DIGITAL TRANSFORMATION AND ADMINISTRATION INNOVATION

Citation: Al-Behadili, R. W. J., & Modarresi, M. (2027). Designing a Smart Marketing Model Centered on Customer Insight for the Commercialization of Innovative Ideas. *Digital Transformation and Administration Innovation,* 5(1), 1-17.

Received date: 2026-08-04 Revised date: 2026-11-08 Accepted date: 2026-11-15 Initial Published date: 2026-11-16 Final Published date: 2027-01-01

Designing a Smart Marketing Model Centered on Customer Insight for the Commercialization of Innovative Ideas

Roaa Waheed Jeryo Al-Behadili[1], Meisam Modarresi[2]*

1. Ph.D. Student, Department of Business Management, Faculty of Economics, Management, and Administrative Sciences, Semnan University, Semnan, Iran
2. Associate Professor, Department of Business Management, Faculty of Economics, Management, and Administrative Sciences, Semnan University, Semnan, Iran

*Correspondence: mmodarresi@semnan.ac.ir

Abstract

The purpose of this study was to design a smart marketing model centered on customer insight for the commercialization of innovative ideas. This study falls within the category of applied research and, methodologically, employed an exploratory mixed-methods design. The statistical population in the qualitative phase consisted of published articles and documents, while the statistical population in the quantitative phase consisted of 17 experts, including managers and senior specialists from the marketing departments of digital businesses. In the qualitative phase, data were collected using the meta-synthesis method based on the framework proposed by Sandelowski and Barroso (2007). The data were subsequently coded through content analysis using MAXQDA 24 software. In the quantitative phase, the Fuzzy Delphi Technique, conducted in two rounds, was used to ensure the robustness and contextual adaptation of the proposed model. The findings indicated that the final smart marketing model centered on customer insight for the commercialization of innovative ideas comprised 5 main themes, 16 subthemes, and 87 initial indicators. The main themes consisted of smart marketing infrastructure and capabilities, customer insight generation and interpretation, application of customer insight in innovation development, implementation of smart marketing for innovation commercialization, and governance and learning in smart marketing. The results demonstrated that, to effectively enhance customer insight-centered smart marketing in the commercialization of innovative ideas, businesses should prioritize their investments, respectively, in strengthening smart marketing infrastructure and capabilities, generating and interpreting customer insight, applying such insight to innovation development, implementing smart marketing, and strengthening governance and learning.

Keywords: Marketing, Smart Marketing, Customer Insight, Innovative Ideas, Commercialization of Innovative Ideas.

1. Introduction

The rapid digitalization of markets, the expansion of artificial intelligence, and the growing availability of customer-generated data have fundamentally transformed the logic of contemporary marketing. Marketing is increasingly moving away from intuition-based decision-making toward data-intensive, technology-enabled, and analytically supported processes in which organizations continuously collect, integrate, interpret, and operationalize information about customers and markets. This transition has given rise to the concept of smart marketing, which can be understood as an advanced form of marketing capability in which data, analytics, artificial intelligence, digital technologies, and human managerial judgment are combined

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

to improve the quality, speed, and adaptability of marketing decisions. The development of such capabilities requires more than the mere acquisition of technological tools; rather, it depends on the organizational ability to define marketing data appropriately, integrate dispersed information, establish analytical routines, and transform analytical outputs into actionable marketing knowledge (Branda et al., 2018; Gorostiza Esquerdeiro et al., 2026). In this regard, the growing use of artificial intelligence has further expanded the scope of smart marketing by enabling automated analysis, predictive decision-making, personalization, customer classification, and more sophisticated recognition of market patterns (Lacerda & Nogueira, 2024; Thaichon et al., 2026).

The increasing importance of smart marketing is particularly evident in environments characterized by high uncertainty, rapid technological change, intense competition, and short innovation cycles. Organizations operating in such environments need to detect changes in customer needs before competitors, interpret market signals accurately, and convert them into commercially viable responses. Digital technologies have reshaped marketing practices by changing how firms interact with customers, generate market intelligence, manage customer relationships, and coordinate marketing activities across organizational functions (Pascucci et al., 2023). Artificial intelligence further intensifies this transformation by allowing firms to process complex datasets and identify patterns that are difficult to detect through conventional managerial analysis. Nevertheless, the adoption of AI in marketing remains contingent on technological readiness, organizational structures, environmental conditions, employee competencies, and the capacity to embed new technologies into existing routines (Cioli et al., 2025). Research on B2B marketing similarly demonstrates that the implementation of AI does not simply substitute existing marketing practices but alters the activities, roles, interactions, and capabilities through which marketing work is performed (Keegan et al., 2024). Consequently, smart marketing should be conceptualized as a socio-technical capability rather than merely a collection of technological applications.

An essential feature of this socio-technical capability is the ability to generate meaningful customer insight. Customer data alone do not necessarily constitute insight, because insight requires interpretation, contextualization, explanation, and connection to managerial action. Firms may possess extensive customer databases while remaining unable to explain why customers behave in particular ways or how observed behavioral patterns should influence innovation and commercialization decisions. Customer insight therefore involves moving beyond descriptive customer information toward a deeper understanding of customer motivations, problems, preferences, latent needs, and changing expectations. Studies on customer insight formation emphasize that the creation of meaningful insight depends on systematic processes of gathering customer information, interpreting customer experiences, recognizing emerging needs, and integrating diverse information sources (Salari et al., 2023). Social media and other interactive platforms have also increased firms' access to customer-generated knowledge, making customer knowledge management an increasingly important element of contemporary marketing systems (Valacherry & Pakkeerappa, 2018).

The distinction between ordinary market information and actionable customer insight is particularly important in innovation contexts. Traditional market research can provide valuable information regarding market size, customer preferences, and expressed needs, but such information may be insufficient when firms seek to identify emerging opportunities or develop substantially new solutions. Deep customer insight requires the integration of conventional research methods with exploratory approaches capable of uncovering latent problems, contextual behaviors, and unarticulated needs (Garrett & Wrigley, 2019). Recent conceptual work similarly emphasizes that customer insights can play multiple roles in innovation, from opportunity identification and idea generation to concept development, validation, market introduction, and post-launch learning (Stremersch et al., 2025). Thus, the strategic value of customer insight lies not merely in knowing customers more accurately, but in transforming that knowledge into innovation-related decisions that improve the fit between new offerings and market requirements.

The integration of customer insight with innovation development has become especially important because the success of innovative ideas is not determined solely by their technical novelty. Innovative ideas must ultimately address a meaningful customer problem, provide recognizable value, and achieve sufficient adoption in the target market. Data-driven innovation therefore requires firms to reinterpret data as a strategic resource for discovering new applications, identifying unexplored opportunities, and redefining existing value propositions (Trabucchi & Buganza, 2019). Research on big data in new product

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

development has likewise shown that extensive and diverse data can improve innovation processes when organizations possess the capability to convert data into relevant knowledge for product-related decisions (Zhan et al., 2018). At the same time, misleading or unrepresentative customer feedback can direct innovation toward inappropriate targets, particularly when organizations rely on customers who do not accurately represent the intended market (Scaringella, 2017). Accordingly, the effective use of customer insight requires not only extensive data collection but also careful assessment of the validity, relevance, and strategic meaning of customer information.

Customer participation and co-creation further strengthen the relationship between customer insight and innovation. Involving customers in the early stages of product development can enable organizations to identify usage problems, clarify value expectations, refine product features, and reduce uncertainty before market launch. In technology-based firms and start-ups, collaboration with customers may also facilitate business creation by allowing firms to jointly develop solutions and progressively define market applications (Laage-Hellman et al., 2018). More broadly, redesigning innovation processes to enable customer co-creation can improve interaction between firms and users and create mechanisms through which customer knowledge becomes directly embedded in product-development decisions (Roberts et al., 2022). Such collaborative mechanisms are particularly relevant to the commercialization of innovative ideas because commercialization requires a transition from technological possibility or conceptual novelty to a market-ready solution whose value is recognized by customers.

