

EMPOWERING SMALL AND MEDIUM ENTERPRISES THROUGH AUGMENTED REALITY TECHNOLOGY FOR BRANDING AND PROMOTING TRADITIONAL PALEMBANG CAKES

Aulia Utami Putri^{1*}, Katriza Imania², Annisa Rahmawati³, Alvina Sevtiani⁴,
Efrilia Wanda Saputri⁵, Nabila Trisya Fathiyah⁶

^{1,2,4,5,6}Department of Public Administration, Sriwijaya University, Palembang, South Sumatra, Indonesia

³Department of Communication Studies, Sriwijaya University, Palembang, South Sumatra, Indonesia

*Corresponding author, email: auliautami@fisip.unsri.ac.id

Received: 11/11/2025

Revised: 05/01/2026

Accepted: 06/01/2026

Abstract. Palembang City is known as a culinary destination with a variety of traditional cakes such as Kue Gandus, Ketan Kuning Serundeng, Kojo, Muso, and Srikaya, which are local cultural identities. Micro, Small, and Medium Enterprises (MSMEs) like Dapoer Endungqu play an important role in preserving this culinary tradition, but face challenges in digital marketing and branding. This service activity aims to empower MSMEs through Augmented Reality (AR) technology to enhance the promotion and branding of traditional Palembang cake products. The implementation method uses a participatory approach that includes initial observation and identification of partner needs, product sampling, AR-based digital media design, and partner training and mentoring. The results show an increase in partner capacity in product photography, the use of interactive AR catalogues, and social media management, which strengthens visual appeal, consumer interaction, and promotional reach. The discussion confirms that AR effectively increases customer trust and loyalty without diminishing cultural value. The conclusion confirms that AR integration can strengthen the competitiveness of MSMEs in the digital age. Follow-up includes further development of the AR application, periodic monitoring, and program expansion to other culinary MSMEs for innovation and sustainability.

Keywords: augmented reality, digital branding, MSMEs

Abstrak. Kota Palembang dikenal sebagai destinasi kuliner dengan keanekaragaman kue tradisional seperti Kue Gandus, Ketan Kuning Serundeng, Kojo, Muso, dan Srikaya yang menjadi identitas budaya lokal. Usaha Mikro, Kecil, dan Menengah (UMKM) seperti Dapoer Endungqu memiliki peran penting dalam pelestarian kuliner ini, namun menghadapi tantangan pemasaran digital dan branding. Kegiatan pengabdian ini bertujuan untuk memberdayakan UMKM melalui teknologi Augmented Reality (AR) guna meningkatkan promosi dan branding produk kue tradisional Palembang. Metode pelaksanaan menggunakan pendekatan partisipatif yang meliputi observasi awal dan identifikasi kebutuhan mitra, pengambilan sampel produk, perancangan media digital berbasis AR, serta pelatihan dan pendampingan mitra. Hasil menunjukkan peningkatan kapasitas mitra dalam fotografi produk, penggunaan katalog AR interaktif, dan manajemen media sosial yang memperkuat daya tarik visual, interaksi konsumen, serta jangkauan promosi. Pembahasan mengonfirmasi bahwa AR efektif meningkatkan kepercayaan dan loyalitas pelanggan tanpa menghilangkan nilai budaya. Kesimpulan menegaskan bahwa integrasi AR mampu memperkuat daya saing UMKM di era digital. Tindak lanjut meliputi pengembangan aplikasi AR lebih lanjut, monitoring berkala, dan perluasan program ke UMKM kuliner lainnya untuk keberlanjutan inovasi.

Kata Kunci: augmented reality, branding digital, UMKM

How to Cite: Putri, A. U., Imania, K., Rahmawati, A., Sevtiani, A., Saputri, E. W. & Fathiyah, N. T. (2025). EMPOWERING SMALL AND MEDIUM ENTERPRISES THROUGH AUGMENTED REALITY TECHNOLOGY FOR BRANDING AND PROMOTING TRADITIONAL PALEMBANG CAKES. *Mitra Mahajana: Jurnal Pengabdian Masyarakat*, 6(3), 392-399. doi: <https://doi.org/10.37478/mahajana.v6i3.7016>

