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Article

Artificial intelligence-driven brand strategy: Impact on awareness, image, equity, and loyalty

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Abstract: The study investigates the impact of artificial intelligence (AI)-powered chatbots on brand dynamics within the banking sector, focusing on the interrelationships between AI implementation and key brand dimensions, including awareness, equity, image, and loyalty. Using structural equation modeling (SEM) analysis on data collected from 520 banking customers, the study tests eight hypotheses to explore the direct and indirect effects of AI-driven interactions on brand development. The findings reveal that AI chatbots significantly enhance brand awareness in banking services, demonstrating moderate positive effects on both brand equity and brand image. Notably, while brand awareness exerts a strong influence on brand image, it does not have a significant direct effect on brand loyalty. Instead, the study shows that brand loyalty is primarily developed through the mediating effects of brand equity and image, with brand image exerting a particularly strong influence on brand equity. For banking practitioners, these insights suggest a need to integrate AI chatbots within a comprehensive brand strategy that merges technological innovation with traditional relationship-building approaches. Limitations of the study and potential directions for future research are also discussed, providing avenues for further exploration of AI's role in brand management.

Keywords: Artificial Intelligence (AI); brand awarness; brand image; brand equity; brand loyalty

1. Introduction

The increasing adoption of artificial intelligence (AI) in the banking sector has revolutionized how financial institutions build and maintain relationships with their customers (Hentzen et al., 2022; Kumar et al., 2021; Marinova et al., 2017 Rahman et al., 2023). As banks integrate AI-powered solutions into their operations, understanding how these technological innovations influence key brand metrics becomes crucial. Traditionally, brand awareness, which encompasses brand recognition and recall, serves as a fundamental prerequisite for developing positive brand associations in consumers' minds. While brand image is the perception of a brand held in the customer's memory, brand equity as an accumulated asset resulting from brand recognition, associations, and customer experiences, contributing to a company's profitability and playing a crucial role in marketing strategy (Batra et al., 2012; Gao et al., 2020; Wang et al., 2021). Hence, in the rapidly evolving digital era, the global banking sector faces intense competition and significant challenges in sustaining brand loyalty.

Consequently, brand awareness, the foundation of brand building efforts, has taken on new dimensions in the AI-enabled banking environment. The ability of customers to recognize and recall a banking brand is increasingly influenced by their interactions with AI-powered interfaces (Ameen et al., 2021; Hollebeek et al., 2014; Sung et al., 2021) Traditional brand awareness building through mass media and physical branches is now complemented, and in some cases superseded, by digital touchpoints that leverage AI to create memorable and distinctive brand experiences. Moreover, brand image, comprising the set of associations customers hold about a brand, is particularly sensitive to service interactions in the banking sector (Fritz et al., 2017; Narteh and Braimah, 2020; Rahi et al., 2020) AI-powered services have the potential to either enhance or diminish brand image through their impact on service consistency, personalization, and problem resolution. The quality of AI implementation, measured through information quality, system quality, and service quality, plays a pivotal role in shaping these brand associations.

It has been argued that a strong brand possesses high equity, positively impacting financial performance and competitiveness in the market. Hence, brand image substantially enhances brand equity by improving perceived quality and brand loyalty, which are essential components of brand equity (Eslami, 2020; Yoo et al., 2000). Brand equity, as an important element of marketing strategy, represents the cumulative value created through all brand-building efforts (Dwivedi et al., 2019; Keller, 2021; Sohaib et al., 2022). In the context of AI- enabled banking services, brand equity is influenced by how effectively AI implementations deliver on brand promises and meet customer expectations. Furthermore, the ultimate goal of brand building efforts, brand loyalty, takes on new significance in the AI era. Research has shown that technological excellence in service delivery can significantly enhance customer retention and advocacy (Keller, 2021; Prentice and Loureiro, 2017; Sohaib et al., 2022). However, the pathways through which AI implementations influence brand loyalty, whether directly or through mediating effects of brand awareness, image, and equity, require deeper investigation.

One of the AI technology that has been used widely is chatbots, offering efficient, automated, and personalized customer service within the industry. Operating around the clock, these chatbots provide instant access to information and deliver a seamless user experience, ultimately enhancing customers' perceptions of the brand (Cheng and Jiang, 2022; Jenneboer et al., 2022; Nguyen et al., 2022). The chatbot's role has expanded beyond merely answering queries to influencing customer perceptions through personalized interactions, creating a stronger bond between the customer and the bank's brand (Aslam, 2023).

Although many banks now employ chatbots not merely as functional service tools but as integral components of their digital branding strategies (Chen et al., 2023), the impact of these AI systems on deeper brand-building objectives—such as enhancing brand awareness, shaping brand image, building brand equity, and fostering customer loyalty—remains largely underexplored. While prior studies have explored general customer satisfaction with chatbots, the direct link between chatbot qualities and brand awareness, brand image, brand equity, and brand loyalty remain underexplored. Consequently, to address this gap, the present study examines how chatbot interactions can shape brand loyalty within the competitive banking industry

(Chen et al., 2023; Chopra and Vidyavihar, 2023). We employed a multidimensional approach to understanding AI chatbot quality, focusing on its impact on customer loyalty through three core quality dimensions: information quality, system reliability, and service quality. This approach moves beyond general satisfaction to a focused analysis, highlighting how each quality dimension shapes customer perception and loyalty in the banking sector (Liu and Hung, 2022).

Another key objective of this study is to explore the role of AI chatbots as strategic tools in enhancing brand awareness, brand image, and brand equity. Rather than serving merely as customer service aids, chatbots are positioned here as essential elements of a bank's overall branding strategy. Through reliable and top-quality interactions, these chatbots can play a crucial role in boosting a bank's brand presence, solidifying its image, and building brand equity in a competitive market (Chopra and Vidyavihar, 2023).

Finally, this study aims to provide practical recommendations for designing chatbot strategies that fulfill both operational and branding objectives. Moreover, it seeks to provide banks with actionable insights for developing AI chatbots that extend beyond customer support functions, integrating seamlessly into broader branding efforts to foster customer loyalty.

2. Literature review and hypotheses development

2.1. Ground theory

The continuous digitization has led to the emergence of new technologies, especially in the realm of information and communication technologies (ICT), which have experienced the most rapid growth (Marangunic and Granic, 2015). In 1986, Davis introduced the Technology Acceptance Model (TAM) to better understand customer behavior and attitudes toward the adoption or rejection of technology (Marangunic and Granic, 2015). TAM is particularly useful for identifying the factors that influence consumer behavior with respect to technology. Its foundational principle is that people make rational decisions when using IT devices, suggesting that users evaluate technology based on its perceived benefits and ease of use (Kim et al., 2010). TAM also includes elements related to service quality (Trivedi et al, 2018). According to Davis et al. (1989), TAM consists of two primary dimensions: perceived ease of use, which refers to the user's preference for technologies that require minimal effort to operate, and perceived usefulness, which refers to the likelihood that a user will adopt technology if it enhances their job performance (Davis et al., 1989). These dimensions help explain how users evaluate technology before adopting it, guiding companies in the design of technologies that align with customer expectations.

