

Implementation of E-Commerce System as SME Development Strategy in the Digital Era

Maulian Saputra, Susilawati, Siti Nurhaliza Sofyan, Ananda Aulia, Andi Ernawati*, Ayu Oftasari, Rian Farta wijaya

^{1*} Master of Information Technology, University Pembangunan Pancabudi, Medan, Indonesia

Email, Maulian.saputra@gmail.com, Susiyahya@gmail.com, sitinurhalizas102@gmail.com, anandaaulia30@gmail.com,

aernawati296@gmail.com, Ayuofta2849@gmail.com, rianfartawijaya@dosen.pancabudi.ac.id

Email Corresponden: aernawati296@gmail.com

Abstract - The implementation of e-commerce systems has become one of the main strategies in the development of Small and Medium Enterprises (SMEs) in the digital era. E-commerce allows SMEs to expand market reach, improve operational efficiency, and strengthen relationships with consumers through better data access. In addition, this digital platform offers benefits such as distribution cost savings, business process automation, and improved customer service. However, challenges in e-commerce adoption for SMEs include limited digital literacy, uneven technology infrastructure, and cybersecurity issues. To achieve the full potential of e-commerce, support from the government and private sector in the form of adequate policies, infrastructure, and training is required. This research aims to identify the benefits, challenges and solutions in implementing e-commerce for SMEs, in order to improve their competitiveness in an increasingly competitive global market.

Keywords: SMEs, e-commerce, digitalisation, operational efficiency, cybersecurity, global markets

1. INTRODUCTION

In an increasingly advanced digital era, traditional businesses are no longer the first choice for entrepreneurs. The emergence of information and communication technology (ICT) has opened up new opportunities for Small and Medium Enterprises (SMEs) to grow and compete in the global market. One very effective strategy in increasing the visibility and sales of SMEs is through the implementation of e-commerce systems.[1], [2] Digitisation not only helps improve the competitiveness of SMEs by expanding market reach, but also offers more efficient services and keeps up with the latest technological trends. By having an online store or presence on e-commerce platforms, SMEs can sell products not only locally or regionally, but also nationally and internationally. In addition, digitalisation allows SMEs to automate many operational processes, such as inventory management to payment processing, thus saving time and costs and reducing human error.[3]–[5] E-commerce system is a process of business transactions conducted electronically through computer networks, especially the internet. With the e-commerce system, SMEs can market their products online, thus reaching consumers around the world without geographical restrictions. This allows SMEs to significantly increase sales and expand market share.[6], [7]

The implementation of e-commerce systems in SMEs not only helps increase visibility and sales, but also facilitates a faster and more efficient transaction process. Customers can order products online and view real-time product information, thereby increasing customer satisfaction. In addition, e-commerce systems also allow for more systematic management of product and transaction data, which helps in making more accurate business decisions.[8], [9]

In the Indonesian context, many SMEs still use limited traditional marketing methods. However, with the advancement of technology, SMEs can improve their business performance more effectively through the implementation of e-commerce systems. Therefore, this research aims to analyse the implementation of e-commerce systems as a development strategy for SMEs in the digital era, as well as find effective solutions to increase the visibility and sales of SMEs through online platforms.

Thus, this research is expected to make a significant contribution in improving the competitive ability of SMEs in the digital era, as well as helping entrepreneurs in understanding the importance of e-commerce system implementation in their business strategy. [9]–[12]

The research conducted by Abdul Halim Anshor in 2022 with the title E-Commerce Development Strategy in the Context of Advancing MSMEs for Sustainable Development is that E-Commerce has the opportunity to grow large and advance so that this can contribute to sustainable development.[13], Research conducted by Moch Rizky Khairul Rachman, et al, in 2024 with the title Implementation of Digital Marketing Strategies Through E-Commerce Shopee at UMKM Keripik Putri Sari Wonokerto Village, explaining that currently, small and medium business actors are starting to realise that people are increasingly interested in shopping

online. [14], Research conducted by. Meylin Rahmawati et al, 2024 with the title Digital Capable MSMEs through the Application of E-Commerce:

Empirical Study in Tarakan City explained that the effectiveness ratio of e-commerce implementation in Tarakan City was 73%, which was in the moderately effective category. As for government support for the application of e-commerce by MSMEs, it has an ineffective category [15], Research conducted by. Layla Azaria Safina in 2024 with the title Implementation of E-Commerce Strategy in Digital Business Planning explains that. By utilising the right e-commerce strategy, companies can increase sales growth, expand market reach, improve operational efficiency, and remain competitive in the digital era.[16] thus that ecommerce is very important to use

