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Examining the Smart Marketing Model with a Focus on Artificial Intelligence in the Banking Industry

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Abstract

This study employs an interpretive research approach based on grounded theory. The research method utilized is descriptive-survey, and in terms of its purpose, the present research is developmental-applied. Given the qualitative nature of the study, credibility was assessed and confirmed using indices of relevance and applicability. Sampling in this study was conducted using the snowball method. The research population consisted of university professors, managers, and experts in the banking industry, and the sample size was determined based on the principle of theoretical saturation. Ultimately, data collection was completed through semi-structured interviews with 17 participants. The results indicated that causal factors, including artificial intelligence and emerging technologies, customer needs and expectations, advancements in information and communication technology, competition in the banking industry, and changes in consumer behavior, serve as the primary drivers of smart marketing. Contextual factors, including the competitive environment of the banking industry, regulatory frameworks and policies, the vast volume of data, and organizational culture, create the necessary conditions for implementing this model. Meanwhile, intervening factors such as information technology infrastructure, organizational support and investment in technology, and legal and ethical constraints act as either barriers or facilitators in implementing the smart marketing model. The central phenomenon of this model is smart marketing in the banking industry, pursued through strategies such as implementing artificial intelligence systems, forecasting market trends, automating marketing processes, and developing customer-centric services. Ultimately, these actions lead to outcomes such as increased customer satisfaction, improved financial performance, enhanced customer experience, targeted marketing, and risk and security management. This model represents a dynamic and interconnected cycle in which each component contributes to the successful realization of smart marketing in banks.

Keywords: Smart marketing, artificial intelligence, banking industry.

1. Introduction

In today's world, banks, as one of the most critical financial institutions in any country, play a vital role in providing liquidity, maintaining economic stability, and improving individuals' living standards. In addition to offering a wide range of financial services, these financial institutions significantly contribute to economic growth and development. Meanwhile, the increasing competition among banks and the pressure to enhance customer satisfaction have prompted banks to design and implement new and innovative strategies to attract and retain customers. One such strategy is smart marketing, which, particularly through the use of advanced tools such as artificial intelligence, can offer significant advantages to banks. In this regard, many

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researchers believe that employing smart marketing strategies is essential for achieving a competitive advantage in banking markets (Hrytsenko et al., 2024; Kaur et al., 2021; Li, 2017).

Smart marketing, with a focus on artificial intelligence, is one of the most recent and effective tools that can assist banks in analyzing big data, understanding customer behavior, and predicting future needs. Artificial intelligence, with its capabilities in processing vast amounts of data and making rapid and intelligent decisions, can create a significant transformation in banks' marketing processes (Beranger, 2021). In this context, banks must leverage artificial intelligence capabilities to design their marketing strategies in a way that not only enhances customer satisfaction but also establishes a sustainable competitive advantage, ultimately leading to the bank's growth and profitability (Rod et al., 2016).

Today, competition in the banking industry has become so intense that banks must offer services that not only excel in quality but also in operational processes and technological innovations to succeed in this competitive environment. In this regard, smart marketing can play a key role in transforming the banking industry. Since a competitive environment and rapid market changes require swift and precise responses, artificial intelligence, as a tool for analyzing customer behavior and predicting future needs, can drive the growth and performance improvement of banks (Chen, 2020).

Especially in countries facing economic challenges and sanctions, such as Iran, banks must seek ways to enhance their performance and attract customers. In such conditions, utilizing advanced technologies like artificial intelligence for smart marketing can serve as a competitive advantage for banks, leading to increased market share and ultimately higher profitability (Beranger, 2021). While banks in developed countries widely use modern technologies in their marketing strategies, countries like Iran can also leverage these technologies to offer better services and benefit from their advantages (Russell, 2016).

Artificial intelligence, particularly when integrated with big data, enables banks to execute their marketing processes intelligently and strategically. Through precise data analysis, predicting customer needs, and optimizing marketing processes, banks can effectively attract new customers while retaining their existing ones. This approach not only increases revenue and profitability but also helps banks gain a competitive edge over other financial institutions (Dignum, 2019).