Recent research has extended TAM's application beyond workplace technology use to understand online behavior, such as integrating TAM with the Information System Success Model to analyze the effects of chatbots on online customer satisfaction and experience (Chen et al., 2021). Their study found a positive correlation between chatbot responsiveness, usability, and overall customer experience. Chiu et al. (2009) also demonstrated that TAM is valuable in understanding online consumer behavior, particularly regarding online shopping and customer loyalty, and they suggest that TAM can explore the relationship between technology acceptance and

consumer loyalty (Chiu et al., 2009). Given its proven relevance across various technological contexts, TAM is a valuable model for understanding technology adoption, especially concerning new technologies such as AI chatbots. By predicting how users will accept AI chatbots, which are still relatively new to the market, TAM supports our analysis by providing insights into user behavior and the factors that influence their interaction with emerging technologies.

2.2. AI chatbot

The effectiveness of AI implementations in banking is frequently evaluated based on three essential quality dimensions: information quality, system quality, and service quality (DeLone and McLean, 2003).

2.2.1. Information quality

The accuracy and reliability of information provided by chatbots directly influence customer trust and confidence in digital banking services. Research by Zhu et al. (2022) demonstrates that high-quality information delivery through AI chatbots correlates strongly with increased customer satisfaction and positive brand associations. Additionally, the relevance and timeliness of information offered by chatbots play a vital role in shaping customer experiences. Studies indicate that chatbots capable of delivering contextually appropriate and up-to-date information achieve higher user engagement rates, contributing to enhanced brand perceptions (Følstad et al., 2018). Banks that implement chatbots with high information quality standards report significant improvements in customer service efficiency and satisfaction. Furthermore, maintaining consistent information quality across various customer touchpoints strengthens brand credibility. For instance, Liu et al. (2019) found that banks with consistently high standards in information quality across chatbot interactions experience improved brand awareness metrics and more favorable brand image ratings. This alignment between information quality and brand outcomes highlights the strategic value of investing in robust information management systems for AI chatbot deployments.

2.2.2. System quality

System quality in AI chatbot implementations encompasses technical reliability, response time, and user interface design. Research by Przegalinska (2019) shows that system stability and performance have a direct impact on user satisfaction and adoption rates. Banks that emphasize system quality in their chatbot deployments tend to observe higher customer engagement levels and reduced service abandonment rates. The responsiveness and accessibility of AI chatbot systems are also significant factors in shaping user experience outcomes. Studies indicate that rapid response times and seamless integration with existing banking platforms foster positive brand associations and customer loyalty (Chung et al., 2018). A strong technical foundation enhances trust in digital banking services.

Moreover, system quality metrics are closely linked to user retention and service adoption patterns. Shankar and Jebarajakirthy (2019) demonstrated that banks investing in high-quality chatbot systems achieve better customer satisfaction scores and higher adoption rates for digital services. The technical performance of AI

chatbots thus serves as a crucial element in the success of digital banking transformation initiatives.

2.2.3. Service quality

Service quality in the context of AI chatbots extends beyond technical factors to include empathy, personalization, and problem-resolution capabilities. Research by Hu et al. (2019) underscores the importance of human-like interactions and emotional intelligence in chatbot design. Banks that implement empathetic AI chatbots effectively often see higher customer satisfaction scores and stronger brand relationships. Furthermore, the personalization capabilities of AI chatbots significantly affect service quality perceptions. Studies suggest that chatbots offering tailored financial advice and customized product recommendations yield higher levels of customer engagement (Ladhari et al., 2011). Maintaining context across interactions and delivering personalized solutions enhances the perceived value of digital banking services.

Additionally, the problem-solving capabilities of AI chatbots play a direct role in service quality assessments. Prentice and Nguyen (2020) found that chatbots capable of resolving complex customer queries independently contribute to strengthened brand trust and loyalty. The development of sophisticated problem-resolution functions represents a key differentiator in the competitive banking landscape.

2.2.4. AI chatbots

Information quality, system quality, and service quality are important dimensions that define the effectiveness of any information system (IS) (DeLone and McLean, 2003). This research views chatbots as a form of IS, examining the influence of these three quality dimensions on the customer experience. The IS success model was selected over other frameworks, such as the Technology Acceptance Model (TAM) developed by Davis (1989), because it encompasses not only technical elements like information and system quality but also essential business factors, such as service quality (Trivedi, 2019).While TAM primarily assesses users' perceptions of a technology's utility and ease of use, the IS success model broadens this by capturing users' views on service quality alongside system and information quality. Since chatbots are a relatively recent innovation, an extensive study of these quality dimensions offers significant insights for both marketers and developers. Hence, the link between AI—more specifically, chatbots—and brand awareness reflects the ability of digital services to enhance brand recognition and recall. Keller (2013) framework suggests that consistent chatbot interactions contribute to brand salience through repeated exposure and memorable experiences. he consistency and quality of chatbot interactions contribute to long-term brand memory formation.

This research delves into the multiple facets of system quality, information quality, and service quality within the specific context of chatbots, providing a robust framework for assessing their impact on customer experience (Trivedi, 2019). Hence, the role of AI chatbots in building brand awareness extends beyond simple recognition to include the creation of distinctive brand associations. It has been found that innovative chatbot features and unique interaction styles can help banks establish memorable brand identities (Chung et al., 2018).

Moreover, the connection between AI and brand image lies in how AI chatbots contribute to building and strengthening positive brand associations through their interactions. The technological sophistication and service quality of chatbot implementations influence perceptions of bank innovation and customer-centricity.

Research by Liu et al. (2019) suggests that advanced AI capabilities can enhance brand image by demonstrating technological leadership. The consistency of chatbot interactions plays a crucial role in shaping brand personality perceptions. Studies indicate that banks maintaining consistent communication styles and service standards across their chatbot interactions achieve stronger brand image outcomes (Moriuchi, 2019). The alignment between chatbot behavior and desired brand attributes contributes to coherent brand image development.

The study examines how the quality of a chatbot's system, its service quality, and the level of personalization contribute to customer satisfaction and loyalty. It finds that well-designed chatbots—characterized by human-like responses and tailored assistance—leave a lasting, positive impression on customers, which in turn strengthens brand image. This heightened satisfaction fosters trust and loyalty among customers, ultimately enhancing the brand's image and helping it stand out in a competitive market (Jenneboer et al., 2022). Additionally, the emotional aspects of chatbot interactions influence brand image formation. Banks that strategically utilize AI chatbots have shown measurable improvements in brand equity metrics. The impact of AI chatbots on brand equity extends beyond merely functional advantages, encompassing emotional and symbolic value creation as well. Research by Bapat (2017) suggests that innovative chatbot features and personalized interactions enhance perceived brand value by providing unique customer experiences. Moreover, the integration of advanced AI capabilities supports brand differentiation and creates a competitive edge. AI chatbots also positively influence brand equity by fostering stronger customer relationships and loyalty. Banks that effectively leverage AI chatbots have shown significant improvements in customer retention rates and loyalty metrics. This impact extends beyond transactional interactions, as AI chatbots play a critical role in cultivating emotional connections and increased image with customers. As Prentice and Nguyen (2020) demonstrated, effective chatbot implementations can deepen customer-brand connections and increase customer lifetime value or brand loyalty. Therefore, we argue that:

H1: AI chatbot interactions positively influence brand awareness.

