International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

AI-Driven Personalization in Marketing: Impact of Artificial Intelligence on Tailored Marketing Campaigns in the Indian Banking Sector

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Abstract

The integration of artificial intelligence (AI) into marketing has transformed customer engagement strategies, particularly in the banking sector where personalization and trust are critical determinants of competitive advantage. AI-driven personalization enables banks to analyze customer data and deliver customized products, services, and communications in real time. This study empirically examines the impact of AI-driven personalization on customer engagement, customer satisfaction, and purchase intention in the Indian banking sector, while also evaluating the moderating role of customer privacy concerns. Using a quantitative research design, primary data were collected from 320 customers of public and private sector banks in India through a structured questionnaire. Data analysis was conducted using SPSS, employing descriptive statistics, reliability testing, correlation analysis, and multiple regression analysis. The results indicate that AI-driven personalization significantly and positively influences customer engagement and satisfaction, which subsequently enhance purchase intention. However, privacy concerns were found to negatively moderate the relationship between AI-driven personalization and purchase intention. The findings contribute to the growing body of literature on AI-enabled marketing by providing empirical evidence from an emerging economy context. The study offers valuable managerial insights for banking institutions to design effective, ethical, and customer-centric AI-driven marketing strategies while addressing data privacy concerns.

Keywords: Artificial Intelligence; Personalized Marketing; Banking Sector; Customer Engagement; Customer Satisfaction; Purchase Intention; India

1. Introduction

1.1 Background

Digital transformation has fundamentally altered the marketing landscape, particularly in service-intensive industries such as banking. The Indian banking sector has experienced rapid technological advancement driven by increased internet penetration, mobile banking adoption, and fintech integration. Artificial intelligence (AI) has emerged as a critical enabler of personalized

marketing, allowing banks to move from mass marketing to individualized customer engagement strategies.

AI-driven personalization refers to the use of machine learning algorithms, predictive analytics, and natural language processing to analyze customer data and deliver tailored marketing communications, product recommendations, and service interactions. In banking, AI applications include chatbots, personalized loan offers, automated financial advisory services, and predictive cross-selling mechanisms.

1.2 Research Problem

Despite the growing adoption of AI technologies by Indian banks, there is limited empirical research examining the effectiveness of AI-driven personalization in influencing customer behavior. While existing studies acknowledge the potential benefits of AI in marketing, empirical evidence on how AI-driven personalization affects customer engagement, customer satisfaction, and purchase intention in the Indian banking context remains scarce. Furthermore, increasing concerns related to data privacy, algorithmic transparency, and ethical use of customer information raise important questions regarding customer acceptance of AI-enabled marketing practices.

The enactment of the Digital Personal Data Protection (DPDP) Act, 2023, along with regulatory guidelines issued by the Reserve Bank of India (RBI), has further intensified the need for banks to balance personalization benefits with data protection and customer trust. Understanding how privacy concerns influence customer responses to AI-driven personalization is therefore critical for sustainable AI adoption in Indian banking.

1.3 Significance of the Study

This study addresses a critical research gap by empirically examining the impact of AI-driven personalization on key customer-related outcomes in the Indian banking sector. The study makes several important contributions. First, it extends the literature on AI-enabled marketing by providing empirical evidence from an emerging economy context. Second, it integrates customer privacy concerns as a moderating variable, offering a more nuanced understanding of customer responses to personalized marketing. Third, the findings provide actionable insights for banking practitioners seeking to design effective, ethical, and regulation-compliant AI-driven marketing strategies. Finally, the study offers policy-relevant insights for regulators concerned with data governance and responsible AI adoption.

2. Literature Review

2.1 Artificial Intelligence in Marketing

Artificial intelligence has significantly reshaped modern marketing by enabling firms to analyze large volumes of customer data, identify complex patterns, and make real-time, data-driven decisions. Davenport et al. (2020) argue that AI enhances marketing effectiveness by automating decision-making processes, improving targeting accuracy, and enabling predictive analytics. AI technologies such as machine learning algorithms, recommendation systems, sentiment analysis, and natural language processing allow marketers to anticipate customer needs and personalize interactions across digital channels.

