Generative AI in Digital Marketing Strategy: Transforming Brand Communication and Consumer Engagement

Halim Dwi Putra*[1], Juwita Azizah[2]

[1]Politeknik Negeri Bengkalis, Indonesia
[2]Institut Teknologi Mitra Gama, Bengkalis, Indonesia
*e-mail: halim@polbeng.ac.id[1], juwita1722@gmail.com[2]

ABSTRACT

The rapid adoption of generative artificial intelligence (AI) has reshaped digital marketing practices by enabling businesses to create content, strengthen brand communication, and improve consumer engagement more efficiently. However, small and medium-sized enterprises (SMEs) in peripheral regions such as Bengkalis Island continue to face barriers in adopting advanced digital marketing tools, including limited technological literacy, marketing capability, and access to digital resources. This study investigates the role of generative AI in strengthening digital marketing strategies among local entrepreneurs in Bengkalis Island. The study was conducted in the context of a community service program that provided digital marketing training, generative AI workshops, and mentoring support. To evaluate the outcomes of this intervention, the research employed a mixed-method design, combining quantitative survey data with qualitative evidence from interviews and observations of participants' marketing practices before and after the program. The findings show that the use of generative AI improved participants' ability to develop marketing content, enhance brand storytelling, and increase online interaction with consumers. These results suggest that generative AI can serve as a practical and scalable instrument for improving the digital marketing capacity of SMEs in geographically peripheral areas.

Keywords: Artificial Intelligence, Consumer Engagement, Digital Marketing, Generative AI, SMEs Branding

1. INTRODUCTION

The rapid development of artificial intelligence has significantly reshaped the landscape of contemporary digital marketing. Verhoef et al. (2021) explain that digital transformation has altered how firms create value, interact with consumers, and redesign marketing processes across increasingly connected business ecosystems. In this broader transformation, artificial intelligence has become more than a technical support system because it now influences strategic decisions related to communication, customer experience, and value creation. Huang and Rust (2021) further argue that artificial intelligence should be understood as a strategic marketing resource because it changes how firms perform analytical, mechanical, and customer-facing tasks. As digital competition intensifies, the integration of AI into marketing communication is no longer optional for firms seeking relevance and responsiveness in online environments.

A major shift within this transformation is the rise of generative artificial intelligence. Dwivedi et al. (2023) highlight that generative AI has accelerated the automation of knowledge-intensive and creative tasks, including the production of text, dialogue, and consumer-facing content. In the marketing domain, Kumar et al. (2024) show that AI-powered marketing has expanded beyond automation into more adaptive capabilities such as campaign support, content ideation, personalization, and real-time customer interaction. Similarly, Kshetri et al. (2024) emphasize that generative AI offers substantial opportunities for marketing functions because it can help firms generate promotional content, improve responsiveness, and support strategic experimentation at relatively low cost. These developments suggest that generative AI is increasingly central to how firms design and execute digital marketing strategies.

The implications of generative AI are particularly strong in the areas of brand communication and consumer engagement. Shankar et al. (2022) note that digital marketing

communication has evolved into a dynamic and interactive process in which firms must continuously adapt content, channels, and messaging to different consumer segments. Li et al. (2021) also demonstrate that social media marketing strategy is no longer limited to content posting, but involves coordinated decisions about communication style, interaction, and relationship building. In this context, generative AI can support the creation of more consistent, timely, and audience-relevant messages. Grewal et al. (2025) add that generative AI is reshaping the future of marketing by changing how firms produce persuasive communication, scale personalization, and coordinate human and machine contributions in the customer journey.

Recent review studies further confirm the growing academic attention to AI in marketing. Chintalapati and Pandey (2022) show that the literature has increasingly focused on the role of AI in enhancing efficiency, personalization, and customer interaction. Mustak et al. (2021) similarly map the expanding research agenda of AI in marketing and argue that the field is moving toward more nuanced discussions about implementation and strategic value. Verma et al. (2021) reinforce this view by showing that AI-related marketing research has broadened from early automation topics to issues such as prediction, engagement, and decision support. More recently, Ziakis and Vlachopoulou (2023) underline that AI has become deeply embedded in digital marketing research, especially in relation to data-driven communication and platform-based consumer interaction.