H2: AI chatbot interactions positively influence brand image.

H3: AI chatbot interactions positively influence brand equity.

2.3. Relationship among brand awareness, brand image, and brand loyalty

Brand awareness defined as the consumer's ability to recognize or recall a brand as part of a specific product category (Aaker, 1991). This awareness spans various levels, ranging from simple recognition to deeper knowledge of the brand (Ilyas et al., 2020). Furthermore, brand awareness reflects the extent to which consumers can recognize or recall a brand in different contexts (Keller, 2013). The capability relates to consumers' ability to identify a brand within a product category and mirrors the

brand's strength in consumers' minds. As noted by Keller Kevin Lane (2013), brand awareness serves as an indicator of how well a brand is recognized by its target market. This level of awareness embodies consumers' familiarity with the brand and plays a crucial role in shaping their behavior throughout the decision-making process.

When consumers are more aware of a brand, they develop a more extensive network of brand-related memories and associations, which directly contributes to forming a more favorable brand image. Therefore, brand awareness serves as a decision heuristic, reducing perceived risks associated with product evaluation and selection. As a result, brands that successfully establish strong awareness among young consumers can enhance their image and competitive advantage in the market (Büyükdağ, 2021; Febriyantoro, 2020; Mohd Suki, 2015). In addition, it has been found that high levels of brand awareness can significantly influence brand image, as consumers are more inclined to hold positive perceptions of brands they are familiar with, associating them with quality and reliability (Bernarto et al., 2020; Huang and Sarigöllü, 2012). This familiarity also lays the groundwork for building brand loyalty, as it fosters a sense of trust between consumers and the brand.

As brand loyalty is defined as a strong commitment from consumers to repeatedly purchase products or services from a specific brand (Aaker, 1991), it indicates that consumers have an emotional and psychological connection with the brand, prompting them to choose it over competitors. Hence, brand loyalty is an attitude influenced by positive consumer experiences with a brand, leading to consistent purchasing behavior that extends beyond mere transactions to encompass emotional commitment and belief in the brand (Oliver, 1999). In addition, past research have been found that brand awareness lead to brand loyalty directly and indirectly (Abbas et al., 2021; Çelik, 2022; Foroudi et al., 2020; Machi et al., 2022; Rimadias et al., 2021; Zhao et al., 2022) in various indutries such as hospitality (Rather and Sharma, 2017), e-commerce (Civelek and Ertemel, 2019) among others. Therefore, when consumers are well- acquainted with a brand, they are more likely to develop positive associations with it, ultimately leading to increased loyalty. We then posit:

H4: Brand awareness positively influences brand image.

H5: Brand awareness positively influences brand loyalty.

2.4. Relationship among brand image, brand equity, and brand loyalty

Brand image defined as the extrinsic properties of the product or service, including the ways in which the brand attempts to meet customers' psychological or social needs (Keller and Lehmann, 2006). In other words, brand image explains the external characteristics of a product or service, including how the brand seeks to fulfill customers' psychological or social needs. Keller (2013) further defines brand image as perceptions about a brand as reflected by the brand associations held in consumer memory.

Hence, brand image is essential in establishing brand equity by influencing consumer perceptions and fostering significant associations in their thoughts. Keller (1993) important work on customer-based brand equity establishes that good brand associations, forming brand image, are essential components of brand equity. These

associations assist customers in processing and retrieving brand information, establishing a foundation for differentiation and purchasing decisions.

As brand equity is defined as the value consumers assign to a brand based on their experiences with its products or services (Keller and Lehmann, 2006), strengthens the brand by fostering positive perceptions and building customer loyalty. Furthermore, it has been found that brand image positively influences brand equity, indicating that advantageous brand connections can be established by marketing initiatives that connect robust, favorable, and distinctive memories to the brand in consumers' memory (Faircloth et al., 2001).

Other findings also confirmed that positive brand image contributes significantly to building brand equity by enhancing perceived quality and brand loyalty (Dada, 2021; Ha et al., 2022; Mariutti and Giraldi, 2020; Yoo et al., 2000). Hence, brand image has been confirmed to have positive impact on brand equity in the contexts of social media (Poturak and Softic, 2019), particularly for the youngsters (Sasmita and Mohd Suki, 2015). Similarly, past studies have indicated that brand image impacts brand loyalty (Rather and Sharma, 2017) across various contexts, such as personal care (Chinomona and Maziriri, 2017), hospitality (Han et al., 2015) and brand online community (Islam et al., 2018). Consequently, we then posit:

H6: Brand image positively influences brand equity

H7: Brand image positively influences brand loyalty

Finally, when consumers perceive high brand equity, they develop a strong sense of confidence and trust in the brand, which serves as a fundamental driver of brand loyalty. In a longitudinal study, it has been revealed that customers who perceive high brand equity are more likely to remain loyal and less sensitive to competitive offerings (Torres and Tribo, 2011). Hence, customer-based brand equity significantly influences brand loyalty in the airline service context (Seo and Park, 2018). Building on this, we posit:

H8: Brand equity positively influences brand loyalty.

We then propose a research model and hypotheses related to AI-driven brand strategy, as shown in **Figure 1**.

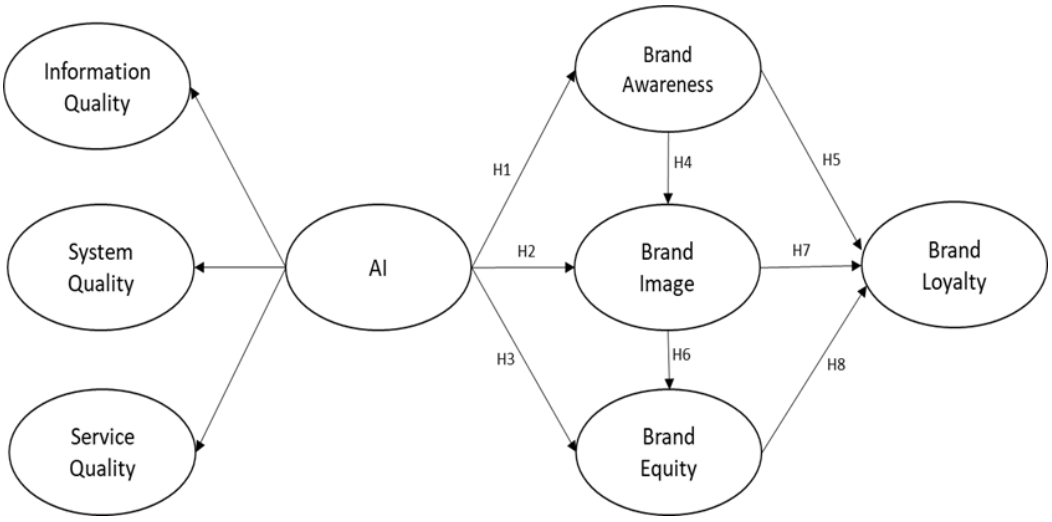

Figure 1. Research model.