2. RESEARCH METHODOLOGY

2.1 Flow of the Research

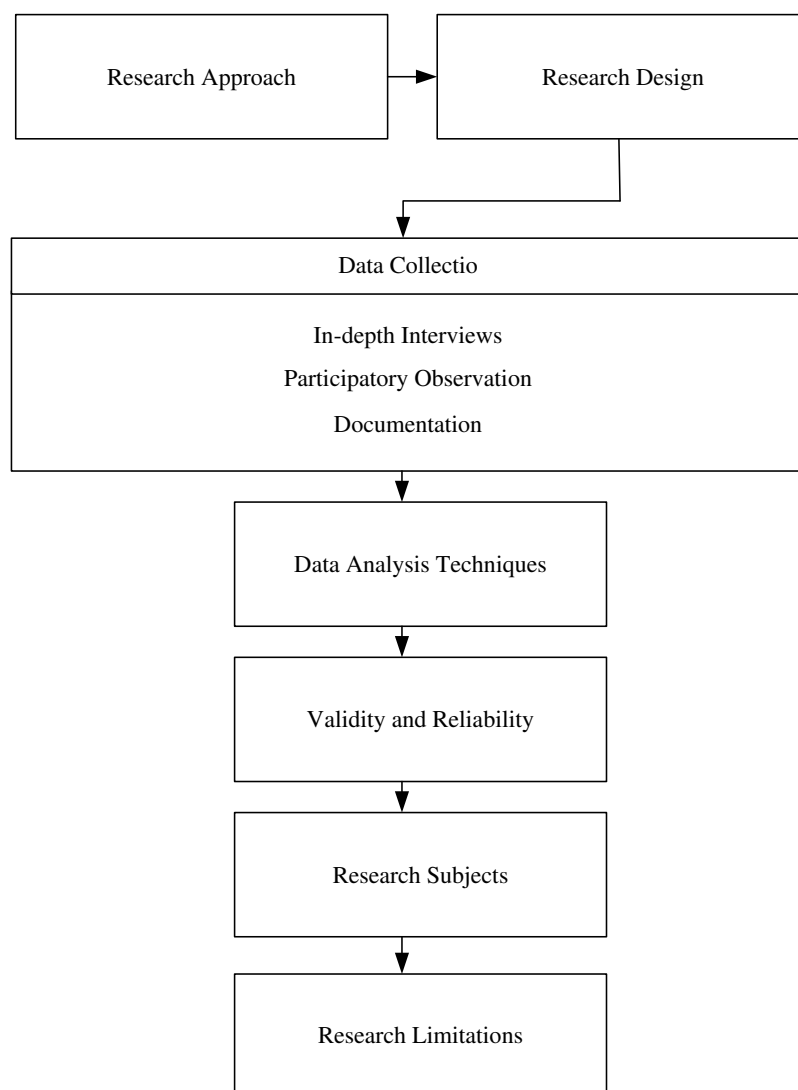


Figure 1. Research Flow

Description

1. **Research Approach** This study uses a qualitative approach with the aim of deeply understanding the process of e-commerce implementation in SMEs in the digital era. The qualitative method was chosen because it allows researchers to explore the factors that influence the implementation of e-commerce, the

benefits gained, as well as the challenges faced by SMEs in using this technology. The qualitative approach also helps in understanding the local context and unique characteristics of SMEs in different sectors.

