Journal of Economics, Entrepreneurship, Management Business and Accounting, 2026, 4(6), 893-922.
https://doi.org/10.61255/jeemba.v4i6.1750

An Explainable Artificial Intelligence-Based Marketing Management Framework for Customer Relationships

Titi Rapini[1]*, Sri Hartono[2]

[1,2] Faculty of Economics, Universitas Muhammadiyah Ponorogo, Jawa Timur, 63471, Indonesia

ABSTRACT

Purpose: This study develops an integrative conceptual framework linking Explainable Artificial Intelligence (XAI), AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty in banking and related financial services. It synthesizes evidence across banking contexts without assuming validation within a single segment.

Design/methodology/approach: A systematic literature review followed PRISMA 2020 and covered Scopus, Web of Science, ScienceDirect, Emerald Insight, and Google Scholar. Because original database search logs were unavailable, the search strategy and selection process were retrospectively reconstructed from available documentation. Of 360 identified records, 23 peer-reviewed English-language journal articles published between 2022 and 2025 were included. The studies were analyzed thematically, supported by study-level quality appraisal and claim-to-evidence mapping.

Findings/Results: The evidence remains fragmented across technological, organizational, and customer-relational domains. Evidence concerning XAI and customer perceptions, trust, and satisfaction is limited, whereas AI-enabled banking research provides broader evidence on service quality, satisfaction, decision-making, and customer outcomes. The Trust–Loyalty relationship receives comparatively stronger empirical and review-level support, while the Engagement–Loyalty relationship is supported by empirical studies in digital banking. However, loyalty operationalization varies across studies. AI-enabled Marketing Management Capability is an author-synthesized concept rather than an established, validated construct. The complete proposed pathway remains empirically unvalidated.

Originality/Value: The framework integrates fragmented evidence and distinguishes empirical, indirect, conceptual, and author-derived relationships, providing a basis for future empirical testing.

ARTICLE INFO

Keywords:
AI-enabled Marketing Management Capability;
Customer Engagement;
Customer Loyalty;
Customer Trust;
Explainable Artificial Intelligence.

Article Information:
Received: 23/07/2026
Revise: 17/09/2026
Accepted: 26/10/2026

ISSN:
2985-3168 (Online)
2985-3222 (Print)

*Corresponding Author at:
Faculty of Economics, Universitas Muhammadiyah Ponorogo, Jawa Timur, 63471, Indonesia
E-mail address: titi.rapini@gmail.com (Titi Rapini)

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1. Introduction

Artificial Intelligence (AI) is reshaping banking and marketing. Research links AI-enabled banking to customer loyalty and service outcomes (Suhartanto et al., 2022). Research on AI-enabled neo-banking also examines customer-related outcomes (Kumar et al., 2025). However, evidence on Explainable Artificial Intelligence (XAI) and customer perceptions, trust, and satisfaction remains limited (Ni, 2024). Research connecting AI, organizational marketing capabilities, and customer relationships remains fragmented. None of the included studies directly tests the complete sequence linking XAI, AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty. This review integrates these research streams without claiming that no comparable framework exists elsewhere.

The study addresses three research questions: (1) Which technological, organizational, and customer-relational constructs and relationships are reported in banking and related financial services? (2) What direct, indirect, limited, conceptual, and author-derived relationships can be identified? (3) How can these findings inform an integrated framework that distinguishes supported relationships from those requiring further testing? Accordingly, this study synthesizes the evidence into an evidence-qualified conceptual framework. Its contribution lies in integrating five partially connected domains while distinguishing empirical findings from author-derived propositions.

Theoretical Review

AI-enabled marketing management applies intelligent technologies to customer-oriented processes and managerial decisions. Banking research examines AI-enabled services and customer outcomes (Suhartanto et al., 2022). Research also addresses AI-related marketing activities (Armutcu et al., 2025). Organizational studies examine capability and innovation (Kucharska & Erickson, 2023). This review synthesizes these perspectives into AI-enabled Marketing Management Capability, a construct not yet validated as a unified measure.

Explainable Artificial Intelligence (XAI) concerns the transparency and interpretability of AI-supported processes or outputs. Transparency relates to information accessibility, whereas interpretability concerns understandability. Neither transparency nor interpretability alone establishes trustworthiness. Evidence on XAI-related customer perceptions, trust, and satisfaction in banking remains limited (Ni, 2024).

AI-enabled Marketing Management Capability is an author-derived organizational construct comprising four proposed components: technological resources and customer information; organizational routines and processes; marketing analytics and decision support; and customer-oriented application of AI insights. These components remain conceptual rather than validated subdimensions.

At the customer level, Customer Trust concerns confidence in an organization and its services. Customer Engagement concerns behavioral and relational involvement, while Customer Satisfaction evaluates service experiences. Customer Loyalty encompasses attitudes, intentions, or behaviors, depending on operationalization (Buhler et al., 2024). Banking research examines trust in relation to loyalty (Wongsansukcharoen, 2022), while digital-banking research examines engagement and loyalty (Levy, 2022).

The framework links XAI at the technological level, AI-enabled Marketing Management Capability at the organizational level, and Trust, Engagement, and Loyalty at the customer-relational level. Evidence differs across relationships: XAI–Trust has limited empirical support (Ni, 2024); XAI–Capability is author-derived (AD); Capability–Trust draws on indirect evidence and author synthesis (IE + AD); Trust–Engagement draws on indirect and conceptual evidence (IE + CT); Trust–Loyalty has empirical and review-level support (Buhler et al., 2024); and Engagement–Loyalty has been examined empirically in digital banking (Levy, 2022). The complete five-construct pathway remains untested. The conceptual definitions, theoretical foundations, levels of analysis, and evidentiary status of the five principal constructs are summarized in Table 1.

Table 1. Construct–Theory–Level of Analysis Mapping

Construct	Conceptual Definition in This Review	Level of Analysis	Theoretical / Conceptual Basis	Evidentiary Status in the Framework
Explainable Artificial Intelligence (XAI)	AI characteristic enabling transparency and interpretability of AI-supported processes and outputs	Technological	Explainability, transparency, and interpretability perspective	Limited empirical support; Ni (2024)
AI-enabled Marketing Management Capability	Organizational capability to deploy AI-enabled technologies, processes, information, and decision-support mechanisms in customer-oriented marketing management	Organizational	Organizational capability and AI-enabled marketing-process perspective	Author-synthesized; indirect/author-derived
Customer Trust	Customer confidence in the organization, services, and technology-mediated interactions	Customer	Relationship marketing / relational perspective	Direct empirical and review support
Customer Engagement	Customer behavioral and relational involvement with the organization and its digital service environment	Customer	Relationship marketing / customer-relational perspective	Direct empirical support for engagement–loyalty relationship
Customer Loyalty	A downstream customer-relational outcome reflected in loyalty-related attitudes, intentions, or behaviors, depending on the operational definition used in each included study	Customer	Relationship marketing / customer outcome perspective	Stronger direct empirical support
Complete	XAI, AI-enabled	Cross-level	Integrative	Conceptual

Framework	Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty	mechanism-oriented synthesis	synthesis; complete pathway not empirically tested

Source: Authors' synthesis based on the 23 included studies.

