Digitalization of village based on information technology through developing BUMDes MSMEs website and logo

Dinar Ajeng Kristiyanti[1]*, Yoanita Alexandra[2], Ringkar Situmorang[3], Reva Fakhrana Athira[4], Juanito Arvin William[5]
[1]Universitas Multimedia Nusantara, Tangerang, Indonesia, email: dinar.kristiyanti@umn.ac.id
[2]Universitas Multimedia Nusantara, Tangerang, Indonesia, email: yoanita.alexandra@umn.ac.id
[3]Universitas Multimedia Nusantara, Tangerang, Indonesia, email: ringkar.situmorang@umn.ac.id
[4]Universitas Multimedia Nusantara, Tangerang, Indonesia, email: reva.fakhrana@student.umn.ac.id
[5]Universitas Multimedia Nusantara, Tangerang, Indonesia, email: juanito.arvin@student.umn.ac.id
*Corresponding author

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ABSTRACT

The development of technology has transformed the global economic landscape, including in the realm of Micro, Small, and Medium Enterprises (MSMEs). However, MSME actors in various villages and regions often still have limitations in understanding the importance of digitalization, especially in utilizing technology to promote their products. Therefore, this Community Engagement activity is initiated with the main goal of creating and disseminating understanding about the importance of implementing a profile website, financial management application, and logo in efforts to increase visibility and sales of products for MSME actors in the Serdang Tirta Kencana Village-Owned Enterprises (BUMDes) in Tangerang, Indonesia. The implementation method is based on Community-Based Participatory Research Program (CBPR) with the following stages are location survey, website and logo creation, socialization, and evaluation. Through close collaboration with local stakeholders from BUMDes Serdang Tirta Kencana, this activity has successfully empowered MSME actors with a strong visual identity and significant digital presence. The result is a 95% increase in the skills of MSME actors in BUMDes Serdang Tirta Kencana. It is hoped that through this activity, MSME actors can become competitive and have a positive impact on local economic growth and community empowerment.

INTRODUCTION

The importance of the role of MSMEs in the economy has become common knowledge. The rapid changes in the way of doing business towards digitalization force businesspeople, including MSMEs, to adjust and follow these developments (Wijoyo & Widiyanti, 2020). Modern MSMEs must adapt to technology to improve operational efficiency and increase visibility in an increasingly competitive market (Idah & Pinilih, 2020). Among the various products produced by MSMEs, one of them is culinary products which are an

important part of this business diversity. Culinary products from MSMEs include food and beverages, food craft products, as well as regional specialties that not only support local economic growth but also promote Indonesia's culinary wealth.

In the current era of globalization, rapid technological advancements are significantly contributing to human activities, enabling them to engage in various tasks and communicate effectively (Kristiyanti et al., 2021).The use of digital marketing provides opportunities for MSMEs to expand their business and become a force in the economic field (Anwar et al., 2022). It is estimated that the digital world will become a central point for all human activities, including business activities (Chairi et al., 2022). One of the promotional media that can be used by MSME players to improve the marketing of their products is a website (Soedewi et al., 2022). Websites and logos are not just additional tools in marketing tools, they are the foundation of the MSME brand image. By having a website, MSMEs can present their brand identity to potential consumers more thoroughly and attractively. Product promotion with an attractive visual appearance can attract customer attention and build trust. The information available on the website not only talks about products and services but also creates confidence in the quality and integrity of the seller. Strong branding, including the use of meaningful logos, can help MSMEs increase their visibility in the eyes of the public and effectively attract the attention of potential customers (Ainun et al., 2023). As MSMEs expand, they tend to hire more local labor, which in turn provides greater economic stimulus.