Furthermore, one of the fundamental challenges in smart marketing is determining how to effectively implement these strategies in the banking industry. Since artificial intelligence refers to systems capable of learning and making intelligent decisions, questions arise regarding accountability and the decision-making process of these systems in marketing (Ghallab, 2019). In this regard, it is crucial for banks and other financial institutions to develop strategies that not only capitalize on artificial intelligence's capabilities but also consider social, legal, and ethical responsibilities (Bryson, 2018).

The literature on smart marketing and artificial intelligence (AI) in banking and financial services highlights various technological advancements and strategic implementations aimed at enhancing customer engagement, risk management, and operational efficiency. Afshar et al. (2022) introduced a neuroscientific smart marketing model for transforming potential markets into actual markets in Iran's mushroom industry, demonstrating the limitations of traditional marketing methods and the effectiveness of AI-based approaches (Afshar et al., 2022). Similarly, Ashouri Roodposhti et al. (2021) developed an MLP-AHP-based smart classification model for prioritizing liquidity risk and investment in digital marketing services, emphasizing AI's role in automating decision-making and risk assessment (Ashouri Roodposhti et al., 2021). Abu al-Masoom et al. (2021) designed a smart marketing model for Sina Industrial Development Investment Company, where a fuzzy Delphi-based framework effectively enhanced marketing decision-making by reducing risks and improving strategic outcomes (Abu al-Masoom et al., 2021). Rajayi and Arast (2019) examined the impact of marketing and business strategies on bank performance, revealing that aggressive, mass, value-based, and cost-reduction strategies significantly influenced organizational success (Rajayi & Arast, 2019). Esfandiari and Esfidani (2017) focused on B2B marketing strategies in Iran's petroleum sector, demonstrating that supply chain and marketing management strategies drive industry growth (Esfandiari & Esfidani, 2017). Gholami (2016) analyzed the role of marketing strategies in the profitability of Hekmat Iranian Bank, establishing a direct correlation between market share expansion, customer satisfaction, and profitability (Gholami, 2016). More recent studies emphasize AI-driven transformations in banking; Hrytsenko et al. (2024) analyzed smart banking technologies, including contactless payments, digital wallets, biometrics, blockchain, and IoT, and their role in enhancing competitiveness (Hrytsenko et al., 2024). Polireddi (2024) explored AI and machine learning applications in banking, showing their impact

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on risk management, quantitative trading, and investment decision-making (Polireddi, 2024). Nagarajan and Arunadevi (2023) investigated customer acceptance of AI in banking across five Asian countries, revealing that awareness, perceived usefulness, and perceived risk significantly influence AI adoption (Nagarajan et al., 2023). Todorova and Antonova (2023) examined AI-powered smart marketing solutions, emphasizing its applications in content creation, audience segmentation, programmatic advertising, and e-commerce (Todorova & Antonova, 2023). Nalini et al. (2021) explored AI-driven marketing automation in Indian banking, demonstrating its role in real-time data processing and autonomous customer communication (Nalini et al., 2021). Akyüz and Mavunacıoğlu (2021) examined the impact of AI on financial marketing and customer service, highlighting cost reduction, customer personalization, and experience enhancement (Akyüz & Mavnacıoğlu, 2021). Savelyeva and Timkina (2021) studied smart technologies in cross-border banking competition, proving that AI, IoT, ubiquitous computing, and blockchain facilitate global banking competitiveness (Savelyeva & Timkina, 2021). Singh and Pathak (2020) investigated emerging AI applications in India's banking sector, showing how machine learning, NLP, and image processing enhance credit assessments and digital banking services (Singh & Pathak, 2020). The findings across these studies demonstrate that AI-driven smart marketing not only optimizes banking operations and enhances customer experience but also plays a pivotal role in strategic decision-making and competitive positioning in the financial sector.

Therefore, the primary objective of this research is to design a smart marketing model with a focus on artificial intelligence in the banking industry. This model can assist banks in optimizing the use of modern technologies, particularly artificial intelligence, to enhance their marketing strategies and leverage its advantages for greater growth and profitability. In this regard, it is essential for banking institutions to undergo a fundamental shift in their marketing perspective and integrate artificial intelligence-based strategies into their processes to withstand competitive challenges and secure a larger market share. Overall, given the growing importance of modern technologies in the banking industry, this research aims to design an appropriate smart marketing model based on artificial intelligence, paving the way for transformation and improvement in the banking industry and ultimately enabling banks to achieve sustainable competitive advantage through these advanced tools.