2. Methodology

Review Design

This review followed systematic review principles for management research (Tranfield et al., 2003) and used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines for transparent reporting (Page et al., 2021). The three research questions guided study selection, data extraction, evidence coding, thematic synthesis, and framework development (Xiao & Watson, 2019).

Search Strategy and Eligibility

The review covered peer-reviewed, English-language journal articles published in 2022–2025 on AI/XAI, marketing management capability, trust, engagement, and loyalty in banking and related financial services. Searches were conducted in Scopus, Web of Science, ScienceDirect, Emerald Insight, and Google Scholar from 10 June to 20 July 2026. Eligible publications included quantitative studies, systematic reviews, meta-analyses, and substantive conceptual studies. Conference papers, books, theses, dissertations, editorials, reports, inaccessible full texts, and out-of-scope studies were excluded (Snyder, 2019). Database-specific Boolean strings are provided in Table 2; because the original search logs were unavailable, these strings are retrospective reconstructions rather than verbatim search records.

Table 2. Reconstructed Database-Specific Search Strings

Database	Search Field	Reconstructed Search String
Scopus	TITLE-ABS-KEY	("artificial intelligence" OR AI OR "explainable artificial intelligence" OR XAI OR explainab* OR interpretab* OR transparency) AND ("marketing management" OR "marketing capability" OR "digital marketing" OR "relationship marketing" OR "marketing practice*") AND ("customer trust" OR trust OR "customer engagement" OR engagement OR "customer loyalty" OR loyalty) AND (bank* OR "private banking" OR "retail banking" OR "digital banking" OR "mobile banking" OR "neo-banking" OR "financial service*")
Web of Science	Topic (TS)	("artificial intelligence" OR AI OR "explainable artificial intelligence" OR XAI OR explainab* OR interpretab* OR transparency) AND ("marketing management" OR "marketing capability" OR "digital marketing" OR "relationship marketing" OR "marketing practice*") AND ("customer trust" OR trust OR "customer engagement" OR engagement OR "customer loyalty" OR loyalty) AND (bank* OR "private banking" OR "retail banking" OR "digital banking" OR "mobile banking" OR "neo-banking" OR "financial service*")
ScienceDirect	Keywords	("artificial intelligence" OR AI OR "explainable artificial intelligence" OR XAI OR explainab* OR interpretab* OR transparency) AND ("marketing management" OR "marketing capability" OR "digital

		marketing" OR "relationship marketing" OR "marketing practice*") AND ("customer trust" OR trust OR "customer engagement" OR engagement OR "customer loyalty" OR loyalty) AND (bank* OR "private banking" OR "retail banking" OR "digital banking" OR "mobile banking" OR "neo-banking" OR "financial service*")
Emerald Insight	Keywords	("artificial intelligence" OR AI OR "explainable artificial intelligence" OR XAI OR explainab* OR interpretab* OR transparency) AND ("marketing management" OR "marketing capability" OR "digital marketing" OR "relationship marketing" OR "marketing practice*") AND ("customer trust" OR trust OR "customer engagement" OR engagement OR "customer loyalty" OR loyalty) AND (bank* OR "private banking" OR "retail banking" OR "digital banking" OR "mobile banking" OR "neo-banking" OR "financial service*")
Google Scholar	General Search	"artificial intelligence" "marketing management" "customer trust" banking; "explainable artificial intelligence" "customer engagement" banking; "artificial intelligence" "customer loyalty" "financial services"

Note: The search strings are retrospective reconstructions based on the review documentation, research questions, conceptual domains, and eligibility criteria. Because the original database search logs were not retained, these strings should not be interpreted as verbatim records of the searches originally executed. They document the intended search concepts but do not independently establish the exact queries or execution history for each database.

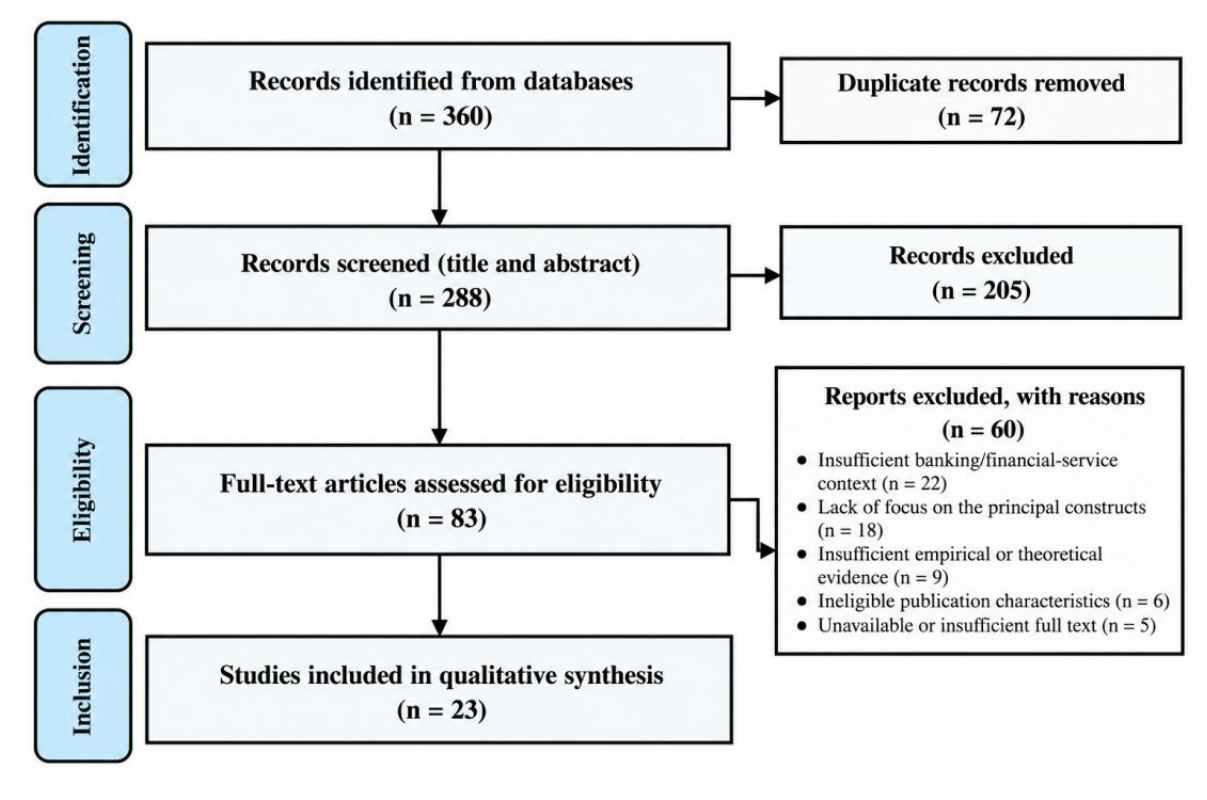
Source: Authors' reconstruction based on the documented research questions, search concepts, and eligibility criteria in the present review.

Screening and Study Selection

The review identified 360 records. After removing 72 duplicates, 288 records underwent title-and-abstract screening by two reviewers; 205 were excluded. Of the 83 full texts assessed, 60 were excluded for insufficient banking or financial-service context (n = 22), insufficient focus on the principal constructs (n = 18), insufficient empirical or theoretical evidence (n = 9), ineligible publication characteristics (n = 6), or unavailable or insufficient full text (n = 5). The final corpus comprised 23 studies. The identification, screening, eligibility assessment, and final inclusion of the studies are summarized in the PRISMA 2020 flow diagram (Figure 1).