BUMDes Serdang Tirta Kencana in Serdang Wetan Village, Tangerang Regency is a village of MSME players who focus on culinary products. In running their MSMEs, MSME partners face several significant obstacles that directly limit local economic development and community empowerment efforts. One of the obstacles faced is that MSME partners in the village do not yet have product labels that can distinguish their products in the market. Lack of understanding of internet use and limitations in marketing and promotion media (Bukit et al., 2019) make it difficult for consumers to distinguish these MSME products from similar products on the market. Another obstacle is their limited network marketing reach. These limitations make it difficult for MSMEs to reach more customers and expand their market share. Therefore, this Community Service (PKM) activity was initiated to implement an Information System under BUMDes Serdang Tirta Kencana. This action is a strategic step taken to overcome these obstacles and support local economic growth and community empowerment using information technology, especially website and logo creation.

Creating websites and logos for MSMEs is an investment in their business image and helps create greater visibility in the digital realm. The credibility of a company can be relied upon when they have a website, not just operating as an online store without identity on an internet platform (Nelsen et al., 2021) and the visual elements that have the highest significance are the logo and product appearance (Arifudin et al., 2021). Overall, this article will explain the implementation and impact of the Information System, with emphasis on

creating logos and websites, to support the progress of MSMEs in Serdang Tirta Kencana Village. It will also illustrate how these measures contribute to sustainable growth at the village level, inspiring similar initiatives across the country. Thus, the increasingly visible role of technology in lifting the potential of Indonesian MSMEs in an increasingly complex and competitive global economic scenario. Create websites and logos for MSMEs is an investment in their business image and helps create greater visibility in the digital realm. The credibility of a company can be relied upon when they have a website, not just operating as an online store without identity on an internet platform (Nelsen et al., 2021) and the visual elements that have the highest significance are the logo and product appearance (Arifudin et al., 2021). Overall, this article will explain the implementation and impact of the Information System, with emphasis on creating logos and websites, to support the progress of MSMEs in Serdang Tirta Kencana Village. It will also illustrate how these measures contribute to sustainable growth at the village level, inspiring similar initiatives across the country. Thus, the increasingly visible role of technology in lifting the potential of Indonesian MSMEs in an increasingly complex and competitive global economic scenario.

METHOD

The approach used to carry out community engagement with the residents of BumDES Serdang Wetan is Community-Based Participatory Research (CBPR). It is part of the action research framework, which involves community participation in the implementation of research rather than relying solely on models formulated by academic researchers (Rosyidah, 2021). CBPR involves collaboration between village residents, students, and also lecturers in a research activity to achieve common goals.   Through discussions and collaborative meetings, they formulate strategies that align with the community's needs and expectations.
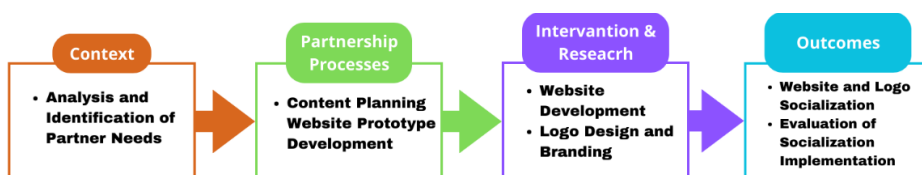

Figure 1. Stages of research using Community-Based Participatory Research (CBPR) methods

The sequence of CBPR methods is context which contains analysis and identification of partner needs starting with a survey that provided an initial view of the needs that had to be met in website and logo development. The next sequence is partnership processes which contain the main feature planning phase of the website involved defining the main features that would be present in the creation of the website, such as Profile, Product, Forum, News, Gallery, and Contact pages. In addition, this stage also includes making an initial prototype of the website using the Figma application to roughly describe the appearance and function of the website.

The next step is Intervention & Research for Website Development and Logo Design and Branding. The website development method of MSME BUMDes Serdang Tirta Kencana that was used in website development was the waterfall method. This development model was known as "waterfall" because it followed a linear sequence that required completing the previous stage before proceeding to the next stage, starting from planning to maintenance (Wahid, 2020). Additionally, PHP programming language and Laravel framework were utilized to ensure stability and security. Furthermore, the Rapid Application Development (RAD) method was also employed, addressing projects with short timeframes and enabling flexible changes based on Partner feedback (Putri et al., 2023) to enable flexible and iterative change based on Partner feedback. The design and branding stage focused on creating a logo, a crucial element in visual identity, representing the values of MSMEs in Serdang Tirta Kencana Village and contributing significantly to building their brand image (Sayatman et al., 2021).

