

Customer Engagement in Human and Veterinary Healthcare Marketing: A Systematic Literature Review

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Abstract

Customer engagement has become a central concept in modern service marketing strategies, particularly within the healthcare sector, where continuous interactions between service providers and clients are essential for delivering meaningful value and achieving long-term satisfaction. Despite its increasing significance, there remains a lack of comprehensive comparative research examining engagement mechanisms across human and veterinary healthcare services. This study systematically reviews and synthesizes recent literature on customer engagement in both human and veterinary healthcare marketing contexts. Guided by the PRISMA 2020 framework, a Systematic Literature Review (SLR) was conducted on 65 peer-reviewed journal articles published between 2018 and 2025, indexed in Scopus, Web of Science, PubMed, and ScienceDirect. The thematic synthesis identifies three dominant themes: determinants of engagement, engagement dimensions, and relational outcomes. In human healthcare, engagement is primarily driven by service quality, trust, digital health experiences, and personalized care. In contrast, veterinary healthcare engagement is shaped by veterinarian empathy, interpersonal communication, and the emotional bond between pet owners and veterinarians. Both sectors emphasize value co-creation and customer-centric interaction, yet they differ in emotional dynamics, interaction intensity, and perceived relational value. Theoretically, this review advances the Service-Dominant Logic (SDL) and Relationship Marketing perspectives by integrating digital and emotional dimensions of engagement across healthcare contexts. Practically, it offers strategic guidance for hospitals and veterinary clinics to enhance loyalty through empathetic, trust-based, and technology-supported communication. Future research directions are proposed, highlighting the integration of AI-driven m-health and telehealth applications to foster sustainable customer engagement in healthcare marketing.

Keywords: customer engagement; healthcare marketing; veterinary healthcare; loyalty; digital communication; systematic literature review

1. Introduction

Customer engagement has emerged as a pivotal concept in modern healthcare service marketing, functioning as a strategic mechanism to foster continuous interactions between service providers and clients. In the context of human healthcare, the evolution of *patient-centered care* has increasingly emphasized the patient's role as an active participant in their treatment journey rather than as a passive recipient of services (Marzban et al., 2022). This transformation has been driven by advances in digital technology that empower patients to access health information, decision-support tools, and communication platforms that enable deeper engagement (Brandão & Ribeiro, 2022). Numerous studies have shown that meaningful engagement can enhance treatment adherence, patient satisfaction, and clinical outcomes (Marzban et al., 2022).

Customer engagement within healthcare services is inherently multifaceted, encompassing emotional, cognitive, and behavioral components that interact during every service encounter (Brandão & Ribeiro, 2022). The customer experience, shaped by effective communication, perceived service quality, and personalization, significantly influences loyalty and the long-term relationship between patients and healthcare providers. In modern marketing paradigms,

customer engagement is not merely viewed as a consequence of satisfaction but as a dynamic process of *value co-creation* between service organizations and beneficiaries.

Parallel to developments in human healthcare, the veterinary healthcare sector has also shown increasing attention to client engagement. This trend is driven by social changes that position companion animals as integral members of families and as sources of emotional connection. Relationships between veterinarians and clients are often formed through empathic communication, understanding of the emotional bond between pet owners and their animals, and trust in the veterinarian's professional competence (Elte et al., 2021). Furthermore, the adoption of digital technologies such as teleconsulting and veterinary telehealth applications has expanded remote interactions between veterinarians and clients, reflecting similar digital innovations occurring in human healthcare systems (Janke et al., 2022).

Although the literature on this topic continues to grow, comprehensive comparative insights into customer engagement across human and veterinary domains remain limited. Both sectors emphasize the importance of relationship quality, communication, and trust as key factors in service success; however, they differ fundamentally in emotional intensity, interaction patterns, and the perceived value formed during the service process. This lack of cross-sectoral synthesis results in a limited understanding of how digital and emotional dimensions of customer engagement can complement one another to enhance customer experience and loyalty.

