

ARTIFICIAL INTELLIGENCE-ASSISTED DIGITAL MARKETING CAPABILITY DEVELOPMENT FOR A TEMPE CONTONG MICROENTERPRISE IN CILACAP

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Abstract

This community engagement program sought to strengthen the digital marketing capability of Tempe Contong, a microenterprise in Sidamulya Village, Sidareja District, Cilacap Regency. Conducted on July 22-23, 2026, the program involved the business owner as the principal partner. A Participatory Action Research (PAR) approach was combined with learning by doing through a cycle of problem identification, action planning, implementation, observation, reflection, and revision. ChatGPT supported the development of content ideas, product descriptions, promotional captions, customer-response templates, and a content calendar, while Canva was used to convert the resulting concepts into visual materials. Evidence was collected through initial observation, reflective interviews, assessment of practical outputs, and documentation of the digital poster, and was analyzed qualitatively. The program moved the partner from having no prior exposure to AI toward being able to formulate basic prompts, assess and revise AI-generated outputs, and prepare promotional materials that reflected the product's distinctive attributes. Key outputs included product descriptions, promotional captions, a digital poster, video ideas, a content calendar, and a concise AI-use guide. Unstable internet access, limited devices, and low familiarity with digital applications were addressed through reusable prompt examples, repeated practice, joint editing, and simplified workflows. The experience indicates that AI can lower the entry barriers to digital marketing for microenterprises when its use is contextual, incremental, and governed by the business owner.

Keywords: artificial intelligence; digital marketing capability; local economic empowerment; microenterprise; participatory action research

INTRODUCTION

Micro, small, and medium enterprises (MSMEs) play a central role in employment creation, local income generation, and community entrepreneurship. At the village level, they also convert local knowledge, raw materials, and practical skills into marketable value. The OECD (2021) notes that digitalization can raise small-firm productivity, reduce transaction costs, widen market access, and support innovation. Yet smaller firms frequently lag in digital transformation because they lack internal resources, skills, financing, and technological awareness. Access to digital tools, therefore, is only one part of the equation; productive use also depends on complementary capabilities that allow business owners to adapt technology to their operating conditions.

Digital marketing can disseminate product information at relatively low cost, but platform availability does not automatically translate into commercial value. Outcomes depend on a firm's ability to formulate relevant messages, produce credible visuals, publish consistently, and respond to customers. Dwivedi et al. (2021) explain that digital and social media marketing can improve brand visibility and interaction, while also creating challenges in content governance, data management, and customer communication. Sulistiyowati and Rahmawati (2024) associate the use

of marketplaces, social media, and targeted promotion with MSME sales growth. Sharabati et al. (2024) similarly argue that digital marketing strengthens market presence and customer relationships when it is supported by organizational capability development. The binding constraint for many microenterprises is thus not simply access to technology, but the capacity to deploy it consistently and purposefully.

Artificial intelligence (AI), particularly generative AI, has become increasingly accessible to small businesses. Feuerriegel et al. (2024) describe generative AI as computational methods capable of producing new text, images, or audio from patterns learned in data. In marketing, these tools can assist with product descriptions, captions, slogans, photo and video concepts, content calendars, basic segmentation, and initial customer responses. Huang and Rust (2021) position AI as a resource for market research, segmentation, targeting, positioning, and marketing action. Grewal et al. (2025) further show that generative AI is reshaping how marketers create and deliver text, image, and video content. For microenterprises, these functions can reduce the initial time and cognitive cost of preparing promotional materials, provided that the business owner reviews and adapts the output.

The potential gains are accompanied by adoption barriers. Business owners may find it difficult to formulate prompts, assess output accuracy, adapt language to local consumers, or operate applications independently. Oldemeyer et al. (2025) identify limited knowledge, cost, and infrastructure among the recurring obstacles to AI implementation in SMEs. The OECD (2021) likewise emphasizes that skills gaps and weak internal resources constrain the adoption of digital technologies. Hamid and Artha (2025) add that limited skills, infrastructure, data governance, and uncertainty about expected benefits impede AI adoption among micro and small enterprises. One-way demonstrations are therefore unlikely to be sufficient. Owners require practice-based assistance that links the technology to concrete business problems, provides feedback, and establishes manageable operating routines.