INTRODUCTION

The city of Palembang, as one of Indonesia's tourist destinations, is not only known for its famous icon, the Ampera Bridge, but also for its culinary diversity. Palembang has been dubbed the "City of a Million Cuisines" because it has enormous potential for culinary tourism development (Azizah et al., 2024). The diversity of traditional cakes, such as Kue Gandus, Ketan Kuning Serundeng, Kojo, Muso, and Srikaya, is a special attraction for both domestic and foreign



tourists. Putri & Wijoyo (2023) states that the development of this culinary potential not only plays a role in strengthening the image of regional tourism but is also an important part of efforts to preserve local culture. Thus, the tourist experience in Palembang will be more complete if tourists can taste and learn more about the variety of traditional foods that are the identity of the city.

Micro, Small, and Medium Enterprises (MSMEs) play a very important role. MSMEs are small businesses established on the initiative of individuals or small groups, playing an important role in reducing unemployment and increasing regional and national income. MSMEs also utilize the potential of local natural resources that have not been commercially processed. The definition of MSMEs varies between countries and international institutions, generally based on criteria such as the number of employees, capital, turnover, business scale, technology, management, and market orientation (Saefullah et al., 2022).

MSMEs are the backbone of the Indonesian economy, with 97% of Indonesia's total workforce employed by MSMEs. Based on business units, the number of MSMEs has reached 65.4 million, or around 99% of the total business units in Indonesia. In addition, MSMEs also contribute to the Indonesian economy. In 2022, the contribution of MSMEs is estimated to reach 61% of the total national GDP (Ministry of Cooperatives and SMEs, 2022 in INDEF (2024)). Basri et al. (2025) state that MSMEs not only contribute to creating jobs and reducing unemployment, but also serve as the main driving force in improving community welfare and strengthening the creative economy based on local potential. Through the culinary sector, MSMEs in Palembang play a major role in preserving traditional foods amid modernization and increasingly fierce competition in the food industry.

Various problems faced by MSMEs include lack of business capital, lack of knowledge on how to develop a business, lack of product innovation, lack of understanding of digital marketing, and manual bookkeeping (Fadhilah & Yuniarti, 2023). However, one of the main challenges faced by MSMEs is limitations in marketing and product promotion (Anggraeny et al., 2025). In the digital era, the use of technology is the key to business success, including for MSMEs.

Diantoro & Soderi (2024) state that MSMEs must adapt to take advantage of digital opportunities in order to remain competitive. In this day and age, the use of digital technology is certainly a solution to help business actors or MSMEs in running their businesses. One way to do this is by marketing using digital media (Farizki et al., 2020). Digital marketing is often associated with marketing or promoting a product using digital media or the internet. Promotional media can include social media platforms such as Instagram and TikTok. Digital marketing is the right solution to boost the brand of a product or service (Oktaviani & Rustandi, 2018). The purpose of digital marketing itself is to reach consumers accurately, introduce business products to the public, and achieve high turnover.

One technology that can be utilized is Augmented Reality (AR), which allows consumers to interact with products virtually before making a purchase. According to Aditama et al. (2019), Augmented Reality (AR) is a term for an environment that combines the real world and the virtual world created by a computer so that the boundary between the two becomes very thin.

Dapoer Endungqu MSME is a micro business that produces various traditional Palembang cakes, such as Kue Gandus, Bugis, Ketan Kuning Serundeng, Kojo, Bolu Suri, Lumpang, Dadar Jiwo, Jando Berais, Lapis, and others. Established in 2018, this business is managed by a married couple with occasional help from additional workers from the surrounding community. Despite its great potential in terms of product cultural value and customer loyalty, this business still faces serious limitations in branding, digital management, and manual production capacity. Digital promotion efforts have been made through Instagram and TikTok, but management has not been optimal due to time constraints and limited ability to create interesting and consistent content.

The gap between the large market potential and the digital capacity and skills of business actors is one of the main factors causing stagnant growth. Therefore, technology-based interventions, such as Augmented Reality (AR), offer a potential solution to introduce products in a more attractive, interactive, and modern way to a broader market. Empowerment activities through AR are expected not only to enhance consumer appeal and trust but also to strengthen the product's identity as part of Palembang's culinary cultural heritage.