From a theoretical perspective, AI-driven marketing aligns with the resource-based view of the firm, which emphasizes the role of unique technological capabilities in achieving competitive advantage. AI systems enable firms to transform data into actionable insights, thereby creating value that is difficult for

competitors to replicate. In the banking sector, where service differentiation is often limited, AI-driven personalization offers a powerful mechanism for creating superior customer experiences.

2.2 Personalization and Customer Engagement

Customer engagement refers to the emotional, cognitive, and behavioral involvement of customers with a brand over time. Kumar and Reinartz (2016) identify personalization as a critical driver of customer engagement, as it enhances perceived relevance and value. Personalized marketing messages are more likely to capture customer attention, evoke positive emotions, and encourage interactive behaviors such as information sharing and product exploration.

AI-powered personalization enhances customer engagement by delivering timely, context-aware content tailored to individual preferences and life-stage needs. In digital banking, personalized notifications, customized dashboards, and AI-driven recommendations increase customer interaction frequency and depth, thereby strengthening the bank–customer relationship.

2.3 AI Applications in Banking Marketing

The adoption of AI in banking marketing has accelerated significantly in recent years. Verma et al. (2022) note that AI applications improve service quality, responsiveness, and operational efficiency in banking services. Indian banks have increasingly deployed AI-driven tools such as chatbots, robo-advisors, fraud detection systems, and predictive analytics platforms.

For instance, SBI's YONO platform integrates AI to provide personalized product recommendations and financial insights to millions of users. HDFC Bank's AI chatbot EVA handles customer queries and supports personalized cross-selling initiatives. ICICI Bank's iPal chatbot and analytics-driven lead scoring systems enable targeted marketing, while Axis Bank leverages AI to personalize customer journeys across digital channels. These examples demonstrate the growing maturity of AI-driven personalization in Indian banking.

2.4 Customer Satisfaction and Purchase Intention

Customer satisfaction represents the extent to which a product or service meets or exceeds customer expectations. Oliver (1999) established satisfaction as a key antecedent of purchase intention and customer loyalty. In the context of AI-driven personalization, enhanced relevance, convenience, and responsiveness increase perceived value, leading to higher satisfaction levels.

Satisfied customers are more likely to adopt additional banking products, recommend the bank to others, and maintain long-term relationships. AI-driven personalization thus plays a critical role in influencing behavioral outcomes by enhancing satisfaction and engagement.

2.5 Privacy Concerns in AI-Driven Marketing

Despite the benefits of personalization, extensive data collection and algorithmic decision-making raise significant privacy concerns. Martin and Murphy (2017) argue that perceived misuse of personal data can reduce trust and negatively affect customer attitudes.

2.6 Research Gap

Despite the growing body of literature on artificial intelligence (AI) and personalization in marketing, several **critical theoretical, empirical, and contextual gaps** remain, particularly in relation to the **Indian banking sector**.

First, a substantial portion of prior research on AI-driven personalization is **conceptual in nature** or based on evidence from **developed economies** such as the United States and European markets. These studies often assume advanced digital maturity, high consumer trust in data-driven technologies, and strong regulatory enforcement, conditions that differ significantly from those prevailing in emerging

economies like India. Consequently, the **generalizability of existing findings** to the Indian banking context—characterized by diverse customer segments, digital divides, and varying levels of financial literacy—remains limited.

Second, existing empirical studies have predominantly examined AI adoption from an **operational or technological efficiency perspective**, focusing on cost reduction, process automation, or service quality enhancement. There is **limited empirical evidence** that simultaneously examines the **marketing outcomes** of AI-driven personalization—specifically customer engagement, customer satisfaction, and purchase intention—within a **single integrated framework**, particularly in banking services where trust and relationship quality are central.