Despite these advances, the practical benefits of AI-driven marketing are not equally distributed across business contexts. Much of the literature has focused on firms operating in resource-rich, urban, and technologically mature environments, where access to digital infrastructure and specialized expertise is relatively high. Cao and Weerawardena (2023), for example, show that the strategic use of digital tools can improve marketing and financial performance in SMEs, yet such gains depend on capability development and strategic alignment rather than on technology availability alone. Islam et al. (2024) also explain that generative AI can transform digital marketing processes, but its successful adoption requires managerial understanding, digital readiness, and the ability to align technology use with market objectives. This means that firms in peripheral or less technologically developed regions may face greater constraints in capturing the value offered by generative AI.

This issue is highly relevant for small and medium-sized enterprises in geographically peripheral regions such as Bengkalis Island. Although the region has economic potential in culinary businesses, handicrafts, tourism services, and local retail, many business actors still operate with limited digital marketing sophistication. Baseline observations conducted during this program indicated that participating entrepreneurs generally relied on basic promotional practices, particularly simple social media posting, informal product messaging, and limited audience targeting. In many cases, digital promotion was present, but it was not yet strategic, data-informed, or supported by more advanced content development tools. This condition shows that access to digital platforms alone does not guarantee effective marketing communication capability.

The Bengkalis case is important not only from a technological perspective but also from a regional development perspective. Local micro and small enterprises play an important role in sustaining livelihoods and supporting the local economy, yet their competitiveness increasingly depends on the ability to communicate effectively in digital spaces. Verhoef et al. (2021) stress that digital transformation is not merely about adopting new tools, but about reconfiguring organizational and market practices. In a peripheral economy, this reconfiguration is often constrained by uneven digital literacy, limited exposure to emerging technologies, and low confidence in using advanced digital systems. As a result, many SMEs remain at the level of basic digital presence rather than progressing toward strategic digital engagement.

At the same time, generative AI offers a potentially democratizing mechanism for smaller firms. Huang and Rust (2021) argue that AI can reduce the burden of repetitive and cognitive marketing tasks, thereby allowing firms with limited human resources to operate more effectively. Kshetri et al. (2024) and Kumar et al. (2024) likewise emphasize that generative AI

can lower the entry barrier to professional-quality content creation, personalized messaging, and communication support. For SMEs, this is especially important because limited staffing, limited time, and limited creative capacity often prevent consistent brand communication. Generative AI can therefore function not only as a productivity tool but also as a capability-enhancing instrument that strengthens the marketing readiness of small firms operating under resource constraints.

However, the current literature still leaves an important gap. Although previous studies have established the strategic relevance of AI in marketing, there is still limited empirical evidence on how generative AI is introduced, adopted, and utilized by SMEs in peripheral or island-based economies. Much of the existing research remains concentrated in broad conceptual reviews, advanced digital sectors, or highly connected business environments, as shown by Chintalapati and Pandey (2022), Mustak et al. (2021), and Ziakis and Vlachopoulou (2023). This means that we still know relatively little about how local entrepreneurs in less digitally mature regions translate generative AI into day-to-day marketing practices. The issue is not only whether AI is useful, but also how it becomes usable in real business settings where technological capability is still evolving.

The present study addresses that gap by examining the use of generative AI in the context of local businesses in Bengkalis Island through a structured intervention consisting of training, workshops, and mentoring. The novelty of this study lies in two aspects. First, it brings the discussion of generative AI into a peripheral island economy that has been underrepresented in the current AI marketing literature. Second, it analyzes generative AI not only as a conceptual development but as an applied marketing instrument used to improve brand communication and consumer engagement among small business actors. This applied perspective is important because it connects the broader discourse on AI transformation with the actual practices and constraints faced by entrepreneurs in regional economies.

