

Development of a Business Database and Clustering of Aisiyiah Family Enterprises to Strengthen ISWARA Membership in Malang City

¹Baroya Mila Shanty, ¹Novita Ratna Satiti*, ¹Sandra Irawati

¹Universitas Muhammadiyah Malang, Indonesia

*Corresponding author

E-mail: satiti@umm.ac.id

Volume

6

Issue

2

Edition

November

Page

508-513

Year

2025

Article History

Submission: 26-07-2025

Review: 31-07-2025

Accepted: 19-08-2025

Keyword

Business Database;
SME Clustering;
Digital Marketing for Communities;
Entrepreneurship Program;
Aisiyiah Women's Businesses;

How to cite

Shanty, B. M., Satiti, N. R., & Irawati, S. (2023). Development of a Business Database and Clustering of Aisiyiah Family Enterprises to Strengthen ISWARA Membership in Malang City. *Jurnal Pengabdian Masyarakat*. Jurnal Pengabdian Masyarakat, Volume 6(2), 508-513
<https://doi.org/10.32815/jpm.v6i2.2758>

Abstract

Purpose: This study addressed the lack of systematic business database and segmentation among Aisiyiah family enterprises in Malang City, which hindered effective economic empowerment planning. It aimed to develop a structured business database and implement clustering methodology to strengthen ISWARA membership through data-driven approaches for more targeted interventions.

Method: A participatory action research approach was employed. Data were collected using Google Forms (38 respondents) and printed questionnaires (31 respondents) for members with limited digital access. The data were collaboratively verified with Majelis Ekonomi dan Ketenagakerjaan PDA Malang City, then analyzed using Microsoft Excel to cluster businesses into four main categories and 17 sub-clusters.

Practical Applications: The program produced a structured database of 69 businesses, documented 42 products, and enhanced entrepreneurial skills through SWA training (43 participants). The ISWARA Online Market WhatsApp Group was established as a transaction platform, strengthening economic networks and fostering collaboration among members.

Conclusion: The research demonstrated that a data-driven, participatory approach can sustainably integrate economic empowerment with digital transformation, providing a replicable model for community-based economic initiatives that strengthens informal leadership and creates measurable impact in women's entrepreneurship development.



Introduction

Aisiyiah, as one of Muhammadiyah's autonomous women's organizations, has played a crucial role in women's and family economic empowerment in Indonesia. In Malang City, there are more than 120 BUEKA units registered under Pimpinan Daerah Aisiyiah (PDA), but only about 57% were actively engaged in structured economic programs as of 2023. Preliminary assessments conducted by the service team indicated that members' digital capacity was relatively low: only around 35% had dedicated business social media accounts, 28% had ever used digital applications for promotion, and fewer than 20% were able to independently upload product content. From a business performance perspective, the average monthly turnover ranged between IDR 1.5–2.5 million, with fewer than 15 regular customers per enterprise. Most marketing efforts still relied on offline methods such as direct sales at home or local markets, while the utilization of online channels for market expansion was minimal. These conditions highlight a significant gap in business management and technology adoption, underscoring the urgency for interventions in business mapping, clustering, and digital marketing. Challenges faced include limited digital literacy, absence of a systematic business database, and lack of market-oriented clustering. Without accurate data, strategic decision-making for SME development becomes less effective (Marcelina et al., 2023; Morgan et al., 2019; Seldal & Nyhus, 2022; Utami et al., 2022). This service program was designed to respond to these needs by mapping and clustering Aisiyiah family businesses in Malang City to create a structured database, prepare digital product e-catalogs, and strengthen members' capacity through Sekolah Wirausaha Aisiyiah (SWA).

Aisiyiah, as one of Muhammadiyah's autonomous women's organizations, makes a significant contribution to economic empowerment, particularly for women and families. Through various programs, Aisiyiah encourages the economic independence of its members by fostering small and medium enterprises (SMEs) in the form of Bina Usaha Ekonomi Keluarga Aisiyiah (BUEKA). However, at the regional level, such as the of Malang City, the management of member businesses still faces various obstacles, especially in terms of data documentation and cluster-based development strategies. The lack of systematic databases and the absence of business segmentation cause the strategic decision-making process and economic empowerment to be less effective and directionless.