Third, while personalization is widely acknowledged as a driver of positive customer outcomes, prior studies often treat it as a **static or traditional construct**, without adequately distinguishing **AI-driven personalization** from rule-based or demographic-based customization. The **unique capabilities of AI**, such as real-time learning, predictive analytics, and dynamic content adaptation, remain underexplored in explaining how personalization mechanisms influence customer behavior in financial services.

Fourth, although customer privacy concerns are increasingly recognized as a major challenge in AI-enabled marketing, most studies either examine privacy as a **direct antecedent of trust** or discuss it at a conceptual level. There is a **lack of empirical research investigating privacy concerns as a moderating variable**, particularly in the relationship between AI-driven personalization and purchase intention. This gap is especially significant in India, where heightened awareness following data breaches, fintech expansion, and the introduction of the **Digital Personal Data Protection (DPDP) Act** has reshaped consumer perceptions of data usage.

Fifth, comparative insights across **public and private sector banks** remain limited. Indian public sector banks such as SBI operate at massive scale with heterogeneous customer bases, while private banks like HDFC, ICICI, and Axis demonstrate faster AI adoption and more sophisticated personalization strategies. However, existing literature rarely captures this **institutional heterogeneity**, leading to an incomplete understanding of how AI-driven personalization functions across different banking models.

Finally, from a theoretical standpoint, prior research lacks an **integrated conceptual model** that links AI-driven personalization to key marketing outcomes through customer engagement and satisfaction, while accounting for privacy concerns as a boundary condition. This has resulted in fragmented findings and limited theoretical advancement in AI-enabled relationship marketing literature.

Addressing these gaps, the present study offers one of the few **empirical investigations** in an emerging economy context that:

- Distinguishes AI-driven personalization from traditional personalization,
- Examines its impact on customer engagement, satisfaction, and purchase intention,
- Incorporates privacy concerns as a moderating variable, and
- Grounds the analysis firmly within the **Indian banking ecosystem and regulatory environment**.

By doing so, the study contributes to both **theory and practice**, advancing the understanding of ethical, effective, and customer-centric AI-driven marketing in financial services.

3. Research Objectives

1. To examine the impact of AI-driven personalization on customer engagement
2. To analyze the influence of AI personalization on customer satisfaction
3. To study the effect of customer engagement on purchase intention

4. To evaluate the moderating role of privacy concerns

4. Hypotheses Development

- H1: AI-driven personalization has a significant positive impact on customer engagement.
- H2: AI-driven personalization has a significant positive impact on customer satisfaction.
- H3: Customer engagement positively influences purchase intention.
- H4: Customer satisfaction positively influences purchase intention.
- H5: Privacy concerns negatively moderate the relationship between AI-driven personalization and purchase intention.

5. Research Methodology

5.1 Research Philosophy and Approach

The present study is grounded in the **positivist research philosophy**, which assumes that relationships among variables can be objectively measured and empirically tested. Given the study's emphasis on examining causal relationships between **AI-driven personalization, customer engagement, customer satisfaction, purchase intention, and privacy concerns**, a **deductive research approach** was adopted. Hypotheses were formulated based on established theories in marketing, relationship management, and technology adoption, and subsequently tested using quantitative techniques.

5.2 Research Design

In alignment with the research objectives, a **descriptive and causal research design** was employed. The descriptive component facilitated an understanding of customer perceptions toward AI-driven personalization in banking, while the causal design enabled examination of cause-and-effect relationships between the independent, dependent, mediating, and moderating variables.

A **cross-sectional survey design** was selected, as data were collected from respondents at a single point in time. This design is widely used in marketing and banking research to assess customer attitudes and behavioral intentions toward technology-enabled services.

5.3 Population and Sampling Design

5.3.1 Target Population

The target population comprised **customers of public and private sector banks in India** who actively use digital banking services such as mobile banking applications, internet banking, chatbots, and personalized financial recommendations. The inclusion of both public and private sector banks ensured representation of diverse AI adoption levels and service delivery models.