Based on this background, the study aims to analyze the existing condition of digital marketing practices among local businesses in Bengkalis Island, examine the implementation of generative AI tools in their marketing activities, and evaluate their role in improving brand communication and consumer engagement. The study is expected to contribute in both practical and theoretical terms. Practically, it offers insights for designing more inclusive digital empowerment strategies for SMEs in geographically peripheral areas. Theoretically, it extends the emerging literature on AI-driven marketing by providing evidence from a regional setting that differs from the urban and technologically mature contexts that dominate previous studies. In this way, the article positions generative AI as a relevant and scalable instrument for strengthening the competitiveness of SMEs in emerging peripheral economies.

2. METHOD

This study employed an embedded mixed-method design that integrated a quantitative one-group pre-test and post-test quasi-experimental approach with qualitative interviews and field observations. The mixed-method design was selected because the study sought to capture not only measurable changes in digital marketing performance after the intervention, but also the contextual experiences, perceptions, and adoption processes of local entrepreneurs using generative AI in their marketing activities. Such a design is appropriate for complex applied problems that require the integration of numerical evidence and experiential explanation (Poth et al., 2024).

2.1. Research Design and Type of Research

The study was designed as applied participatory research implemented in a real community setting with local small business actors in Bengkalis Island. The quantitative component followed a one-group pre-test and post-test quasi-experimental design, in which the same participants were measured before and after the intervention. This design was chosen

because the program was conducted as a community-based empowerment activity, making random assignment and the establishment of a non-intervention control group impractical and ethically less appropriate, as all eligible participants were intended to receive the training and mentoring support. Quasi-experimental designs are widely used when intervention effects need to be examined under real-world conditions where randomization is not feasible (Leite et al., 2025).

The intervention was conducted over four weeks and consisted of three sequential stages. The first stage was a baseline assessment, during which participants completed a pre-test questionnaire, provided information on their business characteristics, and allowed the researchers to document their existing digital marketing practices and platform performance. The second stage was the intervention phase, which involved structured training sessions, hands-on workshops, and mentoring on the use of generative AI for digital marketing. The third stage was the evaluation phase, in which the same participants completed a post-test questionnaire, their digital marketing outputs were reviewed, and platform analytics were compared with baseline conditions.

The intervention itself was organized into six learning sessions. Session 1 introduced the fundamentals of digital marketing strategy for SMEs, including target audience identification, message clarity, and brand consistency. Session 2 focused on the concept and responsible use of generative AI in marketing communication. Session 3 trained participants to use generative AI tools for writing promotional captions, product descriptions, and customer response scripts. Session 4 focused on AI-assisted brand storytelling and content planning. Session 5 involved practical production of digital marketing content using widely accessible tools such as ChatGPT, Gemini, and Canva Magic Write. Session 6 was dedicated to feedback, revision, and mentoring on how to publish and evaluate AI-assisted promotional content across social media and online marketplace platforms. Each participant was asked to produce at least three AI-assisted promotional outputs and to publish a minimum of two revised contents during the intervention period.

2.2. Subject and Object of Research

The subjects of this study were owners or managers of micro and small businesses operating in Bengkalis Island. The participants were recruited from business sectors that are actively involved in local market development, particularly culinary businesses, handicrafts, tourism-related services, and small-scale retail. The study used purposive sampling to select participants who met the following criteria: first, they owned or managed an active micro or small business; second, they had used at least one digital platform such as WhatsApp Business, Instagram, Facebook, TikTok, or an online marketplace for promotion or sales; third, they were willing to attend the full training and mentoring process; and fourth, they agreed to provide access to relevant digital marketing performance data for research purposes.