AI use also raises questions of responsibility. Generated content may appear persuasive even when it contains inaccurate, exaggerated, or brand-inconsistent information. UNESCO (2021) emphasizes transparency, data protection, fairness, and human oversight in the use of AI. Maldonado-Canca et al. (2024) find that AI-supported brand communication and social media management offer personalization and efficiency benefits, but also create privacy, bias, and transparency risks. For food products, these principles require the owner to verify information on ingredients, quality, prices, production methods, and product benefits before publication. AI should function as a drafting and ideation tool rather than the final decision-maker.

The program partner was Tempe Contong, a microenterprise located in Sidamulya Village, Sidareja District, Cilacap Regency. Established in 2008, the business employs two workers and serves Sidamulya and nearby areas. Its principal product is tempe wrapped in a cone-shaped leaf package. According to the owner, the leaf wrapping gives the product a more distinctive aroma, a naturally savory taste, and a more environmentally considerate packaging option than plastic. These attributes constitute a differentiated local value proposition, but they had not yet been communicated through structured promotional materials.

Initial observation showed that Tempe Contong relied on direct selling and word-of-mouth referrals. The partner had no planned digital marketing activity, no content calendar, and limited ability to generate promotional ideas, write marketing copy, or design visual materials. The owner had also never used AI as a marketing aid. Consequently, the product's distinctive attributes were not documented in reusable content, and the business's market communication remained confined to its existing local network.

The program aimed to develop the partner's digital marketing capability through the use of ChatGPT and Canva. In this article, marketing capability refers to the owner's ability to understand the role of AI, formulate prompts, generate and edit promotional messages, prepare visual materials, schedule publication, and use the outputs on digital channels. This capability-oriented

objective was selected because a two-day intervention could not credibly establish longer-term effects on sales.

The program's contribution lies in applying a PAR cycle to a traditional food microenterprise that had neither prior exposure to AI nor a structured digital marketing routine. Rather than ending with an application demonstration, the process enabled the partner to identify problems, plan action, test prompts using actual product information, reflect on unsuitable outputs, and revise them. The approach connects digital transformation with local economic empowerment and responsible entrepreneurship. AI was introduced as a means of strengthening the owner's capabilities while preserving the identity of Tempe Contong and retaining human control over commercial communication.

LITERATURE REVIEW

Digital Marketing Capability in Microenterprises

Digital marketing capability can be understood as a set of routines that allows a business to plan, produce, distribute, and evaluate marketing communication through digital channels. In a microenterprise, this capability includes practical skills such as articulating a product's value proposition, identifying customer groups, preparing content, maintaining publication consistency, and responding to inquiries. Capability changes can be observed sooner than sales changes because sales are also shaped by input prices, production capacity, purchasing power, seasonality, and competition.

Effective digital marketing requires alignment among the message, the medium, and the characteristics of the intended customer. Dwivedi et al. (2021) identify content management, customer engagement, electronic word of mouth, and ethics as central elements of social media strategy. Sharabati et al. (2024) link digital marketing to SME performance through stronger market presence and customer interaction, while Sulistiyowati and Rahmawati (2024) emphasize the role of social media, marketplaces, and promotional activity. In the AI context, Huang and Rust (2021) explain that technology can support segmentation, targeting, positioning, and marketing communication. These findings imply that assistance should focus on the routine production of relevant, usable material rather than merely on account creation.

Generative AI as a Content-Support Tool

Generative AI responds to user instructions, and the usefulness of its output depends heavily on the clarity of the objective, product information, customer segment, tone, format, and constraints embedded in the prompt. Feuerriegel et al. (2024) describe its capacity to generate new content in multiple forms, while Cillo and Rubera (2025) and Grewal et al. (2025) identify significant opportunities for innovation and marketing processes. In MSME marketing, AI can reduce the friction associated with starting a text or producing alternative ideas. Haryanto et al. (2024) report that ChatGPT can improve the efficiency of marketing-content preparation, while Muhardono et al. (2024) demonstrate the value of AI training for optimizing MSME content.