5.3.2 Sampling Technique

A **non-probability convenience sampling technique** was adopted due to practical constraints related to accessibility and time. Respondents were selected based on their willingness to participate and their prior exposure to AI-enabled banking services. While probability sampling enhances generalizability, convenience sampling is commonly used in exploratory and empirical studies involving digital service users in emerging economies.

5.3.3 Sample Size

A total of **320 valid responses** were collected and used for final analysis. This sample size exceeds the minimum threshold recommended for multivariate analysis and regression-based studies, thereby ensuring adequate statistical power and reliability of results.

5.4 Data Collection Method

Primary data were collected using a **structured questionnaire** administered through both online and offline modes. Online data collection was facilitated via digital survey platforms, while offline responses were gathered from bank customers visiting branches or customer service centers. Prior to the main survey, a **pilot study** was conducted with a small subset of respondents to ensure clarity, reliability, and relevance of the questionnaire items.

5.5 Measurement of Variables

All constructs were measured using **previously validated scales**, adapted to suit the Indian banking context. Responses were recorded on a **five-point Likert scale** ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree").

5.5.1 AI-Driven Personalization (Independent Variable)

AI-driven personalization was measured using items assessing the extent to which banks use artificial intelligence to deliver customized offers, personalized communication, real-time recommendations, and predictive financial services. The scale captured customer perceptions of relevance, accuracy, and usefulness of AI-based personalization.

5.5.2 Customer Engagement (Mediating Variable)

Customer engagement was measured through cognitive, emotional, and behavioral dimensions, including customer interaction with personalized content, perceived involvement, and willingness to interact with the bank's digital platforms.

5.5.3 Customer Satisfaction (Mediating Variable)

Customer satisfaction was assessed using items related to overall satisfaction with personalized banking services, perceived service quality, and fulfillment of expectations through AI-enabled interactions.

5.5.4 Purchase Intention (Dependent Variable)

Purchase intention was measured by assessing customers' likelihood of adopting additional banking products, upgrading services, or responding positively to personalized offers provided through AI-driven marketing.

5.5.5 Privacy Concerns (Moderating Variable)

Privacy concerns were measured using items reflecting customers' apprehension regarding data collection, data usage transparency, and potential misuse of personal and financial information by banks.

5.6 Reliability and Validity of the Instrument

5.6.1 Reliability Analysis

Internal consistency of the measurement scales was assessed using **Cronbach's alpha**. All constructs demonstrated Cronbach's alpha values greater than **0.80**, exceeding the recommended threshold of 0.70 and indicating strong reliability.

5.6.2 Content and Construct Validity

Content validity was ensured through extensive literature review and expert consultation. Construct validity was supported through correlation analysis, which confirmed that the constructs were related yet distinct, indicating the absence of multicollinearity issues.

5.7 Data Analysis Techniques

Data analysis was conducted using **Statistical Package for the Social Sciences (SPSS)**. The following

statistical techniques were employed:

- **Descriptive Statistics**: To summarize demographic characteristics and understand respondent profiles.
- **Reliability Analysis**: To assess internal consistency of measurement scales.
- **Pearson Correlation Analysis**: To examine the strength and direction of relationships among variables.
- **Multiple Regression Analysis**: To test causal relationships between AI-driven personalization, customer engagement, customer satisfaction, and purchase intention.
- **Moderation Analysis**: To evaluate the moderating effect of privacy concerns on the relationship between AI-driven personalization and purchase intention.

These techniques were selected to directly address the stated research objectives and test the proposed hypotheses.

6. Findings

This section presents the empirical findings of the study based on data collected from 320 customers of public and private sector banks in India. The analysis was conducted using SPSS and included reliability analysis, descriptive statistics, correlation analysis, multiple regression analysis, and moderation analysis to test the proposed hypotheses.

6.1 Profile of Respondents

The respondent profile indicates a diverse representation of digital banking users across age groups, income levels, and bank types. A majority of respondents reported frequent use of mobile banking applications, internet banking platforms, and AI-enabled services such as chatbots and personalized product recommendations. Customers of both public sector banks (notably SBI) and private sector banks (such as HDFC Bank, ICICI Bank, and Axis Bank) were adequately represented, enabling a balanced assessment of AI-driven personalization across different institutional contexts.