2. Methods and Materials

This study employs the grounded theory approach. The research is exploratory in nature, aiming to identify variables and their causal relationships. The required data were collected through expert interviews. The research population consists of university professors, managers, and experts in the banking industry. To achieve the research objectives in the qualitative modeling stage, specific questions were posed, and data collection was conducted using a non-probability judgmental (purposive) sampling method. Initially, experts were selected based on the researcher's knowledge of their qualifications to respond to the study’s questions. Ultimately, theoretical saturation was reached with 17 participants, who were selected as the research sample.

Interview analysis enabled the researcher to comprehend concepts whose integration provided a deeper understanding of the nature and mechanisms of smart marketing with a focus on artificial intelligence in the banking industry. All stages, including open coding, axial or focused coding, and selective coding, were conducted, leading to the development of the theoretical model from the transcribed and documented interviews in this study. Overall, for analyzing the qualitative data obtained through fifteen purposive and unbiased interviews, the systematic grounded theory coding approach of Strauss and Corbin was applied.

The interviews were conducted in a semi-structured format using open-ended and general questions. Ultimately, the grounded theory technique was employed for data analysis using MAXQDA software to identify key factors.

3. Findings and Results

Out of the total 17 participants, 14 (82.0%) were men and 3 (18.0%) were women. This gender distribution reflects a male-dominated sample, which may be attributed to cultural, social, or professional factors. The highest frequency was observed in the age group under 35 years, with 8 participants (47.0%). Following this, 7 participants (42.0%) fell within the 35 to 45-year age group, while only 2 participants (11.0%) were aged 45 years or older. This age distribution indicates a relatively young expert population, which could contribute to innovation and fresh perspectives in various fields.

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Regarding educational qualifications, 10 participants (58.0%) held a master's degree, while 7 participants (42.0%) held a doctoral degree. This distribution suggests a high level of academic attainment among the experts, which may enhance the quality and credibility of their opinions and findings.

In terms of work experience, 7 participants (42.0%) had between 10 to 20 years of professional experience, while 10 participants (58.0%) had over 20 years of experience. This distribution highlights the extensive expertise of the participants in relevant fields, which contributes to the reliability and validity of their insights.

In the initial phase, qualitative data were collected through in-depth interviews with research participants. During the open coding process, numerous themes emerged. Through an iterative process of data analysis, these initial qualitative data were condensed into a smaller set of categories. Subsequently, each of these categories obtained in the qualitative phase was examined in greater detail.

The following section examines open coding for the components forming the grounded theory model. During the coding process, all concepts were recorded as thoroughly as possible, with redundant and similar items removed. Ultimately, 158 open codes remained, which were qualitatively analyzed by the researcher for selection and categorization within axial coding.