2. **Research Design** The research design is a case study that focuses on several SMEs that have implemented e-commerce systems as their business development strategy. Case studies were chosen to enable in-depth analysis of SMEs' experiences in e-commerce adoption, as well as to identify best practices and barriers encountered. By using this design, the researcher can explore detailed information related to the internal dynamics of SMEs and the external impact of e-commerce implementation.
3. **Data Collection** Data in this study will be collected through several methods, namely:
 - a **In-depth Interviews:** Interviews were conducted with SME owners, managers, and staff directly involved in e-commerce implementation. These interviews aim to gain insight into their motivations, adoption process, as well as the challenges they face.
 - b **Participatory Observation:** The researcher will observe the SMEs' e-commerce activities directly, including the sales, marketing, and customer interaction processes. This observation will provide insight into how the e-commerce platform works in the SMEs' daily operations.
 - c **Documentation:** Researchers will collect documentation related to e-commerce implementation, such as financial statements, online sales data, and digital marketing materials used by the SMEs.
4. **Data Analysis Techniques** The data obtained from interviews, observations, and documentation will be analysed using thematic analysis techniques. In this analysis, the data will be coded to identify key themes relating to the benefits, challenges, and impact of e-commerce on SME development. This technique allows the researcher to identify certain patterns in the data that support the research findings.
5. **Validity and Reliability** To ensure data validity, the researcher will triangulate the data by comparing results from interviews, observations, and documentation. In addition, the researcher will involve several informants from different SME backgrounds to gain a more comprehensive perspective. Research reliability is maintained through consistent application of interview protocols, as well as systematic data recording.
6. **Research Subjects** The subjects of this study consist of SMEs that have implemented e-commerce for at least one year. The selection of subjects was done by purposive sampling to ensure that the selected SMEs have experience in using e-commerce and can provide relevant insights for this study. Other criteria include the type of products or services sold, as well as the level of engagement in the e-commerce platform.
7. **Research Limitations** Limitations in this research include limitations in the generalisability of the research results due to its focus on limited case studies. In addition, the ever-changing dynamics of the digital market may also affect the research results, so further research is needed to update the findings as e-commerce technology evolves.

With this research method, it is expected that a comprehensive understanding of the implementation of e-commerce systems as an SME development strategy can be obtained, as well as solutions to overcome the various challenges faced by SMEs in the digital era.

E-commerce system, or electronic commerce, is a concept of trade that involves the process of buying, selling, and marketing goods or services through electronic systems, especially through the internet. In e-commerce, all transaction activities, from selecting products to payment, are conducted online..[17]–[19]

3. RESULT AND DISCUSSION

3.1 Results and Discussion

The results of the E-Commerce System as an SME Development Strategy in the Digital Era are as follows..

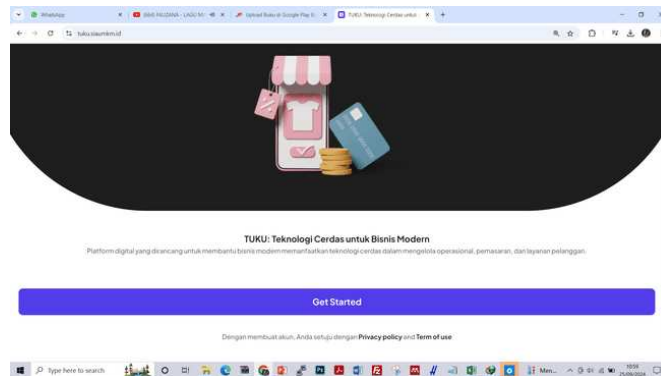


Figure 2. Initial View.

The initial display when the application is accessed, after it appears like this, select Get Started

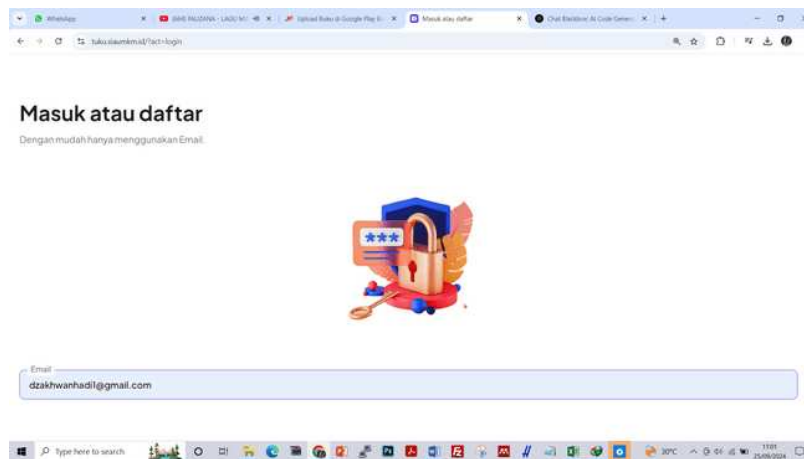


Figure 3 Creating an account

Enter the email that will be used to create an account. After registering an account there will be a notification to the email you use. and enter the OTP code number