3. Methodology

3.1. Data and sample

Our methodology employs quantitative analysis and a deductive approach to assess the research model, a method commonly used in digital banking studies, as demonstrated by Dwivedi et al. (2021). The empirical data utilized in this quantitative analysis was obtained through a structured survey. Data collection was conducted through Google Forms, which facilitated participation via an accessible online platform. This approach allowed for a broader reach, especially among young, urban individuals who are familiar with digital tools. Online data collection proved both convenient and efficient for all ages.

For the context of the study, The Indonesian banking sector provides an appropriate context for examining the relationship between brand awareness and brand image for several reasons. First, Indonesia's banking sector is highly competitive, with 110 commercial banks operating as of 2023, consisting of 95 conventional commercial banks and 15 Islamic banks (Bank Indonesia, 2023). This competitive environment makes brand differentiation crucial for banks' success. Second, Indonesia's large population of approximately 277 million people, combined with a relatively low banking penetration rate of 52% of adults having bank accounts (World Bank, 2021), presents significant growth opportunities where brand awareness and image play crucial roles in consumer decision-making. The urban middle class, which is growing rapidly and is expected to reach 135 million by 2030 (World Bank, 2023), represents a key demographic segment where brand perception strongly influences banking choices. Finally, the Indonesian banking sector has been undergoing significant digital transformation, with mobile banking transactions reaching IDR 4182 trillion in 2022, representing a 32.6% increase from the previous year (Bank Indonesia, 2023). This digital shift makes brand awareness and image particularly relevant as consumers navigate multiple banking options across traditional and digital channels.

3.2. Measurement of variables

The research methodology employs a questionnaire to assess the relationships between AI and brand metrics using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). All measurement items are adapted from established scales from previous studies. The measurement system encompasses AI dimensions through three key components: Information quality, service quality, and system quality adopted from Trivedi (2019). While brand awareness, brand image, and brand equity adapted from Sasmita and Mohd Suki (2015), brand loyalty came from Chaudhuri and Holbrook (2001).

3.3. Data analysis

This study's data analysis involved a comprehensive approach, including validation of the measurement model, common method variance checks, structural model assessment, and hierarchical regression for hypothesis testing. To examine causal relationships in the research model, partial least squares-structural equation modeling was applied. Age-based segmentation allowed us to assess generational

effects, with analyses performed separately for each group. The study adhered to Anderson and Gerbing (1988) two-step method and Hair et al. (2019) approach for clear result presentation. Cronbach's alpha confirmed the reliability of the instrument, with values above 0.70 (Nunnally and Bernstein, 1994). KMO and Bartlett's tests established the need for factor analysis, and exploratory factor analysis (EFA) validated the instrument. To assess multicollinearity, we examined variance inflation factors (*VIF*). Divergent validity was measured by *AVE*, with values above 0.5 indicating that the constructs captured sufficient variance (Henseler et al., 2015). In the final step, maximum likelihood estimation was applied for confirmatory factor analysis (CFA).

4. Results

This survey included 520 respondents, primarily young, urban individuals with high levels of education. A larger proportion of respondents were women (61%), with Gen Z (born after 1994) making up the majority (60.6%), followed by Millennials (20.6%). This demographic profile reflects the survey's focus on capturing insights from younger generations. Education levels among respondents were notably high; over half (59.2%) held a bachelor's degree, and an additional 17.5% held advanced degrees. Employment status also aligned with the respondents' age profile, with most identifying as full-time employees (41.9%) and students (34.4%). Thus, respondents are nearly evenly divided between choosing government-owned banks (46.2%) and private banks (44.2%), offering a balanced perspective on both bank types. **Table 1** shows the details of the survey respondents.

Table 1. Demographic characteristics.

Characteristic	Category	Count	Percentage
Gender	Male	203	39.0%
	Female	317	61.0%
Generation	Gen Z (Born after 1994)	315	60.6%
	Gen Y/Millennials (1977–1994)	107	20.6%
	Gen X (1965–1976)	73	14.0%
	Baby Boomers (1946–1964)	25	4.8%
Education	High School	121	23.3%
	Bachelor's Degree	308	59.2%
	Master's Degree	72	13.8%
	Doctoral Degree	19	3.7%
Employment Status	Student	179	34.4%

Table 1. (*Continued*).

Characteristic	Category	Count	Percentage
	Full-time Employee	218	41.9%
	Entrepreneur	40	7.7%
	Part-time Employee	16	3.1%
	Unemployed	24	4.6%
Bank Type	Others (Retired, Homemaker, etc.)	43	8.3%
	Government-owned Bank	240	46.2%
	Private Bank	230	44.2%
	Islamic Bank	41	7.9%
	Foreign Bank	9	1.7%

Further in **Table 2**, we used exploratory factor analysis (EFA) with principal component analysis and varimax rotation, which is crucial to validate the premise of the study. **Table 2** shows that all indicators across the seven factors showed outer loadings exceeding 0.7, which confirms the reliability in accordance with Hair et al. (2019).

Table 2. Constructs and items.

Construct and Items	Loading Factor	Sources
Artificial Intelligence (AI)		
Information Quality		
INFQ1: Bank X's chatbot provides the information I need	0.765	(Trivedi, 2019)
INFQ2: Bank X's chatbot responds to my questions as expected	0.824	
INFQ3: Bank X's chatbot provides sufficient required information	0.789	
INFQ4: I am satisfied with the accuracy of information provided	0.779	
INFQ5: The information provided helps answer my questions	0.799	
System Quality		
SISQ1: I find it easy to become skilled at using this bank's chatbot	0.817	(Trivedi, 2019)
SISQ2: I believe this bank's chatbot is easy to use	0.826	
SISQ3: Using this bank's chatbot requires little mental effort	0.804	
SISQ4: This bank's chatbot is reliable	0.770	
Service Quality		
SERQ1: I am satisfied with the customer support	0.736	(Trivedi, 2019)
SERQ2: I am satisfied with the after-sales service	0.806	
SERQ3: Bank X's chatbot service understands my problems	0.738	
SERQ4: Bank X's chatbot service responds quickly	0.810	

Table 2. (*Continued*).

