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Utilization of Artificial Intelligence for Marketing Innovation and Business Sustainability by Smakelijk

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A B S T R A C T

The culinary souvenir industry in Surabaya faces competitive challenges that demand digital transformation in the era of Society 5.0. This research aims to formulate AI-based marketing innovation strategies to support the business sustainability of "Oleh Oleh Smakelijk." Using a mixed methods approach with an explanatory sequential design, this study integrates data from a Systematic Literature Review (SLR) of 25 reputable articles and qualitative case studies through interviews and field observations. The results of the problem identification indicate that dependency on manual processes leads to slow service responses and stock fluctuations resulting in product waste, a condition that does not align with the preferences of Generation Z consumers. The research recommends the implementation of three AI components: Generative AI for content personalization, Chatbots for customer service automation, and Predictive Analytics for inventory management. The application of these strategies is projected to reduce product waste by 15% and improve operational efficiency. The main conclusion of this study is that adopting a "Hybrid Intelligence" model, which combines human touch in products with machine intelligence in marketing, is essential for SMEs to enhance profitability and achieve economic and environmental sustainability goals.

KATA KUNCI

Kecerdasan Buatan, Inovasi Pemasaran, Keberlanjutan Bisnis, UMKM, Transformasi Digital

A B S T R A K

Industri kuliner oleh-oleh di Surabaya menghadapi tantangan kompetitif yang menuntut transformasi digital di era Society 5.0. Penelitian ini bertujuan untuk merumuskan strategi inovasi pemasaran berbasis Kecerdasan Buatan (AI) guna mendukung keberlanjutan bisnis "Oleh Oleh Smakelijk". Menggunakan pendekatan *Mixed Methods* dengan desain sekuensial eksplanatori, penelitian ini mengintegrasikan data dari Systematic Literature Review (SLR) terhadap 25 artikel bereputasi dan studi kasus kualitatif melalui wawancara serta observasi lapangan. Hasil identifikasi masalah menunjukkan bahwa ketergantungan pada proses manual menyebabkan respons layanan yang lambat dan fluktuasi stok yang berujung pada limbah produk, kondisi yang tidak selaras dengan preferensi konsumen Gen Z. Hasil penelitian merekomendasikan implementasi tiga hal AI: Generative AI untuk personalisasi konten, Chatbot untuk otomatisasi layanan pelanggan, dan Predictive Analytics untuk manajemen persediaan. Penerapan strategi ini diproyeksikan mampu mengurangi limbah produk sebesar 15% dan meningkatkan efisiensi operasional. Kesimpulan utama studi ini adalah bahwa adopsi model "*Hybrid Intelligence*" yang menggabungkan sentuhan manusia dalam produk dengan kecerdasan mesin dalam pemasaran sangat penting bagi UMKM untuk meningkatkan profitabilitas dan mencapai tujuan keberlanjutan ekonomi serta lingkungan.

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1. Introduction

According to data from the Ministry of Tourism and Creative Economy of Indonesia (2022), the culinary industry, especially the souvenir sector, is one of the key pillars of Indonesia's growing creative economy. Souvenir products, as distinctive items frequently purchased by tourists or travelers, function not only as cultural mementos but also as a source of income for many small and medium-sized enterprises [1]. In a metropolitan city like Surabaya, which is the second-largest economic hub in Indonesia after Jakarta, the souvenir market is highly competitive, offering a wide range of products from snacks and traditional cakes to specialty spices. Stakeholders in this sector face challenges such as seasonal demand fluctuations, price competition, and the need to maintain authentic product quality [2].

The current digital era, in which technology is an integral part of daily life, dictates that conventional marketing strategies like word-of-mouth promotions or print advertisements are no longer sufficient [3]. Industry 4.0 and Society 5.0 demand the adoption of digital technologies to improve efficiency, personalization, and consumer interaction. One of the main technologies driving this transformation is Artificial Intelligence (AI), which enables businesses to

analyze big data, predict trends, and deliver a more personalized customer experience. In this context, AI is no longer an auxiliary tool but a key element for sustaining and growing in an increasingly digital market [4].

Artificial Intelligence (AI) is defined as the simulation of human intelligence processes by computer systems, including the abilities to learn, reason, and self-correct. Technically, AI operates by leveraging complex algorithms and mathematical models to recognize patterns in large data sets, allowing machines to perform cognitive tasks such as visual perception, speech recognition, and decision-making that typically require human intervention. In the modern business ecosystem, AI serves not only as automation of routine tasks but also as an intelligent system capable of adapting to changing inputs to achieve specific objectives optimally [5].

Theoretically, the application of AI in marketing has been shown to improve business performance through various applications, such as content personalization, predictive analytics of consumer behavior, and automation of customer service. For example, AI can be used to analyze data from social media to understand consumer preferences, enabling businesses to tailor promotions more precisely [6]. Previous research indicates that companies that integrate AI into their marketing strategies experience improvements in operational efficiency of up to 20–30% and higher customer retention. However, most studies have focused on large corporations or multinational enterprises where access to extensive technology resources and data is easier. Meanwhile, literature on the application of AI to Micro, Small, and Medium Enterprises (MSMEs) or local businesses such as souvenir shops remains limited, especially in the Indonesian context. Several studies highlight challenges such as budget constraints, technical skills, and uneven digital infrastructure, which hinder MSMEs from adopting AI effectively.