The available documentation does not specify the duplicate-removal method or provide sufficient detail on how disagreements between the two reviewers were resolved. These omissions limit reproducibility and should be considered when interpreting the comprehensiveness of the review.

Figure 1. PRISMA 2020 Flow Diagram of the Literature Search and Study Selection Process.



Source: Authors' synthesis based on the PRISMA 2020 study-selection procedure.

Data Extraction and Coding

A structured framework recorded each study's bibliographic details, context, design, methods, constructs, reported relationships, evidence status, framework relevance, quality rating, and limitations. AI and XAI were coded separately, with XAI evidence recognized only when explainability, interpretability, transparency, or an equivalent mechanism was explicitly examined. AI-enabled Marketing Management Capability was treated as an author-synthesized organizational construct because no included study operationalized it as a unified construct.

Following Supplementary Material S1, relationships were classified as direct empirical evidence (DE), limited empirical evidence (LE), indirect empirical evidence (IE), conceptual/theoretical evidence (CT), or author-derived synthesis (AD). DE required direct examination of the specific relationship or quantitative synthesis of relationship-specific evidence, but did not establish causality. LE represented narrow or context-specific empirical support; IE informed a proposed relationship without directly testing it; CT supported theoretical interpretation; and AD identified author-inferred relationships. The complete five-construct pathway remained a conceptual proposition. Quality ratings informed evidentiary weight, not study inclusion.

Quality Appraisal and Thematic Synthesis

All 23 studies underwent design-sensitive quality appraisal. Quantitative studies were assessed for design suitability, sample adequacy, construct operationalization, analytical appropriateness, reporting transparency, and contextual relevance. Reviews and meta-

analyses were assessed for search and selection procedures, synthesis methods, evidence assessment, and limitations; conceptual studies were assessed for clarity, theoretical grounding, construct specification, reasoning, and coherence.

High, Moderate–High, and Moderate were qualitative judgments, not scores based on a numerical threshold. They indicated comparatively strong methodological clarity, meaningful contributions with identifiable limitations, and evidence requiring greater caution, respectively. Ratings informed evidentiary interpretation but did not determine inclusion or exclusion.

Table 3. Study-Level Quality Appraisal Matrix

No.	Study	Study Design / Methodological Status	Appraisal	Rationale for Appraisal
1	Wongsansukcharoen (2022)	Quantitative empirical study; structural equation modeling (SEM); commercial banking	High	Provides direct empirical evidence on relationship marketing, customer engagement, brand trust, and loyalty in a banking context. The design and analytical approach are sufficiently aligned with the study objectives and the relationships used in the synthesis.
2	Levy (2022)	Quantitative empirical study; web-based survey; 502 participants	High	Provides direct evidence on digital banking, psychological engagement, and brand loyalty using a clearly specified quantitative design. Its relevance to the engagement–loyalty relationship is direct, although the cross-sectional design limits causal interpretation.
3	Christanto & Santoso (2022)	Quantitative survey; 200 respondents	High	Provides direct empirical evidence concerning service quality, corporate image, customer satisfaction, and loyalty in the banking sector. The constructs and relationships are directly relevant to the customer-outcome synthesis.
4	Suhartanto et al. (2022)	Quantitative empirical study; PLS; 204 millennial Islamic-bank customers	High	Provides direct evidence on AI-enabled mobile banking, service quality, attitudes toward AI, trust, religiosity, and customer loyalty. The

				banking context and quantitative analysis are directly relevant to AI-enabled customer outcomes.
5	Kucharska & Erickson (2023)	Quantitative cross-country organizational study	Moderate–High	Provides useful evidence on organizational capability, tacit knowledge, and innovation, but the organizational-level focus is indirectly related to customer-level relationship outcomes. Its contribution is therefore relevant mainly to the capability dimension rather than to the complete customer pathway.
6	Rifaa'tin & Rofiuddin (2023)	Quantitative questionnaire study	High	Directly examines mobile banking, relationship marketing, and customer loyalty. The constructs and context closely correspond to the relationship-marketing and loyalty stream of the synthesis.
7	Redda & Van Deventer (2023)	Quantitative study; descriptive design; mediation analysis; 271 participants	High	Provides direct evidence on service quality, trust, commitment, and loyalty in retail banking. The explicit mediation analysis strengthens its relevance to the synthesis of relational mechanisms, although the study remains non-experimental.
8	Tedjokusumo & Murhadi (2023)	Quantitative empirical study; 194 respondents; BCA e-banking	High	Directly examines e-service quality, customer satisfaction, and customer loyalty in an identifiable banking context. The study provides relevant empirical evidence for the digital-service-to-loyalty stream.
9	Wicaksono et al. (2023)	Quantitative survey; SEM/AMOS; 230 respondents	High	Provides direct empirical evidence on BCA e-banking service quality, e-satisfaction, and e-loyalty. The defined banking context and multivariate analysis make the evidence directly relevant to digital

				customer outcomes.
10	Akinyi et al. (2024)	Quantitative empirical study; deposit-taking SACCOs; 396 respondents	Moderate–High	Provides direct evidence on relationship marketing and customer loyalty, with digital platforms examined as a moderating context. The evidence is relevant to relationship marketing and digital customer mechanisms, but the SACCO context is not directly equivalent to conventional or private banking.
11	Buhler et al. (2024)	Meta-analysis; 275 studies; 1,365 effect sizes	High	Provides broad aggregated evidence on customer loyalty in banking based on a large body of empirical studies. Its synthesis-level evidence is highly relevant to the trust–loyalty and broader customer-loyalty streams, although it does not directly test the proposed framework.
12	Kim et al. (2024)	Systematic review and meta-analysis; 149 records identified; 44 studies included	High	Uses a systematic review and meta-analytic approach with explicit study selection and PRISMA reporting. It provides broad secondary evidence on determinants of banking customer loyalty, particularly satisfaction, trust, service quality, and related mechanisms.
13	Ni (2024)	Quantitative empirical study; structured questionnaire; 169 valid responses	Moderate–High	Provides limited empirical evidence concerning XAI, customer trust, and satisfaction in banking. The findings are relationship-specific and do not establish general causal validity or validate the complete proposed framework.
14	Mackay et al. (2025)	Quantitative cross-sectional study; partial least squares structural equation modeling (PLS-SEM); 401 participants	High	Provides direct empirical evidence on digital banking, customer engagement, switching costs, and loyalty. The sample and multivariate analysis