Several previous studies have proven that the use of Augmented Reality (AR) can increase the effectiveness of MSME marketing strategies. Research conducted by Bastian, et al (2025) from emphasizes that the application of AR in product catalogs not only increases visual appeal and consumer interaction but also expands the marketing reach of MSMEs in the digital realm (Basri et al., 2025). Furthermore, research conducted by Putra & Kurniawan (2022) found that AR can be used in promotional brochures to display 3D models of laptops and complete specifications through markers (QR codes) as image targets. This study found that the use of AR in brochures and image targets helps consumers understand product specifications more easily and clearly compared to regular brochures (Putra & Kurniawan, 2022).

From various previous studies, it can be concluded that Augmented Reality (AR) technology plays an important role in strengthening promotional strategies, enhancing branding, and building consumer trust. However, research specifically implementing AR on traditional Palembang cakes is still very limited. Therefore, this study focuses on the application of an AR-based interactive digital catalog for Dapoer Endungqu MSMEs, as an effort to innovate marketing and preserve traditional cuisine in the digital era.

Through this empowerment program, Dapoer Endungqu MSMEs are encouraged to utilize AR technology in their product branding and promotion strategies. The AR-based interactive product catalog is expected to help consumers see a more realistic view of the cakes, explore product details, and obtain more complete information before purchasing. This innovation is expected to increase consumer appeal and trust, strengthen engagement, expand market reach, and enhance the competitiveness of Dapoer Endungqu SMEs as representatives of traditional Palembang cuisine that are adaptive to developments in digital technology.

METHOD

This community service activity employs a participatory approach that actively engages partners at every stage of implementation. The stages of the activity consist of (1) initial observation and identification of partner needs, (2) sampling, (3) design of Augmented Reality (AR)-based digital media, and (4) training and mentoring of partners.

The first stage began with the initial observation and identification of the needs of partners and business owners to determine the main obstacles in packaging, digital promotion, and marketing strategies employed. This participatory observation-based approach aimed to ensure that the solutions developed were truly relevant to the real conditions of the partners, as was the method used by Basri et al. (2025) in a technology-based MSME empowerment program for the promotion of local products.

The second stage involves sampling and collecting visual documentation used in catalog creation and Augmented Reality visualization. Documentation is carried out with consideration for aesthetic and visual appeal, as visual content plays a strategic role in increasing customer engagement and strengthening brand image (Kusmala et al., 2024).

The third stage is the design of Augmented Reality (AR)-based digital media, which involves team brainstorming activities to determine the design concept, appearance, and user interaction methods. This activity refers to the science and technology diffusion model and practical training developed by Basri et al. (2025), in which the application of AR technology has been proven effective in increasing consumer appeal and expanding the reach of promotions.

The fourth stage is training and mentoring partners, including product photography training, AR media use, and social media management. This approach refers to the findings of Khairani et al. (2025) that digital literacy and adaptive training are very important to support the sustainability of digital transformation in micro and small businesses in areas with limited resources. With these stages, this community service activity is expected to increase the capacity of partners in managing digital media and utilizing AR technology as an innovative, effective, and sustainable marketing strategy.

RESULTS AND DISCUSSION

This community service activity was carried out with the aim of increasing the digitalization capacity of Dapoer Endungqu MSME promotion through the application of interactive media based on Augmented Reality (AR). The program was implemented in a participatory manner by involving partners in each stage so that the solutions developed were in line with the actual conditions and needs in the field (Basri et al., 2025).

Initial Observation and Identification of Partner Needs

The initial stage of the activity was carried out through direct observation at the Dapoer Endungqu business location in Palembang. The community service team conducted in-depth interviews with the business owner to map out the main challenges faced, including limitations in digital promotion, a lack of skills in social media management, and the absence of product visual innovation. Additionally, field observations reviewed the production, packaging, and product documentation processes, which are still carried out manually. The results of the identification showed that the partner needed a more attractive and informative promotional strategy that was in line with the characteristics of its traditional products. This approach was in line with the participatory method, which emphasized active collaboration between the community service team and business actors to formulate priority needs (Anggraeny et al., 2025).