Table 1. Open Coding

Component	Concept Extracted from Interviews
Artificial Intelligence and Emerging Technologies	Machine learning, Natural language processing, Big data analysis
Customer Needs and Expectations	Service personalization, Increased expectations for online and digital services, Speed and convenience in service delivery, Easier financial management
Advancements in Information and Communication Technology	Rapid development of artificial intelligence technologies, Expansion of internet and data accessibility
Competition in the Banking Industry	Emergence of fintech companies, Competition for acquiring new customers
Changes in Consumer Behavior	Preference for digital banking, Increased concerns about data security
Competitive Environment of the Banking Industry	Number of existing financial and banking institutions, Intense competition among banks, Entry of new competitors, Industry trends and their impact on marketing
Regulatory Frameworks and Policies	Customer data regulations, Financial service regulations, Changes in laws and regulations, Legal standards related to artificial intelligence usage
Massive Data Volume in the Banking Industry	Financial transaction data, Online behavior data, Market data
Organizational Culture	Employee acceptance and adoption of technology, Understanding and acceptance of artificial intelligence, Managerial support for innovations
Information Technology Infrastructure	Capabilities of banking information systems, Big data processing capabilities, Availability of artificial intelligence platforms, Security of currency and metaverse transactions, Cybersecurity and data privacy
Organizational Support and Investment in Technology	Leadership and strategic vision, Expert artificial intelligence team, Budget allocation
Legal and Ethical Constraints	Regulations on advertising and marketing, Data privacy laws, Legal restrictions on artificial intelligence usage, Ethical issues
Smart Marketing in the Banking Industry	Utilizing artificial intelligence for customer data analysis, Creating data-driven marketing campaigns
Implementation of Artificial Intelligence Systems	Employee training in emerging technologies, Pattern and anomaly detection, Integration of artificial intelligence systems in marketing processes
Market Trend Forecasting	Analysis of economic and financial trends, Scenario simulation, Market sentiment analysis, Identification of new market opportunities
Marketing Automation	Use of chatbots for customer interaction, Automated management of advertising campaigns, Optimization of scheduling and communication channels, Automated email and promotional message delivery
Development of Customer-Centric Services	Designing interactive customer experiences, Providing personalized financial advice, 24/7 customer support via chatbots and virtual assistants, In-metaverse payments, Metaverse loans, Customer feedback analysis for service improvement, Offering products and services tailored to customer needs
Customer Satisfaction Enhancement	Improving customer experience, Identifying and resolving customer issues, Increasing customer loyalty
Financial Performance Improvement	Revenue growth, Identifying new revenue opportunities, Enhancing operational efficiency, Reducing marketing costs
Customer Experience Enhancement	Customer sentiment analysis, Personalized customer experience, Fast and efficient communication, Complaint management
Targeted Marketing	More precise advertising targeting based on customer behavior analysis, Identification of potential customers, Targeted marketing in the metaverse, Advertising via the metaverse, Optimization of communication channels, Precise market segmentation
Risk Management and Security	Fraud detection, Customer credit assessment, Identification and prevention of fraud, Cybersecurity improvement

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Additionally, before categorizing the concepts, an analysis was conducted to determine which concepts were derived from each interview. Finally, after categorizing the concepts into similar codes, further examination was performed to identify which categories were extracted from which interviews.

After extracting the initial specific codes in this study and relying on previous research, categorization and conceptualization were conducted. The concepts were continuously reviewed and refined through constant comparison, leading to the final formation of concepts and categories. This process can be illustrated with the following example:

Codes such as "capabilities of banking information systems," "big data processing capabilities," "availability of artificial intelligence platforms," "security of currency and metaverse transactions," and "cybersecurity and data privacy" were grouped under the concept of "information technology infrastructure." Similarly, codes such as "number of existing financial and banking institutions," "intense competition among banks," "entry of new competitors," and "industry trends and their impact on marketing" were categorized under the concept of "competitive environment of the banking industry."

During the selective coding phase, categories derived from open and axial coding were classified into six groups: causal conditions, intervening conditions, contextual conditions, strategies, and outcomes. The formation of causal conditions, intervening conditions, contextual conditions, strategies, and outcomes is explained below.

Causal conditions refer to events or incidents that lead to the occurrence or expansion of a phenomenon. In this phase, axial codes were developed based on previous research. In this study, five categories were identified as causal conditions: artificial intelligence and emerging technologies, customer needs and expectations, advancements in information and communication technology, competition in the banking industry, and changes in consumer behavior.

Table 2. Open Coding of Qualitative Data (Causal Conditions)

Selective Code	Axial Code	Initial Open Codes
Causal Factors	Artificial Intelligence and Emerging Technologies	Machine learning, Natural language processing, Big data analysis
	Customer Needs and Expectations	Service personalization, Increased expectations for online and digital services, Speed and convenience in service delivery, Easier financial management
	Advancements in Information and Communication Technology	Rapid development of artificial intelligence technologies, Expansion of internet and data accessibility
	Competition in the Banking Industry	Emergence of fintech companies, Competition for acquiring new customers
	Changes in Consumer Behavior	Preference for digital banking, Increased concerns about data security

Strategies refer to purposeful actions and reactions undertaken to control, manage, and provide feedback on the studied phenomenon. Strategies are implemented with specific objectives in mind. Intervening conditions are always present, which can either facilitate or limit these strategies.