In response to these challenges, this service program is designed to map and cluster Aisiyiah family businesses in Malang City to form a structured database that can be used as a basis for economic program development. In addition, this activity also includes the preparation of product e-catalogs and the implementation of SWA as a form of strengthening member capacity. The use of digital media as promotional tools, such as WhatsApp Groups (WAG) and e-catalogs, is expected to expand market access and enhance the competitiveness of SMEs owned by BUEKA members. This approach is in line with the spirit of digital transformation of Indonesian SMEs which is also a national priority agenda. Thus, this activity not only aims to develop a community-based business information system, but also to build a digital ecosystem that supports women's economic sustainability. This participatory and data-driven approach is an important foundation in integrating social, economic, and technological values in grassroots community empowerment.

Method

This service activity uses a participatory approach and action research, which emphasizes the active involvement of partners and collaboration in the entire activity process. This approach was chosen because it is effective for generating contextual solutions in community-based community empowerment, while enabling a sustainable reflective process between researchers and partners (Avison et al., 1999).

Data collection was carried out in two methods: (1) filling out Google Forms distributed through the WhatsApp groups of PCA and PRA in Malang City, and (2) manual forms (hardcopies) distributed to BUEKA members who have limited digital access. The collected

510) Development of a Business Database and Clustering of Aisiyiyah Family Enterprises to Strengthen ISWARA Membership in Malang City, Shanty, B. M., Satiti, N. R., & Irawati, S.

business data is then verified by the community service team with Majelis Ekonomi dan Ketenagakerjaan (MEK) PDA Malang City to ensure its validity and consistency.

Furthermore, the data were analyzed using a basic software tool, Microsoft Excel, to perform the business clustering process based on two key dimensions: business type and stage of business development. The results of the clustering divided 69 businesses into four main categories, which are: Services, Crafts, Trade, and Food & Beverage, as well as 17 sub-SMEs according to business characteristics. This clustering refers to the business life cycle approach and segmentation based on product and market characteristics used in the development of SME strategies (Pramesthi et al., 2025).

As part of the marketing digitalization strategy, the team conducts professional product shoots for each SME involved. These photos are the main material in the preparation of a digital e-catalog designed with the visual aspect of branding in mind. In addition, a social media-based promotional platform was also formed through the WhatsApp Group (WAG) of the ISWARA Online Market, which functions as a direct marketing channel between business actors and community-based consumers. This approach is considered to be in line with the trend of community commerce which is increasingly relevant in empowering SMEs in the digital era (Maimuna et al., 2024).

Result

The results of the activity show significant achievements in systematic efforts for the economic empowerment of Aisiyiyah members in Malang City. A total of 69 business data were successfully collected from BUEKA members through a collaborative digital and manual data collection process. The data is then analyzed and grouped into four main business clusters, namely: Services, Crafts, Commerce, and Food & Beverages. Each cluster reflects the dominant characteristics of the member business units, and is further broken down into 17 SME sub-clusters, such as laundry services, catering, printing, handicrafts, vegetable trade, to snacks and bakeries.

From the results of the clustering, the Service category dominated with the largest number of sub-SMEs, showing that service-based businesses are still the backbone of the Aisiyiyah family's economy. This activity is in line with previous studies that confirm that the service sector is the main pillar of the women's microeconomy in Indonesia (Dewintara et al., 2024).

The SWA program was attended by 43 participants of ISWARA members and 4 people from the PDA management element. The training materials include business financial management, branding strategies, and human resource management. The active participation of participants shows a high interest in building entrepreneurial capacity, which is also recommended by previous research as the key to the success of community-based SME development (Putri et al., 2023). Beyond technical learning outcomes, several behavioral changes were also observed. Some participants who previously lacked confidence in digital promotion began actively managing their own social media business accounts after attending the training. One member even initiated the role of coordinating product uploads and promotional content in the ISWARA Online Market WhatsApp Group, voluntarily assisting others on how to present their products more effectively. This illustrates the emergence of informal leadership within the community, where members not only applied new skills but also encouraged peer-to-peer learning and collaboration, strengthening the collective agency of ISWARA.

In order to support digital marketing, a visual documentation process was carried out for 42 business products through professional photo sessions. The results of this documentation are the main material in the preparation of digital and print e-catalogs. As a form of implementation of a community-based distribution strategy, the ISWARA Online Market WAG was also formed, which is a means of interaction and transactions between business actors and potential buyers.

When this report was compiled, the process of compiling the e-catalog was still ongoing. However, the data that has been collected, along with product documentation, has formed a strong foundation for the development of community-based digital marketing systems. This initiative reflects a real transformation towards the digitalization of MSMEs as directed by national policies (Fauzi & Sheng, 2020; Prameswari et al., 2023).

Discussion

This service program shows success in building the foundation of economic empowerment of the Aisiyiah family based on data and technology. Through a systematic mapping process and business clustering, PDA Malang City now has a more structured business map, which is an important foothold in developing a more targeted intervention and coaching strategy. Business characteristics-based clustering makes it easier to identify the specific needs of each business group that in line with an effective targeted support approach in community SME development (Lubis & Salsabila, 2024; Setiawati et al., 2024).