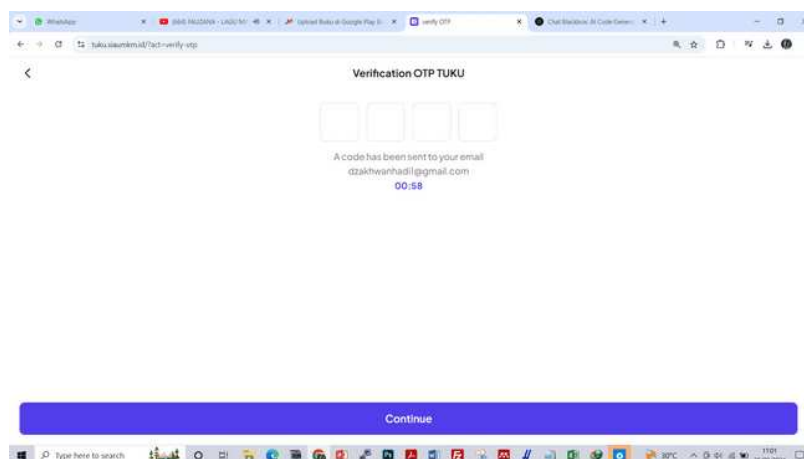


Figure 4. Entering the OTP Code

After entering the OTP code we are expected to complete the business actor profile

The screenshot shows a web browser window with the URL 'bukusistemid.factr-penggunaan'. The page title is 'Fill Your Profile'. The form has the following fields:

- Username (text input)
- Nama lengkap / Usaha (text input)
- Nomor phone aktif (text input with a placeholder 'Please fill out this field')
- Alamat (text input)
- Tanggal ulang tahun (date picker showing 'dd/mm/yyyy')
- Jenis kelamin (dropdown menu with 'Male / Female' options)
- A blue 'Continue' button at the bottom.