				provide useful evidence for the engagement–loyalty relationship, while the cross-sectional design limits causal interpretation.
15	Armutcu et al. (2025)	Quantitative empirical study; questionnaire; SEM using SmartPLS	Moderate–High	Provides relevant empirical evidence concerning bank AI marketing efforts, brand experience, brand preference, and repurchase intention. Its contribution to the proposed framework is indirect because the primary outcome is purchase/repurchase intention rather than customer trust, engagement, or loyalty.
16	Kumar et al. (2025)	Quantitative empirical study; 439 consumers; PLS-SEM	High	Directly examines AI-enabled neo-banking service quality and customer loyalty. The technological context and customer-level outcome provide strong relevance to the AI-enabled banking and loyalty stream.
17	Hussain et al. (2025)	Quantitative empirical study; 380 respondents; PLS path modeling	High	Provides direct empirical evidence concerning AI, customer satisfaction, and customer loyalty in digital banking. The constructs and context are directly relevant to AI-enabled customer outcomes.
18	Manoharan et al. (2025)	Quantitative empirical study; 126 Axis Bank customers; EFA, CFA, and path analysis	Moderate	Provides empirical evidence on digital marketing and a combined customer engagement and loyalty outcome. However, the study reports inconsistencies in sample-size reporting (126 valid questionnaires versus 101 respondents in the EFA section) and in the interpretation of hypothesis-testing results. The single-bank convenience sample limits

				generalizability, while the combined outcome prevents separate interpretation of the engagement and loyalty relationships. These methodological limitations warrant a Moderate appraisal.
19	Sofian & Handoyo (2025)	Quantitative survey; PLS-SEM; 140 digital-bank customers	Moderate–High	Provides direct evidence concerning trust, satisfaction, customer experience, service quality, and loyalty. The evidence is relevant to customer relationship mechanisms, but the focused sample and cross-sectional design limit broader generalization and causal interpretation.
20	Sugijanto et al. (2025)	Quantitative empirical study; 152 respondents; PLS-SEM	High	Provides direct empirical evidence on mobile-banking service security/quality, customer satisfaction, and loyalty among private-bank customers. The constructs and banking context are directly relevant to the digital service–satisfaction–loyalty stream.
21	Sari et al. (2025)	Quantitative empirical study; hypothesis testing	Moderate–High	Provides direct evidence concerning artificial intelligence and loyalty intention in Indonesian banking services. The evidence is relevant to AI and customer loyalty mechanisms, but the dependent construct is loyalty intention rather than observed customer loyalty.
22	Romadhoni et al. (2025)	Quantitative associative/explanatory study	High	Directly examines digital marketing, corporate image, mobile-banking service quality, Shariah compliance, and customer loyalty in Islamic/mobile banking. The constructs and context provide relevant direct evidence for customer relationship outcomes.

23	Andria et al. (2025)	Quantitative empirical study; SEM/AMOS; 300 respondents	High	Provides direct empirical evidence on brand image, e-WOM, e-service quality, e-satisfaction, and e-loyalty among mobile-banking users. The study has a clearly defined customer-level model and directly contributes to the digital service and loyalty synthesis.

Source: Authors' study-level appraisal based on the methodological design, relevance, clarity, and evidentiary status of the 23 included studies.

The appraisal of 23 studies revealed varying methodological strength and evidentiary directness. Evidence supports selected customer-relational and AI-enabled banking relationships, but evidence on XAI and the unified AI-enabled Marketing Management Capability construct remains limited. Ratings informed evidence interpretation, not causal validation; study-specific rationales appear in Table 3. Thematic synthesis covered five streams: (1) relationship marketing, trust, and loyalty; (2) digital service quality and customer outcomes; (3) AI-enabled banking; (4) customer engagement and digital marketing; and (5) organizational capability and XAI. Cross-stream comparisons identified convergences and research gaps informing the proposed framework (Thomas & Harden, 2008). Ni (2024) illustrates the limited evidence on XAI-related customer perceptions, trust, and satisfaction.

Framework Comparison Procedure

The comparison examined studies within the 23-article corpus that addressed at least two framework domains: AI/XAI, organizational or marketing capability, Customer Trust, Customer Engagement, and Customer Loyalty. Purposively selected studies were compared by constructs, reported relationships, evidentiary status, and unaddressed domains. This procedure identifies complementary evidence streams without claiming an exhaustive review of existing frameworks. The comparison of representative prior frameworks and the proposed framework is presented in Table 4, highlighting differences in technological, organizational, and customer-relational dimensions, as well as the evidentiary status of the relationships examined.

Table 4. Comparison of Representative Prior Frameworks and the Proposed Framework

Framework / Study	Technological Dimension	Organizational / Marketing Capability	Customer Trust	Customer Engagement	Customer Loyalty	Evidence / Relationship Structure	Distinctive Scope Relative to Proposed Framework
Wongsansukcharoen (2022)	Not addressed	Community relationship management; relationship marketing orientation	✓	✓	✓	Empirically tested relationships with engagement and trust as mediating mechanisms	Strong relational model, but does not incorporate AI/XAI or AI-enabled marketing capability
Levy (2022)	Digital banking platform	Not explicitly operationalized	Not central	✓	✓	Empirical engagement–loyalty	Explains digital engagement and loyalty but does

						mechanism; platform type considered as a moderator	not address XAI or organizational AI capability
Kucharska & Erickson (2023)	Technology-enabled organizational processes	✓	Not addressed	Not addressed	Not addressed	Empirical organizational capability–innovation relationships	Provides capability-related evidence but does not connect organizational capability to customer-relational outcomes
Ni (2024)	XAI; transparency; interpretability	Not operationalized	✓	Not central	Not tested as the principal outcome	Limited empirical evidence concerning XAI-related customer perceptions, trust, and satisfaction	Provides the closest XAI–trust evidence but does not establish the capability or complete customer-relational pathway
Mackay et al. (2025)	Digital banking	Not explicitly operationalized	Not central	✓	✓	Empirical engagement–loyalty relationship with switching costs as moderator	Strengthens the downstream engagement–loyalty relationship but does not incorporate XAI or organizational capability
Proposed Framework	XAI	AI-enabled Marketing Management Capability	✓	✓	✓	Integrative conceptual synthesis; relationships have differentiated evidentiary status	Integrates technological, organizational, and customer-relational dimensions while explicitly distinguishing direct, indirect, and author-derived relationships

Source: Authors' synthesis based on the representative frameworks and models identified within the 23 included studies.

3. Results and Discussion

Thematic Synthesis of the Reviewed Literature

The 23 studies covered five themes: (1) relationship marketing, trust, and loyalty; (2) digital service quality and customer outcomes; (3) AI-enabled banking; (4) customer engagement and digital marketing; and (5) organizational capability and explainable artificial intelligence (XAI). Table 5 summarizes the included studies and their evidentiary status. The literature remains fragmented, and none of the included studies validates the integrated framework as a whole.

