

MSME Digitalization through E-Catalogs, Google Maps, and QRIS in Bojong Kulur

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ABSTRACT

Micro, small, and medium enterprises (MSMEs) are central to local economic activity, yet village-based businesses often face limited digital promotion, non-cash payment readiness, and online business visibility. This community service program assisted MSMEs in Bojong Kulur Village through e-catalog development, Google Maps registration, Quick Response Code Indonesian Standard (QRIS) implementation, and business-branding media. A participatory approach involved Village-Owned Enterprise managers and MSME actors in observation, planning, implementation, evaluation, and follow-up. The program produced an e-catalog containing 15 featured products, activated QRIS for one MSME, registered one business location on Google Maps, and delivered a new branding banner. Google Maps recorded more than 20 location searches during the first two weeks, while several non-cash transactions were reported during the first week of QRIS use. The intervention strengthened initial business visibility, digital transaction readiness, and promotional capacity. However, long-term sustainability requires a designated digital administrator, regular content training, periodic catalog updates, and continued support from the Village-Owned Enterprise and village government.

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INTRODUCTION

Micro, small, and medium enterprises (MSMEs) are a major pillar of the Indonesian economy. Government data indicate that more than 60 million MSMEs contribute approximately 60.51% of gross domestic product and absorb about 96.9% of national employment ^[1]. Despite this contribution, digital adaptation remains uneven, particularly among village-based enterprises with limited managerial resources and digital skills.

Digital transformation can reshape how small firms communicate with customers, create value, and organize business processes ^{[2]-[4]}. For Indonesian MSMEs, digital channels can reduce geographical barriers, expand market access, and improve customer interaction, although adoption is influenced by organizational readiness, skills, infrastructure, and external support ^{[5], [6]}. Practical tools such as e-catalogs, online business-location services, social media, e-commerce, and standardized digital payments provide relatively accessible entry points for small businesses.

Previous community-service and empirical studies show that e-catalogs can improve product presentation and online visibility ^[7], while the combined use of Google Maps, e-commerce, and QRIS can support business discoverability and transaction efficiency ^[8]. QRIS was established by Bank Indonesia as the national standard for QR-code payments ^[9], and its expansion has supported the broader digital transformation and financial inclusion of Indonesian MSMEs ^[10]. However, technology provision alone is insufficient. MSMEs often face limited digital literacy, inconsistent content management, and weak organizational follow-up, making sustained mentoring and local institutional support essential ^{[11], [12]}.

Bojong Kulur Village, Gunung Putri District, Bogor Regency, has diverse local economic activities coordinated partly through its Village-Owned Enterprise (BUMDes). Initial observations by the Universitas Ibn Khaldun Bogor community-service team showed that several MSMEs had begun using digital promotion but lacked an integrated promotional medium and regular content management. BUMDes also required a collective e-catalog to present local products more professionally. Therefore, this program aimed to assist MSME digitalization through e-catalog development, Google Maps registration, QRIS implementation, and business-branding media. The program emphasized concrete outputs, practical learning, and shared responsibility between the student team, BUMDes, and MSME actors.

Beyond its direct economic weight, the MSME sector also functions as a social buffer during periods of economic pressure. Because MSME activities span nearly every line of business, their development is closely tied to income growth among lower-income groups, and strengthening this sector is often regarded as a strategic instrument for sustaining household purchasing power ^[1].

The push toward MSME digitalization also reflects a broader shift in everyday economic life. Digital tools are no longer limited to promotion; they increasingly underpin core business processes, including financial recording, customer interaction, and transaction handling. As business activities move online, small enterprises gain new opportunities for personalization, pricing discovery, and product innovation, while also facing new demands for digital competence ^{[2], [3]}.

This shift is consistent with the broader idea of a human-centered Society 5.0, in which technological advances such as the Internet of Things and data-driven services are directed toward solving concrete social and economic problems rather than technology adoption for its own sake ^[12]. Within this framing, MSME digitalization is not only a matter of visibility or promotion, but also a means of balancing economic performance with the practical needs of small, community-based businesses.

METHOD

The community service program was conducted from 23 July to 24 August 2025 in Bojong Kulur Village, Gunung Putri District, Bogor Regency. The participants were MSME actors coordinated by BUMDes, with activities focused on digital promotion, business-location accessibility, non-cash transactions, and business branding. The implementation adopted a participatory mentoring approach in which MSME actors and BUMDes managers were involved in identifying problems, determining priorities, implementing activities, and evaluating follow-up needs. Similar community-based digitalization programs have emphasized the value of direct assistance and context-specific learning for strengthening MSME capabilities ^[13].