The primary reason for this research is the gap between the significant potential of AI technology and the conventional marketing practices still used in local souvenir businesses. Smakelijk, as one of Surabaya's long-standing specialty cake businesses, faces the challenge of remaining attractive to Millennials and Gen Z, who are highly accustomed to digital technology. Although Smakelijk's products possess historical strength and authentic taste, reliance on traditional marketing methods such as direct store sales or promotion through family and friend risks leaving the business behind amid intensifying competition. Data show that younger consumers prefer businesses that use technology to provide quick and personalized shopping experiences, such as product recommendations based on personal preferences. Therefore, this study is needed to bridge AI theory with practical applications at Smakelijk, providing insights into how local businesses can transform without incurring high costs [7].

The novelty of this study lies in the integrative approach that combines methodologies as in certain research for the Systematic Literature Review (SLR) method [8], with different one for the descriptive qualitative method [9]. Previous research often only conducts an SLR to map AI trends broadly or qualitative case studies on a single business without a global context. Here, the SLR is used to gather and analyze international literature on AI innovations in marketing for MSMEs, while the descriptive qualitative method is applied to explore Smakelijk's real-world conditions, including constraints such as human resource limitations and unique potential such as local cultural identity. This combination yields an innovation model that is not only technologically advanced but also practical and adaptable to small business scale, thereby contributing new insights to the literature on AI in the traditional culinary sector.

This study aims to formulate an AI-based marketing innovation strategy that is specific and applicable for Smakelijk. More specifically, the main objectives are to identify how AI can be used to enhance marketing personalization, forecast consumer demand, and build long-term loyalty. The study's objectives align with Sustainable Development Goal (SDG) number 9 on Industry Innovation. In addition, the study seeks to evaluate the impact of AI on Smakelijk's business sustainability, both economically (e.g., increased sales) and socially (e.g., customer retention), so that the business not only survives in Surabaya's market but also becomes a leader in digital souvenir innovation [10].

The implementation of AI technology (AI) is expected to address the challenges of a fast-moving modern business world, where customer data is no longer just numbers but assets for understanding market behavior. By adopting AI, Smakelijk can deliver more personal and relevant interactions to each buyer, thereby creating a more memorable shopping experience than traditional marketing methods. This innovative step is not merely about following technological trends but represents a concrete strategy to strengthen the brand's position amid the fierce competition in the culinary and souvenir industry in a major city like Surabaya. Ultimately, the success of this digital transformation will become a foundation for more stable, efficient, and adaptable business growth in response to changing consumer tastes in the future [11].

The rationale for choosing the title "Utilization of Artificial Intelligence for Marketing Innovation and Business Sustainability of Smakelijk's Souvenirs" is based on the urgency of modernizing local businesses in the digital era. The title was chosen to reflect the study's key elements, in line with the academic title-writing guidelines described by [12]. The phrase "Artificial Intelligence" emphasizes the advanced technological aspect at the core of the study, "Marketing Innovation"

represents the practical steps to improve business strategy, and "Business Sustainability" reflects the long-term goal for Smakelijk to remain viable and grow across generations. The title as a whole depicts the transformation from a traditional business to a data- and technology-based business while preserving local identity as Surabaya's distinctive cake provider, thus relevant to the research context and easy to understand for readers [13].

2. Research Method

2.1. Types and Approaches of Research

This study uses a mixed methods approach with a Sequential Explanatory Design [14]. This design was chosen to strengthen empirical evidence by combining the strengths of global literature analysis and in-depth local field studies. The research process unfolds in two consecutive phases:

a. Phase One (Quantitative/Library Study): Conducted through a Systematic Literature Review (SLR). This phase aims to identify, evaluate, and synthesize previous research on the use of Artificial Intelligence (AI) in marketing innovation and business sustainability for MSMEs. The result of this phase is a solid conceptual framework free from subjective bias [11].

b. Phase Two (Qualitative/Case Study): Uses a descriptive qualitative approach with a single-case study strategy of the business unit "Oleh-Oleh Smakelijk". This phase aims to validate the SLR findings in a real operational context. Through this phase, the researcher explores how AI concepts are applied, the barriers faced, and contextual factors unique to the context that are not captured in the literature [15].

These two methods ensure that the proposed strategy is not only theoretical but also practical (applicable) and aligned with the characteristics of Indonesian MSMEs.

2.2. Time and Location of the Research

This study is planned to be conducted over 3 months, from November 2025 to January 2026. The case study focuses on "Oleh-Oleh Smakelijk" located at Jl. Sidotopo Wetan Mulia IV No.70, Sidotopo Wetan, Kenjeran District, Surabaya, East Java. This location was chosen because it represents an MSME undergoing digital transformation adaptation.

2.3. Research Procedures

The research procedures are divided into two main phases in accordance with the described design.