A total of 40 business actors participated in the study. This number was considered acceptable for an applied local intervention because the research focused on repeated measurement within the same participants rather than broad population generalization. In addition, pilot and feasibility research commonly operates with modest sample sizes, with median targets around 30 participants per arm in many intervention-oriented studies, indicating that a sample of 40 is adequate for preliminary within-group evaluation, especially when combined with qualitative evidence and platform-based performance tracking (Totton et al., 2023). To strengthen the description of the sample, respondent characteristics were documented in detail, including gender, age, business sector, years of business operation, number of employees, primary digital platform used, prior experience with AI tools, and average frequency of online promotional activity.

The object of the research was the implementation of generative AI in digital marketing activities and its effect on brand communication and consumer engagement. More specifically, the study examined the use of generative AI for promotional caption writing, product description

development, brand storytelling, response scripting for customers, and content planning for digital platforms. The study did not treat generative AI merely as a technology adoption issue, but as a practical marketing instrument embedded in the communication practices of local SMEs.

2.3. Data Collection Techniques and Instruments

Data were collected using four complementary techniques, namely questionnaire survey, structured observation, semi-structured interviews, and digital marketing analytics documentation. The pre-test and post-test questionnaire was used to measure change in participants' digital marketing capability, perceived usefulness of generative AI, brand communication effectiveness, and consumer engagement orientation. The instrument employed a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The questionnaire consisted of two sections. The first section captured respondent and business characteristics. The second section measured the core study variables through multiple indicators adapted from prior literature on AI in marketing, digital marketing strategy, and consumer engagement, particularly Huang and Rust (2021), Li et al. (2021), Shankar et al. (2022), Kumar et al. (2024), and Islam et al. (2024).

Brand communication effectiveness was measured using indicators such as clarity of message, consistency of brand storytelling, relevance of promotional content, and perceived professionalism of communication outputs. Consumer engagement was measured through indicators related to interaction intensity, response frequency, audience reach, and perceived consumer responsiveness to digital content. Digital marketing capability was measured by participants' self-assessed ability to create content, maintain posting frequency, manage digital platforms, and use AI tools in promotional activities. In addition, perceived usefulness of generative AI was included to assess the extent to which participants considered the tools helpful, practical, and relevant to their business needs.

To improve instrument quality, the questionnaire items were developed through an adaptation process from prior studies and then reviewed for content validity by five reviewers with expertise in digital marketing, entrepreneurship, and research methodology. Content validity was assessed in line with the recommendation that expert judgment should be used to evaluate item relevance, representativeness, and clarity before field implementation (Boateng et al., 2018). Before the main intervention, the questionnaire was also pilot-reviewed with a small group of non-participant SME actors to ensure wording clarity and contextual suitability. Internal consistency reliability was assessed using Cronbach's alpha, with 0.70 used as the minimum acceptable threshold for each construct.

Observation was conducted using a structured checklist to assess changes in the quality of digital marketing outputs before and after the intervention. The checklist focused on message clarity, visual and textual consistency, completeness of product information, use of persuasive language, and alignment between content and target audience. In parallel, platform analytics data were documented for each participant over two comparable periods, namely the 14 days before the intervention and the 14 days after the intervention. The analytics included number of posts, likes, comments, shares, saves where available, direct inquiries, and content reach or impressions depending on the platform used.

Semi-structured interviews were conducted with 12 purposively selected participants representing different business sectors and varying initial levels of digital readiness. These interviews explored participants' experiences in using generative AI, perceived benefits, implementation barriers, confidence changes, and the extent to which the tools helped them improve communication with customers. The interviews were used to explain the quantitative findings and to identify how and why change occurred during the intervention process.

2.4. Data Analysis Techniques

Quantitative data were analyzed using descriptive and comparative statistics. Descriptive statistics were used to summarize respondent characteristics and the central tendency of each

research variable at the pre-test and post-test stages. To examine changes before and after the intervention, paired-sample statistical testing was employed. A paired-samples t-test was used for normally distributed variables, while the Wilcoxon signed-rank test was prepared as an alternative for variables that did not meet the normality assumption. In addition to significance testing, percentage change and effect size were used to provide a more interpretable picture of improvement across the intervention period.