The program followed four stages: observation and problem identification, program planning, implementation, and evaluation with follow-up. Learning-by-doing was used so participants could observe and practice the digitalization process directly. In addition to e-catalog development, Google Maps registration, QRIS activation, and banner design, the implementation stage also included direct assistance in structuring MSME social media accounts and preparing simple promotional content, so that participating businesses were not dependent on a single promotional channel. Data were obtained from field observations, brief interviews, activity documentation, Google Maps search information, social media account records, and reports of early QRIS use. The program evaluated output completion and initial outcomes rather than long-term changes in sales or profitability.

Table 1. Stages of the community service program

Stage	Main activities	Implementers/partners	Expected output
Observation and problem identification	Initial survey, brief interviews with BUMDes managers and MSME actors, and mapping of digital-promotion constraints.	Student team, BUMDes, MSME actors	Priority problems and digitalization needs.
Program planning	Work-plan preparation, intervention selection, and assignment of mentoring responsibilities.	Student team and BUMDes	Plan for e-catalog, Google Maps, QRIS, and branding activities.
Implementation	E-catalog preparation, Google Maps registration, QRIS activation, social media account structuring and content assistance, and banner design.	Student team and MSME actors	Digital promotional media and non-cash payment facilities.
Evaluation and follow-up	Discussion of benefits, remaining constraints, and simple operating guidance.	Student team, BUMDes, MSME actors	Sustainability recommendations and further mentoring needs.

RESULTS AND DISCUSSION

The activity began with coordination with BUMDes, which serves as a local institution for organizing and supporting MSMEs. Initial observations indicated that several businesses were familiar with digital marketing but did not yet have a structured promotional system. BUMDes also identified the need for a collective medium that could present local products consistently and professionally.

The mentoring program produced five principal interventions. First, the student team developed an e-catalog containing 15 featured MSME products. Second, one business location was registered on Google Maps to improve discoverability. Third, QRIS was implemented for one MSME to support non-cash transactions. Fourth, a new business banner was designed and delivered to strengthen offline branding. Fifth, the student team assisted MSME actors in structuring their business social media accounts and preparing simple promotional content, so that online promotion did not depend on a single platform. The combination of online promotion, digital location access, payment readiness, and physical branding was intended to provide a more integrated intervention than a single-platform activity.

Table 2. Outputs and initial outcomes of the MSME digitalization program

Aspect	Initial condition	Intervention	Output	Initial outcome
Social media management	Business social media accounts were not consistently managed.	Assistance in structuring accounts and preparing promotional content.	MSME social media accounts were structured with initial promotional content.	Businesses gained an additional, more consistent online promotional channel.
Product promotion	No structured collective promotional medium.	Development of an MSME e-catalog.	E-catalog containing 15 featured products.	Products can be promoted collectively by BUMDes.
Business-location access	Business location was not optimally visible in digital searches.	Google Maps registration for one MSME.	Business location appeared in search results.	More than 20 location searches in the first two weeks.
Digital transactions	Payments were predominantly cash-based.	QRIS implementation assistance.	QRIS was activated for one MSME.	Several non-cash transactions in the first week.
Business branding	The business lacked strong visual promotional media.	Design and delivery of a new banner.	Branding banner delivered to the MSME.	More professional and recognizable business appearance.

Aspect	Initial condition	Intervention	Output	Initial outcome
Sustainability	No routine digital-content management.	Evaluation discussion and simple guidance.	Follow-up recommendations prepared.	A BUMDes administrator and periodic training are still needed.

The e-catalog created a collective promotional medium that had not previously been available. This output is consistent with prior community-service evidence that structured digital catalogs can improve product presentation and business visibility^[7]. The Google Maps registration complemented the catalog by making the business location easier to find. More than 20 searches were recorded during the first two weeks, indicating early digital visibility, although the figure should not be interpreted as evidence of increased sales.

The addition of structured social media accounts complemented the e-catalog and Google Maps registration by giving MSME actors a more consistent channel for day-to-day promotion. This mirrors earlier findings that inconsistent content management is one of the main barriers preventing MSMEs from sustaining digital promotion after an initial intervention^{[6], [11]}. Even so, the accounts created during this program still depend on continued content input from MSME actors, so their long-term value cannot yet be separated from the broader sustainability challenge discussed below.