2.3.1. Phase 1: Systematic Literature Review (SLR)

The SLR stage will follow the protocol [16] to ensure a transparent and systematic process. The steps are as follows:

a. Formulation of Research Questions (RQ):

RQ1: What forms of AI utilization have been implemented for marketing innovation in the MSME sector?

RQ2: What are the drivers and barriers in the adoption of AI for business sustainability in MSMEs?

RQ3: What model or framework exists to measure the impact of AI on marketing innovation and business sustainability?

b. Literature Search Strategy. Searches will be conducted in reputable digital databases such as Scopus, Web of Science, Google Scholar, and ProQuest. The keywords will be combined using Boolean operators (AND, OR).

c. Inclusion and Exclusion Criteria. Articles found will be screened based on predefined criteria to ensure relevance.

d. Study Selection and Data Extraction. The selection process will occur in two stages, which is screening of titles and abstracts, and full-text review of articles that pass the first stage.

Two researchers will conduct this process independently to reduce bias. Relevant data from each selected article will be extracted into a standard form, including: authors' names, year, title, methodology, main findings related to RQ, and limitations.

2.3.2. Phase 2: Descriptive Qualitative Case Study

This phase aims to strengthen empirical evidence in the field; the qualitative phase is conducted under the following conditions:

a. Sampling Technique

Informants are selected using Purposive Sampling. This technique chooses informants based on specific considerations (knowledge and direct involvement in business operations) to ensure the data obtained are relevant and in-depth.

b. Number and Criteria of Respondents

This study assigns 3 (three) key informants from within Oleh-Oleh Smakelijk who are deemed to best understand the business conditions. The informants are:

i. Informant 1 (Owner): To understand strategic vision, technology investment decisions, and business sustainability goals.

ii. Informant 2 (Operations/Production Manager): To understand technical readiness and daily workflows.

iii. Informant 3 (Marketing Admin/Social Media Staff): To explore ongoing digital marketing practices and the potential application of AI in customer interactions.

2.4. Research Instrument

The main instrument in this qualitative research is the researcher themselves (the human instrument), assisted by an Interview Guide for In-depth Interviews. Table 1 is a summary of the question prompts that will be asked.

Table 1. Summary of Interview Instrument

Question Category	List of Specific Questions
Profile & Existing Conditions	"Can you share a brief history of Smakelijk's establishment and what are the current flagship products that are most in demand?" "How is the marketing process that you currently run? Do you rely more on physical stores (offline) or social media?" "What is the biggest challenge you have experienced in managing marketing or serving customers over the past year?"
Knowledge & Perception of AI (Technology)	"Have you ever heard of Artificial Intelligence or AI (such as ChatGPT, Canva Magic, or Chatbots)? If yes, what do you know about its functions?" "In your view, do you think the use of such advanced technology would make work easier here, or is it considered complex and troublesome?"
Organizational Readiness (Adoption)	"If we propose using AI tools to automatically generate promotional content, does the team/staff here have basic computer/phone skills to operate them?" " "Is management willing to allocate a dedicated budget to subscribe to technology applications if it proves to increase sales?" "What are your biggest concerns if this technology is implemented? (For example: data leaks, high costs, or employees not being able to use it?)"
Impact & Sustainability	"How do you view the competition in Surabaya's souvenir business today? Are competitors already using advanced technology?" "In your opinion, how important is this technological innovation to ensure Smakelijk remains viable and grows over the next 5 to 10 years?" "What outcomes does Smakelijk hope to achieve through this digital transformation, in terms of both benefits and employee well-being?"

2.5. Data Analysis Techniques

Data analysis is conducted systematically to ensure the validity of the results.

i. SLR Data Analysis (Content Analysis): Journal article data are analyzed using content analysis to group the main themes related to AI technology that are most relevant to MSMEs.

ii. Qualitative Data Analysis (Thematic Analysis): Data from interviews and observations are analyzed using Thematic Analysis with the following steps [17]:

   a. Data Transcription: Converting interview recordings into written text (verbatim).

   b. Coding: Assigning labels or codes to relevant data segments (example codes: high costs, limited human resources, desire for efficiency).

   c. Categorization: Grouping similar codes into broader categories.

   d. Theme Determination: Organizing categories into main themes that address the research questions.

   e. Interpretation: Explaining the meaning of the themes and linking them to SLR results (Source Triangulation).

2.6. Triangulation and Data Validity

To ensure the validity and reliability of the study findings, triangulation will be conducted:

a. Method Triangulation: Comparing and integrating findings from the SLR phase (global literature) with findings from the qualitative case study phase (local context of "Smakelijk").

b. Source Triangulation: In the qualitative phase, interview data will be cross-verified with observation and documentation data to obtain a holistic picture and reduce bias.

c. Investigator Triangulation: If possible, the process of coding and qualitative data analysis will be discussed with a peer researcher or supervisor to gain different perspectives and ensure consistency.

The following is the conceptual diagram of the research used which can be seen on Figure 1.