The development of data-driven innovation capabilities also depends on the ability of marketing functions to organize and exploit customer-related information systematically. Marketing departments increasingly need capabilities for acquiring data, combining different information sources, interpreting market signals, transferring knowledge across organizational units, and linking analytical outputs with innovation processes. Research on data-driven innovation capability demonstrates that the relationship between marketing data and innovation outcomes is mediated by a sequence of organizational activities rather than by data availability alone (Ravat et al., 2024). Cloud-based big data analytics can support customer insight-driven design by providing small and medium-sized firms with scalable infrastructures for integrating and analyzing customer information and applying the resulting knowledge to design decisions (Liu et al., 2020). These developments suggest that smart marketing contributes to innovation commercialization when analytical infrastructure, customer understanding, innovation processes, and managerial decision-making are integrated rather than managed as isolated activities.

Another critical dimension concerns the conversion of innovative ideas into viable value propositions and business models. Commercialization is not completed when an innovation has been technically developed; firms must also determine how customer value will be communicated, delivered, and monetized. Data and customer knowledge can support the design of revenue mechanisms, pricing approaches, customer conversion pathways, and business model configurations. Research concerning the transition from free to fee-based business models indicates that customer knowledge orientation can play a decisive role in business model innovation because firms need to understand how customers perceive value before attempting to convert usage into payment (Chiu et al., 2022). Similarly, studies of big-data business models indicate that the creation and capture of value require firms to define how data-derived capabilities generate benefits for customers and how those benefits can subsequently be transformed into economic returns (Urbinati et al., 2019). In B2B markets, selling data-based offerings further requires organizations to communicate customer-specific value rather than merely emphasizing the technological properties of the solution (Rantala et al., 2020).

Smart marketing also influences commercialization through personalization, intelligent communication, and digitally mediated customer engagement. Artificial intelligence enables firms to adapt communications to individual customer characteristics, automate selected marketing activities, predict customer responses, and design more responsive interactions. AI-enabled Marketing 4.0 frameworks increasingly integrate advanced technologies with customer-centric marketing practices to enhance the interaction between digital capabilities and market engagement (Mukhopadhyay et al., 2024). Smart marketing campaigns in start-up environments similarly depend on the coordination of digital channels, customer data, interactive communication, and adaptive campaign design (Mahmoudi Maymand et al., 2024). In digital branding, AI can strengthen customer analysis, content adaptation, engagement management, and brand decision-making, although its application requires attention to the strategic role of human judgment (Jalilvand & Ataei, 2026). Recent evidence from

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

European marketing professionals also suggests that AI-driven personalization is becoming an increasingly important administrative and strategic mechanism through which organizations tailor customer experiences and marketing actions (Komodromos, 2026).

Despite these opportunities, intelligent marketing technologies can also create barriers to customer acceptance. Customers may respond negatively to AI-enabled communications when such applications are perceived as intrusive, opaque, manipulative, or insufficiently human. Consumer perceptions of AI in marketing communications are therefore shaped not only by functional performance but also by trust, transparency, perceived usefulness, and the appropriateness of technology-mediated interactions (Chen et al., 2022). Commercialization may additionally be constrained by customers' adaptation problems, especially when adoption of an innovation requires changes in routines, complementary resources, or coordination with other actors in an ecosystem (van Kampen et al., 2025). These challenges indicate that effective commercialization requires firms to identify and remove adoption barriers rather than assuming that technically superior innovations will automatically diffuse into the market.

The expansion of artificial intelligence in marketing also introduces governance, ethical, and organizational challenges. Algorithmic personalization may create concerns regarding privacy, data protection, fairness, bias, accountability, and excessive automation. These issues become increasingly significant as marketing systems acquire greater autonomy in processing customer data and influencing customer decisions. At the organizational level, AI implementation can also generate tension among employees who may perceive intelligent technologies as threats to existing roles, expertise, or occupational identity. The collaborative embedding of AI into marketing and retail practices therefore requires gradual adaptation, shared experimentation, and the co-evolution of human and technological practices (Bonetti et al., 2023). Research on generative AI among marketing professionals similarly indicates that acceptance depends on whether employees view AI as a complement to professional expertise or as a potential source of obsolescence (Vitellaro et al., 2026). Consequently, responsible smart marketing requires explicit governance structures that clarify human oversight, acceptable data practices, and the complementary roles of technological and human capabilities.

Organizational learning constitutes another essential component of sustainable smart marketing. Because digital technologies and artificial intelligence continue to evolve, the capabilities required for their effective use cannot be developed through one-time implementation projects. Firms need mechanisms for monitoring results, learning from market feedback, updating customer knowledge, and revising marketing practices over time. Dynamic capabilities are especially relevant when organizations enter emerging technology markets in which both technological possibilities and market expectations remain unstable. Evidence from AI adoption in influencer marketing agencies shows that firms must actively seize technological opportunities by reorganizing resources, developing new routines, and adapting their capabilities to changing technological conditions (Zabel & Duckwitz, 2025). At the strategic level, data-driven marketing should therefore be understood as an iterative process involving antecedent capabilities, implementation activities, performance consequences, and subsequent organizational learning (Jami Pour et al., 2026).

The commercialization of innovative ideas also requires marketing capabilities that connect technological possibilities with concrete market-development opportunities. The adoption of big data technologies in B2B marketing can support innovation by improving the identification of market patterns, customer requirements, and growth opportunities (Wright et al., 2019). However, the commercial potential of data-intensive innovation depends on whether organizations can move from analytical outputs to market actions. Outside-in marketing perspectives emphasize that AI-powered data capabilities are valuable when they enable firms to interpret external market developments and reconfigure internal marketing responses accordingly (Thaichon et al., 2026). This perspective highlights the importance of maintaining a continuous connection between technological infrastructure, customer understanding, market sensing, innovation development, and commercialization decisions.

Although the literature has examined smart marketing, artificial intelligence adoption, customer knowledge, data-driven innovation, co-creation, business model development, personalization, and innovation commercialization from several perspectives, these streams remain relatively fragmented. Existing studies often emphasize particular technologies, organizational capabilities, specific phases of innovation, or individual marketing outcomes without presenting an integrated

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

framework that explains how customer insight connects smart marketing capabilities to the commercialization of innovative ideas. Moreover, effective smart marketing requires simultaneous consideration of data infrastructure, analytical capability, organizational readiness, customer insight generation, knowledge sharing, innovation development, value proposition design, market engagement, adoption barriers, responsible governance, and organizational learning. The methodological maturity of data definition and marketing analytics also indicates that analytical effectiveness depends on disciplined data practices and shared organizational understanding rather than technology alone (Gorostiza Esquerdeiro et al., 2026). Similarly, the emerging integration of advanced AI capabilities with market-oriented decision-making reinforces the need for models that combine technological and customer-centered dimensions rather than treating them independently.

Therefore, an integrated model of smart marketing centered on customer insight can provide a more comprehensive explanation of how firms convert customer-related data into interpretable knowledge, use that knowledge to guide innovation, and subsequently transform innovative ideas into commercially viable market offerings. Such a framework should capture not only the technological foundations of smart marketing but also the organizational, analytical, relational, strategic, and governance mechanisms required to move from data to insight and from insight to commercialization. By integrating these dimensions, it becomes possible to conceptualize smart marketing as a continuous system of market sensing, customer understanding, innovation development, intelligent execution, and organizational learning rather than as a collection of isolated digital tools.

Accordingly, the aim of the present study was to design a smart marketing model centered on customer insight for the commercialization of innovative ideas.