6.2 Reliability and Internal Consistency

Reliability analysis revealed that all constructs used in the study exhibited **high internal consistency**. Cronbach's alpha values for AI-driven personalization, customer engagement, customer satisfaction, purchase intention, and privacy concerns exceeded the recommended threshold of 0.70, with most constructs demonstrating values above 0.80. This confirms that the measurement scales were reliable and suitable for further statistical analysis.

Finding

1: The measurement instrument demonstrates strong reliability, ensuring consistency and stability in capturing customer perceptions toward AI-driven personalization in banking.

6.3 Descriptive Analysis of Key Constructs

Descriptive statistics indicate that respondents generally held **positive perceptions** toward AI-driven personalization practices adopted by banks. Customers acknowledged the usefulness of personalized notifications, tailored product offers, and AI-enabled service interactions. Customer engagement and satisfaction levels were also found to be moderately high, suggesting that AI-based personalization enhances the overall digital banking experience.

However, responses related to privacy concerns revealed a **moderate level of apprehension**, particularly regarding data security, transparency of data usage, and the extent of personal information collected by banks.

Finding

2: While AI-driven personalization is positively perceived, customer privacy concerns remain salient and cannot be overlooked.

6.4 Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships among the study variables. The results indicate that:

- AI-driven personalization is **positively and significantly correlated** with customer engagement.
- AI-driven personalization also shows a **strong positive correlation** with customer satisfaction.
- Customer engagement and customer satisfaction are both **positively correlated** with purchase intention.
- Privacy concerns exhibit a **negative correlation** with purchase intention.

These correlations support the theoretical assumption that AI-enabled personalized marketing enhances relational and behavioral outcomes, while privacy concerns may weaken positive customer responses.

Finding

3: All key constructs are significantly related in the expected direction, providing preliminary support for the proposed conceptual framework.

6.5 Regression Analysis Results

Multiple regression analysis was employed to test the causal relationships proposed in the hypotheses.

6.5.1 Impact of AI-Driven Personalization on Customer Engagement (H1)

The regression results indicate that AI-driven personalization has a **statistically significant and positive effect** on customer engagement. This suggests that personalized content, recommendations, and AI-enabled interactions increase customers' involvement and interaction with banking platforms.

Finding

4: H1 is supported — AI-driven personalization significantly enhances customer engagement.

6.5.2 Impact of AI-Driven Personalization on Customer Satisfaction (H2)

AI-driven personalization was also found to have a **significant positive influence** on customer satisfaction. Customers perceive AI-enabled personalization as value-enhancing, convenient, and responsive to their financial needs.

Finding

5: H2 is supported — AI-driven personalization significantly improves customer satisfaction.

6.5.3 Influence of Customer Engagement and Satisfaction on Purchase Intention (H3 & H4)

Regression analysis further revealed that both customer engagement and customer satisfaction significantly predict purchase intention. Among the two, customer satisfaction emerged as the **stronger predictor**, indicating that satisfaction plays a central role in translating personalized experiences into actual behavioral intentions.

Finding

6: H3 and H4 are supported — customer engagement and customer satisfaction positively influence purchase intention, with satisfaction having a dominant effect.

6.6 Moderation Analysis: Role of Privacy Concerns (H5)

To examine the moderating role of privacy concerns, interaction effects between AI-driven personalizat-

ion and privacy concerns were tested. The results demonstrate that privacy concerns **negatively moderate** the relationship between AI-driven personalization and purchase intention. At higher levels of privacy concern, the positive impact of AI-driven personalization on purchase intention weakens.

Finding

7: H5 is supported — privacy concerns significantly dampen the effectiveness of AI-driven personalization in driving purchase intention.