The implementation of the SWA is also a key element in increasing the managerial capacity of ISWARA members. This training equips participants with basic entrepreneurial skills, including financial management, branding, and marketing strategies. These findings reinforce the results of a study by Surbakti et al. (2024) which emphasizes the importance of continuous training in building women's entrepreneurial competencies and encouraging household economic independence.

However, several challenges were also identified in the implementation of the program. One of them is the low digital literacy, which leads to the slow filling of data online and the lack of awareness of the importance of business documentation. To overcome this, the service team applies a personal approach through direct assistance and manual filling. This strategy has proven effective in reaching business actors who have limited access to technology, as recommended in a study by Farhat Abas (2025) which emphasizes the importance of a blended approach in community-based data collection activities.

In addition, the WAG of the ISWARA Online Market, which was formed as a promotional channel and digital transactions, is a promising community-based innovation. The use of WAG as a marketing medium is in line with the concept of community commerce, where social media is used to strengthen sales networks in trust-based communities (Tiwasang & Sawang, 2022). It is hoped that, with sustainable management and increasing the digital capacity of members, this WAG can be an effective means to expand market access and build an independent and inclusive women's economic network.

Conclusion

This community service activity has made a strategic contribution to the economic empowerment of the Aisiyiah family in Malang City. The program's main achievements include the preparation of a structured database, business clustering based on characteristics, and visual documentation of products that are the basis for the development of digital promotions. Through this activity, partner organizations now have a data-based business map that can be used as a basis for planning economic programs in a more measurable and real-time basis.

The implementation of digital e-catalogs and the establishment of the WAG of the ISWARA Online Market is a form of innovation in digitizing the marketing of community-based MSME products. This innovation is in line with the national agenda for the digital transformation of SMEs which emphasizes the importance of utilizing information technology to expand market access and encourage economic inclusion (Thathsarani & Jianguo, 2022; Zikri, 2024).

To ensure the sustainability of the program's impact, several strategic steps are recommended. First, regular updates and maintenance of business databases to maintain

data accuracy and support adaptive planning to market dynamics. Second, the active management of the Online Market WAG with a neat administration system and clear interaction rules so that it remains a healthy, safe, and productive transaction medium. Third, strengthening the digital literacy of ISWARA members through advanced training so that the use of digital platforms is more optimal and encourages active participation in the digital economy ecosystem.

Looking ahead, the next stage of development would be best focused on improving the completeness and quality of the digital catalog, expanding the database of products, and strengthening members' financial management practices. By targeting, for instance, the inclusion of at least 100 products in the e-catalog within the next year and supporting members with financial literacy tools, ISWARA can move towards a more integrated digital and financial ecosystem. Such efforts will not only enhance competitiveness but also prepare the community for potential replication of this model in other communities at other cities.

Acknowledgements

The author expresses his greatest appreciation and gratitude to Pimpinan Daerah Aisiyyah (PDA) Kota Malang and MEK PDA of Malang City for the support, cooperation, and facilitation provided during the implementation of the activity. Awards were also presented to all ISWARA and BUEKA members who have actively participated in data collection, training, and product photography. Not to forget, the author would like to thank the University of Muhammadiyah Malang for the institutional support and funding that allows this service activity to be carried out properly.