Accordingly, this study seeks to bridge that gap by conducting a Systematic Literature Review (SLR) focusing on customer engagement within the contexts of human and veterinary healthcare marketing. The review analyzes 65 international peer-reviewed articles published between 2018 and 2025, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. The main objectives of this study are to identify common themes, key determinants, engagement dimensions, and strategic implications of customer engagement in both sectors. The findings are expected to provide theoretical contributions through the development of a comparative framework of customer engagement across healthcare sectors and practical contributions by offering guidance for service providers to strengthen relational quality and enhance customer experience value within diverse healthcare marketing contexts.

2. Literature Review

2.1 Service Dominant Logic (SDL)

The Service Dominant Logic (SDL) developed by Vargo and Lusch (2004) has become a key paradigm in modern marketing, positioning service as the fundamental basis of value exchange. This paradigm asserts that value is not created unilaterally by the service provider but is co-created through collaborative interactions between customers and providers (Vargo et al., 2023). In the context of healthcare service marketing, SDL views patients or clients not as passive recipients of care but as active partners in the creation of health value (Brandão & Ribeiro, 2022).

SDL is grounded in four core principles that explain how value is created within service interactions. First, service is regarded as the primary form of value exchange, where each interaction between providers and customers contributes to joint value creation. Second, customers act as co-creators of value, meaning they do not merely receive services passively but actively influence outcomes and service experiences through their participation. Third, operand resources such as knowledge and skills are considered more important than operand resources (e.g., tangible goods or physical assets), since human capabilities and information are central to generating sustainable value. Fourth, long-term relationships formed through repeated interactions between providers and customers serve as the foundation for building trust and loyalty. Collectively, these principles emphasize that value in service

contexts is not created in isolation but rather through continuous, reciprocal collaboration between providers and recipients.

These foundational principles were first articulated by Vargo and Lusch (2004) in their seminal work “Evolving to a New Dominant Logic for Marketing,” and were later refined in subsequent publications (Vargo & Lusch, 2008; Vargo & Lusch, 2016). SDL thus reinforces that value in service exchange emerges through a co-creation process rooted in mutual interaction and relationship continuity.

Within the context of this SLR, SDL serves as a conceptual framework for understanding how customer engagement functions as a relational process of value co-creation across both human and veterinary healthcare sectors. In human healthcare, co-creation is manifested through collaboration between patients and physicians in shared decision-making and through the adoption of digital health technologies such as telemedicine and m-health (Marzban et al., 2022). In veterinary healthcare, co-creation occurs through empathic interpersonal communication, understanding of pet owners’ emotional conditions, and their active participation in treatment decisions (Belshaw et al., 2024). Therefore, SDL provides a robust theoretical foundation for explaining customer engagement as the core of service relationships, which in turn contributes to enhanced loyalty, satisfaction, and long-term trust.

2.2 Relationship Marketing Theory (RMT)

The Relationship Marketing Theory (RMT) introduced by Morgan and Hunt (1994) emphasizes the importance of establishing, maintaining, and enhancing long-term relationships between service providers and customers. This theory assumes that the quality of a relationship is not solely determined by service performance, but also by trust, commitment, and customer satisfaction (Palmatier et al., 2022). In the context of healthcare services, these elements are crucial for sustaining relationships that prioritize the well-being of both human patients and companion animals (Elte et al., 2021).

Recent studies indicate that customer engagement serves as a logical extension of RMT, as active customer participation strengthens emotional bonds and commitment toward the service provider (Marzban et al., 2022; Janke et al., 2023). In human healthcare, the patient-provider relationship is maintained through information transparency, personalized services, and patient participation in every stage of the decision-making process (Brandão & Ribeiro, 2022). In veterinary healthcare, client loyalty is largely determined by the empathy of veterinarians, quality of communication, and the pet owners’ perception of care and attention toward their animals (Rogers et al., 2024).

Furthermore, RMT introduces the concept of relationship quality, which encompasses the dimensions of trust, commitment, and satisfaction. In numerous studies, these dimensions have been linked to customer engagement as a key mediating variable between service quality and customer loyalty (Palmatier et al., 2022). Thus, RMT helps explain that engagement is not merely behavioral but also represents a manifestation of strong emotional relationships between customers and organizations.