Table 5. Characteristics and Evidence Synthesis of the Included Studies

Study	Year	Context	Main focus	Evidence status
Wongsansukcharoen	2022	Commercial banking, Thailand	Relationship marketing, customer engagement,	Direct

			brand trust, loyalty	
Levy	2022	Digital banking	Customer engagement, digital banking, loyalty	Direct
Christanto & Santoso	2022	Banking sector, Yogyakarta, Indonesia	Service quality, corporate image, customer satisfaction, loyalty	Direct
Suhartanto et al.	2022	AI-enabled mobile banking, Indonesian Islamic banks	Artificial Intelligence, mobile banking, customer loyalty	Direct
Kucharska & Erickson	2023	Organizational context	Organizational capability, innovation	Indirect
Rifaa'tin & Rofiuddin	2023	Mobile banking	Mobile banking, relationship marketing, customer loyalty	Direct
Redda & Van Deventer	2023	Retail banking	Service quality, trust, commitment, loyalty	Direct
Tedjokusumo & Murhadi	2023	BCA e-banking, Indonesia	E-service quality, satisfaction, loyalty	Direct
Wicaksono et al.	2023	BCA e-banking, Indonesia	E-service quality, e-satisfaction, e-loyalty	Direct
Akinyi et al.	2024	Deposit-taking SACCOs, Western Kenya	Relationship marketing, customer loyalty, digital platforms.	Direct
Buhler et al.	2024	Banking sector	Customer trust, customer loyalty	Meta-analytic synthesis
Kim et al.	2024	Banking sector	Banking customer loyalty determinants, including customer trust, satisfaction, and service quality	Systematic review and meta-analysis
Ni	2024	Banking	XAI, transparency, interpretability, customer trust, satisfaction	Direct (limited empirical)

Mackay et al.	2025	Digital banking	Customer engagement, switching costs, loyalty	Direct
Armutcu et al.	2025	Banking	Bank AI, managerial decision-making, consumer purchase intention	Indirect
Kumar et al.	2025	Neo-banking	AI-enabled service quality, customer loyalty	Direct
Hussain et al.	2025	Digital banking	AI, customer satisfaction, customer loyalty	Direct
Manoharan et al.	2025	Indian banking sector, Axis Bank	Digital marketing, customer engagement, customer loyalty	Direct empirical evidence (combined engagement–loyalty outcome)
Sofian & Handoyo	2025	Digital banking, Jakarta	Trust, customer experience, loyalty	Direct
Sugijanto et al.	2025	Banking	Mobile banking service quality, satisfaction, loyalty	Direct
Sari et al.	2025	Banking services, Indonesia	Artificial Intelligence, loyalty intention	Direct
Romadhoni et al.	2025	Islamic/mobile banking	Digital marketing, service quality, corporate image, Shariah compliance, loyalty	Direct
Andria et al.	2025	Mobile banking	Brand image, e-WOM, e-service quality, e-satisfaction, e-loyalty	Direct

Source: Developed by the authors based on the synthesis of the 23 included studies published between 2022 and 2025.

Relationship Marketing, Trust, and Loyalty. Studies in commercial banking link relationship marketing with customer engagement, trust, and loyalty (Wongsansukcharoen, 2022). Research on mobile banking also examines relationship marketing in financial services (Rifaa'tin & Rofiuddin, 2023). In retail banking, service quality, trust, and commitment are

examined in relation to loyalty (Redda & Van Deventer, 2023). These findings support the relevance of relational factors but do not establish that XAI or an integrated AI-enabled marketing capability produces these outcomes.

Digital Service Quality, Satisfaction, and Loyalty. Research across conventional and digital banking examines service quality, satisfaction, and loyalty-related outcomes (Christanto & Santoso, 2022). Studies of digital banking further investigate service quality and customer responses (Tedjokusumo & Murhadi, 2023). Related research examines similar issues in digital banking contexts (Wicaksono et al., 2023). Other studies consider mobile-banking service quality and loyalty outcomes (Sugijanto et al., 2025). Research also addresses related customer outcomes in digital service contexts (Andria et al., 2025). These constructs remain distinct; evidence concerning service quality or satisfaction does not independently validate trust, engagement, or loyalty relationships.

AI-enabled Banking and Customer Outcomes. Studies of AI-enabled mobile banking examine customer outcomes associated with digital services (Suhartanto et al., 2022). Research also investigates neo-banking service quality and digital-banking outcomes (Kumar et al., 2025). Other studies examine customer outcomes in digital-banking contexts (Hussain et al., 2025). Research in Indonesian banking addresses loyalty intention (Sari et al., 2025). Collectively, these studies inform the relationship between AI-enabled services and customer outcomes but do not directly establish the effects of XAI. AI adoption alone does not demonstrate that AI-supported decisions are explainable or understandable to customers.

Customer Engagement and Digital Marketing. Research in digital banking examines the relationship between Customer Engagement and Customer Loyalty, including the role of switching costs (Levy, 2022). Further research examines this relationship in the context of switching costs (Mackay et al., 2025). Studies also address relationship marketing in financial services (Akinyi et al., 2024). Digital marketing research considers customer engagement and loyalty in related banking contexts (Manoharan et al., 2025). Other research examines these issues in banking and related digital-marketing contexts (Romadhoni et al., 2025). This evidence supports the relevance of engagement and marketing practices but does not establish engagement as a mediator in a complete causal pathway from XAI to loyalty.

Organizational Capability and XAI. Organizational research examines capability and innovation (Kucharska & Erickson, 2023). Other research addresses AI-related marketing processes and consumer purchase intention (Armutcu et al., 2025). These studies provide contextual insights but do not directly validate AI-enabled Marketing Management Capability as a unified construct. Evidence concerning XAI-related customer trust and satisfaction remains limited (Ni, 2024).

Overall, the five themes provide complementary but partially connected evidence. The included studies support selected customer-relational and AI-enabled banking relationships, but none validates the complete sequence linking XAI, AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty. The framework therefore remains an evidence-informed conceptual synthesis rather than an empirically validated causal model.

Construct Definition and Boundaries of AI-enabled Marketing Management Capability

AI-enabled Marketing Management Capability is an author-derived organizational construct describing how organizations integrate AI-related technologies, customer information, organizational routines, and decision-support processes into customer-oriented marketing management. Organizational research highlights the role of technology-enabled processes in innovation (Kucharska & Erickson, 2023). Research on AI-enabled marketing also provides relevant context for understanding this capability (Armutcu et al., 2025). However, none of the 23 included studies directly operationalizes this construct as a unified, validated measure.

The proposed construct comprises four conceptual components: (1) AI-enabled technological resources and customer information; (2) organizational routines and processes; (3) marketing analytics and decision support; and (4) customer-oriented application of AI-supported insights. These components describe how AI resources may be translated into marketing activities. They remain proposed components rather than validated subdimensions; related digital-marketing research provides context but does not validate this structure (Manoharan et al., 2025).

XAI and organizational capability are distinct. XAI concerns the transparency and interpretability of AI-supported processes or outputs, whereas capability concerns the organizational integration of AI resources into marketing management. Limited banking evidence addresses XAI-related customer perceptions, trust, and satisfaction (Ni, 2024), but does not establish that explainability automatically develops organizational capability or increases customer trust. The proposed XAI–capability relationship therefore remains author-derived.

Customer Trust, Customer Engagement, and Customer Loyalty are customer-relational constructs, not components of organizational capability. Trust concerns confidence in an organization and its services; engagement concerns customer involvement in organizational or service interactions; and loyalty concerns continued relationships, attitudes, intentions, or behaviors, depending on operationalization. Banking research examines trust in relation to loyalty (Wongsansukcharoen, 2022), while digital-banking research examines engagement and loyalty (Levy, 2022).

The framework synthesizes evidence from conventional, digital, mobile, Islamic, retail, and neo-banking contexts, as well as related financial services represented in the reviewed literature. These contexts provide complementary evidence rather than a single, uniform empirical setting. Although the framework may inform marketing management in private banking, its applicability to this segment remains a potential managerial implication rather than an empirically validated, sector-specific model. The proposed capability should not be interpreted as a general measure of AI maturity, technical infrastructure, or digital transformation capability, and the proposed relationships should not be construed as established causal effects.