Figure 5. Complete business data

After completing the account, a display will appear as below

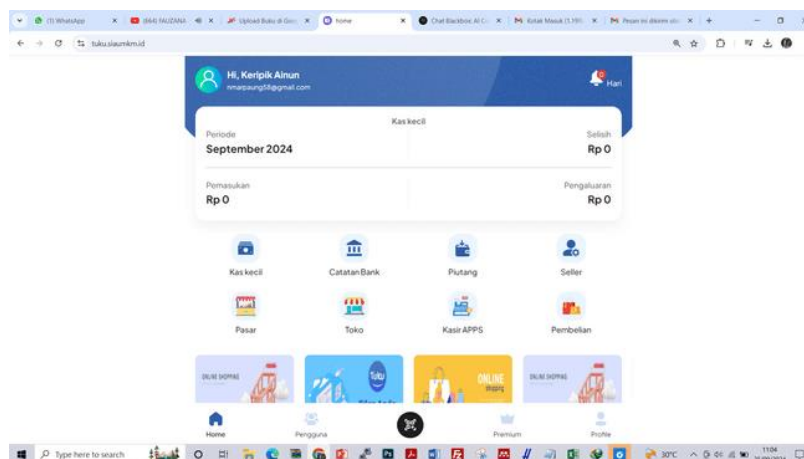


Figure 6 front view

After this display, we will be the reseller or seller, so select Seller

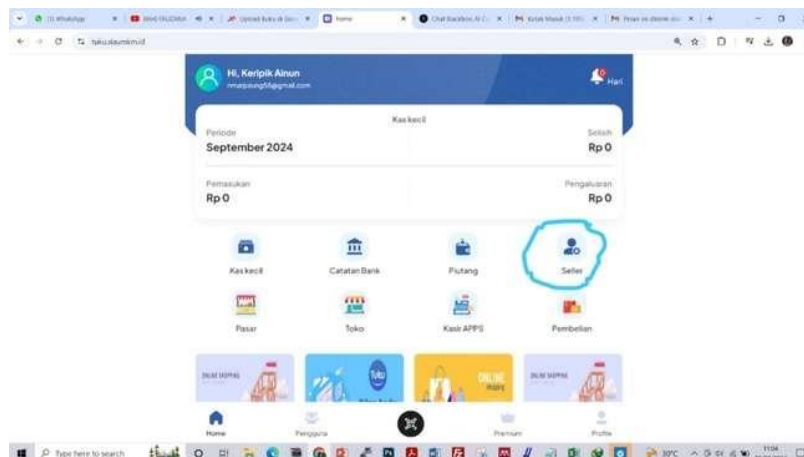


Figure 7. Creating a seller

After selecting Seller, a display will appear as below and press Sign Me In

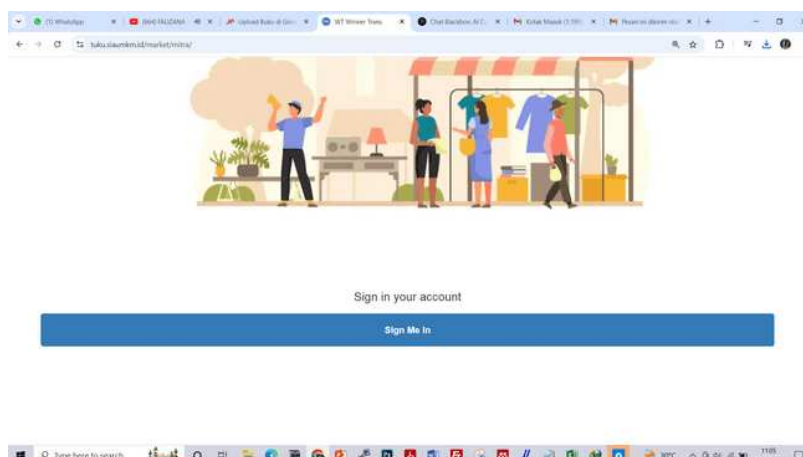


Figure 8. Directed to become a seller

After logging in we are directed to complete our respective business data

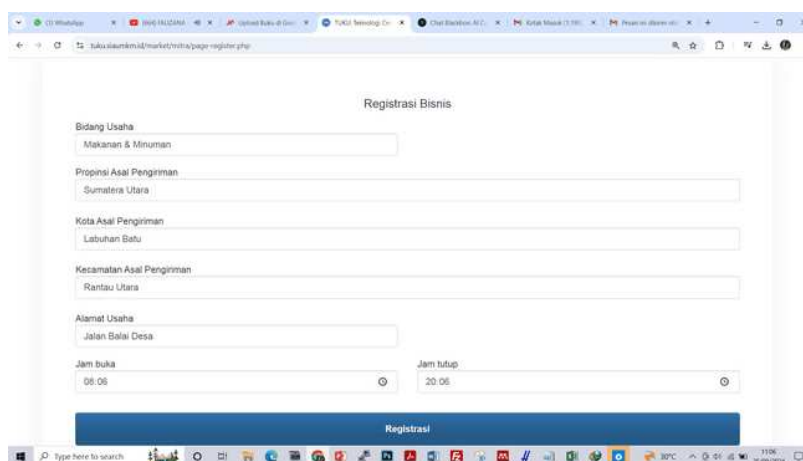


Figure 9 includes the business fields that will be created

After completing the food business data, it will appear below..