Construct and Items	Loading Factor	Sources
Artificial Intelligence (AI)		
Brand Loyalty		
BLOY1: I intend to own other Bank X products	0.764	(Chaudhuri and Holbrook, 2001)
BLOY2: I consider Bank X as my first choice	0.817	
BLOY3: Next time I need a banking product, I will buy from Bank X	0.867	
BLOY4: I will continue to be a loyal customer	0.839	
BLOY5: I am willing to pay more for Bank X products	0.718	
BLOY6: I recommend Bank X to others	0.833	
Brand Image		
BI1: Bank X is well-established	0.862	(Sasmita and Mohd Suki, 2015)
BI2: Bank X has a clean image	0.878	
BI3: Bank X has a different image compared to others	0.846	
Brand Equity		
BE1: I prefer Bank X despite similar features	0.866	(Sasmita and Mohd Suki, 2015)
BE2: Bank X is my first choice	0.839	
BE3: I plan to buy from Bank X despite alternatives	0.885	
BE4: I would still buy from Bank X despite same cost	0.881	
BE5: If other bank brands are no different from Bank X in any way, it seems smarter to purchase from Bank X	0.825	
Brand Awareness		
BA1: I am aware of Bank X	0.861	(Sasmita and Mohd Suki, 2015)
BA2: I can recognize Bank X compared to other banks	0.898	
BA3: I know what Bank X looks like	0.877	
BA4: Characteristics quickly come to my mind	0.837	
BA5: I can quickly recall the symbol or logo	0.849	

4.1. Measurement model (outer model)

Based on **Table 3**, the results of the PLS-SEM data analysis show strong reliability and validity across all constructs. The analysis of Cronbach's alpha values shows excellent internal consistency, ranging from 0.853 to 0.950, well above the recommended threshold of 0.70 (Hair et al., 2014). Composite Reliability measures further confirm the model's reliability, with values between 0.854 and 0.950, exceeding the 0.70 criterion. Additionally, the Average Variance Extracted (*AVE*) values for all constructs range from 0.624 to 0.773, surpassing the minimum requirement of 0.50, indicating strong convergent validity (Fornell and Larcker, 1981). The outer loadings for all indicators demonstrate robust item reliability, with values ranging from 0.736 to 0.898, above the acceptable threshold of 0.70.

Table 3. Measurement model results.

Construct	ITEM	Outer Loading	Cronbach's	Composite	*AVE*	*VIF*
AI (Artificial Intelegent)	INFQ1	0.765	0.950	0.950	0.624	2.293
	INFQ2	0.824				2.921
Brand Loyality	INFQ3	0.789	0.893	0.901	0.652	2.442
	INFQ4	0.779				2.611
	INFQ5	0.799				3.051
	SERQ1	0.817				2.912
	SERQ2	0.826				3.148
	SERQ3	0.804				2.808
	SERQ4	0.770				2.313
	SISQ1	0.736				2.195
	SISQ2	0.806				2.900
	SISQ3	0.738				2.248
	SISQ4	0.810				2.702
	BLOY1	0.764				1.914
	BLOY2	0.817				2.293
	BLOY3	0.867				2.746
	BLOY4	0.839				2.356
	BLOY5	0.718				1.714
Brand Image	BLOY6	0.833	0.853	0.854	0.773	2.244
	BI1	0.861				1.962
	BI2	0.898				2.386
Brand Equity	BI3	0.877	0.908	0.908	0.730	2.088
	BE1	0.837				2.296
	BE2	0.849				2.398
	BE3	0.862				2.644
	BE4	0.878				2.954
Brand Awareness	BE5	0.846	0.911	0.913	0.739	2.433
	BA1	0.866				2.605
	BA2	0.839				2.385
	BA3	0.885				2.975
	BA4	0.881				2.971
	BA5	0.825				2.316

The analysis of individual constructs reveals strong measurement properties across all dimensions. The Artificial Intelligence (AI) construct, comprising 13 items across information quality, service quality, and system quality, shows excellent reliability (Cronbach's α = 0.950, *CR* = 0.950, *AVE* = 0.624). Brand loyalty (6 items) demonstrates strong internal consistency (Cronbach's α = 0.893, *CR* = 0.901, *AVE* = 0.652), while Brand Image (3 items) exhibits good reliability measures (Cronbach's α = 0.853, *CR* = 0.854, *AVE* = 0.773). Similarly, brand equity (5 items) and brand

awareness (5 items) show robust measurement properties with Cronbach's α values of 0.908 and 0.911 respectively, and corresponding strong *CR* and *AVE* values.

The collinearity assessment through Variance Inflation Factor (*VIF*) values indicates no significant multicollinearity issues in the model. *VIF* values range from 1.714 to 3.148, well below the conservative threshold of 5.0 suggested in the literature (Hair et al., 2011). These results were obtained using Smart PLS 4.0 software, employing a bootstrap procedure with 5000 samples to ensure the stability and reliability of the findings. The comprehensive analysis suggests that the measurement model meets all necessary criteria for reliability, convergent validity, and discriminant validity, providing a solid foundation for subsequent structural model assessment and hypothesis testing (Ringle and Sarstedt, 2016).

Table 4 reveals important relationships between AI and various brand metrics in the banking sector. The discriminant validity analysis reveals important relationships between AI and various brand metrics in the banking sector (**Table 4**). AI shows consistent moderate correlations with brand awareness (0.565), brand equity (0.597), and brand image (0.580), indicating its balanced influence across these brand constructs while maintaining distinct effects on each. The analysis highlights particularly strong relationships between brand image and brand equity (0.877), brand equity and brand loyalty (0.854), and brand image and brand awareness (0.811), suggesting these constructs are closely interrelated in building brand value. Brand awareness demonstrates substantial correlations with both brand equity (0.799) and brand loyalty (0.687), underlining its fundamental role in brand development. Importantly, all correlation values remain below the 0.9 threshold, confirming adequate discriminant validity between constructs. This indicates that while these brand metrics are interconnected, each variable measures a distinct aspect of brand performance, validating the research model's structure and supporting the theoretical framework's premise that these are separate but related components of brand development in AI- enabled banking services.

Table 4. Discriminant validity (HTMT).

	Al	**BLOY**	**Brand Awareness**	**Brand Equity**	**Brand Image**
Al					
BLOY	0.694				
Brand Awareness	0.565	0.687			
Brand Equity	0.597	0.854	0.799		
Brand Image	0.580	0.786	0.811	0.877	

4.2. Structural model (inner model)

Figure 2 below presents a diagrammatic analysis of the structural model for the hypothesis testing results.