Theoretical Integration and Proposed Relationships. The framework integrates technological, organizational, and customer-relational perspectives through four theoretical foundations: the Resource-Based View (RBV), Dynamic Capability Theory, Relationship Marketing

Theory, and Service-Dominant Logic. These theories provide complementary explanations for the proposed relationships but do not validate the complete pathway empirically.

Theoretical Foundations and Construct Mapping. The Resource-Based View explains how strategically valuable resources may contribute to competitive advantage (Barney, 1991). It distinguishes AI-related technological resources from AI-enabled Marketing Management Capability, which concerns the organizational integration of those resources into marketing processes. Dynamic Capability Theory explains how organizations integrate and reconfigure resources in response to environmental change (Teece et al., 1997). It provides a rationale for examining how AI-related resources may support marketing analysis, decision-making, and customer relationship management. This application is theoretical and does not empirically validate the proposed capability.

Relationship Marketing Theory emphasizes trust and commitment in sustaining customer relationships (Morgan & Hunt, 1994). Banking research examines relationship marketing in connection with customer engagement, brand trust, and loyalty (Wongsansukcharoen, 2022). This perspective informs the proposed role of Customer Trust in the framework. Service-Dominant Logic emphasizes interaction and value co-creation between organizations and customers (Vargo & Lusch, 2004). It informs the positioning of Customer Engagement as a relational process and Customer Loyalty as a potential downstream outcome. Together, these theories explain the conceptual links between organizational resources, capability development, trust, engagement, and loyalty. However, theoretical compatibility does not establish causal relationships among the five constructs. Each proposed relationship must therefore be interpreted according to its specific evidentiary classification.

Proposed Relationship 1: XAI and AI-enabled Marketing Management Capability

XAI may inform how organizations incorporate explainable AI outputs into marketing processes and managerial decisions. However, XAI concerns the explainability of AI processes and outputs, whereas AI-enabled Marketing Management Capability concerns their organizational integration. Research provides limited evidence on XAI-related customer perceptions and trust (Ni, 2024). Organizational research addresses capability and innovation (Kucharska & Erickson, 2023). AI-enabled banking research examines customer outcomes (Suhartanto et al., 2022), while other research investigates AI-related marketing processes (Armutcu et al., 2025). None directly tests XAI as an antecedent of the unified capability proposed here. This relationship is therefore classified as an author-derived inference (AD), without direct empirical support.

Proposed Relationship 2: AI-enabled Marketing Management Capability and Customer Trust

Organizational integration of AI-related resources may shape customer-facing marketing activities and trust-related outcomes. Banking research examines relationship marketing and customer trust (Wongsansukcharoen, 2022). Retail-banking research addresses service quality, trust, commitment, and loyalty (Redda & Van Deventer, 2023). Digital-banking research also examines customer experience, service quality, and trust-related outcomes (Sofian & Handoyo, 2025). These studies provide indirect contextual support but do not directly test the unified capability construct. The relationship is classified as indirect

empirical evidence and author-derived synthesis (IE + AD); its mechanism and strength remain unvalidated.

Proposed Relationship 3: Customer Trust and Customer Engagement

Customer Trust is proposed as a potential antecedent of Customer Engagement because trust may support continued interaction between customers and service providers. Relationship Marketing Theory provides the conceptual rationale for this association (Morgan & Hunt, 1994). Banking research examines relationship marketing alongside customer engagement, brand trust, and loyalty (Wongsansukcharoen, 2022). However, the reviewed evidence does not directly validate trust as an antecedent of engagement. This relationship is classified as indirect empirical evidence and conceptual/theoretical support (IE + CT), with its direction and mechanism requiring further testing.

Proposed Relationship 4: Customer Engagement and Customer Loyalty

Customer Engagement may be associated with Customer Loyalty through customers' continued involvement in service relationships. Digital-banking research directly examines this relationship (Levy, 2022). Research also investigates engagement and loyalty in the context of switching costs (Mackay et al., 2025). Accordingly, the relationship is classified as direct empirical evidence (DE) in the contexts studied. This evidence does not establish universal causality or validate the complete five-construct framework.

Additional Relationship: XAI and Customer Trust

XAI may influence how customers perceive AI-supported processes and decisions. Banking research provides limited empirical evidence concerning XAI-related customer perceptions, trust, and satisfaction (Ni, 2024). The XAI–Customer Trust relationship is therefore classified as limited empirical evidence (LE), not as a generally validated causal relationship. This additional link does not establish the complete organizational pathway proposed in the framework.

Additional Evidence Streams: Customer Trust and Loyalty, AI-enabled Banking, and Digital Service Quality

Banking research provides empirical and review-level evidence on Customer Trust and Customer Loyalty. Relationship marketing has been examined in relation to customer outcomes in banking (Wongsansukcharoen, 2022). Service quality, trust, commitment, and loyalty have also been investigated in retail banking (Redda & Van Deventer, 2023). A meta-analysis synthesizes determinants of banking customer loyalty (Buhler et al., 2024). A systematic review further examines factors associated with customer loyalty (Kim et al., 2024). Digital-banking research addresses trust, satisfaction, customer experience, service quality, and loyalty (Sofian & Handoyo, 2025). Collectively, these studies provide stronger support for the relevance of Customer Trust to Customer Loyalty than for the proposed Trust–Engagement relationship.

Research on AI-enabled banking also addresses customer outcomes. AI-enabled mobile banking has been examined in relation to customer outcomes (Suhartanto et al., 2022). Other

studies investigate AI-enabled banking and customer-related outcomes (Kumar et al., 2025). Related research examines developments in digital banking (Hussain et al., 2025). Loyalty intention has also been investigated in Indonesian banking (Sari et al., 2025). Digital service quality research examines customer satisfaction and loyalty (Christanto & Santoso, 2022). Digital-banking studies further investigate service experiences and customer outcomes (Tedjokusumo & Murhadi, 2023). Related research examines customer outcomes in digital banking (Wicaksono et al., 2023). Additional studies address digital service quality and customer outcomes (Sugijanto et al., 2025). Similar issues have been examined in other research on digital services (Andria et al., 2025). Relationship marketing has also been investigated in mobile banking (Rifaa'tin & Rofiuddin, 2023). Research in related financial services examines relationship marketing and loyalty (Akinyi et al., 2024). Digital marketing research considers customer engagement and loyalty (Manoharan et al., 2025). Related work also addresses digital marketing and customer relationships (Romadhoni et al., 2025). At the organizational level, research examines capability and innovation (Kucharska & Erickson, 2023). AI-related marketing processes have also been investigated (Armutcu et al., 2025).