AI does not replace the owner's tacit knowledge of the product and its customers. Outputs must be selected, checked, and edited to avoid generic language or inaccurate claims. Grewal et al. (2025) stress the importance of calibrating human involvement in the use of AI-generated material, and Huang and Rust (2021) show that marketing decisions continue to require contextual judgment. Ardiansah et al. (2025) find that practical instruction in AI prompting can improve MSME owners' familiarity and skills. The relevant capability is therefore not simply the ability to open an application, but the capacity to provide appropriate context and critically evaluate what the system produces.

Participatory Action Research for Enterprise Empowerment

Participatory Action Research positions the partner as an active participant in problem identification, action planning, implementation, observation, and reflection. Chevalier and Buckles (2019) describe PAR as an integration of action, learning, and knowledge production through the involvement of those directly experiencing the problem. Vaughn and Jacquez (2020) add that participatory methods should be selected in line with the context, available resources, and intended change.

In microenterprise assistance, PAR allows the program to reflect the partner's available devices, work routines, product characteristics, and marketing needs. Reflection is particularly important because an initial AI output may not be commercially appropriate. The partner and facilitators can identify weaknesses, refine prompts, and develop a more relevant subsequent action. Technology is thus learned as part of enterprise problem-solving rather than as an abstract training topic.

Responsible AI and the Sustainability of Local Products

Responsible AI use involves information verification, data protection, transparency, and human oversight. UNESCO (2021) argues that AI development and use should be guided by ethical assessment and respect for human rights and dignity. Maldonado-Canca et al. (2024) similarly emphasize transparency, privacy protection, and human supervision as foundations of trust in AI-assisted digital communication. At the MSME level, these principles can be translated into routine checks of product facts, avoidance of unsupported claims, exclusion of customers' personal data from prompts, and retention of publication decisions by the owner.

Digital assistance should also reinforce the sustainability of the local economy. Technology can expand a firm's capabilities without erasing the product story, local language, or distinctive attributes. For Tempe Contong, the promotional narrative emphasized geographic origin, flavor, aroma, and leaf packaging. This orientation connects digital innovation with the preservation of traditional product identity and responsible entrepreneurship.

RESEARCH METHODS

Program Design, Setting, and Partner

The community engagement program used Participatory Action Research (PAR) and qualitative descriptive analysis. PAR was combined with learning by doing so that the partner could learn AI through tasks directly related to the marketing of Tempe Contong. The program was conducted on July 22-23, 2026, in Sidamulya Village, Sidareja District, Cilacap Regency. The partner was the owner, who was directly involved in production and marketing.

The owner's personal name is withheld to protect privacy. The business name and the location in Sidamulya Village, Sidareja District, Cilacap Regency are reported with the partner's consent because they form part of the factual setting of the program. The WhatsApp number shown in the poster documentation has been masked.

PAR Cycle and Implementation Stages

The intervention was organized as one action cycle comprising problem identification, planning, initial action, observation and reflection, action refinement, and evaluation. Table 1 summarizes the cycle.

Table 1. PAR Cycle in the Tempe Contong Microenterprise Assistance Program

PAR Stage	Activity	Outcome or Decision
Problem identification	Observation of marketing practices and discussion of the product, customers, existing media, and AI awareness.	Marketing still relied on word of mouth; the partner had no prior exposure to AI and found it difficult to prepare promotional messages and visuals.
Action planning	Selection of applications, content, practice sequence, and realistic two-day outputs.	ChatGPT was selected for text and ideas, Canva for visuals; exercises focused on prompts, captions, descriptions, a poster, and a content calendar.
Initial action	Introduction to AI, application demonstrations, and initial prompt-writing practice.	The partner could use the applications, but several outputs remained generic and did not convey Tempe Contong's distinctive features.
Observation and reflection	Assessment of language, accuracy of product information, ease of use, and technical constraints.	Prompts needed to specify the customer segment, product attributes, tone, format, and claim limitations. Connectivity, device access, and limited digital routines were the main constraints.
Action refinement	Prompt revision, joint editing, simplification of steps, and poster development in Canva.	The content became more specific, accessible, and consistent with the product information supplied by the partner.
Evaluation and follow-up	Reflective interview, output assessment, and preparation of a guide and content calendar.	The partner obtained a package of marketing assets and a plan for gradual AI use with follow-up assistance.