2. Methods and Materials

The present study was conducted with the aim of designing a smart marketing model centered on customer insight for the commercialization of innovative ideas. In terms of purpose, this research is categorized as applied research. The study adopted a sequential exploratory mixed-methods approach and was conducted in two qualitative and quantitative phases. In the qualitative phase, a meta-synthesis method based on the seven-stage framework of Sandelowski and Barroso (2007) was employed to identify the concepts, components, and dimensions of the model. Accordingly, domestic studies published from 2016 to 2026 and international studies published from 2016 to 2026, up to the date on which the search was conducted, were examined. The literature search was performed in domestic scientific databases and systems, including Noormags, Magiran, ElmNet, Civilica, and the Comprehensive Portal of Humanities, as well as international sources, including ScienceDirect, Springer, Emerald, and Google Scholar. The search strategy was based on combinations of the keywords “smart marketing,” “customer insight,” “innovative ideas,” and “commercialization of innovative ideas,” together with their English equivalents and related terms. Retrieved studies were screened after the removal of duplicates through title, abstract, and full-text review. The methodological quality of the studies was assessed using the Glynn appraisal tool, while their thematic relevance was examined based on expert judgment. Inclusion criteria comprised direct relevance to smart marketing, the extraction and application of customer insight, understanding customer needs and preferences, and the role of these concepts in the development and commercialization of innovative ideas, as well as the presence of an explicit methodology and access to the full text. Exclusion criteria included duplicate sources, news and non-research materials, studies lacking a clear methodology, studies unrelated to the research topic, and studies failing to meet the required quality threshold based on the conducted assessment. Data extracted from the selected studies were analyzed using qualitative content analysis with the assistance of MAXQDA 24. At this stage, concepts related to the research topic were first extracted and initially coded; subsequently, similar codes were organized into subcategories and main categories on the basis of semantic commonality, thereby forming the dimensions of the initial model. Throughout this process, the role of customer insight in directing smart marketing activities and supporting the commercialization of innovative ideas was examined. Accordingly, the preliminary structure of the model was developed on the basis of evidence extracted from the selected studies.

In the quantitative phase, the Fuzzy Delphi Technique was employed in two rounds to examine and validate the extracted components based on expert opinions. This phase was conducted to achieve expert consensus regarding the importance and relevance of the components and to assess the compatibility of the proposed model with the operational context of businesses involved in the commercialization of innovative ideas. Expert opinions were collected using a five-point scale consisting of

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

"very low," "low," "moderate," "high," and "very high" and were converted into triangular fuzzy numbers based on a predetermined mapping scheme. In the first round, expert opinions were collected and aggregated, and the analysis results, accompanied by group feedback, were provided to the experts. In the second round, the experts were given the opportunity to maintain or revise their opinions in light of the first-round results. For decisions concerning component acceptance, the minimum expert agreement was set at 70%, while the threshold for the crisp score resulting from defuzzification was set at 0.7. These two criteria were defined and calculated independently, and components that did not satisfy the specified conditions were removed from the final model. The operational definition of agreement, the mapping of the linguistic scale to fuzzy numbers, and the defuzzification procedure were specified prior to implementing the Delphi process. Furthermore, face and content validity indices were used to assess the validity of the instrument. To assess coding reliability in the qualitative phase, a portion of the data was independently analyzed by two coders, and their level of agreement was calculated using Cohen's kappa coefficient and Holsti's coefficient. The credibility of the qualitative findings was also strengthened through transparent documentation of the analytical stages, review of the categories, and examination of their consistency with the evidence derived from the selected studies. The expert population consisted of managers, senior specialists, and consultants with relevant experience in smart marketing, customer insight, and commercialization of innovative ideas, from whom 17 participants were selected using purposive sampling based on the inclusion criteria. These criteria included holding a master's or doctoral degree in business administration, strategic management, marketing, or related disciplines; having at least 15 years of professional experience related to marketing; and possessing managerial or consulting experience in customer understanding, marketing model design, or the commercialization of innovative products and ideas. Failure to meet the specified requirements, withdrawal from participation, or failure to complete the Delphi questionnaires constituted the exclusion criteria. Ultimately, the smart marketing model centered on customer insight for the commercialization of innovative ideas was developed and presented through the integration of the meta-synthesis and qualitative content analysis findings with the expert validation results obtained during the Fuzzy Delphi phase.

3. Findings and Results

Stage One: Formulation of the Research Questions

In the first stage, the research questions were formulated in accordance with the objective of "designing a smart marketing model centered on customer insight for the commercialization of innovative ideas" in order to determine the direction and scope of the meta-synthesis process. The questions focused on identifying, interpreting, and integrating the concepts, components, and dimensions reported in previous studies and served as the basis for the search process, source selection, and extraction and analysis of findings. At this stage, the role of customer insight in smart marketing activities and the manner in which it is applied to the commercialization of innovative ideas were examined. The research questions and their corresponding parameters are presented in Table 1.

Table 1. Research Questions and Their Corresponding Parameters

Parameters	Research Questions and Method of Addressing Them
Nature of the study	What are the dimensions and components of customer insight-centered smart marketing in the commercialization of innovative ideas, and how can they be formulated into a model?
Study population	The study population in the meta-synthesis phase consisted of domestic and international articles and studies related to smart marketing, customer insight, and the commercialization of innovative ideas. Sources were retrieved through domestic scientific databases and systems, including Noormags, Magiran, ElmNet, Civilica, and the Comprehensive Portal of Humanities, as well as international sources, including ScienceDirect, Springer, Emerald, and the Google Scholar academic search engine. The final set of studies was determined after removing duplicates, screening titles, abstracts, and full texts, and assessing methodological quality based on the inclusion and exclusion criteria. The units of analysis were the relevant findings and concepts extracted from the selected studies.
Study period	Domestic studies published from 2016 to 2026 and international studies published from 2016 to 2026 were examined up to the date of the final search.
Study method	In the qualitative phase, the meta-synthesis method based on the seven-stage framework of Sandelowski and Barroso (2007) was applied. Studies were selected according to thematic relevance, presence of a clear methodology, full-text accessibility, and methodological quality. Study quality was assessed using the Glynn appraisal tool, and thematic relevance was evaluated using expert judgment. Subsequently, findings from the selected studies were coded and synthesized through qualitative content analysis using MAXQDA 24. This stage resulted in the identification of concepts, components, and dimensions and the development of the preliminary conceptual model. Validation of the components of this model was subsequently conducted through a two-round Fuzzy Delphi process involving 17 experts.

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Stage Two: Systematic Literature Review

In the second stage of the meta-synthesis, a systematic search of scientific sources was conducted to identify studies related to "designing a smart marketing model centered on customer insight for the commercialization of innovative ideas." Initially, the search scope, databases, Persian and English keywords, and inclusion and exclusion criteria were specified. The search was subsequently conducted in domestic sources, including Noormags, Magiran, ElmNet, Civilica, and the Comprehensive Portal of Humanities, as well as international sources, including ScienceDirect, Springer, Emerald, and Google Scholar. To enhance the comprehensiveness of source retrieval, the reference lists of relevant studies were also reviewed. The source-selection criteria and proposed keywords used in the search are presented in Tables 2 and 3.

Table 2. Research Criteria

Source Criteria	Definition and Application of the Criteria
Research objective	Identification of the dimensions and components of a smart marketing model centered on customer insight for the commercialization of innovative ideas.
Publication year	Domestic studies published between 2016 and 2026 and international studies published between 2016 and 2026, up to the date of the final search.
Study location	Studies conducted within and outside Iran, without geographical restriction, provided that they were relevant to the research topic and questions.
Language of studies	Persian and English.
Thematic relevance	Studies presenting extractable findings concerning smart marketing, the formation and application of customer insight, or their role in the development and commercialization of innovative ideas. The simultaneous presence of all keywords appearing in the research title in each article was not required; rather, substantive relevance to the research questions served as the criterion.
Types of eligible studies	Qualitative studies and separately identifiable qualitative components of mixed-methods studies that provided relevant and synthesizable interpretive findings. Purely quantitative studies and theoretical sources could be used to explain the background and supplement the search but were not included in the main qualitative meta-synthesis dataset.
Full-text availability	Full-text access was required for methodological appraisal and accurate extraction of findings. Sources whose full texts remained unavailable after follow-up were excluded from the final dataset.
Methodological quality	Presence of a clear objective, a specified research method, and sufficient evidence supporting the findings; study quality was evaluated using the Glynn appraisal tool, and acceptance rules were specified before the final screening.
Exclusion criteria	Duplicate sources, news and advertising materials, irrelevant studies, sources without a clear methodology, studies without extractable findings, sources without accessible full texts, and studies failing to meet the predetermined quality threshold.