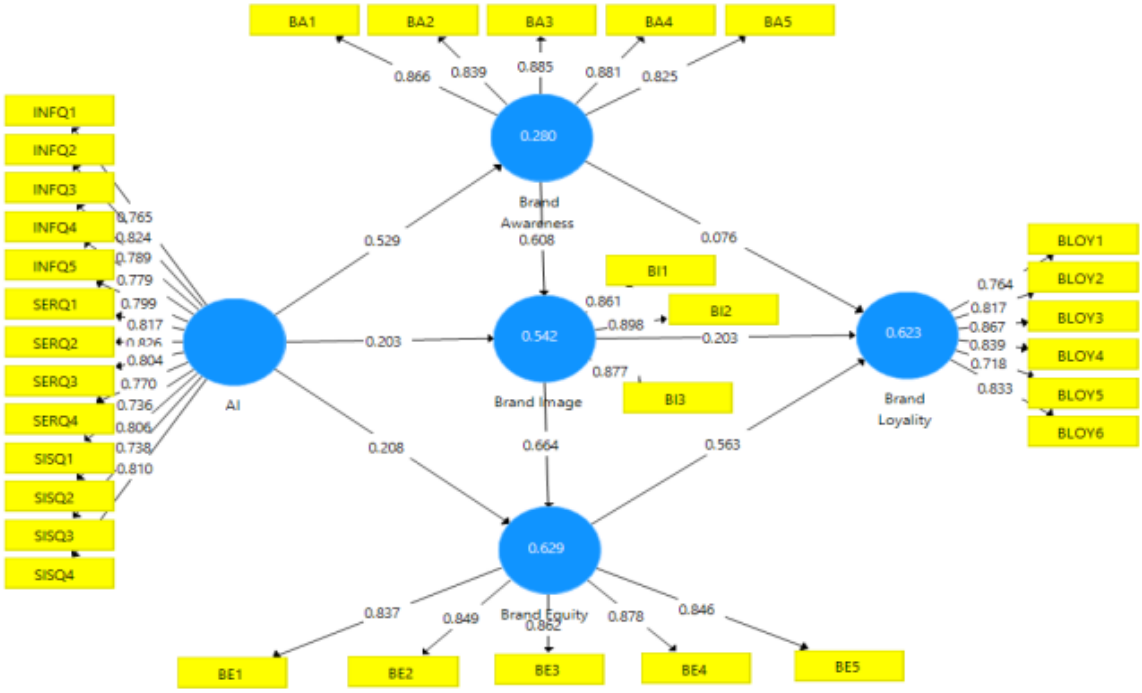

Figure 2. Results of research model.

In **Table 5**, eight hypotheses were tested to explore the relationships among artificial intelligence (AI), brand awareness, brand image, brand equity, and brand loyalty. The testing results indicate that AI has a significant positive effect on brand awareness (H1), with a path coefficient of 0.529 and a very low *p*-value (0.000), confirming that positive interactions with AI effectively enhance consumers' recognition and understanding of the brand. Additionally, the second hypothesis (H2) shows that AI also positively contributes to brand image, with a path coefficient of 0.203 and a *p*-value of 0.000, indicating that AI technology not only improves brand awareness but also helps build a favorable brand image in consumers' minds. Results for the third hypothesis (H3) support that AI positively influences brand equity (path coefficient of 0.208, $p < 0.001$), suggesting that companies effectively utilizing AI can increase the perceived value of their brand. The fourth hypothesis (H4) demonstrates a strong relationship between brand awareness and brand image, with a path coefficient of 0.608 ($p < 0.001$), highlighting the importance of creating brand awareness to build a positive brand image. However, the fifth hypothesis (H5) was not supported, with a path coefficient of only 0.076 and a *p*-value of 0.149, suggesting that while brand awareness is important, it is not sufficient to directly drive brand loyalty. The sixth hypothesis (H6) indicates that brand image has a significant positive impact on brand equity (path coefficient of 0.664, $p < 0.001$), emphasizing the importance of investing in building a positive brand image. Results for the seventh hypothesis (H7) support the positive relationship between brand image and brand loyalty (path coefficient of 0.203, $p < 0.001$), indicating that consumers with a strong brand image tend to exhibit greater loyalty. Finally, the eighth hypothesis (H8) demonstrates strong support for the relationship between brand equity and brand loyalty (path coefficient of 0.563, $p < 0.001$), affirming that the higher the perceived value of the brand, the more likely consumers are to remain loyal. Overall, the findings of this research

indicate that AI serves as an important driver in building brand awareness, image, and equity, which in turn influences consumer loyalty. While brand awareness does not directly drive loyalty, the strong connections between brand image, brand equity, and loyalty suggest that effective marketing strategies should focus on creating positive experiences and strong brand values to enhance consumer engagement.

Table 5. Hypotheses testing results.

Hypotesis	Path	Original Sample (O)	Standard deviation (STDEV)	*T* Statistics	*P* values	Bias	5%	95%	Decision
H1	Al → Brand Awareness	0.529	0.040	13.280	0.000	0.002	0.448	0.603	supported
H2	Al → Brand Image	0.203	0.045	4.481	0.000	0.002	0.119	0.296	supported
H3	Al → Brand Equity	0.208	0.038	5.544	0.000	0.002	0.135	0.280	supported
H4	Brand Awareness → Brand Image	0.608	0.042	14.621	0.000	−0.002	0.521	0.683	supported
H5	Brand Awareness → Brand Loyalty	0.076	0.052	1.444	0.149	0.001	−0.027	0.178	Not supported
H6	Brand Image → Brand Equity	0.664	0.034	19.282	0.000	−0.001	0.593	0.728	supported
H7	Brand Image → Brand Loyality	0.203	0.054	3.724	0.000	−0.003	0.097	0.315	supported
H8	Brand Equity → Brand Loyality	0.563	0.059	9.541	0.000	0.002	0.439	0.668	Supported

The specific indirect effects of AI, Brand Awareness (BA), Brand Image (BI), Brand Equity (BE), and Brand Loyalty (BLOY) as seen in **Table 6** reveal several key pathways and relationships. First, the path Al → Brand Awareness → Brand Image → Brand Equity → BLOY shows that AI influences Brand Awareness, which enhances Brand Image and ultimately increases Brand Equity and BLOY, with a moderate effect size of 0.120. In comparison, the path Brand Awareness → Brand Image → Brand Equity → BLOY, without AI, has a stronger effect size of 0.227, indicating that traditional brand-building efforts have a more significant impact on loyalty than AI- driven efforts. AI also plays a role in the path Al → Brand Awareness → Brand Image → Brand Equity with a 0.213 effect, showing its ability to indirectly enhance brand equity by shaping awareness and image. The path Al → Brand Image → Brand Equity → BLOY has a smaller effect size of 0.076, suggesting that AI-driven improvements in brand image have a limited but positive impact on loyalty. AI also strongly influences Brand Awareness, as seen in Al → Brand Awareness → Brand Image (0.322), indicating that AI primarily enhances brand perception through awareness, which in turn boosts brand image. The strongest effect on BLOY is found in the path Brand Image → Brand Equity → BLOY with a value of 0.373, demonstrating that improving brand image leads to a significant increase in brand equity and loyalty. Other pathways, such as Al → Brand Awareness → BLOY (0.040) and Al → Brand Image → BLOY (0.041), show weak indirect effects of AI on BLOY when focusing solely on awareness or image. Meanwhile, Al → Brand Equity → BLOY (0.117) indicates a modest effect of AI on loyalty through brand equity. In summary, AI has a moderate indirect effect on Brand Awareness and Brand Image, which positively impacts Brand Equity and BLOY, but the strongest effects on loyalty stem from pathways that rely heavily on improving.

Table 6. Indirect effects.