Source: Program observation, practice sessions, and joint reflection with the partner, 2026.

Training Content, Applications, and Practical Exercises

The material covered basic AI concepts, the benefits and limitations of generative AI, the risk of inaccurate information, ethical use, data protection, and human review. Practical exercises included prompt formulation, product descriptions, promotional captions, photo ideas, poster concepts, content calendars, basic customer segmentation, and customer-response templates.

ChatGPT was used to generate content ideas, draft and revise captions, summarize the product's distinctive attributes, prepare alternative customer responses, and develop a content calendar. Canva was used to translate these concepts into visual material. The team acted as facilitators, while the partner supplied product information, selected the tone, checked prices and claims, and approved the final outputs.

Data Collection, Analysis, and Trustworthiness

Evidence was collected through observation of the initial business conditions, reflective interviews and discussions with the partner, assessment of practical outputs, and documentation of the digital poster. Observation was used to identify the existing marketing pattern and assess the partner's performance during practice. Reflective interviews captured perceived benefits, difficulties, and readiness to continue using AI. Output assessment focused on prompt clarity, accuracy of product information, appropriateness of language, and content usability.

The evidence was analyzed qualitatively through reduction, categorization, presentation of findings, and conclusion drawing. Capability changes were assessed by comparing conditions before and after the program using observational evidence, the partner's statements, and the outputs produced. Trustworthiness was strengthened through method triangulation and repeated confirmation of product information during joint editing. Because documentation of the training process was incomplete, the article presents the digital poster as its principal visual record.

Success Indicators

Program success was assessed qualitatively against four indicators: (1) the partner understood the functions, benefits, limitations, and risks of AI; (2) the partner could formulate basic prompts and evaluate the output; (3) promotional materials consistent with the identity of Tempe Contong were available; and (4) the partner had a plan to use the content and publication calendar independently. No pre-test, post-test, or sales-growth target was used because the intervention focused on capability formation and initial practice.

RESULTS AND DISCUSSION

Initial Conditions and Partner Needs

The initial diagnosis confirmed that Tempe Contong had no planned digital marketing activity. Product information circulated through direct interaction and customer referrals. Although these mechanisms remain valuable in a local market, they limit the owner's ability to store promotional assets, repeat messages consistently, and communicate beyond the existing customer network. The partner also had no experience with AI and did not know how to convert product knowledge into a prompt.

The priority was not a complex application but a manageable route into promotion. The partner needed a clearer formulation of the product's value proposition, caption examples, usable visual material, a realistic publication schedule, and customer-response templates. These needs guided the choice of material and prevented the training from being overloaded with features that were not immediately relevant.

Table 2. Initial Conditions and Priority Assistance Needs

Aspect	Initial Condition	Priority Need
Marketing channels	No planned use of digital channels; sales relied on direct transactions and referrals.	A simple channel that the owner could manage incrementally.
Promotional message	Difficulty generating ideas, drafting copy, and communicating product differentiation.	Prompt templates, product descriptions, captions, and calls to action.
Visual material	No structured digital promotional poster.	A visual concept covering the product, origin, price, benefits, and ordering information.
Planning	No content themes or publication schedule.	A content calendar with a realistic posting frequency.

Aspect	Initial Condition	Priority Need
AI literacy	No prior exposure to AI or prompt formulation.	Demonstration, repeated practice, and a concise user guide.

Source: Observation and discussion with the partner, 2026.

Action Implementation, Reflection, and Prompt Refinement

The first day focused on needs identification, an introduction to AI and its benefits and risks, and demonstrations of ChatGPT and Canva. The second day was devoted to prompt formulation, promotional captions, product descriptions, content ideas, visual concepts, a content calendar, and output refinement. This sequencing helped the partner understand that AI performance depends on the context supplied by the user.

In the initial trial, an overly brief prompt produced generic promotional copy. The output did not adequately convey the Sidamulya origin, cone-shaped leaf wrapping, distinctive aroma, naturally savory taste, intended customers, or preferred local tone. This gap became the basis for reflection. The prompt was then expanded to specify the AI's role, promotional objective, product information, target audience, output format, tone, and a prohibition on unsupported claims.