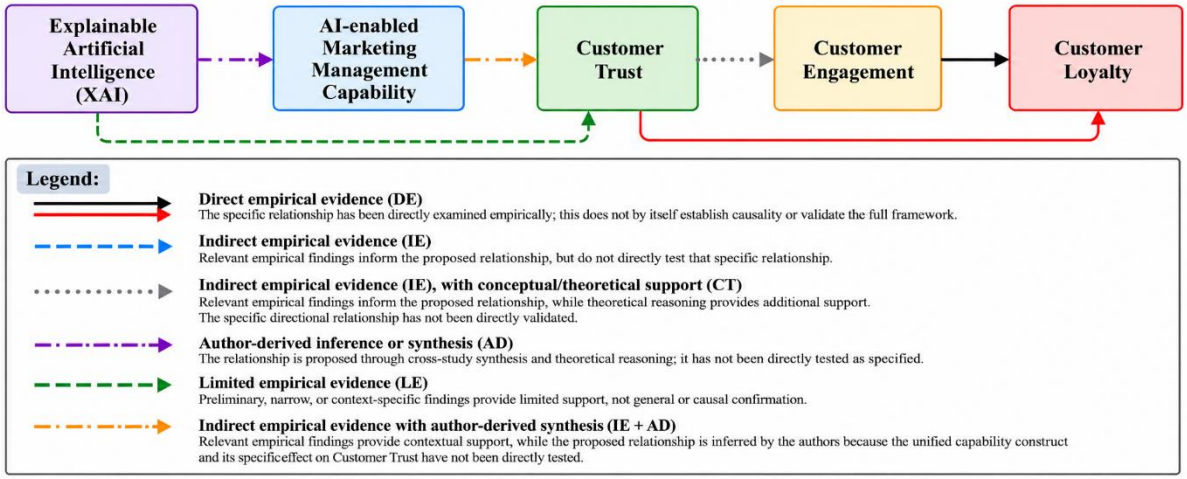
Although these studies inform the organizational and customer-relational dimensions of the framework, they do not directly validate the proposed XAI-related pathways or establish AI-enabled Marketing Management Capability as a unified empirical construct. Loyalty intention should also be distinguished from observed loyalty behavior.

Integrated Interpretation and Evidentiary Status of the Proposed Framework

The framework integrates five constructs across technological, organizational, and customer-relational levels: Explainable Artificial Intelligence (XAI), AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty. The six proposed relationships have different evidentiary statuses. XAI–Capability is author-derived (AD); Capability–Trust is supported by indirect empirical evidence and author-derived synthesis (IE + AD); Trust–Engagement has indirect empirical and conceptual/theoretical support (IE + CT); Engagement–Loyalty has direct empirical support (DE); Trust–Loyalty has relationship-specific empirical support, supplemented by broader review-level evidence where applicable; and XAI–Trust has limited empirical support (LE). These classifications distinguish evidence directly addressing a relationship from indirect contextual findings and author-derived propositions. They do not establish the complete five-construct sequence as a validated causal pathway. Figure 2 presents the proposed relationships, while Table 6 summarizes their evidentiary basis and limitations. The framework remains a conceptual synthesis requiring further empirical testing (Ni, 2024).

These classifications distinguish direct findings from indirect evidence and theoretical propositions. They do not validate the complete causal sequence. Figure 2 presents the proposed relationships, while Table 6 summarizes their evidence and limitations. The framework remains a conceptual synthesis requiring empirical testing.

Figure 2. Proposed Conceptual Framework Linking Explainable Artificial Intelligence, AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty.



Source: Developed by the authors based on the synthesis of 23 included studies.

Table 6. Claim-to-Evidence Matrix for the Proposed Framework

Proposed relationship / claim	Evidence status	Supporting evidence	Framework interpretation
XAI-related customer perceptions and trust/satisfaction outcomes	Limited empirical evidence (LE)	(Ni, 2024)	Ni (2024) provides limited empirical evidence concerning customer perceptions of explainability-related AI and trust- or satisfaction-related outcomes. The findings are relevant to the technological and customer-relational dimensions of the framework but do not independently establish a general causal relationship or validate the complete proposed pathway.
XAI and Customer Trust	Limited empirical evidence	(Ni, 2024)	Ni (2024) provides limited empirical evidence relevant to the proposed XAI–Customer Trust relationship. The evidence is relationship-specific and insufficient to establish a generalizable causal effect, particularly in the private-banking context. It does not validate the complete proposed organizational

			and customer-relational pathway.
XAI and AI-enabled Marketing Management Capability	Author-derived inference (AD); no direct empirical evidence	(Ni, 2024); (Kucharska & Erickson, 2023); (Suhartanto et al., 2022); (Armutcu et al., 2025)	The reviewed studies do not directly test XAI as an antecedent of a unified AI-enabled Marketing Management Capability construct. This proposed relationship is an author-derived inference based on the integration of evidence concerning XAI, organizational capabilities, and AI-enabled banking. It should be interpreted as a conceptual proposition requiring direct empirical testing.
AI-enabled Marketing Management Capability and Customer Trust	Indirect empirical evidence (IE) and author-derived synthesis (AD)	(Wongsansukcharoen, 2022); (Redda & Van Deventer, 2023); (Sofian & Handoyo, 2025)	The reviewed studies provide indirect contextual evidence concerning relationship marketing, service quality, customer experience, and trust. However, none directly operationalizes and tests AI-enabled Marketing Management Capability as a unified construct or establishes its specific effect on Customer Trust. The proposed relationship therefore remains an author-derived synthesis requiring empirical validation.
Customer Trust and Customer Loyalty	Direct empirical evidence; corroborated by reviews	(Wongsansukcharoen, 2022); (Redda & Van Deventer, 2023); (Buhler et al., 2024); (Kim et al., 2024); (Sofian & Handoyo, 2025)	Multiple empirical studies examine trust-related constructs in relation to customer loyalty, and review-level evidence further synthesizes this relationship. However, the specific object of trust varies across studies, including brand trust and trust within customer–service-provider relationships. These findings provide

			comparatively strong relational evidence, but differences in construct operationalization and study design should be considered, and direct empirical evidence does not automatically establish causality.
Customer Trust and Customer Engagement	Indirect empirical evidence (IE) and conceptual/theoretical support (CT); no direct validation	(Wongsansukcharoen, 2022)	The reviewed study connects relationship marketing with customer trust and customer engagement but does not directly establish customer trust as an antecedent of customer engagement. The proposed directional relationship therefore has indirect or conceptual support rather than direct empirical validation. Its direction and mechanism require further empirical testing.
Customer Engagement and Customer Loyalty	Direct empirical evidence	(Levy, 2022); (Mackay et al., 2025)	Digital banking studies directly examine customer engagement in relation to customer loyalty. This provides empirical support for the downstream engagement–loyalty relationship.
Digital Marketing / Marketing Practices and Customer Loyalty	Direct empirical evidence	(Rifaa'tin & Rofiuddin, 2023); (Akinyi et al., 2024); (Manoharan et al., 2025); (Romadhoni et al., 2025)	Relationship marketing and digital marketing studies provide direct evidence that marketing-related practices are associated with customer loyalty across banking and related financial-service contexts. Manoharan et al. (2025) examines digital marketing dimensions in relation to a combined customer engagement and loyalty outcome. Its findings should not be interpreted as separate