Table 3. Open Coding of Qualitative Data (Strategic Conditions)

Selective Code	Axial Code	Initial Open Codes
Strategies	Implementation of Artificial Intelligence Systems	Employee training in emerging technologies, Pattern and anomaly detection, Integration of artificial intelligence systems in marketing processes
	Market Trend Forecasting	Analysis of economic and financial trends, Scenario simulation, Market sentiment analysis, Identification of new market opportunities
	Marketing Automation	Use of chatbots for customer interaction, Automated management of advertising campaigns, Optimization of scheduling and communication channels, Automated email and promotional message delivery
	Development of Customer-Centric Services	Designing interactive customer experiences, Providing personalized financial advice, 24/7 customer support via chatbots and virtual assistants, In-metaverse payments, Metaverse loans, Customer feedback analysis for service improvement, Offering products and services tailored to customer needs

Outcomes are the results that emerge from the implementation of strategies. They represent the consequences of actions and reactions. Outcomes are not always predictable and do not necessarily align with the intended objectives. They may manifest as events or occurrences, take on a negative form, be explicit or implicit, and occur in the present or future. Additionally, what is considered an outcome at one point in time may later become part of the conditions or contributing factors.

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Table 4. Open Coding of Qualitative Data (Outcomes)

Selective Code	Axial Code	Initial Open Codes
Outcomes	Increased Customer Satisfaction	Improving customer experience, Identifying and resolving customer issues, Increasing customer loyalty
	Improved Financial Performance	Revenue growth, Identifying new revenue opportunities, Enhancing operational efficiency, Reducing marketing costs
	Enhanced Customer Experience	Customer sentiment analysis, Personalized customer experience, Fast and efficient communication, Complaint management
	Targeted Marketing	More precise advertising targeting based on customer behavior analysis, Identification of potential customers, Targeted marketing in the metaverse, Advertising via the metaverse, Optimization of communication channels, Precise market segmentation
	Risk Management and Security	Fraud detection, Customer credit assessment, Identification and prevention of fraud, Cybersecurity improvement

Context refers to the specific set of characteristics that define the phenomenon under study; it represents the setting in which events and occurrences related to the phenomenon take place. Context indicates the specific conditions under which action-reaction strategies are implemented.

Table 5. Open Coding of Qualitative Data (Contextual Conditions)

Selective Code	Axial Code	Initial Open Codes
Contextual Factors	Competitive Environment of the Banking Industry	Number of existing financial and banking institutions, Intense competition among banks, Entry of new competitors, Industry trends and their impact on marketing
	Regulatory Frameworks and Policies	Customer data regulations, Financial service regulations, Changes in laws and regulations, Legal standards related to artificial intelligence usage
	Massive Data Volume in the Banking Industry	Financial transaction data, Online behavior data, Market data
	Organizational Culture	Employee acceptance and adoption of technology, Understanding and acceptance of artificial intelligence, Managerial support for innovations

Intervening conditions refer to structural factors that influence action-reaction strategies related to the phenomenon. These conditions either facilitate or constrain strategies within a specific context.

Table 6. Open Coding of Qualitative Data (Intervening Conditions)

Selective Code	Axial Code	Initial Open Codes
Intervening Factors	Information Technology Infrastructure	Capabilities of banking information systems, Big data processing capabilities, Availability of artificial intelligence platforms, Security of currency and metaverse transactions, Cybersecurity and data privacy
	Organizational Support and Investment in Technology	Leadership and strategic vision, Expert artificial intelligence team, Budget allocation
	Legal and Ethical Constraints	Regulations on advertising and marketing, Data privacy laws, Legal restrictions on artificial intelligence usage, Ethical issues

The core category, or central phenomenon, serves as the foundation of the study, representing the main idea around which actions and reactions are structured, managed, or responded to. The core category is the central axis of the process. In this research, smart marketing in the banking industry was identified as the core category.

As indicated, the presence of this concept is observable throughout the data and was referenced in nearly all interviews, playing a pivotal role. In other words, all other categories are linked to smart marketing in the banking industry. Furthermore, interview participants, in their narratives, frequently mentioned concepts such as the use of artificial intelligence in customer data analysis and the development of data-driven marketing campaigns, highlighting their influence on smart marketing in the banking sector. Addressing or neglecting these factors can significantly impact the effectiveness of smart marketing in banking.