Figure 1. Community service team with MSME partners

The next step is to collect product samples and visual documentation that will be used in an AR-based digital catalogue. This process includes taking photos of various types of traditional cakes such as Kue Gandus, Ketan Kuning Serundeng, Kojo, Muso, and many others. At this stage, the team pays attention to aesthetics, lighting, and visual composition so that the documentation results are highly attractive. Good product visualization has been proven to influence consumer perception in choosing products (Kusmala et al., 2024).



Figure 2. Observation and product sampling

Designing Augmented Reality (AR)-Based Digital Media

The next step is the design of interactive AR-based digital media. This process begins with brainstorming concepts for a digital catalogue that allows users to scan markers on packaging or brochures using an AR viewer application to display three-dimensional models of products (Nirmala et al., 2024). The digital catalogue is designed to display product visuals, brief descriptions, price lists, and ingredient information. The use of AR provides an interactive experience for consumers so they can see a more realistic view of the cake before purchasing (Bhavadharini, et al., 2023). According to Aditama et al. (2019), AR technology is effective in creating immersive learning and marketing experiences because it can harmoniously combine real and virtual elements. In the context of MSMEs, the application of AR not only increases the aesthetic value of promotions but also strengthens the branding of traditional products to make them more competitive in the digital market (Basri et al., 2025).



Figure 3. Design of Augmented Reality (AR)-based digital media

Partner Training and Mentoring

The final stage is partner training and mentoring, which covers three main aspects. First, Product Photography Training. This training aims to improve partners' skills in taking attractive product photos using smartphone cameras and natural lighting. The training is conducted through hands-on practice with the partners' actual products. Second, AR and Digital Catalog Training. The team provides training on how to use AR applications to display interactive catalogs, from scanning markers to displaying 3D models.



Figure 4. *Product photography training and AR usage*

Third, social media management training. This stage focuses on optimizing Instagram and TikTok as promotional media. The training material covers content posting strategies, the use of engaging captions, effective hashtag selection, and insight analysis to gauge audience reach (Khan, 2025). This training is important to ensure the sustainability of the digital media that has been developed (Khairani et al., 2025).



Figure 5. *Social media management training*

The results of this activity show an improvement in partners' ability to manage digital promotions. Partners are able to photograph products with better quality, upload content consistently, and use AR catalogs in promotions to consumers.

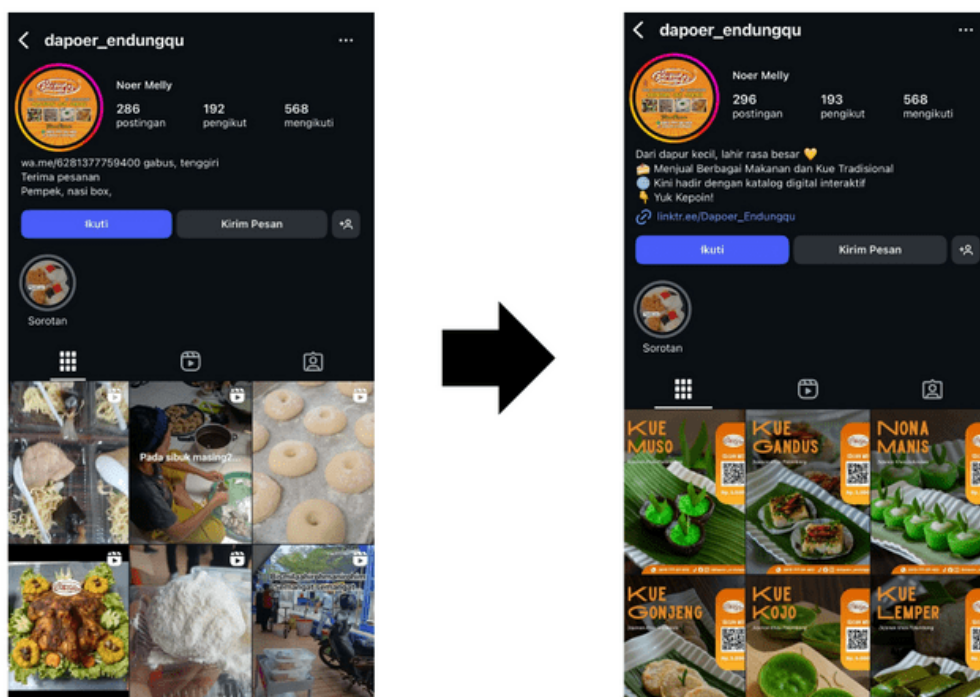


Figure 6. Instagram displays before and after the activity

In addition, Dapoer Endungqu products now have a new image as traditional MSMEs that innovate with modern technology. The AR-based approach also increases the interest of new customers who are attracted to interactive and modern visual concepts without losing the cultural values of Palembang. These findings align with the research by Anggraeny et al. (2025) and Basri et al. (2025), which states that integrating AR technology into SMEs can enhance competitiveness and customer loyalty.