One prompt structure used in the exercise was: "Act as a digital marketing specialist for a traditional food microenterprise. Prepare promotional content for Tempe Contong from Sidamulya, targeting households, food stalls, and nearby residents. Emphasize its distinctive aroma, naturally savory taste, leaf packaging, and support for local products. Use clear and persuasive language, and do not make health claims that cannot be substantiated." This structure produced more relevant material and reduced the amount of editing required.

Reflection also showed that the partner benefited from joint editing. Overly formal sentences were simplified, uncertain information was removed, and calls to action were adapted to local customers. The process illustrates human oversight in practice: AI supplied alternatives, but the owner retained authority over the facts and messages released to the market.

Content Outputs and Digital Poster

The program produced a set of marketing assets that the partner could use or adapt. Their status is reported conservatively as practical outputs and partner-reported initial use, not as evidence of sales growth.

Table 3. Digital Marketing Outputs Produced During the Program

Output	Form of Result	Evidence and Intended Use
Product description	A concise narrative covering origin, aroma, taste, cone-shaped leaf wrapping, and product uses.	Produced and used as the basis for promotional material.
Promotional captions	Alternative captions introducing the product, encouraging purchase, and supporting local products.	Produced, selected, and edited jointly with the partner.
Digital poster	A visual presenting the product, price, address, benefits, customer segments, and ordering call.	Developed in Canva and presented in Figure 1.
Photo and video ideas	Concepts for product introductions, production processes, and serving ideas.	Prepared as references for subsequent content.

Output	Form of Result	Evidence and Intended Use
Content calendar	A phased plan for publication themes and timing.	Prepared to support consistent promotion.
AI-use guide	Prompt structure, output-verification steps, and ethical principles.	Prepared as a reusable reference.
Initial application	Preparation of a social media channel and use of promotional materials.	According to the partner, implementation began gradually; commercial effects have not yet been measured.

Source: Practical outputs, reflective interview, and program documentation, 2026.



Figure 1. Digital promotional poster for Tempe Contong developed during the program

Figure 1 provides the principal visual record of the program. ChatGPT supported the message structure, while Canva was used to arrange the visual layout. The poster presents the local product identity, Sidamulya origin, price, household and food-service target segments, product availability, address, and a call to support a local Cilacap microenterprise. Product photographs dominate the

design to show the cone form and leaf wrapping. The poster intentionally remains in Indonesian because it was developed for the enterprise's local consumer market.

During editing, all information was reviewed to exclude health claims or other assertions that could not be substantiated. The WhatsApp number was masked in the academic manuscript. This practice demonstrates that digital promotion can remain commercially informative while respecting privacy. The poster also reinforces local differentiation through a natural visual palette and an explicit emphasis on product origin.

Changes in the Partner's Marketing Capability

Capability change was assessed by comparing initial conditions with observed practice, output quality, and the partner's reflections. Before the program, the partner had no prior exposure to AI and had never formulated a prompt. After the assistance, the partner could open the application, enter product information, formulate a basic prompt, compare alternative captions, and revise unsuitable outputs. The partner also understood that AI-generated material requires verification before use.

In the final reflection, the partner reported that AI made it faster to obtain promotional ideas. Rather than beginning with a blank page, the owner could work from several alternatives. The partner also recognized that broad instructions produced weakly differentiated text and that more practice was needed to formulate specific prompts. This response indicates a change in managerial awareness, not merely a one-off technical skill.

The most visible result was the availability of marketing assets that had not existed previously: a product description, captions, a digital poster, video ideas, a content calendar, and a concise AI-use guide. These assets improve the partner's readiness to introduce digital marketing incrementally. The finding is consistent with Haryanto et al. (2024), Muhardono et al. (2024), and Ardiansah et al. (2025), who show that practice-based training can help MSMEs prepare content more efficiently and systematically. It also supports Cillo and Rubera (2025) and Grewal et al. (2025), who argue that generative AI can contribute to marketing-content creation and development, although its value remains contingent on context and human involvement.