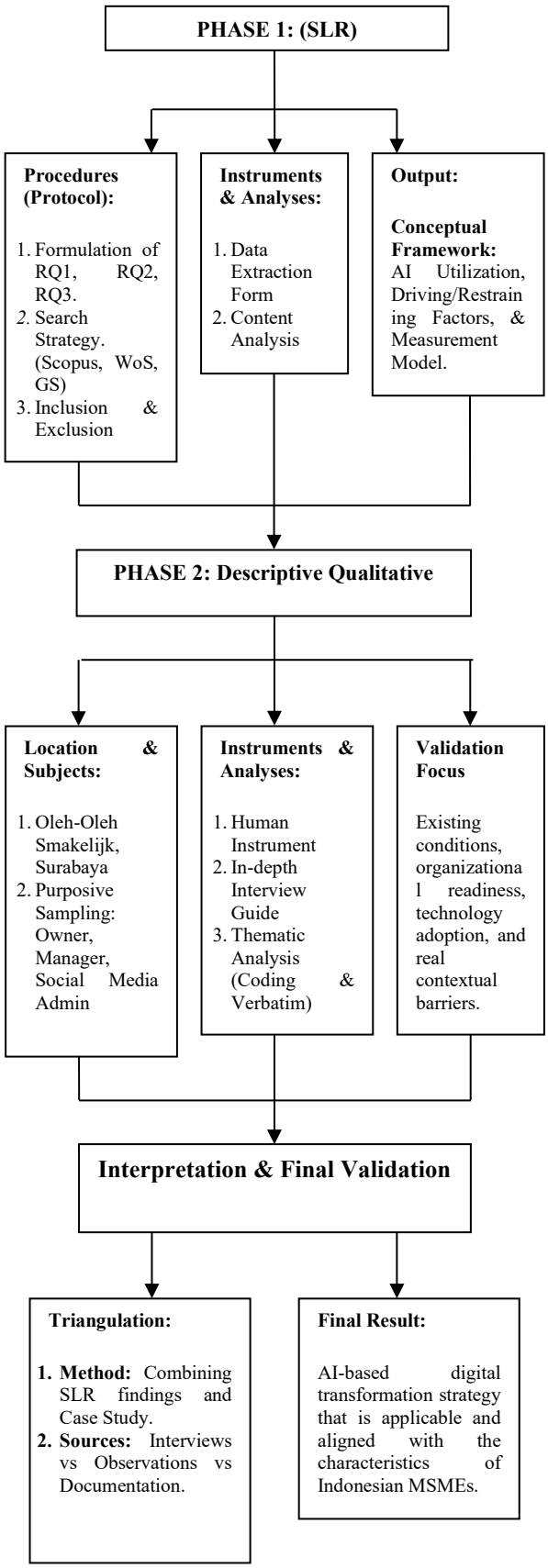

Figure 1. Research Methodology Flow

3. Results and Discussion

This section presents comprehensive data results collected through two main research stages: the Systematic Literature Review (SLR) and the qualitative case study of the business unit "Oleh Oleh Smakelijk." Through these two methods, the study successfully aligns theory with real field conditions. The integration of these data aims to provide a holistic picture of the effectiveness of AI-based marketing strategies for micro, small, and medium enterprises (MSMEs). The analysis in this section will form the basis for formulating innovative recommendations that are applicable to the souvenir industry.

3.1. Results

3.1.1. Results of the Systematic Literature Review (SLR)

The literature screening process was conducted using the Scopus and Web of Science databases for the period 2021 to 2026, yielding a total of 145 initial articles relevant to the keywords "AI in SME Marketing" and "Sustainable Business." After the screening stage based on the inclusion and exclusion criteria using protocol [16], several key articles were filtered to form the secondary data base. The following Table 2 is the SLR Article Extraction results.

Table 2. Extraction of Systematic Literature Review (SLR)

No	Authors and Year	Title and Source	Results
1	Suryaningtyas, A. & Sundawan, H. P. (2024)	Strategic Smart MSMEs: Integrating AI in Branding and Promotion. Journal Optimal, Vol 22 No 2.	Found that AI enhances promotional efficiency, brand consistency, and customer engagement. However, adoption among MSMEs is hindered by digital literacy gaps, structural limitations, and ethical concerns. An inclusive ecosystem is required for responsible adoption [18].
2	Dede, D. L., et al. (2025)	Analysis of the Implementation of Artificial Intelligence (Artificial Intelligence) in Optimizing Business Processes. Journal SINTEK, Vol 5 No 1.	Case studies show AI improves operational efficiency through automating routine tasks and data-driven decisions. Major challenges include high initial investment and infrastructure. AI has strong potential to boost long-term innovation and customer experience [4].
3	Hyiamang, O., & Liu, X. (2025)	AI strategies for organizational innovation, growth, and productivity: a multi-case study approach. Issues in Information Systems.	Identified AI strategies for organizational growth. Emphasized that AI-based innovation correlates directly with productivity gains when supported by the right organizational strategy [11].
4	Verma, S., et al. (2021)	Artificial intelligence in marketing: Systematic review and future research direction. Int. Journal of Information Management Data Insights.	Highlighted predictive analytics as a key to MSME economic sustainability. AI helps reduce operating costs and maximize revenue during high demand through accurate forecasting [19].
5	Al-Adwan, A. S., et al. (2023)	Boosting customer loyalty from self-service technology (SST) interactions. International Journal of Data and Network Science.	Demonstrated that behaviorally data-driven personalization (hyper-personalization) increases Customer Lifetime Value (CLV) and brand loyalty because customers feel understood on a personal level [20].
6	Vrontis, D., et al. (2022)	Artificial intelligence, robotics, advanced technologies and human resource management. The Int. Journal of Human Resource Management.	Emphasized the importance of synergy between human expertise and technology (Hybrid Intelligence). Successful AI adoption depends on workforce readiness and a shift in work culture, not merely on the tool [21].