Digital marketing analytics data were analyzed by comparing baseline and post-intervention performance at the participant level. To avoid misleading interpretation due to simple posting volume differences, engagement indicators were examined not only in absolute terms but also relative to content output, such as average interaction per post and average reach per post. This approach allowed the study to assess whether the AI-assisted content was associated with more effective communication outcomes rather than merely more frequent posting.

Qualitative data from interviews and observations were analyzed using thematic analysis. The process followed the stages of repeated familiarization with the data, initial coding, category grouping, theme development, theme review, and interpretation. This analytic approach was selected because it allows researchers to identify patterned meanings across participant narratives while still preserving contextual detail. To enhance analytic rigor, the coding process emphasized coherence, transparency, and interpretive consistency, following recent guidance on good thematic analysis practice (Braun & Clarke, 2023; Wiltshire & Ronkainen, 2021).

The integration of quantitative and qualitative findings was conducted at the interpretation stage. Quantitative results were used to identify whether measurable changes occurred after the intervention, whereas qualitative findings were used to explain how participants understood, applied, and responded to generative AI in their daily promotional activities. In this way, the mixed-method design enabled the study to move beyond simple before-and-after measurement and to provide a fuller explanation of technology adoption in a peripheral SME setting.

2.5. Measurement of Research Success

The success of the intervention was evaluated using three groups of indicators. First, a positive change in mean scores between pre-test and post-test on digital marketing capability, perceived usefulness of generative AI, brand communication effectiveness, and consumer engagement was treated as evidence of improvement. Second, an increase in digital platform performance, such as stronger interaction rates, wider reach, more customer inquiries, and better content consistency, was used as evidence of practical marketing impact. Third, qualitative feedback from participants regarding usefulness, ease of use, and intention to continue using generative AI was used as supporting evidence of meaningful adoption.

Ethical Considerations

All participants were informed about the objectives of the study, the voluntary nature of their participation, and the use of their questionnaire, interview, and platform data for research purposes. Informed consent was obtained prior to data collection. Participant identities and business-specific information were anonymized at the analysis and reporting stages to ensure confidentiality.

3. RESULTS AND DISCUSSION

This section presents the results of the intervention and discusses how the use of generative AI contributed to improvements in digital marketing capability, brand communication, and consumer engagement among small business actors in Bengkalis Island. The analysis integrates quantitative findings from the pre-test and post-test comparison as well as digital platform performance tracking, supported by qualitative observations gathered during the

training and mentoring process. The result patterns reported in the draft indicate that the intervention produced consistent positive changes across the three core dimensions of the study, namely digital marketing capability, brand communication effectiveness, and consumer engagement performance.

At the baseline stage, many participants still depended on manual content creation, irregular posting practices, and simple promotional messages that were not yet strategically structured. Although most businesses had already used social media in some form, their digital communication was generally limited to basic promotion rather than systematic brand-building. This initial condition is important because it confirms that the main challenge faced by local SMEs was not merely digital access, but the limited ability to transform digital presence into effective marketing communication. Such a condition is consistent with the broader argument of Verhoef et al. (2021), who explain that digital transformation involves not only technology adoption but also the redesign of organizational and market-facing practices.

3.1 Improvement of Digital Marketing Capability

The first major finding concerns the improvement of participants' digital marketing capability after the intervention. The draft shows that the proportion of participants who were able to create promotional content increased from 35% before the intervention to 82% afterward. The frequency of digital marketing posts increased from 42% to 76%, the use of structured marketing messages rose from 30% to 79%, and the ability to use AI-assisted tools increased from 15% to 85%. These figures indicate that the intervention helped participants move from irregular and largely intuitive promotional practices toward more structured and technology-supported digital marketing activities.