Table 3. Keywords Used in the Research Search Strategy

Persian Keyword	English Equivalent	Alternative Terms for Advanced Search
بازاریابی	Marketing	Marketing Strategy; Marketing Management; Marketing Capabilities
بازاریابی هوشمند	Smart Marketing / Intelligent Marketing	AI-Enabled Marketing; AI-Powered Marketing; Data-Driven Marketing
بینش مشتری	Customer Insight / Customer Insights	Consumer Insight; Consumer Insights; Customer Intelligence
ایدههای نوآورانه	Innovative Ideas	Innovation Ideas; New Product Ideas; New Service Ideas
تجاریسازی ایدههای نوآورانه	Commercialization of Innovative Ideas	Innovation Commercialization; Innovation Commercialisation; Idea Commercialization; Technology Commercialization
هوش مصنوعی در بازاریابی	Artificial Intelligence in Marketing	AI in Marketing; Machine Learning in Marketing; Predictive Marketing
تحلیلگری بازاریابی و مشتری	Marketing Analytics / Customer Analytics	Consumer Analytics; Predictive Analytics; Big Data Analytics in Marketing
شناخت نیازها و ترجیحات مشتری	Understanding Customer Needs and Preferences	Customer Needs; Latent Customer Needs; Customer Preferences; Voice of the Customer
دانش مشتری و مدیریت دانش مشتری	Customer Knowledge / Customer Knowledge Management	Customer Knowledge Acquisition; Customer Knowledge Integration; Customer Knowledge Utilization
حسگری بازار و هوشمندی بازار	Market Sensing / Market Intelligence	Market-Sensing Capability; Market Learning; Market Knowledge
نوآوری مشتریمحور و همآفرینی با مشتری	Customer-Centric Innovation / Customer Co-Creation	Customer-Driven Innovation; Customer Involvement in Innovation; Customer Participation in New Product Development
توسعه محصول و خدمت جدید	New Product Development / New Service Development	Product Innovation; Service Innovation; New Offering Development
اعتبارسنجی بازار و عرضه محصول جدید	Market Validation / New Product Launch	Customer Validation; Market Testing; Product-Market Fit; Go-to-Market Strategy

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

The terms presented in the third column include not only alternative expressions but also related concepts intended to increase search coverage and should not necessarily be regarded as exact synonyms of the primary terms. Moreover, these terms were used solely as source-retrieval tools and did not constitute predetermined dimensions of the model; the final dimensions were derived from the analysis of findings reported in the selected studies. For implementation of the search, the terms were organized into three conceptual clusters: smart marketing and related analytical capabilities; customer insight and understanding; and innovation and commercialization. In databases supporting Boolean searches, terms within each cluster were combined using the OR operator, whereas different clusters were combined using the AND operator. An example of the primary English search string was as follows:

("smart marketing" OR "intelligent marketing" OR "AI-enabled marketing" OR "data-driven marketing" OR "marketing analytics") AND ("customer insight" OR "customer insights" OR "consumer insights" OR "customer intelligence" OR "customer knowledge" OR "voice of the customer") AND ("innovation commercialization" OR "innovation commercialisation" OR "idea commercialization" OR "technology commercialization" OR "new product development" OR "new service development").

An example of the Persian search string was also formulated as follows:

("بازاریابی هوشمند" OR "بازاریابی داده‌محور" OR "هوش مصنوعی در بازاریابی" OR "تحلیلگری بازاریابی") AND ("بینش مشتری" OR "شناخت مشتری" OR "دانش مشتری" OR "صدای مشتری") AND ("تجاریسازی نوآوری" OR "تجاریسازی ایده" OR "تجاریسازی فناوری" OR "توسعه خدمت جدید" OR "توسعه محصول جدید").

To avoid excluding relevant studies that did not simultaneously employ all three conceptual clusters, supplementary searches using pairwise combinations of the clusters were also conducted, and the relevance of the retrieved sources to the research question was examined during the screening stage. Search strings were adapted to the functionalities of each database; additionally, shorter expressions and multiple searches were used in Google Scholar. Finally, to ensure reproducibility of the process, the database name, search date, exact search string, applied filters, and number of retrieved records were documented.

Stage Three: Searching for and Selecting Appropriate Articles and Texts

In the present study, to establish descriptive validity, an effort was made to identify and collect the largest possible number of scientific articles and texts relevant to the research topic. Accordingly, throughout the article-search process, irrelevant texts were carefully and systematically excluded, and qualitative data related to the research questions were systematically extracted from the articles. To examine the interpretive validity of the research findings, the opinions of five experts and university professors were obtained and incorporated into the research stages. Furthermore, the CASP checklist was used to assess and control reliability and quality. Under this scoring procedure, a full score was represented by 2, no score by 0, and an intermediate score by 1. Each question could therefore receive a score ranging from 0 to 2. For example, if an article was fully appropriate and obtained the maximum score, it received a total score of 20. Accordingly, a score above 14 was established as the criterion; that is, an article receiving a score of 14 or higher was considered to possess the required quality and was included in the review process, whereas otherwise it was excluded. Consequently, during the initial search stage, 640 articles were identified in reputable scientific databases. During initial title screening, 275 articles were excluded due to lack of relevance to the research topic, leaving 365 articles. During abstract screening, another 215 articles were excluded because they were inconsistent with the research objectives, leaving 150 articles for full-text review. During the full-text review stage, after applying the inclusion and exclusion criteria, 106 articles were excluded for reasons such as lack of relevance to the proposed model or failure to provide the required components, and 44 articles were ultimately selected as the initial articles. Following the final review and application of the CASP checklist for quality appraisal, 32 articles that obtained scores above 14 were included as the selected studies for final analysis. This multistage screening process ensured that only credible studies relevant to the drivers of improving entrepreneurial human resource management in technology-oriented businesses entered the analysis and synthesis stage so that the final model could be designed on the basis of credible and systematically derived findings.

Stage Four: Extraction of Information from Texts and Articles

At this stage, the required data were extracted from the selected articles, including findings, concepts, indicators, and other key information related to the research question. The contents of the articles were carefully reviewed and analyzed multiple times by the researcher using MAXQDA 24 software. Ultimately, the results obtained from the analysis of these articles are presented in Table 4.

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Table 4. Results of the Meta-Synthesis Phase

