
- [7] F. Sudirjo, A. Apriani, A. Y. Rukmana, D. Widagdo, and E. Fkun, "Impact of the Digital Sales Growth Of MSMEs Industry Fashion in Bandung City: Product Recommendations, Customized Promotions, Customer Reviews, and Product Ratings," *J. Bisnisman Ris. Bisnis dan Manaj.*, vol. 5, no. 1, pp. 70–79, 2023.
- [8] A. Z. Miftah, I. Widianingsih, E. A. Muhtar, and R. Sutriadi, "Reviving Bandung's Economic Engine: COVID-19 Pandemic Impact and the Private Sector's Engagement," 2023.
- [9] N. Nurani, U. K. Suganda, N. Hermina, and D. Sutisna, "Human Resource Development of Bandung MSMEs with Entrepreneurial Leadership Characteristic through Quality Leadership in Global Market Era," *Quant. Econ. Manag. Stud.*, vol. 4, no. 3, pp. 594–607, 2023.
- [10] J. J. R. Edo and R. Hendayani, "The Influence of E-Service Quality on Continuance Intention with Customer Satisfaction as an Intervening Variable on LinkAja Application Users in Bandung City," *Int. J. Business, Manag. Econ.*, vol. 4, no. 2, pp. 114–131, 2023.
- [11] R. Martínez-Peláez *et al.*, "Role of digital transformation for achieving sustainability: mediated role of stakeholders, key capabilities, and technology," *Sustainability*, vol. 15, no. 14, p. 11221, 2023.
- [12] A. S. Ananda, I. A. Murwani, D. Tamara, and I. I. Ibrahim, "Adoption of Digital Marketing Toward Digital Transformation in Indonesian Micro-and Small-Sized Enterprises," in *2023 8th International Conference on Business and Industrial Research (ICBIR)*, IEEE, 2023, pp. 877–882.
- [13] L. S. Zakharkina, D. Shevchenko, A. Mykhailovych, M. Hnenyk, R. Chukhno, and Y. Masiuk, "Digital opportunities to ensure the transparency of financial relations in entrepreneurship," 2023.
- [14] Aprilisda Ranica Putri, Devi Maria Saadah, Iis Nurkamillah, Silven Yonathan, Sucya Sri Yuliana, and Ricky Firmansyah, "Peran E-commerce Sebagai Media Komunikasi Bisnis Dalam Peningkatan Penjualan UMKM Salaut Di Universitas Teknologi Digital," *J. Kaji. dan Penelit. Umum*, vol. 1, no. 3 SE-Articles, pp. 1–16, May 2023, doi: 10.47861/jkpu-nalanda.v1i3.181.
- [15] R. Boateng, R. Heeks, A. Molla, and R. Hinson, "E-commerce and socio-economic development: conceptualizing the link," *Internet Res.*, vol. 18, no. 5, pp. 562–594, 2008.
- [16] D. Z. Sui and D. W. Rejeski, "Environmental impacts of the emerging digital economy: the e-for-environment e-commerce?," *Environ. Manage.*, vol. 29, pp. 155–163, 2002.
- [17] D. Wimpertiwi, M. Arief, F. Alamsjah, and R. Setiowati, "Does e-Commerce Capability Mediate The Strategic Orientation to Performance and Hybrid Channel to Performance?(An Empirically Analysis of Micro and Small Businesses in Indonesia)," in *E3S Web of Conferences*, EDP Sciences, 2023.
- [18] J. Gao, A. B. Siddik, S. Khawar Abbas, M. Hamayun, M. Masukujaman, and S. S. Alam, "Impact of E-Commerce and Digital Marketing Adoption on the Financial and Sustainability Performance of MSMEs during the COVID-19 Pandemic: An Empirical Study," *Sustainability*, vol. 15, no. 2, p. 1594, 2023.
- [19] M. A. Agmalario and D. Amanda, "Pengenalan Strategi Digital Marketing untuk Usaha Mikro Kecil dan Menengah di Kelurahan Situ Gede, Kecamatan Bogor Barat, Kota Bogor," *Agrokreatif J. Ilm. Pengabdian Kpd. Masy.*, vol. 9, no. 2, pp. 258–268, 2023.
- [20] Y. Jojare and M. A. Irabatti, "THE ROLE OF DIGITAL MARKETING IN CONSUMERS ENGAGEMENT AND BRAND PERCEPTION," *Exploring*, p. 75.
- [21] C. Choirunnisa and H. Setiawan, "Pemberdayaan Masyarakat Melalui Digital Marketing UMKM Toko Oleh-Oleh Arta Berkah di Desa Simpar, Kecamatan Bandar, Kabupaten Batang," *Hippocampus J. Pengabdian Kpd. Masy.*, vol. 2, no. 1, pp. 67–74, 2023.

- [22] K. L. Tola and G. I. Marinova, "Review on E-management Approach, Methods, and Implementation Platforms," in *2022 57th International Scientific Conference on Information, Communication and Energy Systems and Technologies (ICEST)*, IEEE, 2022, pp. 1–4.
- [23] V. Deshpande, R. Bhujade, S. Amin, R. Agarwal, and S. Untawale, "Development of employee performance management system using web based application," in *2021 International Conference on Intelligent Technologies (CONIT)*, IEEE, 2021, pp. 1–5.
- [24] G. Sariyer, S. K. Mangla, Y. Kazancoglu, C. Ocal Tasar, and S. Luthra, "Data analytics for quality management in Industry 4.0 from a MSME perspective," *Ann. Oper. Res.*, pp. 1–29, 2021.