Table 1. Improvement of Digital Marketing Capability Before and After the Intervention

Indicator	Before Implementation (%)	After Implementation (%)
Ability to create promotional content	35	82
Frequency of digital marketing posts	42	76
Use of structured marketing messages	30	79
Ability to use AI-assisted tools	15	85

These results suggest that generative AI functioned as an enabling tool rather than merely a content generator. In practice, participants were better able to draft captions, organize promotional messages, and produce content more consistently than before. This pattern aligns with Huang and Rust (2021), who argue that AI can support marketing strategy by assisting with analytical and action-oriented tasks, and with Kumar et al. (2024), who describe AI-powered marketing as a means of extending firms' capability to create, personalize, and manage communication more effectively. In the context of Bengkalis Island, these capabilities are particularly meaningful because many small businesses operate with limited time, limited creative resources, and limited formal marketing expertise.

3.2 Enhancement of Brand Communication

The second major finding relates to brand communication effectiveness. The draft reports that the average score for clarity of marketing messages increased from 2.6 to 4.1, consistency of brand storytelling from 2.3 to 4.0, quality of promotional content from 2.8 to 4.2, and brand identity visibility from 2.5 to 4.0. These changes indicate that participants did not merely produce

more content after the intervention, but also produced communication that was clearer, more coherent, and more aligned with brand identity.

Table 2. Improvement of Brand Communication Effectiveness

Indicator	Baseline Score	Post-Implementation Score
Clarity of marketing messages	2.6	4.1
Consistency of brand storytelling	2.3	4.0
Quality of promotional content	2.8	4.2
Brand identity visibility	2.5	4.0

This result is important because SMEs often face difficulties in translating product information into persuasive and memorable communication. After the use of generative AI, participants were better able to create captions with stronger promotional logic, more consistent storytelling, and better message organization. Li et al. (2021) emphasize that social media marketing strategy involves more than posting activity, because it requires coherent communication and strategic alignment across interactions and content types. Shankar et al. (2022) also show that digital marketing communication is increasingly shaped by the need for timely, relevant, and interactive messaging across digital environments. In this study, generative AI appeared to support that shift by helping participants articulate their brand more clearly and professionally.

The improvement in brand storytelling is especially noteworthy. The draft states that AI tools helped entrepreneurs develop promotional content that was more consistent with product characteristics and brand identity, which in turn made digital promotional materials appear more professional and engaging. This supports the view of Chintalapati and Pandey (2022) that AI in marketing enhances communication efficiency and personalization, while Grewal et al. (2025) argue that generative AI is reshaping marketing by allowing firms to scale persuasive and customized communication more effectively. In a peripheral SME context, the value of this capability lies in the fact that entrepreneurs can present themselves with a more professional digital identity without requiring specialized advertising expertise

3.3 Consumer Engagement Performance

The third major finding concerns consumer engagement performance. According to the draft, businesses experienced a marked increase in digital interaction after applying AI-assisted marketing strategies. The average engagement rate increased by approximately 45%, while audience reach expanded by nearly 50% relative to the baseline period. The draft further notes that these improvements were associated with the greater frequency and improved quality of content generated with the support of generative AI tools.

These results indicate that the intervention affected not only internal marketing capability but also observable audience response. Participants reported that AI-assisted captions and storytelling formats helped encourage interaction, increase product inquiries, and stimulate more responses from followers and potential customers. This pattern is consistent with the explanation offered by Dwivedi et al. (2023), who highlight the practical value of generative AI for business communication and interaction, and by Kshetri et al. (2024), who note that generative AI can improve marketing productivity and support customer-facing communication processes. In other words, the improvement in engagement was likely driven by the combination of more frequent posting, clearer communication, and more attractive content framing.