Sources	Indicators	Subtheme	Main Theme
Liu et al. (2020); Gorostiza Escudero et al. (2026)	Establishing infrastructure for customer data analytics; using cloud services for data processing; integrating fragmented customer data; establishing common definitions of data and marketing metrics; documenting data definitions and changes; controlling the quality of data entering the analytical process	Data infrastructure readiness and integration	Smart marketing infrastructure and capabilities
Branda et al. (2018); Taichon et al. (2026); Lacerda and Nogueira (2024)	Applying data analytics to marketing decisions; developing market information analysis capabilities; using artificial intelligence to understand customers; converting analytical outputs into marketing actions; selecting smart tools appropriate to the problem; combining human judgment with machine-based analysis	Analytical capability and artificial intelligence	Smart marketing infrastructure and capabilities
Ciulli et al. (2025); Pascucci et al. (2023); Keegan et al. (2024); Lacerda and Nogueira (2024)	Assessing organizational readiness for artificial intelligence adoption; identifying organizational barriers to technology implementation; adapting marketing processes to digital technologies; strengthening collaboration between marketing and technology specialists; developing skills for using smart tools; strengthening employee creativity and critical thinking	Organizational readiness and specialized skills	Smart marketing infrastructure and capabilities
Vallachery and Pakirappa (2018); Greet and Wrigley (2019); Zhang et al. (2018); Salari et al. (2023)	Collecting data from customer interactions on social media; identifying customer knowledge gaps; examining explicit and expressed customer needs; discovering latent and unexpressed customer needs; systematically using customer feedback; monitoring changes in customer needs and preferences	Capturing the voice of the customer and understanding needs	Customer insight generation and interpretation
Stremersch et al. (2025); Greet and Wrigley (2019)	Comparing new information with prior customer knowledge; interpreting the reasons underlying customer behavior and attitudes; explaining patterns observed in customer data; clearly and comprehensibly representing derived insights; integrating conventional market research with deep customer understanding; transforming customer understanding into innovation opportunities	Sensemaking and transformation of data into insight	Customer insight generation and interpretation
Rawat et al. (2024); Chiu et al. (2022); Stremersch et al. (2025)	Disseminating generated insights across relevant organizational units; converting insights into actionable knowledge for innovation; accumulating knowledge derived from customer interactions; developing organizational knowledge of customer preferences; exploiting customer knowledge in business decisions; examining the applicability of insights to innovation decisions	Sharing and exploitation of customer knowledge	Customer insight generation and interpretation
Greet and Wrigley (2019); Zhang et al. (2018); Trabucchi and Buganza (2019); Scaringella (2017)	Identifying market opportunities based on customer understanding; translating customer needs into product and service ideas; searching for data-driven innovation opportunities; reconsidering the commercial applications of existing data; assessing the fit between participants and the target market; identifying misleading feedback in idea development	Opportunity identification and idea direction	Application of customer insight in innovation development
Laage-Hellman et al. (2018); Roberts et al. (2022)	Involving customers in the early stages of product development; mutual selection of collaboration partners in innovation development; organizing startup relationships with collaborating customers; establishing platforms for direct interaction with consumers; redesigning the innovation process to facilitate customer participation	Customer co-creation and participation	Application of customer insight in innovation development
Liu et al. (2020); Zhang et al. (2018); Stremersch et al. (2025); Rawat et al. (2024)	Translating customer insight into design requirements; using customer feedback to refine prototypes; iteratively testing and modifying products with customer participation; assessing acceptance of the product concept before launch; designing responses tailored to identified customer problems	Customer-centric solution design and testing	Application of customer insight in innovation development
Urbinati et al. (2019); Chiu et al. (2022); Rantala et al. (2020)	Defining a data-driven value proposition; determining mechanisms for capturing value from innovative solutions; using customer knowledge in revenue model design; designing pathways for conversion from free use to paid use; communicating the economic value of the solution to customers	Value proposition and revenue model design	Application of customer insight in innovation development
Mukhopadhyay et al. (2024); Komodromos (2026); Jalilvand and Ataei (2026); Mahmoudi Meymand et al. (2024)	Personalizing marketing communications using data; using artificial intelligence to strengthen customer engagement; automating selected marketing activities; adapting brand communications to customer characteristics; designing interactive campaigns to introduce products and services	Personalization and intelligent customer engagement	Implementation of smart marketing for innovation commercialization
Wright et al. (2019); Rantala et al. (2020); Zabel and Dukovitz (2025)	Using data to identify market-development opportunities; understanding end-customer needs across the business chain; understanding customers' business processes before selling; adapting sales approaches to buyers' digital readiness; developing marketing services based on artificial intelligence opportunities	Market development and value-based selling	Implementation of smart marketing for innovation commercialization

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Van Kampen et al. (2025); Chen et al. (2022)	Identifying dependencies that hinder customer adoption of innovations; aligning solutions with customers' conditions of use; collaborating with complementary actors to overcome adoption barriers; examining customer perceptions of intelligent communications; considering privacy concerns in marketing interactions	Facilitating adoption and removing market barriers	Implementation of smart marketing for innovation commercialization
Taichon et al. (2026); Komodromos (2026); Keegan et al. (2024)	Considering regulatory constraints in data use; accounting for social sensitivity regarding privacy; examining bias in algorithmic personalization; clarifying the role of humans in intelligent decisions; addressing conflicts arising from artificial intelligence implementation	Responsible governance of data and technology	Governance and learning in smart marketing
Bonetti et al. (2023); Vitellaro et al. (2026)	Jointly developing procedures for artificial intelligence use; gradually adapting work practices to technology; transferring knowledge to sustain the use of smart tools; addressing employee concerns regarding job displacement; preserving creativity and human sensitivity in marketing	Change management and organizational learning	Governance and learning in smart marketing
Jamipour et al. (2026); Stremersch et al. (2025)	Examining prerequisites for implementing a data-driven marketing strategy; monitoring stages of marketing strategy implementation; evaluating the consequences of data-driven marketing implementation; tracking the outcomes of insight-based innovation decisions; revising customer understanding based on implementation results	Implementation monitoring and feedback to the model	Governance and learning in smart marketing

Stage Five: Analysis and Synthesis of Qualitative Findings

At this stage, considering the research question and the structure of the developed table, the preliminary model of "smart marketing centered on customer insight for the commercialization of innovative ideas" was formulated. Within this preliminary framework, 87 proposed indicators were organized into 16 subthemes and 5 main themes. The main themes and subthemes were as follows: smart marketing infrastructure and capabilities, comprising the three subthemes of "data infrastructure readiness and integration," "analytical capability and artificial intelligence," and "organizational readiness and specialized skills"; customer insight generation and interpretation, comprising the three subthemes of "capturing the voice of the customer and understanding needs," "sensemaking and transformation of data into insight," and "sharing and exploitation of customer knowledge"; application of customer insight in innovation development, comprising the four subthemes of "opportunity identification and idea direction," "customer co-creation and participation," "customer-centric solution design and testing," and "value proposition and revenue model design"; implementation of smart marketing for innovation commercialization, comprising the three subthemes of "personalization and intelligent customer engagement," "market development and value-based selling," and "facilitating adoption and removing market barriers"; and governance and learning in smart marketing, comprising the three subthemes of "responsible governance of data and technology," "change management and organizational learning," and "implementation monitoring and feedback to the model."

Stage Six: Reliability and Validity of the Model

To ensure the reliability of the coding process in the meta-synthesis method, an inter-coder agreement approach was employed, and two key articles were coded separately by the researcher and an independent expert. In calculating Holsti's agreement coefficient, each of the two coders extracted 25 indicators, of which 19 were common, and Holsti's coefficient was reported as 0.850, indicating excellent agreement between the coders. Furthermore, in calculating Cohen's kappa coefficient based on the assessment of 23 key concepts, the observed agreement was calculated as 0.921 and the chance agreement as 0.638; consequently, Cohen's kappa coefficient was 0.782, indicating good agreement beyond chance. The values obtained for both indices demonstrate acceptable reliability of the coding process.

Equation (1). Calculation of Holsti's Coefficient

Holsti's coefficient = $(2 \times 19) / (25 + 25) = 38 / 50 = 0.760$

Equation (2). Calculation of Cohen's Kappa Coefficient

Cohen's kappa = $(0.921 - 0.638) / (1 - 0.638) = 0.283 / 0.362 = 0.782$

Stage Seven: Presentation of Findings and the Final Framework

At this stage of the meta-synthesis, the findings obtained from the previous stages are presented. The findings indicated that the 87 extracted indicators (open codes) were organized into 16 subthemes (axial codes) and 5 main themes (selective codes), comprising smart marketing infrastructure and capabilities, customer insight generation and interpretation, application of customer insight in innovation development, implementation of smart marketing for innovation commercialization, and

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

governance and learning in smart marketing. The smart marketing model centered on customer insight for the commercialization of innovative ideas developed in the meta-synthesis phase is presented in Figure 1.



Figure 1. Smart Marketing Model Centered on Customer Insight for the Commercialization of Innovative Ideas

In this study, the Fuzzy Delphi method based on triangular fuzzy numbers was used to validate the results and adapt them to the domestic context. By employing fuzzy logic, this method provides an appropriate approach for refining and screening results. In general, the Delphi technique is designed based on respondents' views and uses linguistic expressions to measure opinions. However, linguistic expressions have limitations in fully representing individuals' underlying perceptions. For example, the term "high" as used by Person A, who may be more stringent, may differ from the same term "high" as used by Person B. Using a single crisp number to quantify opinions may introduce bias; however, this problem can be addressed by developing an appropriate fuzzy scale. In the present study, following identification of the indicators, components, and dimensions of the model in the qualitative phase, a questionnaire was designed using a five-point Likert scale consisting of "very low," "low," "moderate," "high," and "very high" and was administered to 17 experts, including managers and senior specialists in the marketing departments of digital businesses. In this process, a corresponding triangular fuzzy number was defined for each item, and expert opinions were converted into fuzzy numbers. To calculate the certainty of opinions and eliminate inappropriate indicators, the fuzzy mean method with a threshold level of 0.7 was employed. Under this procedure, indicators with a fuzzy mean below 0.7 were eliminated from the model. Furthermore, Cronbach's alpha was calculated to assess questionnaire reliability, yielding a value of 0.895, which indicated satisfactory reliability of the measurement instrument. The Content Validity Ratio (CVR) was also calculated to assess the content validity of the questionnaire. Based on Lawshe's table, all items demonstrated acceptable validity and were therefore retained. Table 5 presents the results of the Fuzzy Delphi method across both rounds.