			empirical validation of the digital marketing–engagement and digital marketing–loyalty relationships.
AI-enabled Banking and Customer Outcomes	Direct empirical evidence	(Suhartanto et al., 2022); (Kumar et al., 2025); (Hussain et al., 2025); (Sari et al., 2025)	The corpus directly demonstrates that AI-enabled banking applications are associated with customer-facing outcomes. These findings support the broader AI-enabled component of the framework but should not be interpreted as evidence specifically for XAI. Sari et al. (2025) examine loyalty intention rather than observed customer loyalty; their findings therefore support an intention-related outcome and should not be interpreted as direct evidence of actual loyalty behaviour.
Digital Service Quality and Satisfaction / Loyalty	Direct empirical evidence	(Christanto & Santoso, 2022); (Tedjokusumo & Murhadi, 2023); (Wicaksono et al., 2023); (Sugijanto et al., 2025); (Andria et al., 2025)	Digital service quality is repeatedly examined in relation to satisfaction and loyalty. This evidence provides contextual support for customer-outcome mechanisms within digitally mediated banking services.
Organizational Capability and Innovation / AI-enabled Organizational Processes	Indirect evidence	(Kucharska & Erickson, 2023); (Armutcu et al., 2025)	The reviewed evidence indicates the relevance of organizational capability and AI-related decision processes to organizational and customer-oriented activities. However, the specific construct of AI-enabled Marketing Management Capability is not directly validated.
XAI, Marketing Capability, Trust, Engagement, and Loyalty	No direct evidence for the complete sequence; integrative conceptual synthesis	Evidence integrated across the 23 included studies	No included study directly tests the complete sequential pathway. The framework therefore represents an integrative,

	mechanism-oriented synthesis of fragmented evidence and should be treated as a proposed conceptual model requiring empirical testing.

Source: Developed by the authors based on the synthesis of the 23 included studies.

Evidence Status of the Proposed Framework

The reviewed studies provide varying levels of evidence for the proposed relationships. In banking research, Wongsansukcharoen (2022) examines customer trust in relation to customer loyalty, while the meta-analysis by Buhler et al. (2024) provides broader evidence on factors associated with banking customer loyalty. Customer Engagement–Customer Loyalty has also been directly examined in digital banking by Levy (2022), with Mackay et al. (2025) further investigating this relationship in the context of switching costs. These relationships should remain distinct because the supporting studies differ in constructs, research contexts, and outcome operationalization.

Evidence linking XAI to Customer Trust remains limited, as indicated by Ni (2024). The proposed relationship between AI-enabled Marketing Management Capability and Customer Trust relies on indirect empirical evidence and author-derived synthesis because the capability has not been validated as a unified construct. Similarly, the proposed Trust–Engagement relationship draws on indirect empirical findings and conceptual/theoretical reasoning, leaving its direction unverified. None of the included studies directly tests the complete sequence linking all five constructs. Accordingly, Figure 2 and Table 6 distinguish relationship-specific empirical findings from limited evidence, indirect support, and author-derived propositions. The framework therefore remains a theory-informed conceptual synthesis that requires further empirical testing.

Theoretical Contributions and Implications

This study integrates Explainable Artificial Intelligence (XAI), AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty into an evidence-qualified conceptual framework. Its contribution lies in connecting fragmented research streams while distinguishing empirical findings from relationships that remain propositions.

First, the study conceptualizes AI-enabled Marketing Management Capability as an organizational capability for integrating AI-related resources into marketing processes. This perspective draws on the Resource-Based View (Barney, 1991) and Dynamic Capability Theory (Teece et al., 1997). The construct nevertheless requires operationalization and empirical validation.

Second, the framework positions Customer Trust as a potential link between technology-enabled marketing and customer outcomes. This interpretation follows Relationship Marketing Theory, which emphasizes trust in sustaining marketing relationships (Morgan & Hunt, 1994). However, the role of explainability in trust formation remains insufficiently established.

Third, Customer Engagement and Customer Loyalty are treated as distinct but related outcomes. This positioning is consistent with Service-Dominant Logic, which emphasizes interaction and value co-creation (Vargo & Lusch, 2004). By explicitly classifying the evidentiary status of proposed relationships, the framework provides a basis for focused empirical testing rather than claiming causal validation.

For private banking, the proposed framework offers a potential managerial lens for considering how explainable AI, organizational marketing capabilities, and customer-relational mechanisms may be integrated. However, these implications are extrapolated from the broader banking and related financial-services literature; they should be treated as propositions for managerial consideration rather than sector-specific findings established by the reviewed studies.

Institutions can assess whether perceived transparency and reliability are associated with Customer Trust, Customer Engagement, satisfaction, and loyalty outcomes. These indicators should be measured separately because satisfaction, loyalty intentions, and observed loyalty behavior are not interchangeable. Explainability should not be assumed to increase trust without empirical assessment.

Pilot studies, customer feedback, and comparisons across service channels or customer segments can help evaluate these relationships. Assessments should account for service quality and customer characteristics and distinguish associations from causal effects. Until empirically validated, the framework should guide managerial assessment and research design rather than serve as a proven predictive model.

Limitations and Future Research

This review has three principal limitations. First, although it followed PRISMA 2020, the original database search logs were not fully retained. The reported search strings and selection procedures are retrospective reconstructions rather than verbatim archival records, limiting reproducibility. Future reviews should retain database-specific queries, search dates, screening decisions, duplicate-removal records, and reviewer-disagreement procedures.

Second, the synthesis covers 23 peer-reviewed studies published between 2022 and 2025 across diverse banking and related financial-service contexts. Differences in settings, construct definitions, and outcome measures limit comparability and generalization to private banking. Future research should examine the proposed relationships across specific banking segments and customer groups.

Third, evidence varies across the framework. Evidence concerning XAI and Customer Trust in private banking remains limited, and AI-enabled Marketing Management Capability has not been validated as a unified construct. The framework should therefore not be interpreted as an established causal or predictive model.

Future research should pursue three priorities. First, interviews with banking managers, marketing professionals, AI specialists, and customers could refine the capability construct. Subsequent quantitative studies should assess its dimensionality, reliability, validity, and contribution beyond established digital-marketing and organizational-capability constructs.

Second, empirical studies should test the proposed relationships among XAI, AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer

Loyalty. Longitudinal designs and appropriately designed field experiments could help examine temporal ordering and potential causal effects, particularly those involving explainability and trust.

Third, comparative research across private, conventional, Islamic, digital, and mobile banking, as well as fintech, should assess contextual differences. Studies should distinguish customer attitudes, loyalty intentions, and observed loyalty behavior.

Overall, further progress depends on reproducible review procedures, construct validation, and empirical testing across relevant contexts.

Conclusion and Suggestions

This review synthesized 23 peer-reviewed studies published between 2022 and 2025 to develop an evidence-informed framework linking Explainable Artificial Intelligence (XAI), AI-enabled Marketing Management Capability, Customer Trust, Customer Engagement, and Customer Loyalty. The evidentiary status varies across the proposed relationships: some have direct empirical support, whereas others rely on limited or indirect evidence, conceptual reasoning, or author-derived synthesis. In particular, XAI-related customer trust evidence remains limited, and AI-enabled Marketing Management Capability has not been validated as a unified construct. The complete five-construct framework should therefore be interpreted as a conceptual synthesis rather than an empirically validated causal model.

Future research should validate the proposed capability construct and empirically test the relationships among the five constructs across different banking contexts. Studies should distinguish direct empirical findings from indirect evidence and conceptual propositions, and differentiate loyalty intentions from observed loyalty behavior. The framework's explanatory and predictive value must be established through empirical testing before definitive causal conclusions or managerial prescriptions can be justified.

Declaration of AI and AI-assisted technologies in the writing process

ChatGPT was used for language refinement, readability, and organization. The authors independently conducted the review, including literature searching and screening, evidence appraisal and synthesis, interpretation, framework development, and final manuscript review.

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