Table 7. Open Coding of Qualitative Data (Core Category)

Selective Code	Axial Code	Initial Open Codes
Core Phenomenon	Smart Marketing in the Banking Industry	Use of artificial intelligence in customer data analysis, Development of data-driven marketing campaigns

Presenting a model enables individuals to illustrate the complex relationships among multiple elements within a complicated decision-making context. A model serves as a tool for organizing and directing the complexity of interrelationships between

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variables. This approach analyzes the impact of one element on others, determining the sequence and direction of relationships among elements within a system, thereby managing the complexity of interconnections.

After gathering expert opinions and reviewing previous research, axial coding paradigms were applied, establishing linear relationships among the study categories, including causal conditions, core categories, contextual conditions, intervening conditions, strategies, and outcomes.

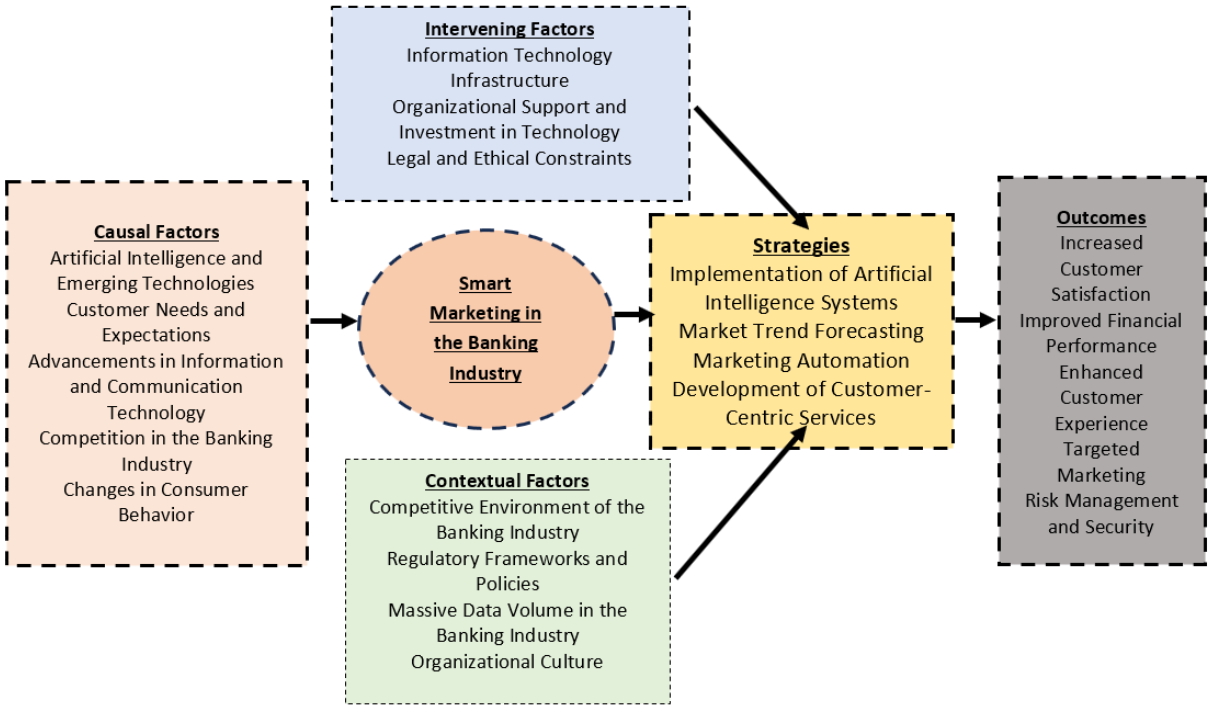

Figure 1. Final Paradigmic Model of Study

4. Discussion and Conclusion

In the banking industry, the smart marketing model with a focus on artificial intelligence is an innovative approach that helps banks achieve greater success in a competitive and rapidly changing environment. This model leverages modern technologies to analyze big data and identify customer behavioral patterns. This study identified several key factors that contribute to shaping the smart marketing model and ensuring its success in the banking sector.