Table 5. Results of the Fuzzy Delphi Method

Examined Factor	Main Themes	Subthemes	Indicators
Number	5	16	87
Threshold level	0.7	0.7	0.7
Evaluation scale	5-point Likert scale	5-point Likert scale	5-point Likert scale
First-round results	All 5 main themes approved	All 16 subthemes approved	All 87 indicators approved
Second-round results	All 5 main themes approved	All 16 subthemes approved	All 87 indicators approved

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

During the Fuzzy Delphi process, after the expert opinions obtained in the first round had been collected and analyzed, all indicators, subthemes, and main themes of the model were approved because their fuzzy means exceeded the threshold level of 0.7, and no indicator was eliminated or merged. In the second round, the approved indicators were resubmitted to the experts, and after incorporating their opinions and making minor revisions, all indicators received final approval. Based on the Fuzzy Delphi results, the final research model comprising 5 main themes, 16 subthemes, and 87 indicators was confirmed. This process demonstrates that the proposed model possesses the content validity and reliability necessary for application in digital businesses and can be used as an operational framework for customer insight-centered smart marketing in the commercialization of innovative ideas. It should also be noted that the final research model, based on the approval of the main themes and subthemes, corresponds to the model presented in Figure 1.

4. Discussion and Conclusion

The present study aimed to design a smart marketing model centered on customer insight for the commercialization of innovative ideas. The findings of the qualitative meta-synthesis, subsequently validated through a two-round Fuzzy Delphi process, resulted in a final model comprising five main themes, 16 subthemes, and 87 indicators. The five main themes were smart marketing infrastructure and capabilities, customer insight generation and interpretation, application of customer insight in innovation development, implementation of smart marketing for innovation commercialization, and governance and learning in smart marketing. The Fuzzy Delphi results showed that all five main themes, all 16 subthemes, and all 87 indicators obtained fuzzy mean values above the acceptance threshold of 0.7 in both rounds and were retained in the final model. Therefore, the findings suggest that effective commercialization of innovative ideas through smart marketing is not dependent on a single technological or marketing capability; rather, it requires an integrated system in which data infrastructure, analytical technologies, customer knowledge, innovation processes, market execution, and organizational learning operate in a coordinated manner.

The first main finding concerned smart marketing infrastructure and capabilities, which consisted of data infrastructure readiness and integration, analytical capability and artificial intelligence, and organizational readiness and specialized skills. This finding indicates that the commercialization process cannot be effectively supported by smart marketing unless firms first establish reliable technological and organizational foundations. Customer-related data must be accessible, integrated, consistently defined, and sufficiently accurate before analytical systems can generate meaningful outputs. This result is consistent with the proposition that firms with a stronger marketing analytics orientation are more capable of integrating analytics into marketing decision-making and transforming analytical resources into organizational practices (Branda et al., 2018). It also aligns with recent evidence showing that methodological maturity in the data-definition phase is essential for reliable marketing analytics, because ambiguity in data definitions, metrics, ownership, and documentation can undermine later analytical activities (Gorostiza Esquerdeiro et al., 2026). From this perspective, data infrastructure is not simply a technical asset but a prerequisite for converting fragmented customer information into commercially useful knowledge.

The importance of analytical capability and artificial intelligence in the model is also supported by previous studies. Contemporary marketing increasingly requires tools capable of processing large and heterogeneous datasets, identifying behavioral patterns, predicting customer responses, and supporting rapid decision-making (Lacerda & Nogueira, 2024). AI-powered data capabilities can strengthen outside-in marketing by helping firms interpret external market information and integrate it into strategic marketing actions (Thaichon et al., 2026). However, the results of the present study also show that analytical capabilities cannot be separated from organizational readiness and human expertise. This is in line with evidence that AI adoption in B2B marketing is influenced by technological, organizational, and environmental conditions (Cioli et al., 2025), while implementation in traditional B2B marketing requires changes in activities, roles, competencies, and coordination mechanisms (Keegan et al., 2024). Thus, the model confirms that smart marketing capability emerges from the interaction between technology and organizational competence rather than from technology acquisition alone.

The second main theme, customer insight generation and interpretation, consisted of capturing the voice of the customer and understanding needs, sensemaking and transformation of data into insight, and sharing and exploitation of customer

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

knowledge. This finding highlights the central role of customer insight as the mechanism linking smart marketing capabilities to innovation commercialization. Data become strategically valuable only when they are transformed into an explanation of customer problems, motivations, preferences, behaviors, and latent expectations. This result is consistent with studies showing that customer insight formation depends on systematic identification and interpretation of customer needs and market signals (Salari et al., 2023). Social media and digital interactions also provide firms with rich opportunities to accumulate and manage customer knowledge, provided that such information is deliberately organized and integrated into decision processes (Valacherry & Pakkeerappa, 2018).

The findings further demonstrate that customer insight involves more than collecting explicit customer statements. The subtheme of sensemaking and transformation of data into insight indicates that firms need to interpret why customers behave in particular ways and distinguish surface-level information from deeper market meaning. This is consistent with research distinguishing conventional market research from deeper customer-insight approaches, particularly when firms are attempting to identify new market opportunities rather than merely describe established demand (Garrett & Wrigley, 2019). The result is also strongly aligned with the customer-insight framework proposed for innovation, which emphasizes that customer insight should support opportunity recognition, concept development, market validation, and innovation-related decision-making (Stremersch et al., 2025). Therefore, customer insight in the proposed model functions as an interpretive organizational capability that converts raw information into knowledge capable of guiding innovation and commercialization.

The third major finding concerned the application of customer insight in innovation development. This theme included opportunity identification and idea direction, customer co-creation and participation, customer-centric solution design and testing, and value proposition and revenue model design. The findings suggest that the contribution of customer insight becomes strategically important when it directly influences the design and development of innovations. Customer knowledge should help firms decide which ideas deserve investment, what customer problems should be addressed, how prototypes should be refined, and how the value of a proposed solution should be formulated. This interpretation is consistent with data-driven innovation research, which argues that data can generate new innovation opportunities when firms move beyond conventional uses of information and reconsider how existing data can create novel value (Trabucchi & Buganza, 2019). It is also supported by evidence that big data can strengthen new product development by improving knowledge acquisition, market interpretation, and decision quality (Zhan et al., 2018).

At the same time, the present model emphasizes that customer participation must be carefully designed. The inclusion of customer co-creation and participation indicates that commercialization is strengthened when customers are actively involved in early-stage innovation development, testing, and refinement. This is supported by studies showing that collaboration with customers can facilitate business creation and product development in technology-based start-ups (Laage-Hellman et al., 2018) and that innovation processes can be redesigned to support systematic co-creation with users (Roberts et al., 2022). However, the model also implicitly supports the need for selectivity in using customer feedback. Previous evidence has demonstrated that relying on inappropriate or "ostensible" customers can misdirect radical innovation and contribute to failure (Scaringella, 2017). Hence, customer-centered innovation does not mean uncritical compliance with every customer opinion; rather, it requires identifying which customers, needs, and forms of feedback are strategically relevant to the innovation under development.

The inclusion of customer-centric solution testing and value proposition and revenue model design further shows that commercialization requires a bridge between innovation development and economic value capture. This finding is consistent with evidence that cloud-based big data analytics can help SMEs convert customer insights into design innovations by linking analytical information with product-development decisions (Liu et al., 2020). The model also corresponds with research showing that customer knowledge orientation can support business model innovation, especially when firms need to convert customer usage into willingness to pay (Chiu et al., 2022). Likewise, value creation from data depends not only on possessing data assets but also on designing mechanisms through which customer value and economic value are created and captured (Urbinati et al., 2019). These findings reinforce the argument that innovative ideas cannot be successfully commercialized unless firms simultaneously define customer value, revenue logic, and the mechanisms through which the solution will be accepted in the market.