2.3 Integration of SDL and RMT in the Context of Customer Engagement

The integration of Service-Dominant Logic (SDL) and Relationship Marketing Theory (RMT) provides a more comprehensive understanding of customer engagement as both a relational and co-creative process. SDL explains how value is co-created through interactions between customers and service providers, whereas RMT explains why long-term and emotional relationships are essential for sustaining such interactions (Vargo et al., 2023; Palmatier et al., 2022).

In the context of healthcare service marketing, these two theoretical perspectives work synergistically to illustrate that customer engagement is not merely an end goal but an ongoing

process of mutual value and trust creation. Findings from the 65 journal articles included in this SLR reveal that, in the human healthcare sector, engagement is largely facilitated by digital technologies such as online health communities, AI-based health monitoring, and telemedicine, all of which enhance patient access and interaction (van Kessel et al., 2024). Meanwhile, in the veterinary healthcare sector, engagement is predominantly shaped by empathetic communication, interpersonal warmth, and personalized service experiences (Belshaw et al., 2024; Robinson et al., 2023).

Together, these approaches emphasize that customer engagement strategies must balance technological innovation and human empathy. Thus, the integration of SDL and RMT reinforces the view that customer engagement represents the core of relationship-based service marketing, where value and trust are co-created to ensure long-term sustainability.

2.4 Theoretical Foundation of Customer Engagement in Healthcare Services

Customer Engagement (CE) in the healthcare context is a multidimensional construct encompassing cognitive, emotional, and behavioral dimensions, manifested through ongoing interactions between patients and service providers (Marzban et al., 2022). CE is rooted in the principles of Service-Dominant Logic (SDL), which emphasizes *value co-creation*, wherein patients play an active role in shaping their service experiences (Brandão & Ribeiro, 2022).

In human healthcare services, CE is closely associated with patient empowerment, shared decision-making, and personalized care, all of which have been proven to enhance adherence, satisfaction, and clinical outcomes (Marzban et al., 2022). Models such as the *Patient Engagement Framework* and *Patient Centered Care Model* affirm that active patient participation can strengthen self-efficacy and trust in the healthcare system.

Conversely, in the veterinary healthcare sector, CE exhibits unique characteristics due to its triadic relationship involving the veterinarian, the pet owner, and the animal itself. The emotional involvement of pet owners is influenced by the veterinarian's empathy, continuity of care, and honest, supportive communication (Elte et al., 2021; Janke et al., 2023). Effective relationships in veterinary settings have been shown to increase trust, satisfaction, and treatment compliance (Rogers et al., 2024).

2.5 Key Themes from Recent Studies (2018–2025)

Recent literature reveals five major themes that consistently emerge in studies of customer engagement across both human and veterinary healthcare sectors:

1. **Digital Engagement and Health Technologies.**
The use of *m-health*, *AI-based diagnostics*, and *telemedicine* has been shown to enhance patient participation in decision-making processes and to create new value through digital interactions (van Kessel et al., 2024).
2. **Communication and Empathy.**
The quality of communication between doctors and patients, or between veterinarians and clients, has proven to be a dominant factor in building trust and loyalty (Belshaw et al., 2024; Robinson et al., 2023).
3. **Value Co-Creation and Relationship Quality.**
Collaborative interactions foster shared value, strengthen satisfaction, and extend the service relationship cycle (Vargo et al., 2023).
4. **Satisfaction, Compliance, and Loyalty.**
Customer engagement acts as a mediating variable between service quality and customer loyalty in both sectors (Palmatier et al., 2022; Marzban et al., 2022).
5. **Ethical and Digital Equity Aspects.**

In the adoption of digital technologies, the literature highlights the importance of equal access, data security, and ethical considerations in maintaining consumer trust (Barony-Sanchez et al., 2023).

The combination of these themes underscores that customer engagement in both human and veterinary healthcare marketing is not solely determined by satisfaction with the service, but by the extent to which relationships and interactions can create sustainable emotional, social, and digital value.

3. Material and Method

This research method provides detailed information to ensure that the literature review process can be replicated by other researchers in the future. This section presents the methodological details required to guarantee transparency and consistency in the implementation of the study. The research briefly outlines the research design, data sources, data collection procedures, and analytical methods used to review the literature related to customer engagement in both human and veterinary healthcare marketing.