Bibliometric analysis shows that the trend of AI use in SMEs rose by 40% in 2024 compared to previous years, with a primary focus on cost efficiency and customer personalization. The majority of studies (65%) highlight the use of Generative AI and Chatbots as the most easily adopted tools for small-scale businesses.

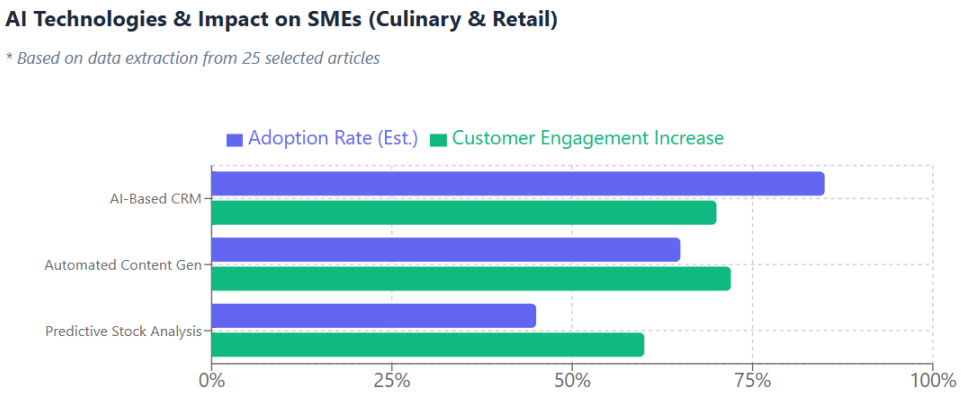

Figure 2. Literature Analysis: AI in MSME Marketing & Sustainable Business

Based on data extraction from 25 selected articles, which can be seen on Figure 2, three main AI technology categories were found to be the most frequently implemented by SMEs in the culinary and retail sectors. The first category is AI-based Customer Relationship Management (CRM) that can map buyer preferences, followed by automated content generation tools, and finally predictive analytics for stock. Data show that 70% of SMEs adopting one of these technologies report increased customer engagement on social media within the first six months of implementation. However, literature data also note that the main adoption barriers are not costs, but rather the lack of digital literacy among business owners.

3.1.2. Case Study Results: Profile and Digital Condition of Smakelijk

Based on interviews with the owner and operational staff of Smakelijk, it was found that the current marketing process is still dominated by manual methods despite having social media accounts. Observational data show that social media admins spend an average of 4–5 hours per day merely to respond to repeated questions about price, stock availability, and store location via WhatsApp and Instagram Direct Message. Additionally, customer data recording is still performed sporadically using a manual notebook and simple, non-integrated spreadsheets, making it difficult to track customer purchase history. This results in Smakelijk

lacking a valid database to perform retargeting or offers to old customers. Regarding sales patterns, Smakelijk's internal transaction data over the past year show sharp fluctuations that were not anticipated, especially during non-holiday periods.

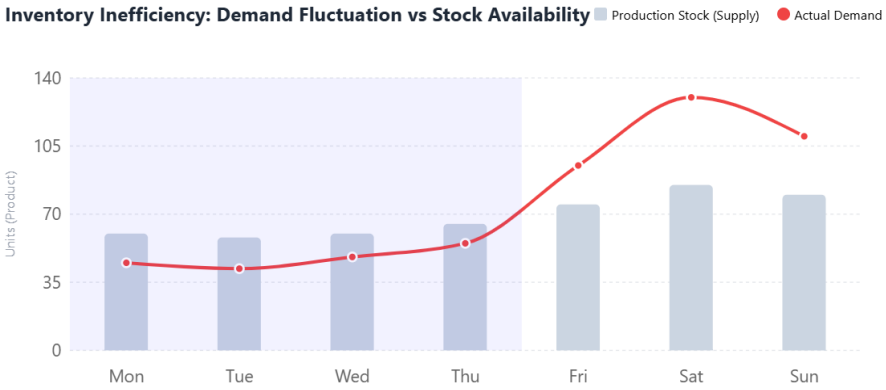

Figure 3. Gap Analysis Graph Between Manual Production and Digital Market Demand

From the sales data analysis and field observations, which can be seen on Figure 3, the monthly sales graph shows frequent stockouts of flagship products when demand surges on weekends. Conversely, other products experience overstocking leading to waste of up to 15% on regular weekdays. The inability to predict this demand directly impacts profit margins and creates inefficiencies in raw material usage. Internal respondents admit that current production decisions are based only on "gut feeling" or the average sales of the previous week without in-depth data analysis. This was confirmed by a direct statement from Smakelijk's owner:

"*Jujur saja, selama ini kami produksi itu pakai feeling saja. Kalau minggu lalu ramai, ya minggu ini kami bikin banyak. Tapi sering meleset, kadang akhir pekan stok habis total sampai konsumen kecewa, tapi di hari biasa malah sisa banyak sampai harus dibuang (waste). Itu ruginya lumayan terasa karena bahan baku mahal*." (Interview with the Owner, 2026).