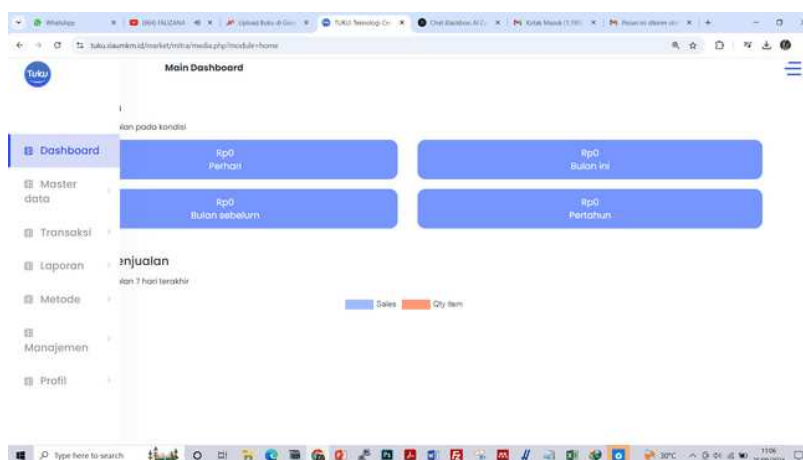


Figure 10 includes product data

To add products, we select the menu on the left > Master Data > Products

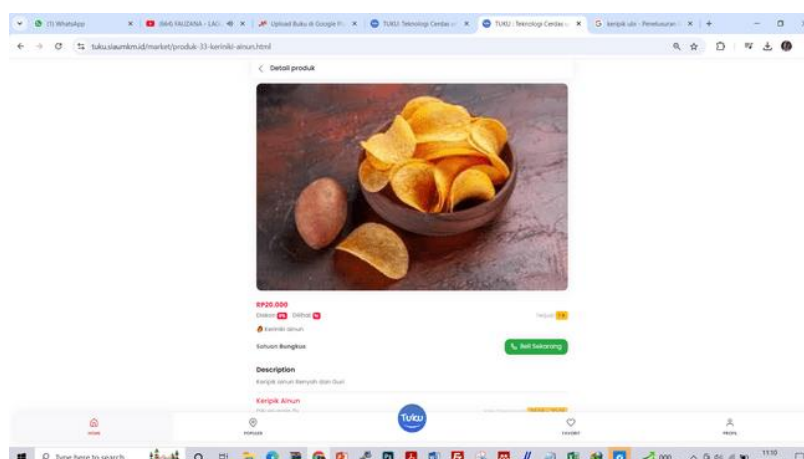


Figure 11. Results of the input product

4. CONCLUSION

Implementing an e-commerce system has proven to be an effective strategy in supporting the development of Small and Medium Enterprises (SMEs) in the digital era. Through e-commerce, SMEs can expand market reach without geographic limitations, increase operational efficiency, and strengthen interactions with consumers. This digital platform not only opens up opportunities to increase sales, but also allows SMEs to compete more competitively with larger companies, thanks to access to technology and data that can be optimized for business decision making. However, the successful implementation of e-commerce in SMEs cannot be separated from a number of challenges. Obstacles such as limited digital infrastructure, low technological literacy among business actors, and concerns about cyber security are significant obstacles. Therefore, support is needed from the government, technology service providers and the private sector to help SMEs overcome these obstacles. This support can take the form of infrastructure development, providing technology training, as well as regulations that support digital transaction security. Overall, e-commerce has great potential to drive growth and innovation in the SME sector. With appropriate and sustainable adoption, SMEs can utilize e-commerce as a tool to create competitive advantages, improve service quality, and adapt to the ever-evolving dynamics of the digital market. Digital transformation through e-commerce is not only a choice, but a necessity for SMEs to survive and develop in this era of globalization and digitalization.

REFERENCES

- [1] I. Dharmawan and W. Puspita, "Pemanfaatan Dalam Peningkatan Pemasaran di UMKM Grosir Batik Tasikmalaya," vol. 02, no. 01, pp. 0–3, 2019.
- [2] B. Triandi, I. F. Rahmad, R. Puspasari, L. Tanti, B. S. Riza, and M. Rizky, "Pelatihan Penggunaan Komputer dan Instalasi Hardware Komputer Pada Praktek Mandiri Bidan Supiani Dalam Mendukung Peningkatan Pelayanan," vol. 2, no. 3, pp. 104–110, 2022, doi: 10.47065/jrespro.v2i3.1213.
- [3] Angeline, D. Allister, L. L. Gunawan, and Y. Prianto, "Pengembangan Umkm Digital Sebagai Upaya Ketahanan Bisnis Pasca Pandemi Covid-19," *Pros. Serina IV*, no. 1, pp. 85–92, 2022.
- [4] H. A. Mumtahana, S. Nita, and A. W. Tito, "khazanah informatika Pemanfaatan Web E-Commerce untuk Meningkatkan Strategi Pemasaran," vol. 3, no. 1, pp. 6–15, 2017.
- [5] A. Agustin, G. P. E. Putra, D. T. Pramesti, and H. Madiistriyatno, "Strategi Umkm Dalam Menghadapi Digitalisasi," *Oikos-Nomos J. Kaji. Ekon. DAN BISNIS*, vol. 16, p. 33, 2023.
- [6] Septiano, "Apa Itu Digital Marketing ? Pengertian dan Konsep Dasarnya," 2017. <http://redtreeasia.com/info/apa-itu-digital-marketing-pengertian-dan-konsep-dasarnya/>.
- [7] D. Tetap and S. Cki, "E-COMMERCE SEBAGAI PENDUKUNG PEMASARAN."
- [8] A. Karim, M. Bobbi, K. Nasution, and S. Suryadi, "Pelatihan Digital Marketing dalam Meningkatkan