CONCLUSION

The integration of Augmented Reality (AR) technology into the branding and promotion strategy for traditional Palembang cakes has successfully empowered Dapoer Endungqu MSMEs by increasing their competitiveness in the digital era. Through a participatory approach, this program achieved its main objective of strengthening the identity of local culinary culture while expanding market reach through interactive digital innovation. The application of AR not only improves partners' capacity in technical aspects such as product photography and social media management, but also builds higher consumer trust without reducing the traditional value of the product. This shows that AR technology is effective as an empowerment tool for culinary MSMEs, allowing them to adapt to the challenges of modernization while preserving cultural heritage.

To maintain and develop the results of this program, it is recommended to develop more sophisticated AR applications, such as adding real-time interaction features with consumers or integration with e-commerce platforms. Regular monitoring of technology use by partners needs to be conducted every three months to assess effectiveness and provide additional assistance if necessary. In addition, this program can be expanded to other culinary MSMEs in Palembang or surrounding areas through collaboration with local governments and universities, in order to create a sustainable innovation ecosystem and encourage creative economic growth based on local potential. With these steps, it is hoped that traditional culinary MSMEs can become more independent and competitive in facing global competition.

ACKNOWLEDGEMENT

We would like to express our gratitude to Sriwijaya University, particularly the Institute for Research and Community Service (LPPM), for funding this community service activity in accordance with Rector's Decree Number 0014/UN9/SK.LPPM. PM/2025 concerning the Determination of Implementing Personnel and Titles of Community Service Activities for the Community-Based Service Scheme for Sriwijaya University Lecturers, dated September 17, 2025. We also express our appreciation to the Dapoer Endungqu MSME in Palembang City, South Sumatra, for their active and participatory cooperation so that the community service activities could run successfully.