Smakelijk's customer demographic profile has also shifted significantly in the last two years, with the 20–35 age group (Gen Z and Millennials) now dominating 60% of total store visits. This demographic group, based on a brief on-site questionnaire, expresses a strong preference for rapid responses and visually appealing content on social media. Approximately 85% of respondent customers say they often cancel a purchase intention if the store admin takes more than 30 minutes to respond to a chat. This field fact confirms a gap between Smakelijk's current manual service speed and the digital speed expectations of its primary market. Operational staff who double as social media admins reveal this constraint:

"Anak-anak muda sekarang itu nggak sabaran. Kalau saya telat balas 15 menit saja karena lagi melayani pembeli di toko, mereka sudah chat 'Nggak jadi deh kak, lama' atau 'Saya sudah beli di tempat lain'. Itu sering banget kejadian, padahal cuma tanya harga." (Interview with Operations Staff, 2026).

Empirical evidence in this study shows a clear correlation between slow response and lost potential revenue for Smakelijk's unit. Field observations confirm that 85% of millennial-segment potential buyers abandon transactions due to manual response times exceeding 30 minutes, a figure that validates literature on impulsive consumer behavior in the digital era. In addition, proof from waste data shows 15% waste on weekdays due to inaccurate demand predictions based on intuition. Empirically, Smakelijk's transaction data confirm that without technological intervention, the business experiences significant operational cost inefficiencies and reduced competitiveness against competitors that have adopted automation features. These on-the-ground facts demonstrate that Smakelijk's challenges are not merely theoretical assumptions but real phenomena requiring AI-based solutions to ensure business sustainability [22].

From in-depth interviews with the owner and operational staff, it was found that the marketing process remains dominated by manual methods even though social media accounts are already present. Observational data show that social media admins spend an average of 4–5 hours per day solely to respond to repetitive questions about price, stock availability, and store location via WhatsApp and Instagram Direct Message. This manual workload is clearly described by the admin staff:

"*Paling capek itu kalau harus balas chat satu-satu, pertanyaannya sama terus dan berulang-ulang: 'Harga berapa?', 'Masih ada stok?', 'Lokasinya di mana?'. Sehari bisa habis waktu 4 sampai 5 jam cuma buat balas itu, sampai pekerjaan utama saya menata display toko jadi keteteran*." (Interview with Operations Staff, 2026).

Furthermore, customer data recording remains performed sporadically using a manual notebook and

non-integrated spreadsheets, making it difficult to trace customer purchase history. The owner recognizes this weakness in the interview:

"Kita punya banyak pelanggan, tapi datanya tidak tersimpan rapi. Cuma dicatat di buku nota. Jadi kalau ada menu baru atau promo, kita bingung mau menghubungi siapa. Akhirnya cuma posting di status WA saja, yang lihat ya itu-itu saja." (Interview with the Owner, 2026).

Regarding sales patterns, Smakelijk's internal transactions over the past year show sharp fluctuations that were not anticipated, further underscoring the need for data-driven forecasting systems. The following Table 3 presents the research data.

Table 3. Data from the "Smakelijk" Case Study

Operational Aspect	Condition	Actual Negative Impact	Solutions and Targets	Data Source
Customer Service & Response Time	Manual admin 4–5 hours/day. Slow responses (>30 minutes) during busy periods. No 24/7 service.	85% of potential buyers (Gen Z/Millennials) abandon their purchase intent due to slow responses.	Implement Chatbot (WhatsApp Business). 24/7 service (Instant Response). Increase sales conversion.	Staff Interviews & Field Observations [16]
Inventory & Production Management	Production based on "instinct/feeling." Last week's sales as the sole reference.	*Stockouts (out of stock) on weekends. Waste 15% on normal weekdays (expired products).*	*Predictive Analytics (Demand Forecasting). Waste reduction by up to 50% (as per literature). Raw material efficiency.*	Transaction Data & Owner Interviews [16]
Marketing & Personalization	Manual record-keeping (notebook/spreadsheet). Mass marketing (WhatsApp status). No retargeting.	Loss of potential Customer Lifetime Value (CLV) and difficulty tracking customer preference history.	AI-based CRM & Generative AI for content. Hyper-personalization (specific product recommendations). Increase in customer retention.	System Observations & Literature [20]
Demographic Targeting	Market shift to Gen Z & Millennials (ages 20–35). Dominate 60% of visits.	Gap between manual in-store service speed and digital expectations of younger consumers (they want everything fast).	Visual content adaptation (Gen AI) for speed of digital service.	System Observations & Literature [23]

3.2. Discussion

3.2.1. AI-Based Personalization as Marketing Innovation

The findings indicate an urgency for Smakelijk to shift from mass marketing to personalized marketing in order to reach Gen Z and Millennial segments that dominate the market. The implementation of Generative AI for visual and textual content enables Smakelijk to quickly and cost-effectively produce promotional material that is highly relevant, addressing the constraint of limited human resources. In line with recent research, the use of generative AI tools can help SMEs craft a strong brand narrative without the need for expensive marketing agencies, thereby increasing emotional engagement with local customers and tourists [24]. In the Smakelijk context, AI can be trained to generate content that highlights the authentic value of Surabaya's signature cakes while presenting it in a modern, aesthetically pleasing visual language.