- Kompetensi Siswa SMK Negeri 1 Rantauprapat,” vol. 3, no. 2, pp. 115–119, 2022, doi: 10.47065/jrespro.v3i2.2759.
- [9] A. Karim and G. Ginting, “Pemanfaatan Digital Marketing Dengan Facebook Ads Bagi Pelaku UMKM Di Labuhanbatu,” *J. Pengabd. Masy. Gemilang*, vol. 2, pp. 12–16, 2021.
- [10] M. Adi, S. Nalendra, and A. Husna, “Workshop Desain Pemasaran Digital melalui Aplikasi Canva dan Mobile Photography kepada Pelaku UMKM Food & Beverage di Tiban Center Batam,” vol. 2, no. 1, pp. 17–24, 2021.
- [11] P. A. Riyantoko, T. M. Fahrudin, A. V. Ansori, P. A. Atnanda, and R. B. Alamsyah, “PEMANFATAAN APLIKASI CANVA SEBAGAI MEDIA PEMASARAN DI,” pp. 198–203, 2022.
- [12] R. T. Surya, E. E. Sembiring, F. Hadiani, and E. H. Juniwati, “PELATIHAN SOSIAL MEDIA FACEBOOK ADS DAN INSTAGRAM FOR BUSINESS DALAM MENINGKATKAN PENJUALAN Prodi Akuntansi , Jurusan Akuntansi , Politeknik Negeri Bandung Prodi D3 Keuangan dan Perbankan , Jurusan Akuntansi , Politeknik Negeri Diterima : Abstrak Direvisi,” vol. 3, no. 2, pp. 62–71, 2022.
- [13] A. H. Anshor, “Strategi Pengembangan E-Commerce Dalam Rangka Memajukan UMKM Untuk Pembangunan Berkelanjutan E-Commerce Development Strategy in Order to Promote UMKM for Sustainable,” *Pros. Saintek Sains dan Teknol.*, vol. 1, no. 1, pp. 337–345, 2022.
- [14] M. Chips, P. Sari, W. Village, U. Pembangunan, and V. Jawa, “Implementasi Strategi Pemasaran Digital Melalui E-Commerce Shopee pada UMKM Keripik Putri Sari Desa Wonokerto (Implementation Of Digital Marketing Strategies Through E-Commerce Shopee In Article History : memanfaatkan teknologi internet untuk melakukan promosi dan memperoleh keuntungan yang berbelanja secara online , karena konsumen juga mengikuti perkembangan teknologi digital,” no. 3, 2024.
- [15] K. Kartini, Meylin Rahmawati, Sulistya Rini Pratiwi, Rika Wahyuni, and Istianah Asas, “UMKM Cakap Digital melalui Penerapan E-Commerce: Studi Empiris di Kota Tarakan,” *J. Alwatzikhoebillah Kaji. Islam. Pendidikan, Ekon. Hum.*, vol. 10, no. 2, pp. 318–331, 2024, doi: 10.37567/alwatzikhoebillah.v10i2.2790.
- [16] L. A. Safina, H. A. Salsabila, N. Ammarullah, S. A. Marpaung, R. H. Nugroho, and M. Ikaningtyas, “Implementasi Strategi E-Commerce dalam Perencanaan Bisnis Digital,” *J. Ilm. Multidisiplin*, vol. 1, no. 4, pp. 60–68, 2024, [Online]. Available: <https://doi.org/10.62017/merdeka>.
- [17] N. I. Effendi, G. Suliska, L. D. Marthika, T. Ferdian, and S. Wineh, “PENINGKATAN PENJUALAN PRODUK UMKM MASA PANDEMI COVID-19 MELALUI PELATIHAN DIGITAL MARKETING DENGAN GRAPHIC DESIGNER SOFTWARE CANVA,” vol. 6, no. 1, pp. 643–653, 2022.
- [18] R. Nurhanifah, J. D. Pribadi, A. Bisnis, and P. N. Malang, “PEMBUATAN MEDIA PROMOSI DIGITAL E-CATALOG DI INSTAGRAM DENGAN MENGGUNAKAN APLIKASI,” pp. 149–152, 2021.
- [19] M. Alfandi, M. F. Ribie, M. L. Fitria, and M. T. Wahyuni, “Pemanfaatan Canva Sebagai e-Katalog Dalam Meningkatkan Visibilitas Dan Kehadiran Toko Zaidan di Dunia Digital,” vol. 1, no. 3, pp. 567–573, 2023.