QRIS expanded the available payment options and generated several early non-cash transactions. This result aligns with the role of standardized QR payments in promoting financial inclusion and digital transaction readiness among MSMEs^{[9], [10]}. Previous research also indicates that digital-payment literacy and inclusion can support MSME business performance when adoption is accompanied by appropriate understanding and use^[14]. Nevertheless, this program involved only one QRIS-enabled MSME and a short observation period; therefore, the evidence supports transaction readiness rather than a causal claim of profitability improvement.

The participation of MSME actors and BUMDes contributed to positive acceptance of the activities. Direct mentoring helped connect the practical needs of local businesses with broader digital-economy initiatives. This supports the view that digital transformation in small firms depends not only on technology availability but also on skills, learning, strategy, and institutional support^{[3], [6], [11]}. The student team functioned as a technical facilitator, while BUMDes provided local coordination and potential continuity after the community-service period. Supporting photographs of the coordination, mentoring, and handover activities are provided in the Activity Documentation appendix.

The principal challenge is sustainability. MSME actors have limited time to update content, BUMDes does not yet have a dedicated digital administrator, and technical capabilities remain uneven. Digital outputs may lose value when catalogs, maps information, and promotional content are not regularly maintained. Studies of SME digital transformation similarly show that digitalization is an iterative organizational process rather than a one-time technology installation^{[2], [4], [15]}. The program therefore recommends assigning a BUMDes digital administrator, conducting periodic content training, updating the e-catalog, and monitoring Google Maps and QRIS usage as simple sustainability indicators.

The output-oriented evaluation distinguished between tangible deliverables and initial outcomes. The e-catalog, Google Maps registration, QRIS activation, and branding banner were direct outputs that could be verified at the end of the program. By contrast, the number of location searches and the occurrence of early non-cash transactions were short-term outcome indicators. This distinction is important because community-service activities are often completed within a limited period and cannot immediately demonstrate long-term changes in revenue, customer retention, or business growth.

The e-catalog addressed the absence of a collective promotional medium for the MSMEs coordinated by BUMDes. Before the program, product promotion was fragmented and depended on the individual initiative of each business actor. By organizing 15 featured products in one catalog, BUMDes obtained a more structured instrument for introducing local products to potential customers and external partners. The catalog also provided a basis for future updates, although its value will depend on the regular revision of product information and the willingness of MSME actors to supply updated materials.

Google Maps registration responded to a different aspect of digital accessibility. A product may be promoted effectively but remain difficult to purchase when consumers cannot identify the business location. The recorded figure of more than 20 searches during the first two weeks indicates that the registered location began to attract digital attention. However, the program did not track whether each search resulted in a visit or purchase. The finding is therefore interpreted as increased discoverability rather than evidence of increased sales.

The QRIS intervention expanded payment choice for one participating MSME. The early use of non-cash transactions shows that the facility was operational and accepted by at least some customers. This outcome is relevant because digital-payment readiness can reduce dependence on cash and align small businesses with changing consumer payment habits. Nevertheless, the number of participating MSMEs and the monitoring

period were limited. A broader follow-up program should compare transaction patterns over a longer period and examine whether other MSMEs encounter administrative, technical, or literacy barriers during adoption.

The branding banner complemented the digital interventions by improving the physical presentation of the business. Digitalization does not eliminate the importance of offline visibility, especially for village-based food businesses that continue to serve walk-in customers. The combination of a visible banner, an identifiable Google Maps location, an e-catalog, and QRIS created a more coherent promotional and transaction experience. This integrated approach is more appropriate than treating digitalization as the use of a single application without considering the wider customer journey.

CONCLUSION

The MSME digitalization assistance program in Bojong Kulur Village produced an e-catalog containing 15 featured products, Google Maps registration for one business, QRIS implementation for one MSME, and a new branding banner. Initial outcomes included more than 20 Google Maps searches during the first two weeks and several non-cash transactions during the first week of QRIS use. These results indicate improved initial business visibility, location accessibility, digital-payment readiness, and promotional capacity.

The program demonstrates the value of participatory community service that involves BUMDes and MSME actors from problem identification through evaluation. However, the short implementation and observation period does not support a conclusion that sales or profitability increased. The outcomes should therefore be interpreted as initial improvements in visibility, accessibility, promotional readiness, and digital-payment preparedness.

BUMDes and the village government are advised to appoint a digital-media administrator, update the e-catalog periodically, conduct simple content-creation training for MSME actors, and monitor Google Maps and QRIS usage as sustainability indicators. Continued collaboration with universities, financial institutions, local government, or other partners is recommended so that the assistance can be extended to additional MSMEs.

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