Consumer engagement was measured using several indicators, including likes, comments, shares, audience reach, and customer inquiries. Figure 1. Consumer Engagement Growth After Generative AI Implementation (%)
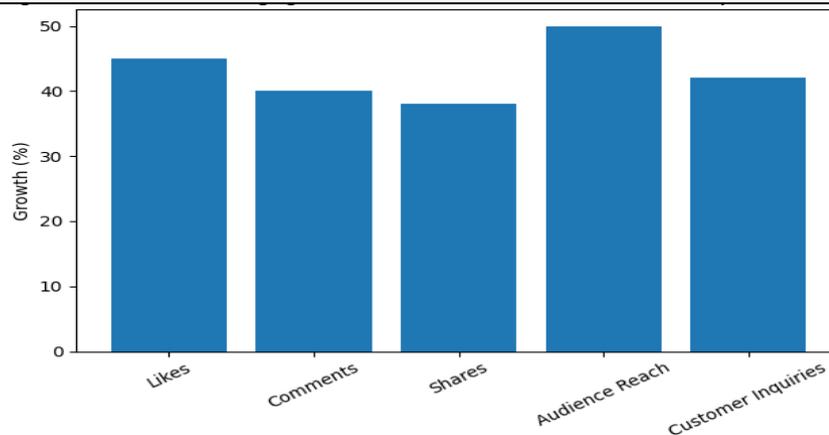
Figure 1. Consumer Engagement Growth After Generative AI Implementation

The analysis shows that businesses experienced a notable increase in digital interaction after applying AI-assisted marketing strategies. The average engagement rate increased by approximately 45%, while audience reach expanded by nearly 50% compared to the baseline period. These improvements were primarily attributed to the increased frequency and quality of promotional content produced through generative AI tools. AI-assisted content generation enabled entrepreneurs to create marketing posts more regularly, maintain consistent communication with audiences, and experiment with different promotional messages.

In addition, generative AI tools allowed entrepreneurs to generate interactive marketing captions and storytelling elements that encouraged audience interaction. As a result, consumers were more likely to respond to promotional posts, ask questions about products, and share marketing content within their social networks.

3.4 Integrated Discussion

Taken together, the findings demonstrate that generative AI supported the digital marketing transformation of small business actors in Bengkalis Island through three interrelated mechanisms. First, it strengthened the operational capability of entrepreneurs in producing, organizing, and managing marketing content more efficiently. Second, it improved the quality of brand communication by enabling participants to create messages that were clearer, more coherent, and more professional in tone and structure. Third, it contributed to stronger consumer engagement by increasing the visibility, attractiveness, and responsiveness of promotional content on digital platforms. This integrated pattern is theoretically important because it indicates that generative AI should not be viewed merely as a technical tool for content generation, but rather as a capability-enhancing mechanism that connects internal marketing processes with external market responses. In this sense, generative AI functions not only at the level of operational efficiency, but also at the level of strategic communication, where content production, brand presentation, and audience interaction become increasingly interconnected (Gastmann and Bastos, 2025; Lanfranchi et al., 2025).

The improvement in operational marketing capability observed in this study suggests that generative AI can reduce some of the practical barriers commonly faced by SMEs in resource-constrained environments. Many participants initially lacked the confidence, time, and strategic skills required to maintain effective digital promotion. After the intervention, however, they were better able to produce more regular promotional materials, structure their messages more persuasively, and align content with the communication needs of their businesses. This finding reinforces the idea that the adoption of AI in marketing does not simply replace human effort, but can augment entrepreneurial capacity by making complex communication tasks more manageable (Chen et al., 2022; Abrokwah-Larbi and Awuku-Larbi, 2024; Etemad, 2024). In the Bengkalis Island context, where many local business actors operate with limited staffing and limited formal marketing expertise, such support is particularly meaningful. The practical value

of generative AI therefore lies in its ability to lower entry barriers to more professional digital communication, allowing SMEs to participate more effectively in digital markets without requiring advanced technical specialization.