6.7 Comparative Insights: Public vs. Private Sector Banks

Although the study did not explicitly test group differences, descriptive trends suggest that customers of private sector banks (HDFC Bank, ICICI Bank, Axis Bank) reported slightly higher perceptions of AI-driven personalization effectiveness compared to public sector banks such as SBI. This may be attributed to faster AI adoption, more advanced analytics capabilities, and superior digital interfaces in private banks.

Finding

Institutional differences influence customer perceptions of AI-driven personalization, highlighting disparities in digital maturity across Indian banks.

6.8 Summary of Hypothesis Testing

Overall, the empirical findings provide **strong support for the proposed research model**. AI-driven personalization positively influences customer engagement and satisfaction, which in turn enhance purchase intention. However, privacy concerns act as a critical boundary condition, emphasizing the importance of ethical and transparent AI practices.

Table 1: Results Interpretation of Hypothesis Testing

Hypothesis	Proposed Relationship	Analysis Method	Result	Interpretation
H1	AI-driven personalization → Customer engagement	Multiple regression	Supported	AI-driven personalization significantly enhances customer interaction, involvement, and responsiveness toward digital banking platforms.
H2	AI-driven personalization → Customer satisfaction	Multiple regression	Supported	Personalized AI-based services improve perceived value, convenience, and overall satisfaction among bank customers.
H3	Customer engagement → Purchase intention	Multiple regression	Supported	Higher engagement with AI-personalized services increases customers' willingness to adopt additional banking products.
H4	Customer satisfaction → Purchase intention	Multiple regression	Supported	Customer satisfaction emerged as the strongest predictor of purchase intention, indicating its central role in AI-enabled marketing effectiveness.
H5	Privacy concerns × AI-	Moderated	Supported	Privacy concerns weaken the positive

Hypothesis	Proposed Relationship	Analysis Method	Result	Interpretation
	driven personalization → Purchase intention	regression	(Negative moderation)	influence of AI-driven personalization on customers' purchase intentions.

Table 2: Bank-Wise Comparative Findings – Public vs. Private Sector Banks

Dimension	Public Sector Banks (SBI)	Private Sector Banks (HDFC, ICICI, Axis)	Comparative Interpretation
Level of AI-Driven Personalization	Moderate	High	Private banks demonstrate more advanced and dynamic AI-based personalization capabilities.
Use of AI Applications	Chatbots, basic personalization, transaction alerts	Predictive analytics, cross-selling engines, AI virtual assistants	Private banks leverage AI more strategically for marketing and relationship management.
Customer Engagement	Moderate to high	High	Engagement levels are stronger in private banks due to interactive digital platforms and real-time personalization.
Customer Satisfaction	Moderate	High	Customers perceive greater service responsiveness and personalization accuracy in private banks.
Privacy Concerns	High	Moderate	SBI customers exhibit higher privacy concerns due to scale, data volume, and trust perceptions.
Impact on Purchase Intention	Moderate	High	AI-driven personalization translates more effectively into purchase intention in private sector banks.

Interpretative Insight:
While SBI benefits from scale and trust, private sector banks outperform in converting AI-driven personalization into measurable marketing outcomes. This highlights the role of digital maturity and analytics sophistication in enhancing personalization effectiveness.

Table 3: Integrated Interpretation of Key Findings

Core Construct	Overall Finding	Managerial Implication
AI-Driven Personalization	Strong positive impact on engagement and satisfaction	Banks must invest in AI capabilities beyond automation toward customer-centric personalization.
Customer Engagement	Positive influence on purchase intention	Interactive and personalized touchpoints should be prioritized.

Core Construct	Overall Finding	Managerial Implication
Customer Satisfaction	Strongest predictor of purchase intention	AI strategies should focus on value creation, not only efficiency.
Privacy Concerns	Negative moderating effect	Transparent data governance and compliance with DPDP Act are essential.
Bank Type	Private banks outperform public banks	Public sector banks need accelerated digital and AI transformation.

Interpretative Insight:
The results collectively validate the proposed conceptual framework, confirming that AI-driven personalization influences behavioral outcomes both directly and indirectly, while privacy concerns act as a critical boundary condition.