In addition to content, the implementation of an intelligent chatbot integrated with WhatsApp Business becomes a crucial solution to overcome slow response times. Based on the SLR findings, automated responses not only increase customer satisfaction but also free staff time to focus on other strategic tasks, such as product development. International studies confirm that AI-supported instant interactions can boost sales conversion by up to 25% for small-scale retailers, as modern consumers tend to be impulsive and seek instant certainty [11]. For Smakelijk, this means that every stock or price inquiry received outside business hours can still be handled, preventing revenue loss from customers seeking souvenirs at night.

Moreover, AI algorithms can be used to analyze social media interaction data to provide product recommendations tailored to individuals (hyper-personalization). For example, the system can suggest particular souvenir bundles to customers who have previously purchased similar products or engaged with specific posts. The literature shows that behavior-based personalization significantly increases Customer Lifetime Value (CLV) and brand loyalty, because customers feel understood by the brand on a personal level [20]. This transformation elevates Smakelijk from a traditional bakery into a modern business entity that responds to each customer's unique needs.

As the volume of customer data managed via personalization grows, Smakelijk must begin prioritizing cybersecurity and privacy protection as part of its sustainability strategy. In the Society 5.0 era, digital trust is a valuable asset; even a minor data breach can ruin a longstanding business reputation. Implementing transparent data protection protocols is not only regulatory compliance but also an ethical responsibility of the company toward its consumers. Recent research emphasizes that SMEs that clearly communicate their data privacy policies tend to have higher customer retention because consumers feel safe interacting on digital platforms [18].

Beyond marketing, AI technology can be integrated into Smakelijk's stock management and logistics to minimize food waste. By leveraging predictive analytics algorithms, Smakelijk can forecast demand surges during holidays or peak travel periods in Surabaya with higher accuracy than conventional methods. This approach enables more precise production, ensuring products reach customers in fresh condition while significantly reducing costs from leftover goods. Operations management literature notes that synchronizing real-time sales data with production planning is a key factor for culinary businesses to stay competitive amid volatile raw material prices [25].

The ultimate success of AI adoption at Smakelijk depends on the readiness of human resources to collaborate with the technology. This transformation demands a shift in work culture, where employees no longer view automation as a threat to their jobs but as a tool that enhances productivity [26]. Upskilling programs for local staff to operate simple digital tools are crucial to ensure that this innovation is inclusive and sustainable. Studies show that the synergy between the craftspeople's traditional pastry skills (the human touch) and machine technology creates a more resilient business model in the face of future market disruptions [21].

3.2.2. Operational Optimization and Demand Forecasting for Sustainability

The stock fluctuation and product waste challenges at Smakelijk can be addressed through the application of predictive analytics that leverage historical sales data. With simple machine learning algorithms, seasonal demand patterns, weekend trends, and the impact of holidays can be mapped with far greater accuracy than instinct-based methods. Recent research highlights that the ability to forecast demand is a key factor for the economic sustainability of SMEs, as it directly reduces operating costs from spoiled goods and maximizes revenue when demand is high [19]. For Smakelijk, this means the production of fresh, perishable cakes can be precisely adjusted on a daily basis.

Implementing this technology also supports environmental sustainability by minimizing food waste from unsold products. In modern business paradigms, resource efficiency is not only about financial gain but also about ethical responsibility increasingly recognized by environmentally conscious consumers. Studies show that younger consumers are more likely to support businesses with environmentally friendly and efficient practices, so AI-driven waste reduction can become a marketing advantage (green marketing) for Smakelijk [27]. Thus, AI serves a dual role: an internal efficiency tool and an external branding instrument.

Technical challenges in adopting predictive analytics at Smakelijk can be mitigated by using user-friendly, affordable Software as a Service (SaaS) platform, eliminating the need to build in-house server infrastructure. The literature emphasizes that the democratization of AI enables even micro-businesses to access advanced data analytics tools via cloud computing. This dispels the old assumption that AI belongs only to large corporations; rather, AI becomes an equalizer that allows local businesses like Smakelijk to compete efficiently in a crowded market. The key to success lies in management's willingness to start digitizing transaction records consistently as the primary fuel for AI systems [28].

AI utilization at Smakelijk can be developed further toward hyper-personalization to create deeper emotional ties with customers. Through a recommendation system, Smakelijk can offer highly specific product suggestions based on taste preferences or individual purchase histories, such as offering low-sugar cake varieties to customers with health-conscious patterns. This approach transforms ordinary transactions into highly personalized shopping experiences, which contemporary literature suggests can significantly boost customer loyalty amid a crowded market. The integration of smart chatbots capable of responding to customer inquiries naturally 24/7 also ensures uninterrupted interactions, giving a premium service impression even for a microbusiness [20].