The final step is outcomes. Outcomes contains website and logo then socialization and evaluation of socialization implementation This socialization stage aimed to introduce the website and logo to the residents of Serdang Wetan Village and provided an understanding of the benefits of these two elements. In addition, this process also focused on educating citizens about how to use the website that had been built and practical ways to create logos using related applications, such as Canva. The evaluation stage of the website and logo socialization activities to MSME actors of BUMDes Serdang Tirta Kencana was divided into two, namely Pre-test and Post-test. The pre-test involved an initial assessment of the knowledge and understanding of Serdang Wetan Village residents about website use and logo creation, while the Post-test was a re-evaluation after residents participated in socialization. It aimed to measure the increase in their understanding and skills related to websites and logos. This evaluation method was carried out by distributing questionnaire papers to socialization participants.

RESULT AND DISCUSSION

The implementation of MSME Development activities in Serdang Tirta Kencana village, focusing on the creation of logos and websites, is aimed at enhancing product promotion and visibility among the broader community. This PKM initiative, targeting Micro, Small, and Medium-sized Enterprises (MSMEs) of BUMDes Serdang Tirta Kencana, was carried out from June to July 2023. The initial phase involved conducting a field survey of BUMDes Serdang Tirta Kencana in collaboration with its Director, Mr. Wibowo Budi Utomo, to analyze and identify partner needs, which would later inform the features incorporated into the website.

Figure 2. Field survey to BUMDes Serdang Tirta Kencana

The results of the field survey on June 18, 2023, highlighted that culinary products in Serdang Wetan Village were predominantly marketed using social media and traditional methods like word of mouth. However, this approach was time-consuming due to manual management requirements, and partners lacked product labels to effectively promote their offerings.

Following the survey, it became evident that there was a crucial need to develop a comprehensive website. This website would encompass a Profile page elucidating the history, vision, mission, and organizational structure of BUMDes. Additionally, there was a demand for features such as Forum, News, Contact, and Gallery to enable BUMDes to engage with customers and provide up-to-date information and product visualizations. Backend necessities included Authentication features for secure access, Dashboards for business performance tracking, and Master Data for efficient data management. Furthermore, features like Product, Shopping List, COGS, and Price Suggestions were deemed essential for managing products, orders, cost of goods sold, and offering appropriate price recommendations.
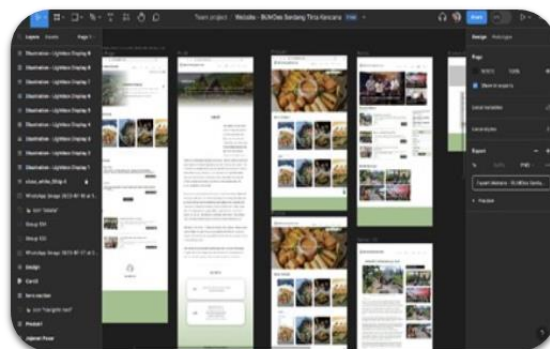
Figure 3. Website prototype

In the development of the Serdang Tirta Kencana BUMDes MSME website, the method used is the waterfall method. This approach was chosen because it provides a good structure in development by completing the stages sequentially, from planning to maintenance. The use of PHP programming

language and Laravel framework was chosen to ensure the stability and security of the website. PHP, short for Hypertext Preprocessor, is a high-level scripting language integrated into HTML documents (Sandria et al., 2022). A common advantage of using Laravel is the existence of a large community that contributes to the discovery of various libraries, allowing the completion of web projects from low to medium scale (Endra et al., 2021).