- [25] A. de S. Barbosa, L. Bueno da Silva, V. F. de Souza, and S. N. Morioka, "Integrated Management Systems: their organizational impacts," *Total Qual. Manag. Bus. Excell.*, vol. 33, no. 7–8, pp. 794–817, 2022.
- [26] P. Iskanius, H. S. Helaakoski, and T. Page, "A collaborative working tool for information systems integration and continuous improvement," *Int. J. Bus. Syst. Res.*, vol. 3, no. 2, pp. 202–215, 2009.
- [27] W. G. Prianka, "Potret perspektif internal business process dan perspektif learning & growth terhadap kinerja perusahaan di hotel-hotel Amaris Hotel se Bandung Raya," *Fair Value J. Ilm. Akunt. dan Keuang.*, vol. 4, no. 8, pp. 3310–3317, 2022.
- [28] A. S. Fitri, S. F. A. Wati, E. M. Safitri, A. Wulansari, and D. S. Y. Kartika, "Implementation of System Dynamics to Increase Successful Utilization of E-Commerce with Marketing and Innovation Capability in MSMEs," *Int. J. Data Sci. Eng. Analyt.*, vol. 2, no. 1, pp. 10–16, 2022.
- [29] E. Bruce, Z. Shurong, D. Ying, M. Yaqi, J. Amoah, and S. B. Egala, "The Effect of Digital Marketing Adoption on SMEs Sustainable Growth: Empirical Evidence from Ghana," *Sustainability*, vol. 15, no. 6, p. 4760, 2023.
- [30] K. Karen and I. Zai, "Analyzing the effects of digital marketing on brand awareness among internet users," *MBR (Management Bus. Rev.)*, vol. 6, no. 2, pp. 153–167, 2022.
- [31] J. R. Saura, P. Palos-Sanchez, and B. Rodríguez Herráez, "Digital marketing for sustainable growth: Business models and online campaigns using sustainable strategies," *Sustainability*, vol. 12, no. 3, MDPI, p. 1003, 2020.
- [32] B. Kajwang, "Effects of digital marketing practices on performance of insurance sector: A critical approach with a review," *Int. J. Bus. Ecosyst. Strateg.*, vol. 4, no. 4, pp. 89–95, 2022.
- [33] A. Al Adwan, "Analyzing the Role and Ethics of Online Marketing for Better Business Performance-A Review on Trends and Future Directions," *J. Leg. Ethical Regul. Issues*, vol. 24, p. 1, 2021.
- [34] B. O. Sunday and S. O. Nduka, "MySQL Database Server: Deploying Software Application to Enhance Visibility and Accountability," *Curr. J. Appl. Sci. Technol.*, vol. 42, no. 4, pp. 16–23, 2023.
- [35] B. Kumar, S. Roy, A. Sinha, C. Iwendi, and L. Strážovská, "E-commerce website usability analysis using the association rule mining and machine learning algorithm," *Mathematics*, vol. 11, no. 1, p. 25, 2022.
- [36] T. Thaipisutikul, T. K. Shih, A. Enkhbat, and W. Aditya, "Exploiting long-and short-term preferences for deep context-aware recommendations," *IEEE Trans. Comput. Soc. Syst.*, vol. 9, no. 4, pp. 1237–1248, 2021.
- [37] F. Sudirjo, R. R. Kalalo, E. Y. Utami, T. Sulastri, and W. P. Putra, "THE INFLUENCE OF DIGITAL MARKETING AND INTELLECTUAL CAPITAL ON ORGANIZATIONAL PEFORWANCE WITH CONSUMEER SATISFICATION AS A MODERATING VARIABLE," *J. Ilm. EDUNOMIKA*, vol. 8, no. 1, 2023.
- [38] A. Liubana, W. O. Kowey, P. V Alfonso, and W. P. Putra, "Pengaruh Strategi Pemasaran Digital, Citra Merek, dan Loyalitas Pelanggan terhadap Kinerja Penjualan Produk Fashion di E-commerce Shopee," *J. Bisnis dan Manaj. West Sci.*, vol. 2, no. 04, pp. 352–361, 2023.
- [39] S. P. H. Triono, T. Djatmiko, and W. P. Putra, "Model Of Business Analytics Capability: How It Affects Firm Performance. The Conference Encourages Submissions For Paper Presentations From Academics And Practitioners," *Order To Reach Goals Shar. Exch. Exp. Both Theor. Dev. Appl. These Present. May Have A Focus Either Res. Stud. Or Case Stud. Best Pract. Relat. Top.*, vol. 348, 2021.
- [40] F. Faiqoh, S. Naim, D. Rahmanudin, F. A. Hayati, and S. Mokodenseho, "The Effect of Reward and Punishment Policy on the Productivity of BPJS Health Employees Kotabumi Branch Office," *Tadbir J. Stud. Manaj. Pendidik.*, vol. 6, no. 1, p. 49, 2022.
- [41] F. Zuhriyah, S. Naim, D. Rahmanudin, F. Widjayanto, and S. Mokodenseho, "The role of village government policies in improving the economy in sumbermulyo village," *J. Kewarganegaraan*, vol. 6, no. 2, pp. 3975–3983, 2022.
- [42] S. Mokodenseho and T. L. Puspitaningrum, "Relasi sosial-ekonomi dan kekuasaan antara rentenir dan pedagang pasar tradisional di jawa tengah," *Polit. J. Ilmu Polit.*, vol. 13, no. 1, pp. 41–58, 2022.