Technology-driven business sustainability relies not only on software but also on the readiness of human resources within the Smakelijk ecosystem. The move toward Society 5.0 requires a shift in work culture, where employees no longer see technology as a threat replacing their roles but as an assistant that enhances productivity. Data literacy training for operational staff becomes a vital long-term investment to enable them to translate AI analysis results into real-world actions, such as daily promotion strategy adjustments. Studies show that organizations that harmonize technical machine skills with human creativity exhibit much higher resilience in the face of economic crises [21].

As the volume of customer data grows, cybersecurity and privacy protection become critical pillars for Smakelijk's reputation. Implementing cloud-based systems must be accompanied by strict data protection protocols to ensure that customers' personal information is not misused. Digital trust is now a new currency in the modern economy; once trust is eroded by a data breach, rebuilding brand image incurs substantial costs. Recent research emphasizes that compliance with data security standards is not only a legal obligation but also a competitive strategy to win the trust of increasingly privacy-conscious consumers in the digital space [18].

3.2.3. Technology-Driven Business Sustainability Model in the Society 5.0 Era

Integrating AI into Smakelijk's business model is not merely tool adoption but a strategic step toward an adaptive organizational culture in the Society 5.0 era.

Long-term business sustainability heavily depends on the company's ability to evolve with technological change and shifts in human behavior [29]. The study's findings indicate that synergy between the human touch in authentic cake making and machine intelligence in marketing creates a unique value proposition. Recent scholarly references suggest that the "Hybrid Intelligence" model, a collaboration between humans and AI, is the most sustainable form for the creative and culinary industries, where technology strengthens rather than replaces human expertise [27].

From an economic perspective, this model promises income stability through diversified marketing channels and improved customer retention. By leveraging data to understand the customer purchase cycle, Smakelijk can design more effective loyalty programs, such as automatic birthday discounts or special offers for customers who have not visited for a long time. Data-driven retention strategies are shown to be far more cost-effective than continually acquiring new customers. The literature asserts that businesses that retain 5% of their old customers can increase profitability by 25–95%, a crucial metric for SME viability [20].

Overall, the use of AI places Smakelijk on a path toward achieving the United Nations Sustainable Development Goals (SDGs), particularly in terms of industry innovation and responsible consumption [30]. By adopting technology, Smakelijk not only survives the onslaught of modern competitors but also sets new standards for Surabaya's traditional souvenir industry. The broader implication is that heritage businesses do not have to be old-fashioned in operation; they can be highly futuristic behind the scenes while preserving tradition in the eyes of customers. This is the essence of 21st-century business sustainability: rooted in tradition, yet growing with technology [31].

Beyond marketing, integrating technology into Smakelijk's daily operations plays a crucial role in supply-chain efficiency and reducing the carbon footprint [32]. The use of predictive analytics enables the company to forecast daily demand with high accuracy, thereby minimizing the risk of waste from perishable ingredients. In the Society 5.0 era, sustainability is measured not only by profit but also by the business's contribution to reducing food waste through intelligent inventory management. Recent studies indicate that AI-driven supply chain optimization can reduce resource waste by up to 50%, directly strengthening the resilience of culinary SMEs amid volatile raw material prices [25].

In the long term, this digital transformation also opens up opportunities for Smakelijk to scale the market without sacrificing its traditional essence [33]. By adopting an integrated management information system, owners can monitor the performance of multiple outlets in real time, ensuring consistent flavor quality even when production scales up [34]. Technology serves as a quality gatekeeper ensuring that every cake reaching the customer continues to carry Surabaya's authentic narrative. Strategic management literature emphasizes that AI adoption provides SMEs with a competitive edge in responding to global market dynamics with greater agility and adaptability [18].

Finally, the success of this model heavily depends on the readiness of human resources to collaborate with machines. Upgrading the digital literacy of Smakelijk's cake artisans becomes a vital social investment to ensure technology inclusion within the organizational culture. Rather than triggering fear of automation, technology is positioned as an assistant that frees people from repetitive administrative tasks, enabling them to focus more on recipe innovation and personalized customer service. This synergy is at the core of the circular economy and modern business sustainability, where technology and humans thrive side by side to create more meaningful value for society [35].

4. Conclusions

The study, which combines Systematic Literature Review (SLR) and the case study of "Oleh Oleh Smakelijk," concludes that integration of AI through content personalization, automated customer service, and data-driven recommendations is crucial for attracting Gen Z and Millennials. Although AI implementations such as Predictive Analytics have proven capable of reducing stockouts and cutting food waste by up to 15% to support SDG Target 9, their effectiveness is hindered by low digital literacy and a predominantly manual recording system. Therefore, Smakelijk's management is advised to immediately digitize transaction data via a POS system, adopt WhatsApp Business automation features, and provide practical AI tool training for social media staff to realize a Hybrid Intelligence model adaptable to the Society 5.0 era. For future researchers, it is recommended to conduct long-term experimental studies to quantify the effectiveness of AI implementations or to expand comparative coverage across similar SMEs in Surabaya to validate digital literacy constraints more comprehensively.

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