In addition to the waterfall method, the development of this website also involves the Rapid Application Development (RAD) method. RAD system allows information system development in a short time, 30-90 days and it involves three main stages: requirements analysis, design stage, and implementation stage (Putri et al., 2023). This allows for quick integration of changes or feature additions without disrupting the entire development. Furthermore, the implementation stage is carried out to get the system ready for operation (Susanti & Elmiyati, 2020). This website is expected to effectively increase the visibility and marketing of MSME products online.

The creation of this website has results that include various features that will provide benefits for MSMEs in Serdang Tirta Kencana Village. This website can be accessed through the following link https://umkmserdangwetan.com/

Figure 4. The frontend page of the Serdang Wetan Village MSME website

Figure 4 illustrates various menu options available on the website. The "About" menu provides information about Serdang Tirta Kencana Village, including its profile, vision, mission, and logos representing both the village and its MSMEs. Under the "Products" menu, users can explore a range of products uploaded by MSME players in the village. The "News" section presents the latest updates and developments relevant to Serdang Tirta Kencana Village. Additionally, the Forum menu facilitates user interaction and enables MSME actors to give and receive feedback. The Gallery menu showcases photos and videos documenting activities related to BUMDES Serdang Tirta Kencana. Lastly, the Contact Menu offers details for users to reach or visit MSMEs Culinary BUMDES Serdang Tirta Kencana.
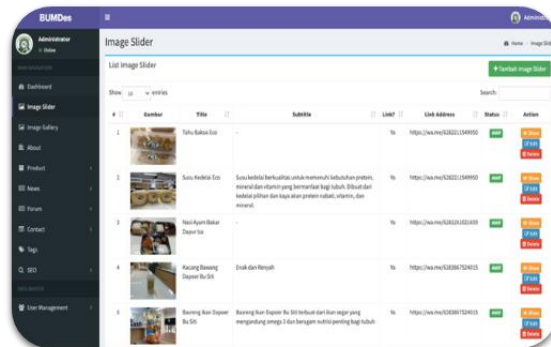
Figure 5. The backend page of the Serdang Wetan Village MSME website

On the back side of the site, some features strengthen business management. The Authentication feature will set up secure access management, while the Dashboard will provide an easy-to-understand view of business performance. Master Data will enable efficient data management, and the Product, Shopping List, COGS, and Price Suggestions features will help in managing products, orders, and cost of goods sold, as well as providing appropriate price recommendations.


Figure 6. Serdang Wetan Village UMKM logo

This logo visually reflects the values that MSMEs in Serdang Tirta Kencana Village want to represent. The logo represented unity, cooperation, and focus on the culinary sector, effectively communicating the identity and values of Serdang Tirta Kencana MSMEs.

Figure 7. Website socialization to residents of Serdang Tirta Kencana Village

Socialization sessions were held at the Multimedia Nusantara University campus on September 7, 2023, to train MSME partners in using the website and understanding the philosophy behind logo design. The evaluation results showed significant improvement in participants' knowledge of digital media utilization and achievement of training goals, indicating the success of the program in meeting its objectives. Socialization about the Culinary MSME logo was also held to provide an in-depth understanding of the philosophy behind logo design to MSME partners. This aims to explain the importance of logos as a strong visual identity for MSME businesses. Although the main element of a brand is its name, logos and symbols have an important role (Rasyid, 2019). Furthermore, in the training, citizens are taught practical ways to create their logos using design tools such as the Canva app.