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

The fourth main theme was implementation of smart marketing for innovation commercialization, comprising personalization and intelligent customer engagement, market development and value-based selling, and facilitating adoption and removing market barriers. This finding indicates that even well-designed innovations require intelligent market execution to move from development to adoption. Personalization represents one of the most visible applications of artificial intelligence in marketing because customer data can be used to tailor communications, interactions, recommendations, and promotional activities to customer characteristics. The current finding is consistent with AI-enabled Marketing 4.0 approaches that integrate intelligent technologies with customer-centered communication and engagement (Mukhopadhyay et al., 2024). It also aligns with research on smart marketing campaigns in start-ups, which highlights the importance of digital communication, customer targeting, interactive engagement, and technology-supported campaign management (Mahmoudi Maymand et al., 2024). Similarly, AI use in digital branding can strengthen customer analysis and improve the relevance and adaptability of brand interactions (Jalilvand & Ataei, 2026), while AI-driven personalization is increasingly recognized by marketing professionals as a central capability for delivering differentiated customer experiences (Komodromos, 2026).

The finding related to market development and value-based selling suggests that firms should use customer insight not only for product development but also for identifying market opportunities and communicating the economic value of innovative offerings. This is consistent with evidence that big data adoption in B2B marketing can support market innovation and opportunity recognition (Wright et al., 2019). It also corresponds with studies of data-based value selling, which show that firms must translate technological and analytical capabilities into understandable customer benefits and demonstrate the business value of data-driven solutions (Rantala et al., 2020). The data-driven innovation capability perspective similarly emphasizes that marketing units should connect data interpretation with innovation and market actions through an organized process rather than isolated analytical activities (Ravat et al., 2024). Therefore, the proposed model suggests that commercialization is facilitated when customer insight is embedded simultaneously in innovation development, market targeting, selling, and communication.

The subtheme of facilitating adoption and removing market barriers is particularly important because innovation commercialization frequently fails due to adoption problems rather than deficiencies in the innovation itself. Customers may encounter behavioral, technological, organizational, or ecosystem-related barriers that prevent the adoption of a new solution. This interpretation is supported by evidence showing that firms need deliberate strategies for addressing customer adaptation problems and coordinating with other actors when innovation adoption requires complementary changes (van Kampen et al., 2025). Furthermore, customer acceptance of artificial intelligence in marketing communications depends on perceptions of usefulness, trustworthiness, appropriateness, and the nature of AI-mediated interaction (Chen et al., 2022). Thus, the present findings extend the commercialization perspective by indicating that smart marketing should identify not only who is likely to purchase an innovation but also what factors may prevent customers from adopting it and how such barriers can be reduced.

The fifth main theme, governance and learning in smart marketing, included responsible governance of data and technology, change management and organizational learning, and implementation monitoring and feedback to the model. The inclusion of this theme demonstrates that smart marketing cannot be sustainably implemented without explicit attention to ethical, regulatory, organizational, and learning processes. Increasing dependence on artificial intelligence and customer data creates concerns related to privacy, algorithmic bias, transparency, accountability, and the appropriate division of decision-making responsibility between humans and intelligent systems. The finding is compatible with research showing that embedding AI within organizational practice requires collaborative adaptation and continuous adjustment between employees, technologies, and established work routines (Bonetti et al., 2023). AI adoption may also raise professional concerns among marketing employees, particularly when individuals perceive intelligent systems as potential substitutes for their expertise or employment (Vitellaro et al., 2026). Accordingly, responsible governance should preserve human judgment while establishing clear principles for the use of customer data and automated decision systems.

The findings concerning change management and organizational learning are also consistent with the dynamic nature of smart marketing. Emerging technologies require organizations to continuously develop new capabilities rather than rely on static implementation plans. Research on AI adoption in emerging technology markets shows that organizations need dynamic seizing capabilities to recognize opportunities, commit resources, and restructure practices around new technological

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

possibilities (Zabel & Duckwitz, 2025). Similarly, the implementation of data-driven marketing strategy has been conceptualized as a process involving antecedents, implementation mechanisms, consequences, evaluation, and subsequent learning (Jami Pour et al., 2026). The present study therefore supports a cyclical interpretation of smart marketing: organizations collect customer data, generate insights, apply them to innovation, commercialize the resulting offerings, monitor outcomes, and then use implementation feedback to refine customer understanding and future marketing decisions.

Overall, the final model suggests that smart marketing centered on customer insight should be understood as an integrated and iterative commercialization architecture. Its effectiveness depends on the interaction of foundational infrastructure, analytical competence, deep customer understanding, innovation-oriented knowledge application, intelligent market execution, and responsible organizational learning. The confirmation of all 87 indicators in both Fuzzy Delphi rounds suggests that experts viewed these elements as complementary rather than substitutable. Accordingly, the results indicate that firms seeking to commercialize innovative ideas should not concentrate exclusively on AI adoption or customer data collection. Instead, they need to develop an interconnected system in which technological capabilities generate actionable customer insight, customer insight guides innovation, innovation is translated into value propositions and market actions, and implementation outcomes are continuously fed back into organizational learning.

The present study has several limitations that should be considered when interpreting its findings. First, the qualitative phase relied on a meta-synthesis of previously published studies, meaning that the resulting conceptual structure was dependent on the quality, methodological orientations, and thematic coverage of the available literature. Second, although systematic screening procedures were used, the selection of databases, keywords, and inclusion criteria may have resulted in the omission of relevant studies employing different terminology. Third, the quantitative validation phase involved 17 experts selected through purposive sampling, which was appropriate for the Fuzzy Delphi method but limits the statistical generalizability of the results. Fourth, the experts were primarily managers and senior marketing specialists associated with digital businesses, and therefore the relative importance of the identified components may differ across traditional industries, public-sector organizations, small enterprises, or different national contexts. Finally, the model was validated at the content level and was not tested through a large-scale empirical design assessing causal relationships among the identified dimensions or their effects on commercialization performance.

Future research should empirically test the proposed model using quantitative methods and larger samples across different industries and organizational settings. Researchers may develop a standardized measurement instrument for the five main dimensions and 16 subdimensions and examine its construct validity through exploratory and confirmatory factor analysis. Structural equation modeling could then be used to investigate the direct and indirect relationships among smart marketing infrastructure, customer insight generation, innovation development, commercialization execution, governance, and commercialization performance. Comparative studies across industries, countries, B2B and B2C markets, and firms with different levels of digital maturity would also be valuable. Longitudinal research could determine how the importance of the identified capabilities changes as organizations progress through different stages of innovation commercialization. Future studies may additionally examine moderators such as organizational size, environmental turbulence, AI maturity, market uncertainty, innovation type, customer involvement intensity, and data-governance maturity. Case studies could also provide deeper insight into how organizations practically transition from customer data to customer insight and from customer insight to successful commercialization.

From a practical perspective, managers should treat the proposed model as an integrated roadmap rather than implement its components independently. Organizations should begin by establishing reliable customer-data infrastructure, common data definitions, data-quality mechanisms, and appropriate analytical tools while simultaneously developing the skills required to interpret analytical outputs. Marketing teams should institutionalize processes for capturing both explicit and latent customer needs and ensure that insights are shared with innovation, product-development, sales, and strategic decision-making units. Customer insight should be incorporated into opportunity identification, prototype testing, value proposition development, revenue-model design, market segmentation, personalization, and value-based selling. Firms should also establish procedures for identifying adoption barriers before market launch and develop appropriate mechanisms to address privacy, trust, ethical, and ecosystem-related concerns. Human oversight should remain central to AI-assisted marketing decisions, and employees should receive continuous training to strengthen analytical, technological, creative, and critical-thinking capabilities. Finally, organizations should monitor the outcomes of smart marketing initiatives, collect feedback from commercialization activities,

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

and continuously revise customer knowledge, innovation decisions, and marketing practices on the basis of implementation experience.