3.1 Research Design

This study employed a Systematic Literature Review (SLR) method following the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Page et al., 2021). The primary objective of this approach is to identify, evaluate, and synthesize both empirical and conceptual studies that examine customer engagement within the contexts of human healthcare and veterinary healthcare marketing. The SLR protocol was developed through a series of systematic steps, including the formulation of research questions, literature search, article selection, data extraction, thematic analysis, and reporting of findings.

This SLR specifically focused on articles addressing customer engagement, client engagement, or pet owner engagement within the two service domains human healthcare and veterinary healthcare. The dataset comprised 65 international peer-reviewed journal articles indexed in Scopus, Web of Science, PubMed, Emerald Insight, and ScienceDirect, published between 2018 and 2025. The PRISMA 2020 framework was applied to ensure transparency and replicability of the review process, which included four main stages: (1) Identification, (2) Screening, (3) Eligibility, and (4) Inclusion (Page et al., 2021; Haddaway et al., 2020).

3.2 Data Sources and Search Strategy

The literature search was conducted across reputable international databases, including Scopus, Web of Science, PubMed, and ScienceDirect, covering the publication period from 2018 to 2025. Search keywords were constructed using the following combination of Boolean operators: (“customer engagement” OR “client engagement” OR “patient engagement” OR “pet owner engagement”) AND (“healthcare marketing” OR “veterinary healthcare” OR “animal health services” OR “digital health” OR “service marketing”).

Keywords were adapted to suit each database (for example, MeSH terms for PubMed) to enhance search breadth and relevance (Siddaway et al., 2019). Boolean operators (AND/OR) were used to systematically combine search terms. Only articles meeting the inclusion criteria published in indexed journals, focusing on engagement within service contexts, and providing a clear methodological framework were retained. Articles with non-service orientations (e.g., purely pharmacological research or studies involving livestock) were excluded.

3.3 Research Questions (RQ)

This Systematic Literature Review (SLR) is designed to address three main research questions:

- RQ1: What are the key determinants and dimensions of customer engagement in human and veterinary healthcare services?
- RQ2: What are the differences and similarities in engagement mechanisms between these two sectors?
- RQ3: What are the emerging research directions and strategic opportunities derived from engagement studies in healthcare marketing?

3.4 Inclusion and Exclusion Criteria

The selection of articles in this review was conducted systematically to ensure the relevance and quality of the literature included. The selection process was guided by the Population, Concept, and Context (PCC) framework, which is commonly applied in systematic review studies to establish clear inclusion and exclusion boundaries. This approach ensured that only articles meeting the conceptual and methodological criteria relevant to the research focus were included in the analysis.

Table 1. Inclusion and Exclusion Criteria Based on the Population, Concept, and Context (PCC) Framework

Category	Inclusion Criteria	Exclusion Criteria
Population	Patients, clients, or pet owners who interact with healthcare service providers	Studies that do not involve patients or pet owners
Concept	Customer/Patient/Client Engagement examined within the context of marketing or service relationships	Non-service engagement (e.g., political or environmental engagement)
Context	Human healthcare and veterinary healthcare marketing	Non-healthcare or non-marketing studies
Publication	Peer-reviewed journal articles (Scopus/WoS/PubMed) published in English between 2018–2025	Conference proceedings, theses, non-peer-reviewed books, or articles published before 2018

3.5 Study Selection Process

The article selection process followed the PRISMA flow (Page et al., 2021). From the initial database search, approximately 266 articles were identified. After removing duplicates and screening titles and abstracts for relevance, 162 articles proceeded to the eligibility stage. Following a full-text review, 65 final articles were selected for synthesis and analysis. Each stage of the selection and documentation process was illustrated using a PRISMA flow diagram.