REFERENCES

- Aditama, P. W., Adnyana, I. N. W., & Ariningsih, K. A. (2019, February). Augmented reality dalam multimedia pembelajaran. In *SENADA (Seminar Nasional Manajemen, Desain dan Aplikasi Bisnis Teknologi)* (Vol. 2, pp. 176-182). <https://eprosiding.idbbali.ac.id/index.php/senada/article/view/225>
- Anggraeny, R., Hasnawati, H., Hasriani, H., & Sukmayani, S. (2025). Optimalisasi Pemasaran Digital Umkm Pare Takoyaki Melalui Pemanfaatan Teknologi Augmented Reality. *Abdimas Toddopuli: Jurnal Pengabdian Pada Masyarakat*, 7(1), 139-146. DOI: <https://doi.org/10.30605/atjpm.v7i1.6878>
- Azizah, F. P., Sudarman, S., Syabilah, N. A., & Fariza, N. A. (2024). Palembang City In Time: A History of Social And Cultural Change. *El Tarikh: Journal of History, Culture and Islamic Civilization*, 5(2), 94-103. DOI: <https://doi.org/10.24042/jhcc.v5i2.17560>
- Basri, M., Kasmada, & Wahyuddin. (2025). Pemberdayaan UMKM Takoyaki: Pemanfaatan Augmented Reality (AR) Untuk Katalog Produk Interaktif Dan Pemasaran Digital. *Abdimas Toddopuli: Jurnal Pengabdian Pada Masyarakat*, 6. <https://www.e-journal.my.id/atjpm/article/view/6441/3997>
- Bhavadharini, B., Monica, V., Anbarasan, R., & Mahendran, R. (2023). Virtual, augmented, and mixed reality as a versatile tool in food consumer behavior evaluation: Recent advances in aroma, taste, and texture incorporation. *Comprehensive Reviews in Food Science and Food Safety*, 22(6), 4925-4956. <https://doi.org/10.1111/1541-4337.13248>
- Diantoro, K., Soderi, A., & Informatika, T. (2024). Pengembangan strategi digital marketing umkm di era digital. *PEMANAS: Jurnal Pengabdian Masyarakat Nasional*, 4(2), 175-187. DOI: 10.22441/pemanas.v4i2.31141
- Fadhillah, P., & Yuniarti, A. (2023). Pemberdayaan UMKM: Melihat Peluang Bisnis UMKM di Era Digital di Desa Ujunge Kecamatan Tanasitolo Kabupaten Wajo. *Jurnal Pengabdian Masyarakat dan Riset Pendidikan*, 2(1), 291-298. DOI: <https://doi.org/10.31004/jerkin.v2i1.176>
- Farizki, F. I., Salamah, R., Mutiah, T. S. R., Wardhani, W. K., & Siddi, P. (2020). PENYULUHAN UMKM DI ERA NEW NORMAL DENGAN MEMPRIORITASKAN EKONOMI DIGITAL MARKETING. *SELAPARANG: Jurnal Pengabdian Masyarakat Berkemajuan*, 4(1), 620-623. <https://journal.ummat.ac.id/index.php/jpmb/article/view/3374>
- INDEF. (2024). *LAPORAN FINAL PERAN PLATFORM DIGITAL TERHADAP PENGEMBANGAN UMKM DI INDONESIA*. <https://indef.or.id/wp-content/uploads/2024/01/Laporan-Final-Peran-Platform-Digital-Terhadap-Pengembangan-UMKM-di-Indonesia-INDEF.pdf>
- Khairani, S., Azra, I., & Zainarti, Z. (2025). Strategi Digitalisasi sebagai Solusi Pemasaran UMKM : Studi pada Warung Sarapan Tiga Dara di Medan Area. *Jurnal Nuansa : Publikasi Ilmu Manajemen Dan Ekonomi Syariah*, 3(3), 263-273. <https://doi.org/10.61132/nuansa.v3i3.1965>
- Khan, L. (2025). *The Data Analytics Advantage: Strategies and Insights to Understand Social Media Content and Audiences*. Oxford: Oxford University Press.

- Kusmala, L., Anggriani, R., Zilam, H., Sumadewa, I. N. Y., Febriana, W., & Nahdlatuzzainiyah, N. (2025, March). ANALISIS EFEKTIVITAS KONTEN VISUAL DALAM KAMPAYE DIGITAL MARKETING UNTUK UMKM. In *Prosiding Seminar Nasional Teknologi, Inovasi, dan Ekonomi (SETIE)* (pp. 42-46). <https://journal.universitasbumigora.ac.id/SETIE/article/view/5024>
- Nirmala, J. P., Raja, R., & Kanchana, M. (2024). Transforming graphic design–The impact of augmented and virtual reality on user interaction, security, and product packaging optimization. *GRID: Graphic Engineering and Design*, 15(1), 166-178. <https://doi.org/10.24867/GRID-2024-p19>
- Oktaviani, F., & Rustandi, D. (2018). Implementasi Digital Marketing dalam Membangun Brand Awareness. *PROfesi Humas*, 3(1), 1–20. <https://doi.org/10.24198/PRH.V3I1.15878>
- Putra, Y. W. S., & Kurniawan, A. Implementasi Augmented Reality pada Produk Laptop sebagai Media Promosi Berbasis Android. *Jurnal Informatika Merdeka Pasuruan*, 6(2), 464771. DOI: 10.37438/jimp.v6i1.351
- Putri, J. A., & Wijoyo, T. A. (2023). Global image through local cuisine: exploring culinary diversity in global tourism. In *International Conference on Digital Advanced Tourism Management and Technology* (Vol. 1, No. 2, pp. 138-144). DOI: <https://doi.org/10.56910/ictmt.v1i2.30>
- Saefullah, E., Rohaeni, N., & Tabroni. (2022). *MANAJEMEN USAHA MIKRO, KECIL DAN MENENGAH (UMKM)* (E. T. Afiah, H. Kurniawanto, & D. L. Wati, Eds.). CV. EUREKA MEDIA AKSARA.