Path	Specific indirect effects
Brand Awareness → Brand Image → Brand Equity	0.403
Al → Brand Awareness → Brand Image	0.322
Brand Image → Brand Equity → BLOY	0.373
Al → Brand Awareness → Brand Image → Brand Equity → BLOY	0.120
Al → Brand Awareness → Brand Image → Brand Equity	0.213
Al → Brand Image → Brand Equity → BLOY	0.076
Al → Brand Awareness → Brand Image → BLOY	0.065
Brand Awareness → Brand Image → Brand Equity → BLOY	0.227
Al → Brand Image → BLOY	0.041
Al → Brand Equity → BLOY	0.117
Al → Brand Awareness → BLOY	0.040
Al → Brand Image → Brand Equity	0.135
Brand Awareness → Brand Image → BLOY	0.123

Brand Image and Brand Equity. Traditional brand-building remains a more powerful driver of loyalty, though AI can enhance brand perception and equity in meaningful ways.

5. Discussion

The results of this study underscore the transformative impact of AI-powered chatbots on brand awareness, brand image, brand equity, and loyalty within the banking sector. Seven out of eight hypotheses were supported, indicating robust connections between AI-driven interactions and key brand dimensions, including brand awareness, equity, image, and loyalty. One of the most notable findings is the strong impact of AI on brand awareness, which supports the idea that AI-powered interactions significantly boost brand visibility. This aligns with previous research that highlights AI's role in facilitating consistent, scalable interactions that capture consumer attention and foster brand recognition (Kumar et al., 2019). We also assessed the influence of personalized interactions facilitated by chatbots on customer exprerience. This includes exploring how tailored responses, reliability, and relevance of chatbot interactions contribute to fostering long-term loyalty in the banking sector. Understanding this role of personalization can provide banks with strategies to deepen customer relationships and improve retention rates (Chen et al., 2023). Through personalized, instantaneous responses, chatbots enhance a brand's accessibility and relatability, particularly in sectors like banking where trust and ease of access are essential.

However, while AI showed a positive influence on brand equity and brand image, these effects were less pronounced than its impact on awareness. This suggests that while AI contributes to perceptions of brand quality and image, other factors—such as product quality and direct customer service—remain essential for fully cultivating positive brand perceptions (Prentice and Nguyen, 2020). Hence, it has been found that empathetic and personalized chatbot responses can humanize digital banking services

and create positive emotional associations with the brand. Banks successfully implementing emotionally intelligent chatbots report improved brand awareness, brand image, and brand equity. Consequently, a holistic approach that integrates AI with traditional brand-building efforts could further strengthen brand equity and image.

Interestingly, while brand awareness was strongly linked to brand image, it did not directly influence brand loyalty. This finding suggests that although AI-driven awareness efforts draw customer attention, they are insufficient to foster long-term loyalty. To the best of our knowledge, there is increased access to information, resulting in numerous brand choices and higher expectations for personalization and customer engagement. For example, AI allows brands to offer hyper-personalized experiences. Therefore, consumers now anticipate tailored recommendations, offers, and interactions, demanding a unique and memorable customer journey. This is in line with previous findings from Kumar and Pansari (2016) that modern consumers are increasingly sophisticated and require more than mere recognition to develop loyalty Arguably, while chatbots are effective in capturing attention, cultivating loyalty requires a deeper emotional connection supported by consistent brand loyalty.

Therefore, based on the findings, we suggest that chatbots in banking should have, first, brand-centric chatbot design. Chatbots need to be designed to do more than just resolve queries. They should actively promote the bank's values, products, and services in a way that aligns with the bank's overarching branding strategy. For instance, chatbots can subtly recommend tailored financial products or services that match customer profiles, reinforcing the bank's brand offerings. Second, proactive engagement. Beyond responding to customer queries, chatbots should proactively engage customers with personalized messages, offers, and reminders. This keeps the brand top-of-mind, fostering customer loyalty by adding value through relevant and timely interactions. Third, integration with loyalty programs. We argue that chatbots should be linked with customer loyalty programs, providing seamless access to rewards, updates, and personalized offers. This integration enhances the customer experience and strengthens brand loyalty. This is relevant to the findings of Hoyer et al. (2020), which highlight AI-enabled personalization as crucial for building lasting customer relationships. Fourth, interactive and educational content. We need to position chatbots as educational tools that offer customers insights into personal finance management or explaining new products. This not only helps customers but also reinforces the bank's position as a trusted expert, enhancing brand equity.

Finally, feedback and improvement mechanism. We suggest that chatbots should gather feedback from customers about their experiences and continuously evolve based on that input. This creates a customer-driven process of improvement and can reinforce the bank's commitment to customer satisfaction and innovation. While AI can enhance awareness and aid in customer support, traditional elements such as product quality, personal interactions, and direct communication channels continue to play an essential role in building brand equity and loyalty. The findings are also consistent with those of a previous study by Prentice and Nguyen (2020). This hybrid approach could mitigate potential negative perceptions of AI and enhance the credibility of the bank's digital engagement. The study also reveals the importance of personalization in AI- driven interactions, particularly for fostering brand loyalty.

Supporting this perspective, Ma and Sun (2020) validate the effectiveness of integrating AI with traditional banking elements.

Moreover, chatbots that deliver tailored responses and ensure reliability contribute significantly to customer satisfaction, laying the foundation for a positive brand image. However, as AI continues to evolve, addressing privacy and transparency concerns will become crucial for maintaining customer trust. Ensuring that chatbot interactions are transparent and secure can mitigate customer concerns, fostering a sense of trust that strengthens the brand-customer relationship (Mende et al., 2019).

6. The policy implications of AI adoption in banking

The use of AI-driven chatbots in banking presents substantial policy ramifications, requiring meticulous evaluation at regulatory, privacy, and economic dimensions. As financial institutions progressively implement AI-driven consumer engagement, the establishment of comprehensive regulatory frameworks becomes essential. This study, supported by Huang and Rust's (2021) analysis, demonstrates that although AI improves brand recognition and customer engagement, it necessitates explicit standards, especially for algorithmic openness and accountability in decision-making inside financial services.

Thus, privacy concerns represent a critical element of AI deployment in banking, presenting both opportunities and challenges. Chatbots enhance personalization and user experience; nevertheless, they also pose considerable privacy concerns about data collection and processing. Mende et al. (2019) underscore the imperative for financial institutions to implement advanced data governance frameworks that exceed conventional privacy standards. As AI systems develop in handling sensitive financial data, institutions must proactively address privacy concerns through transparent communication and robust client data protection safeguards.

The integration of AI in banking affects market dynamics and competition from an economic perspective. Studies suggest that AI-driven technology, by augmenting brand awareness and customer interaction, could transform competitive dynamics within the industry. Kumar et al. (2019) caution that technological obstacles may disadvantage smaller financial institutions, potentially resulting in market concentration. This presents essential policy issues, particularly the necessity to retain competitive balance and guarantee fair access to AI technologies for banks of differing sizes.