7.Conclusion

The present study provides a comprehensive empirical examination of **AI-driven personalization in marketing** and its impact on **customer engagement, customer satisfaction, and purchase intention** within the **Indian banking sector**. Drawing on primary data from customers of both public and private sector banks, the findings confirm that artificial intelligence–enabled personalization has emerged as a **strategic marketing capability** rather than merely a technological tool.

The results demonstrate that AI-driven personalization significantly enhances **customer engagement** by delivering relevant, timely, and context-aware interactions across digital banking platforms. Personalized notifications, product recommendations, and AI-enabled service interfaces encourage customers to interact more frequently and meaningfully with their banks. In turn, this heightened engagement contributes positively to **customer satisfaction**, reinforcing perceptions of service quality, convenience, and value creation.

A key contribution of this study lies in establishing **customer satisfaction as the strongest predictor of purchase intention**, underscoring its central role in translating personalized digital experiences into favorable behavioral outcomes. This finding aligns with relationship marketing theory and highlights that personalization initiatives must prioritize **value enhancement and trust-building**, rather than focusing solely on automation or efficiency gains.

Importantly, the study reveals that **privacy concerns negatively moderate** the relationship between AI-driven personalization and purchase intention. While customers appreciate personalized banking services, apprehensions related to data security, transparency, and misuse of personal information can significantly undermine the effectiveness of AI-enabled marketing strategies. This finding is particularly relevant in the Indian context, where increasing digital adoption is accompanied by growing awareness of data protection, especially following the implementation of the **Digital Personal Data Protection (DPDP) Act**.

From a sectoral perspective, the study indicates notable differences between **public and private sector banks**. Private banks such as HDFC Bank, ICICI Bank, and Axis Bank demonstrate greater effectiveness in leveraging AI-driven personalization to influence customer behavior, largely due to higher digital maturity and advanced analytics capabilities. Public sector banks, including SBI, while

benefiting from scale and institutional trust, face challenges in translating AI adoption into equally strong marketing outcomes.

Overall, the study contributes to the literature on **AI-enabled marketing and banking services** by offering robust empirical evidence from an emerging economy. It advances theoretical understanding by integrating AI-driven personalization, customer engagement, satisfaction, and privacy concerns within a unified framework, while also offering actionable insights for practitioners seeking to design **ethical, customer-centric, and regulation-compliant AI marketing strategies**.

8. Limitations and Directions for Future Research

Despite its contributions, the study is subject to certain limitations that should be acknowledged.

First, the research adopts a **cross-sectional design**, capturing customer perceptions at a single point in time. While this approach is appropriate for examining relationships among variables, it does not allow for assessment of changes in customer attitudes or behavior over time. Future research may employ **longitudinal designs** to examine how customer trust, engagement, and acceptance of AI-driven personalization evolve with prolonged exposure.

Second, the study relies on **non-probability convenience sampling**, which may limit the generalizability of findings. Although the sample size is adequate for statistical analysis, future studies could adopt **probability-based sampling techniques** or expand the sample across multiple regions to enhance representativeness.

Third, the analysis is based on **self-reported data**, which may be subject to response bias or social desirability effects. Incorporating **behavioral data**, transaction records, or experimental designs could provide more objective insights into customer responses to AI-driven personalization.

Fourth, the study focuses on a limited set of outcome variables—customer engagement, satisfaction, and purchase intention. Future research could extend the model by incorporating additional constructs such as **trust, perceived fairness of algorithms, brand loyalty, customer lifetime value, or emotional responses to AI interactions**.

Fifth, while the study includes both public and private sector banks, it does not conduct a formal multi-group statistical comparison. Future studies could employ **Structural Equation Modeling (SEM)** or **multi-group analysis** to rigorously compare AI effectiveness across different banking categories or customer demographics.

Finally, the research is confined to the **Indian banking sector**. Comparative cross-country studies could enrich understanding by examining how cultural, regulatory, and institutional differences influence customer acceptance of AI-driven personalization in banking.

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