The causal factors of this model include artificial intelligence, advancements in information and communication technology, changes in consumer behavior, intense competition in the banking industry, and customer needs. The use of artificial intelligence and emerging technologies such as machine learning, natural language processing, and big data analytics enables banks to provide personalized services tailored to individual customer needs. In today's world, where customers expect fast and convenient services, banks must be able to respond swiftly to changes in consumer behavior. As a result, integrating artificial intelligence into banking marketing strategies can enhance customer experience and improve banks' competitive positioning.

The contextual factors identified in this study include the competitive environment of the banking industry, regulatory frameworks and policies, massive data volumes, and organizational culture. The emergence of fintech companies and innovative startups has increased pressure on traditional banks, compelling them to leverage artificial intelligence for improved and personalized services. Moreover, compliance with data protection laws and information security regulations remains a major challenge in adopting these technologies. Banks must develop robust data processing infrastructure and foster an organizational culture that embraces new technologies.

For the effective implementation of the smart marketing model, four intervening factors were identified: information technology infrastructure, organizational support, investment in technology, and legal and ethical constraints. Banks must invest in IT infrastructure and update their systems to fully harness the advantages of artificial intelligence. Additionally, strong

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support from senior management and adequate resource allocation for research and development play a crucial role in the model's success. At the same time, banks must be aware of the legal and ethical aspects of data usage, particularly concerning customer privacy.

Three key strategies in the smart marketing model with a focus on artificial intelligence include market trend forecasting, marketing automation, and customer-centric service development. Market trend forecasting enables banks to align their marketing strategies with economic shifts and customer needs. Marketing automation, facilitated by artificial intelligence tools, enhances campaign management and enables the delivery of personalized messages, allowing banks to optimize resource allocation. Customer-centric service development, through personalized financial services, chatbot interactions, and customer sentiment analysis, leads to improved customer experience and increased satisfaction and loyalty.

The implementation of the smart marketing model with artificial intelligence can lead to increased customer satisfaction, improved financial performance, enhanced customer experience, targeted marketing, and effective risk and security management. The adoption of this model not only improves customer experience and loyalty but also enables banks to identify new opportunities and reduce costs through precise data analysis. Additionally, data analytics powered by artificial intelligence helps banks detect unusual patterns and mitigate security risks.

Jandor (2021) examined the opportunities and challenges of artificial intelligence in banking and concluded that AI can enhance personalized services, transaction security, process automation, and customer experience. These findings align with the present study’s emphasis on the capabilities of artificial intelligence in personalized services and customer experience enhancement, particularly through big data and machine learning.

Singh and Pathak (2020) explored artificial intelligence adoption in Indian banking, emphasizing the role of technological advancements such as natural language processing, machine learning, and data analytics in improving bank performance. These findings align with the present study's insights on leveraging emerging technologies for big data analysis and customer behavior identification.

Akyüz and Mavunacıoğlu (2021) analyzed the impact of artificial intelligence advancements on banking marketing, highlighting AI’s potential to improve customer experience and service quality. The present study similarly underscores the role of artificial intelligence in customer-centric service development and enhancing satisfaction and loyalty.

For bank managers, the technology division of Bank Mellat, and artificial intelligence specialists, the following practical recommendations are proposed for integrating smart marketing with artificial intelligence in the banking sector:

1. Utilize AI algorithms to predict customer behavior and adjust marketing strategies accordingly.
2. Develop AI-based decision support systems that analyze big data and enable bank managers to make faster and more informed decisions.
3. Offer personalized recommendations based on AI-driven data analysis to enhance customer experience and satisfaction.
4. Leverage AI for fraud detection and security threat prediction to prevent financial fraud in banking operations.
5. Implement AI-powered chatbots for faster customer interactions and improved service delivery, especially for frequently asked questions.
6. Automate banking processes with AI to enhance speed, accuracy, and efficiency.
7. Use AI-driven big data analytics to gain insights into customers, market trends, and competitors, enabling optimal decision-making.
8. Collaborate with AI-focused startups to foster innovation and enhance banking technology capabilities.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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