Reference

- Avison, D., Lau, F., Myers, M., & Nielsen, P. A. (1999). Action Research. In COMMUNICATIONS OF THE ACM (Vol. 42, Issue 1).
- Dewintara, E., Aminah, S., Semaun, S., & Bahri, A. S. (2024). AL-MAIYYAH Orientasi dan Strategi Bertahan Persaingan Kewirausahaan Perempuan pada UMKM.
- Farhat Abas. (2025). Strategi Pendampingan Hybrid Koperasi-Perguruan Tinggi: Dampak terhadap Pengembangan Kapasitas dan Pertumbuhan UMKM Makanan Olahan. SOSMANIORA: Jurnal Ilmu Sosial Dan Humaniora, 4(1), 134–144. <https://doi.org/10.55123/sosmaniora.v4i1.4984>
- Fauzi, A. A., & Sheng, M. L. (2020). The digitalization of micro, small, and medium-sized enterprises (MSMEs): An institutional theory perspective. Journal of Small Business Management. <https://doi.org/10.1080/00472778.2020.1745536>
- Fitrya Maimuna, F., Alda Fanny Roroa, N., & Agit, A. (2024). Transformasi Digital dalam Kewirausahaan: Analisis Faktor Penghambat dan Pendorong Perkembangan Ekonomi Digital (Issue x).
- Lubis, P. S. I., & Salsabila, R. (2024). Peran UMKM (Usaha Mikro, Kecil, Dan Menengah) Dalam Meningkatkan Pembangunan Ekonomi Di Indonesia. MUQADDIMAH: Jurnal Ekonomi, Manajemen, Akuntansi Dan Bisnis, 2(2), 91–110. <https://doi.org/10.59246/muqaddimah.v2i2.716>
- Marcelina, D., Kurnia, A., & Terttiaavini, T. (2023). Analisis Klaster Kinerja Usaha Kecil dan Menengah Menggunakan Algoritma K-Means Clustering. MALCOM: Indonesian Journal of Machine Learning and Computer Science, 3(2), 293–301. <https://doi.org/10.57152/malcom.v3i2.952>
- Morgan, P., Huang, B., & Trinh, L. (2019). The need to promote digital financial literacy for the digital age. <https://whatis.techtarget.com/definition/gig-economy>
- Pramesthi, F. A., Yektiningsih, E., Hafi, N., & Fitriana, I. (2025). Strategi Pemasaran Beras Berdasarkan Analisis Tahap Business Life Cycle dan Analytical Hierarchy Process di PT Komoditi Tani Indonesia. 18(1). <https://doi.org/10.31289/agrica.v18i1.13099>

513) Development of a Business Database and Clustering of Aisyiyah Family Enterprises to Strengthen ISWARA Membership in Malang City, Shanty, B. M., Satiti, N. R., & Irawati, S.

- Prameswari, N. S., Krisnawati, M., Widagdo, B., & Luthfia, K. H. (2023). Desain E-Katalog UMKM Fesyen "Womenpreneur Community" Surakarta Dalam Transformasi Ekonomi Digital (Vol. 12, Issue 2). <https://journal.unnes.ac.id/sju/index.php/ffe/index>
- Putri, L. P., Christiana, I., & Rahayu, S. E. (2023). PELATIHAN MANAJEMEN KEWIRAUSAHAAN GUNA MENINGKATKAN KEMANDIRIAN EKONOMI SEBAGAI USAHA RANTING AISIYIAH MARELAN-I. JMM (Jurnal Masyarakat Mandiri), 7(5), 4821. <https://doi.org/10.31764/jmm.v7i5.17358>
- Seldal, M. M. N., & Nyhus, E. K. (2022). Financial Vulnerability, Financial Literacy, and the Use of Digital Payment Technologies. *Journal of Consumer Policy*, 45(2), 281–306. <https://doi.org/10.1007/s10603-022-09512-9>
- Setiawati, T., Astuti, B., Suhartini, Mulyati, S., & Nurfauziah. (2024). Pelatihan Manajemen Usaha untuk Peningkatan Kapasitas Internal Pengusaha Perempuan. *Rahmatan Lil 'Alamin Journal of Community Services*, 25–38. <https://doi.org/10.20885/RLA.Vol4.iss1.art4>
- Surbakti, E. W., Hasibuan, S., & Dwi Arjuna, M. (2024). Pelatihan Edukasi Seputar Basic Wirausaha Perempuan untuk Peningkatan Kapasitas UMKM Aisyiyah Berbasis Komunitas. <https://journal.univpancasila.ac.id/index.php/capacitarea>
- Thathsarani, U. S., & Jianguo, W. (2022). Do Digital Finance and the Technology Acceptance Model Strengthen Financial Inclusion and SME Performance? *Information (Switzerland)*, 13(8). <https://doi.org/10.3390/info13080390>
- Tiwasing, P., & Sawang, S. (2022). Does membership of local Chambers of Commerce networks enhance rural SME performance?: An empirical analysis. *International Journal of Entrepreneurial Behaviour and Research*, 28(2), 368–385. <https://doi.org/10.1108/IJEBR-07-2021-0614>
- Utami, A., Syukri, & Sunrawali, A. N. (2022). Digital marketing dalam pengembangan usaha mikro, kecil, dan menengah. Online) KINERJA: Jurnal Ekonomi Dan Manajemen, 19(1), 170. <https://doi.org/10.29264/jkin.v19i1.10207>
- Zikri, H. (2024). Transformasi Ekonomi Digital untuk Meningkatkan Produktivitas dan Daya Saing UMKM di Indonesia. *Glossary : Jurnal Ekonomi Syariah*, 2(1), 16–25. <https://doi.org/10.52029/gose.v2i1.206>