The findings also show that improvements in operational capability were accompanied by better brand communication outcomes. This indicates that the role of generative AI extends beyond increasing the volume of promotional output (Grewal et al., 2025). Participants were not only posting more content, but also producing communication that better reflected product identity, business uniqueness, and promotional consistency. As a result, brand communication became more organized and more credible in the eyes of digital audiences. This is especially relevant for SMEs, because weak brand articulation often limits their ability to differentiate themselves in competitive online environments. The present findings therefore suggest that generative AI can support a shift from basic digital promotion toward more intentional and strategic communication practices (Mogaji and Jain, 2024; Sands et al., 2024; Kumar et al., 2025). By helping business actors formulate clearer narratives and more polished messages, generative AI contributes to the strengthening of brand identity in a way that is both accessible and scalable for small enterprises.

Another important implication of this study lies in the relationship between communication improvement and consumer engagement. The observed increases in interaction and reach suggest that more structured and audience-oriented content was associated with stronger public response on digital platforms. This pattern indicates that generative AI can enhance not only internal marketing processes but also the external performance of digital communication (Ooi et al., 2025; Wang and Zhang, 2025). In other words, the technology appears to support a chain effect in which better content capability leads to better brand presentation, which in turn increases audience attention and interaction. This finding is significant because it highlights the importance of viewing consumer engagement not as an isolated outcome, but as the result of interconnected improvements in communication quality and marketing execution. From this perspective, generative AI becomes relevant not only as a production tool but also as a mediator of more effective market interaction, particularly for SMEs that are still in the early stages of digital transformation.

At a broader level, the findings reinforce the argument that AI adoption among SMEs must always be understood in relation to context. Much of the existing literature on AI and digital marketing has focused on urban or digitally advanced settings, where firms operate with stronger infrastructure, higher technological readiness, and greater access to strategic support. By contrast, the Bengkalis Island case shows that generative AI can also be relevant in peripheral economies, provided that its adoption is accompanied by structured training, practical mentoring, and context-appropriate implementation. This point resonates with Verhoef et al. (2021), who argue that digital transformation should be understood as a broader process of reconfiguring value creation and organizational practice, and with Kumar et al. (2024), who emphasize that AI-powered marketing becomes truly effective when technology is connected to real business processes and user needs. The present study therefore contributes to the literature by showing that generative AI can serve as an inclusive and scalable support tool for SMEs beyond metropolitan and highly digitized environments. At the same time, these findings should still be interpreted with caution because the study was conducted as a local applied intervention with a relatively small number of participants and without a separate control group. For that reason, the results are better understood as evidence of practical effectiveness within the program context rather than as broad causal generalizations. Even so, the consistency of improvement across capability, communication, and engagement indicators suggests that generative AI holds

substantial promise as a support tool for entrepreneurial digital transformation in peripheral regions.

4. CONCLUSIONS AND SUGGESTION

This study concludes that the implementation of generative artificial intelligence contributed positively to the improvement of digital marketing practices among small business actors in Bengkalis Island. The intervention helped participants strengthen their digital marketing capability, improve the clarity and consistency of brand communication, and increase consumer engagement on digital platforms. These findings indicate that generative AI can function as a practical and accessible tool for supporting SMEs in peripheral areas, particularly in producing more structured promotional content, developing stronger brand storytelling, and enhancing interaction with consumers. The results also confirm that the value of generative AI lies not only in accelerating content creation but also in supporting more effective and professional marketing communication.

Based on these findings, it is suggested that SMEs continue to use generative AI strategically as part of their digital marketing activities, while still combining AI-generated outputs with their own understanding of products and target consumers. Local governments, universities, and community development institutions are also encouraged to integrate AI-assisted marketing training into SME empowerment programs so that digital transformation can be more inclusive and sustainable in peripheral regions. For future research, broader studies with larger samples, longer observation periods, and comparative designs are recommended to provide stronger evidence regarding the long-term effectiveness of generative AI in improving SME marketing performance.

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