Table 4. Comparison of Marketing Capability Before and After the Program

Aspect	Before the Program	After the Program
Understanding of AI	No awareness of AI functions or risks.	Understood basic functions, limitations, and the need for verification.
Prompt formulation	No prior experience with prompts.	Able to write a basic prompt specifying the objective, product, target market, and output format.
Copy development	Difficulty initiating ideas and writing promotional text.	Able to generate several caption alternatives and edit them.
Visual material	No structured digital poster.	Possessed a digital poster and a visual concept aligned with product information.
Content planning	No themes or publication schedule.	Possessed a content calendar for gradual implementation.
Attitude toward AI	Unaware of AI's potential business uses.	More confident in testing AI while recognizing the need for continued practice and verification.

Source: Observation, assessment of practical outputs, and reflective interview, 2026.

Constraints, Responses, and Sustainability

The main constraints were unstable internet connectivity, limited devices, and low familiarity with digital applications. These conditions slowed the exercises and required repetition. The facilitators responded by providing reusable prompt examples, preparing a concise guide, simplifying the applications' features, supporting joint editing, and adapting the language to local consumers.

Device limitations underline the need to align AI adoption with the resource realities of microenterprises. Badghish and Soomro (2024), Hamid and Artha (2025), and Oldemeyer et al. (2025) show that organizational readiness, knowledge, cost, and infrastructure shape AI implementation in smaller firms. The OECD (2021) also treats managerial skills and organizational capability as complementary assets in small-business digital transformation. The most sophisticated tool is not necessarily the most productive choice when access and usability are weak. Effective assistance begins with a narrow set of functions that address immediate needs and can be operated with the resources already available.

The continuation strategy is based on a content calendar, prompt templates, and follow-up consultation. The partner plans to publish content regularly, develop the social media account, review customer responses, and later learn additional functions related to design, video, and marketplaces. Each publication should be checked for product facts, price, ordering information, language, and privacy. This routine supports responsible entrepreneurship by using technology to strengthen the enterprise without compromising factual communication or the owner's control.

The program also contributes to a more sustainable local economy. The OECD (2021) explains that digitalization can help small firms widen market reach, differentiate products, and improve competitiveness. In this case, the assistance enabled a traditional enterprise to adopt digital tools while retaining Tempe Contong's identity as a Sidamulya product. The narrative of leaf packaging, aroma, and flavor was not replaced by standardized marketing language; it was translated into a shareable digital format. Digital transformation was therefore directed toward expanding local enterprise capability rather than erasing product character.

Program Limitations

The program has several limitations. First, the partner was a single business owner, so the findings cannot be generalized to all MSMEs in Cilacap Regency. Second, the two-day duration did not allow long-term monitoring. Third, documentation of the training process was incomplete, leaving the digital poster as the principal visual evidence. Fourth, changes in social media reach, customer engagement, inquiries, orders, and sales were not measured.

Accordingly, this article does not claim that the program increased sales. Its findings are limited to initial capability development and the availability of basic marketing assets. A follow-up program should expand the documentation, monitor implementation for at least several weeks, and record simple indicators such as publication frequency, reach, engagement, customer inquiries, and orders.

CONCLUSION

The AI assistance program for Tempe Contong was delivered through a PAR cycle and learning by doing on July 22-23, 2026. The partner participated in problem identification, planning, practice, observation, reflection, and the refinement of prompts and content. This approach aligned the material with a business that had previously relied on word of mouth and had no experience with AI.

The program produced an initial improvement in digital marketing capability. The partner developed a basic understanding of AI's functions and limitations, learned to formulate simple

prompts, generated and edited captions, and used product information to develop a poster and content calendar. The resulting set of promotional assets can be reused. The main benefit perceived by the partner was faster access to alternative ideas; the remaining need is continued practice in formulating more specific instructions.

The practical implication is that AI adoption in microenterprises should be incremental, context-sensitive, and owner-centered. Prompt templates, verification guidelines, and content calendars need to become part of a regular marketing routine rather than one-off training outputs. AI use should remain subject to fact checking, data protection, and final owner approval. Future community engagement and research should extend the observation period, improve documentation, involve a broader set of MSMEs, and assess whether sustained digital publication affects customer engagement and sales.

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