The following are the evaluation results of 20 participants' socializing websites and logos through filling out the Pre-test and Post-test:
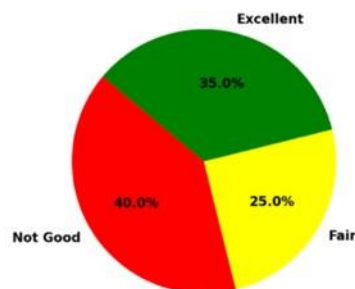
Figure 8. Percentage of digital media utilization knowledge assessment

Figure 8 represents the percentage of participants' knowledge of the use of digital media. 7 participants answered, "Excellent" and 5 participants answered, "Fair". While participants answered "Not Good" there were 8 people or about 40.0% of the total participants who filled out the Pre-test form.
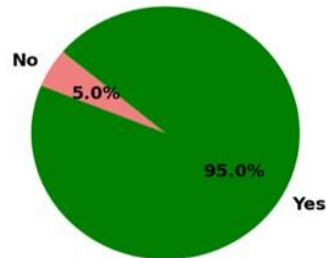
Figure 9. Percentage of participants' goals achieved from training

Figure 9 illustrates the results of the Post-Test on whether the participant's goal of knowing the deeper use of digital media through website and logo socialization is achieved or not. It can be concluded from the results that 95.0% of participants who answered "Yes", exactly 19 out of a total of 20 participants, felt that their goals in the training had been achieved well. This is a very positive result and shows the success of the training program in achieving its goals.

Tabel 1. Comparison table after and before training and socialization

Indicator	Before	After
Knowledge about using websites to enhance business.	The majority of participants have knowledge ranging from poor to fairly good.	The majority of participants have fairly good to very good knowledge.
Proficiency in utilizing websites to enhance business.	The majority of participants have skills ranging from poor to fairly good.	The majority of participants have skills ranging from fairly good to very good.
The value of digital media usage skills.	The majority of participants are not accustomed to using digital media. gunakan media digital	The majority of participants are accustomed to using digital media.
Training objectives achieved	The majority of participants have not achieved the training objectives.	The majority of participants feel they have achieved the training objectives.

The research findings and the impact of this development, as well as provide recommendations for community empowerment and the sustainability of MSMEs in the village. The development of the website and logo had a significantly positive impact on the MSMEs in Serdang Wetan Village in terms of facilitating product promotion, improving business management, and enhancing the partners' understanding of digital media usage, especially websites and logos. These findings were crucial because MSMEs are the backbone of the local economy, and improvements in branding, promotion, and business management can help them compete in an increasingly complex and competitive digital economy. One of the key findings is that most of the MSME partners initially had basic knowledge of digital media usage. However, through training and socialization, their understanding improved significantly. This highlights the importance of ongoing education and training to enable MSMEs to leverage digital technology more effectively. Training in website usage and

logo design achieved a high success rate, with 95% of participants feeling that their goals in this training had been achieved. This reflects the effectiveness of the training and socialization programs conducted by the author.

CONCLUSION

The development of websites and logos for MSMEs in Serdang Wetan village made a significant positive contribution in facilitating the promotion of MSME products, improving business management, and understanding MSME partners about the use of digital media, especially websites and logos. MSME partners initially had basic knowledge of digital media and hoped to improve business capabilities. After the training, they experienced significant improvements in website usage, logo creation, and Canva design. Satisfaction with the training material reached 95.0% of participants who responded that they felt their goals were achieved, with several suggestions for improvement such as increasing the duration of training and more intensive assistance for those who were less familiar with certain features. The development of village MSMEs based on information systems, especially logo and website creation, helped MSMEs in Serdang Tirta Kencana Village grow and compete in the digital economy era. Thus, this effort proved the strategic value of digital technology in lifting the potential of Indonesian MSMEs in facing increasingly complex and competitive global economic challenges. Based on the research findings, here are several recommendations to further empower community partnerships and ensure the sustainability of MSMEs in BUMDes Serdang Tirta Kencana in Serdang Wetan Village: 1) Provided ongoing training and skill enhancement sessions to further develop participants' digital media skills and keep them updated on the latest trends and technologies; 2) Offered mentorship and continuous support for those participants who may require additional assistance in utilizing certain digital features effectively; 3) Explored opportunities to integrate the websites and logos created by MSMEs into online marketplaces, thereby expanding their reach and customer base and 4) Conducted regular evaluations and sought feedback from participants to ensure that the training programs remained relevant and beneficial to their evolving needs.

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