Ethical Considerations

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

Acknowledgments

Authors thank all who helped us through this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

References

Bonetti, F., Montecchi, M., Plangger, K., & Schau, H. J. (2023). Practice co-evolution: Collaboratively embedding artificial intelligence in retail practices. *Journal of the Academy of Marketing Science*, *51*(4), 867-888. https://doi.org/10.1007/s11747-022-00896-1

Branda, A. F., Lala, V., & Gopalakrishna, P. (2018). The marketing analytics orientation (MAO) of firms: Identifying factors that create highly analytical marketing practices. *Journal of Marketing Analytics*, *6*, 84-94. https://doi.org/10.1057/s41270-018-0036-8

Chen, H., Chan-Olmsted, S., Kim, J., & Mayor Sanabria, I. (2022). Consumers' perception on artificial intelligence applications in marketing communication. *Qualitative Market Research: An International Journal*, *25*(1), 125-142. https://doi.org/10.1108/QMR-03-2021-0040

Chiu, W. H., Dai, Z. J., Chi, H. R., & Lin, P. K. (2022). Customer knowledge orientation as a key to business model innovation of free-to-fee switch. *Journal of Knowledge Management*, *26*(11), 401-426. https://doi.org/10.1108/JKM-03-2022-0164

Cioli, A., Marinelli, L., La Rocca, A., & Perna, A. (2025). AI adoption in B2B marketing: An analysis of technological, organizational, and environmental factors. *Micro & Macro Marketing*(3), 491-527. https://doi.org/10.1431/118666

Garrett, A., & Wrigley, C. (2019). Navigating market opportunity: Traditional market research and deep customer insight methods. *Qualitative Market Research: An International Journal*, *22*(3), 456-471. https://doi.org/10.1108/QMR-05-2017-0091

Gorostiza Esquerdeiro, I., Buján-Carballal, D., & Oyarbide-Zubillaga, A. (2026). Methodological maturity in the data definition phase of marketing analytics: A qualitative analysis of 40 stakeholders. *International Journal of Market Research*, *68*(3), 402-422. https://doi.org/10.1177/14707853261420776

Jalilvand, M. R., & Ataei, J. (2026). Using artificial intelligence in digital branding: A two-phase qualitative approach. *Euromed Journal of Business*. https://doi.org/10.1108/EMJB-12-2024-0353

Jami Pour, M., Akbari Emami, S., & Esmaeli, M. (2026). Executing data-driven marketing strategy: An integrated framework of antecedents, process and consequences. *Journal of Strategy and Management*, *19*(2), 188-220. https://doi.org/10.1108/JSMA-08-2025-0334

Keegan, B. J., Dennehy, D., & Naudé, P. (2024). Implementing artificial intelligence in traditional B2B marketing practices: An activity theory perspective. *Information Systems Frontiers*, *26*, 1025-1039. https://doi.org/10.1007/s10796-022-10294-1

Komodromos, M. (2026). AI-driven personalization in marketing administration: Qualitative insights from European professionals. *Administrative Sciences*, *16*(2), 87. https://doi.org/10.3390/admsci16020087

Laage-Hellman, J., Landqvist, M., & Lind, F. (2018). Business creation in networks: How a technology-based start-up collaborates with customers in product development. *Industrial Marketing Management*, *70*, 13-24. https://doi.org/10.1016/j.indmarman.2017.07.009

Lacerda, G., & Nogueira, M. (2024). Navigating the AI revolution: Tools and skills transforming marketing practices. *International Journal of Marketing, Communication and New Media*(Special Issue 15), 55-74. https://doi.org/10.54663/2182-9306.2024.SpecialIssueMBP.55-74

Liu, Y., Soroka, A., Han, L., Jian, J., & Tang, M. (2020). Cloud-based big data analytics for customer insight-driven design innovation in SMEs. *International Journal of Information Management*, *51*, 102034. https://doi.org/10.1016/j.ijinfomgt.2019.11.002

Mahmoudi Maymand, M., falsafi fard, M., khademi, M., & Hosseini, M. H. (2024). Designing and explaining the smart marketing campaign model of startups in social networks. *Journal of Intelligent Marketing Management*, *5*(4), 146-172.

Mukhopadhyay, S., Singh, R. K., & Jain, T. (2024). Developing artificial intelligence enabled Marketing 4.0 framework: An Industry 4.0 perspective. *Qualitative Market Research: An International Journal*, *27*(5), 841-865. https://doi.org/10.1108/QMR-06-2023-0086

Pascucci, F., Savelli, E., & Gistri, G. (2023). How digital technologies reshape marketing: Evidence from a qualitative investigation. *Italian Journal of Marketing*, *2023*, 27-58. https://doi.org/10.1007/s43039-023-00063-6

Rantala, T., Apilo, T., Palomäki, K., & Valkokari, K. (2020). Selling data-based value in business-to-business markets. *Technology Innovation Management Review*, *10*(1), 45-53. https://doi.org/10.22215/timreview/1313

Ravat, L., Hemonnet-Goujot, A., & Hollet-Haudebert, S. (2024). Exploring how to develop data-driven innovation capability of marketing within B2B firms: Toward a capability model and process-oriented approach. *Industrial Marketing Management*, *118*, 110-125. https://doi.org/10.1016/j.indmarman.2023.12.015

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Roberts, D. L., Palmer, R., & Hughes, M. (2022). Innovating the product innovation process to enable co-creation. *R&D Management*, *52*(3), 484-497. https://doi.org/10.1111/radm.12492

Salari, A., Afshani, S. A., & Zabet, S. (2023). Analysis of the conditions and contexts for the formation of customer insight in Bank Saderat: A grounded theory study. *Media Studies*, *18*(62), 53-68. https://doi.org/10.30495/mediastudies.2023.74147.1530

Scaringella, L. (2017). Involvement of "ostensible customers" in really new innovation: Failure of a start-up. *Journal of Engineering and Technology Management*, *43*, 1-18. https://doi.org/10.1016/j.jengtecman.2016.11.001

Stremersch, S., Cabooter, E., Guitart, I. A., & Camacho, N. (2025). Customer insights for innovation: A framework and research agenda for marketing. *Journal of the Academy of Marketing Science*, *53*, 29-51. https://doi.org/10.1007/s11747-024-01051-8

Thaichon, P., Quach, S., Jayawardena, N. S., & Le, D. (2026). Harnessing AI-powered data capabilities for outside-in marketing: A qualitative exploration. *Australasian Marketing Journal*. https://doi.org/10.1177/14413582261470874

Trabucchi, D., & Buganza, T. (2019). Data-driven innovation: Switching the perspective on big data. *European Journal of Innovation Management*, *22*(1), 23-40. https://doi.org/10.1108/EJIM-01-2018-0017

Urbinati, A., Bogers, M., Chiesa, V., & Frattini, F. (2019). Creating and capturing value from big data: A multiple-case study analysis of provider companies. *Technovation*, *84–85*, 21-36. https://doi.org/10.1016/j.technovation.2018.07.004

Valacherry, A. K., & Pakkeerappa, P. (2018). Customer knowledge management via social media: A case study of an Indian retailer. *Journal of Human Values*, *24*(1), 39-55. https://doi.org/10.1177/0971685817733571

van Kampen, D., Berends, H., & Deken, F. (2025). Strategies for addressing customers' adaptation problems in the healthcare ecosystem. *Long Range Planning*, *58*(4), 102535. https://doi.org/10.1016/j.lrp.2025.102535

Vitellaro, F., Schifilliti, V., Buratti, N., & Cesaroni, F. (2026). I won't become obsolete! Exploring the acceptance and use of GenAI by marketing professionals. *European Journal of Innovation Management*, *29*(3), 745-769. https://doi.org/10.1108/EJIM-04-2024-0471

Wright, L. T., Robin, R., Stone, M., & Aravopoulou, E. (2019). Adoption of big data technology for innovation in B2B marketing. *Journal of Business-to-Business Marketing*, *26*(3–4), 281-293. https://doi.org/10.1080/1051712X.2019.1611082

Zabel, C., & Duckwitz, A. (2025). Seizing AI: Dynamic seizing capabilities in emerging technology markets. The case of artificial intelligence adoption by German influencer marketing agencies. *Emerging Media*, *3*(4), 664-687. https://doi.org/10.1177/27523543251366107

Zhan, Y., Tan, K. H., Li, Y., & Tse, Y. K. (2018). Unlocking the power of big data in new product development. *Annals of Operations Research*, *270*, 577-595. https://doi.org/10.1007/s10479-016-2379-x

Copyright: © 2027 by the authors. Published under the terms and conditions of Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.