Lastly, beyond regulatory and economic factors, the societal implications of AI integration in banking warrant attention, particularly regarding financial inclusion and accessibility. While AI-powered interactions improve customer experience, the study underscores the importance of ensuring service accessibility for diverse customer segments. Prentice and Nguyen (2020) stress the need for regulatory frameworks that balance responsible AI adoption with the preservation of traditional banking services. This aligns with findings that emphasize the continued relevance of conventional brand-building strategies alongside technological innovation. Together, these insights highlight the necessity of balanced policy approaches that address both technological progress and inclusive access to financial services.

7. Conclusion

The empirical analysis provides compelling evidence for the significant role of artificial intelligence, particularly through chatbots, in shaping brand dynamics within the banking sector. Of particular significance is AI's substantial influence on brand awareness, demonstrating its capacity to enhance brand recognition and visibility in an increasingly digital banking landscape. While AI-powered chatbots also show positive effects on both brand equity and brand image, these influences manifest more moderately, suggesting that technological interventions contribute to, but do not solely determine, these deeper banking brand constructs. This is in line with previous research that suggests chatbots hold potential in shaping customer perceptions, specifically regarding the quality of information, system reliability, and service effectiveness (Trivedi, 2019).

A noteworthy finding emerges in the relationship between brand awareness and subsequent brand constructs in banking. While brand awareness strongly influences brand image, its direct effect on banking customer loyalty proves statistically insignificant, representing the sole unsupported hypothesis in the study. This revelation carries important implications for banking brand strategy, suggesting that mere digital visibility and recognition, while crucial initial steps, are insufficient to generate lasting customer loyalty in financial services, particularly banking.

The path to banking customer loyalty emerges as a complex phenomenon primarily driven through brand equity, with brand image also demonstrating a significant, albeit more modest, direct effect. These findings suggest that the development of customer loyalty in banking requires a sophisticated interplay of brand elements, where AI-powered chatbot impact is mediated through multiple brand dimensions rather than operating through direct channels alone.

Similarly, past research has revealed that a well-designed chatbots can build trust and emotional connection, strengthening customer attachment to the brand (Chopra and Vidyavihar, 2023). It also emphasizes the critical role of personalization in chatbot interactions as a driver of long-term brand loyalty. This perspective offers valuable insights for banks seeking to develop chatbots that not only support immediate customer service needs but also make a lasting contribution to brand loyalty (Chen et al., 2023). This understanding challenges simplistic approaches to AI implementation in banking services and advocates for more nuanced brand-building strategies that consider the unique characteristics of financial services relationships.

Finally, the findings from this research will contribute to both theoretical understanding and practical applications in several ways. First, it bridges the gap between technology adoption and brand management literature by examining how AI implementation quality affects brand-related outcomes. Second, it provides empirical evidence for the theoretical relationships between AI quality dimensions and brand constructs in the banking context. Third, it offers practical insights for bank managers seeking to leverage AI technologies while building stronger brands.

From a managerial perspective, we can conclude that, first, to increase brand awareness and visibility, chatbots should be designed to proactively initiate interactions across different platforms (e.g., mobile apps, social media). They can engage customers with information about the bank's products and services, raising

awareness and facilitating immediate responses to customer inquiries, which can drive more engagement.

Second, to incrase brand image, chatbots should embody the bank's values, maintaining a consistent and professional tone that reflects the bank's image. Personalization, empathy, and transparency in chatbot interactions will help foster positive perceptions and improve the bank's image in the eyes of customers.

Third, to enhance brand equity, chatbots should build trust by offering accurate, timely, and helpful information. Incorporating features that showcase the bank's expertise, such as financial tips or product recommendations, will further position the bank as a valuable partner in customers' financial journeys.

Lastly, to enhance brand loyalty, chatbots can provide personalized experiences and quick resolutions to customer concerns. They can also engage customers by offering loyalty rewards, sending personalized updates, and ensuring a seamless service experience that encourages long-term customer relationships.

These contributions are particularly timely as the banking industry continues to undergo digital transformation, with AI playing an increasingly central role in customer interactions and service delivery.

8. Limitations and future research directions

While this study provides valuable insights into the relationship between AI implementation and brand-related outcomes in the banking sector, several limitations should be acknowledged. First, the cross-sectional nature of our data collection limits our ability to capture the dynamic evolution of brand relationships over time, particularly as AI technology rapidly evolves. The banking industry's AI capabilities are continuously advancing, and customer expectations are simultaneously shifting. Future longitudinal studies could provide deeper insights into how brand awareness, image, equity, and loyalty develop and change as consumers become more familiar with AI-powered banking services.

Second, our study focused specifically on AI implementations in the Indonesian banking market, which may limit the generalizability of findings to other cultural contexts or banking environments. Cultural differences in technology adoption, trust in financial institutions, and brand relationship development could significantly influence how AI affects brand-related outcomes. Future research could validate these relationships across different cultural settings and examine how various AI interfaces (e.g., voice assistants, virtual reality agents, or augmented reality experiences) might differently influence banking brand relationships.

Third, while our study examined AI quality dimensions comprehensively, the rapid advancement of AI technology means that new quality factors may emerge that were not captured in our framework. The recent emergence of more sophisticated AI models (e.g., ChatGPT, Google Bard) suggests that the parameters for evaluating AI quality in banking services may need continuous refinement. Future studies could explore how evolving AI capabilities influence the traditional dimensions of service quality and their subsequent impact on brand metrics.

However, there are several promising directions for future research emerge from these limitations. First, researchers could investigate how the integration of different

AI technologies affects brand relationship frameworks in banking. As financial institutions increasingly leverage multiple AI touchpoints, understanding how various AI interactions contribute to overall brand experience becomes crucial. Comparative studies between different types of AI could reveal how technological sophistication influences brand relationship dynamics.

Second, future studies could explore the moderating role of customer characteristics in the relationship between AI implementation and brand outcomes (Lobschat et al., 2021). Factors such as technology readiness, age, digital literacy, and prior banking relationships might influence how customers perceive and respond to AI-powered services. Understanding these individual differences would help banks develop more targeted AI implementation strategies that enhance brand relationships across different customer segments. Third, research could examine the potential trade-offs between AI- driven efficiency and human touch in banking services, particularly how these trade- offs affect brand equity and loyalty. Thus, Huang et al (2021) highlight the balance between automated and human-led services in the digital economy. While AI can enhance service consistency and availability, some customers may value human interaction for complex financial decisions. Understanding the optimal balance between AI and human service delivery could help banks maintain strong brand relationships while leveraging technological advantages. Fourth, future research could investigate the role of AI in crisis management and its impact on brand resilience. The COVID-19 pandemic highlighted the importance of digital banking capabilities, and understanding how AI-powered services influence brand relationships during crises could provide valuable insights for future disruptions (Donthu and Gustafsson, 2020). Studies could examine how AI implementation quality affects brand trust and loyalty during periods of market uncertainty or operational challenges.

Finally, researchers could explore the potential negative effects of AI implementation on brand relationships, such as the impact of AI failures, miscommunications, or perceived privacy concerns. Understanding these challenges would help financial institutions develop more robust AI integration strategies that maintain brand equity while leveraging technological advantages. This could include examining how banks can effectively recover from AI-related service failures while preserving brand relationships.

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