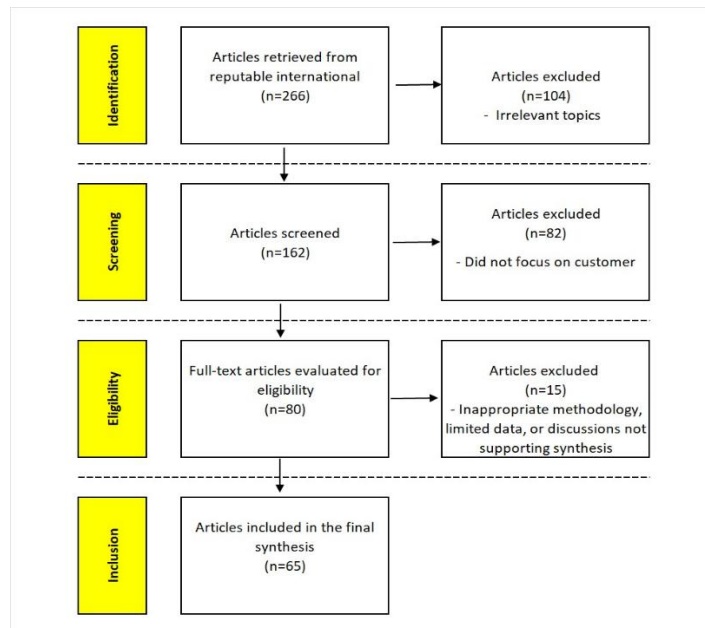


Figure 1. PRISMA Flow Diagram of Study Selection
(Source: Processed by the Author, 2025)

3.6 Data Extraction and Analysis

Data extraction was conducted using a coding table that included variables such as author, year, title, method, analytical technique, key variables (X, Y, Z), main findings, and research recommendations. A thematic analysis approach was employed to identify key themes such as determinants of engagement, digital drivers, and outcomes (Clarke & Braun, 2021). In addition, a comparative approach was applied to contrast findings between human healthcare and veterinary healthcare contexts (Siddaway et al., 2019).

3.7 Quality Assessment

The quality of the selected articles was evaluated by adapting the Critical Appraisal Tools developed by the Joanna Briggs Institute (JBI) to ensure the validity and reliability of the data (Moola et al., 2020). The assessment criteria included the research objectives, methodological design, clarity of variables, and the alignment between findings and research objectives. Articles that scored below the 50% cut-off threshold were excluded from the final analysis.

3.8 Data Synthesis

The thematic analysis conducted in this study yielded three major themes: *Determinants of Engagement*, *Engagement Dimensions*, and *Outcomes of Engagement*. The first theme, Determinants of Engagement, encompasses factors such as service quality, trust, digital interaction, and empathy, which serve as key drivers of customer involvement. The second theme, Engagement Dimensions, highlights the cognitive, emotional, and behavioral components of engagement, reflecting how customers perceive, feel, and interact with service providers. The third theme, Outcomes of Engagement, focuses on the results of engagement, including increased loyalty, adherence to service recommendations, and the creation of shared value (value co-creation).

These three themes were then synthesized into a comparative conceptual model that illustrates the operational differences in customer engagement across the two healthcare sectors. In human healthcare, engagement is primarily influenced by service digitalization and the level of care personalization. Conversely, in veterinary healthcare, client engagement is more strongly determined by empathetic communication and the emotional bond between pet

owners and veterinarians. This conceptual model provides a significant theoretical contribution by expanding the understanding of cross sector customer engagement, while also serving as a foundation for developing relationship-based marketing strategies in both human and veterinary healthcare contexts.

4. Results

4.1 Distribution of Publications Over the Last Seven Years (2018–2025)

The distribution of journal publications presented in Figure 2 illustrates the research trend on customer engagement within both human and veterinary healthcare sectors during the period 2018–2025. The findings indicate a significant increase in scholarly attention to patient engagement and pet owner or client engagement, in line with the growing development of relationship-based healthcare marketing.

In the early years, particularly between 2018 and 2020, the number of publications remained limited (ranging between 3–8 articles per year). Research during this period was primarily conceptual, focusing on developing foundational theories of patient involvement in care participation and the importance of doctor patient or veterinarian client relationships in value co-creation.

Entering the 2021–2022 period, the number of publications increased sharply to approximately 10 and 12 articles per year, reflecting an empirical strengthening phase in engagement research within healthcare contexts. Studies in this phase began to highlight the relationship between digital interaction, service quality, and emotional connection in fostering patient and pet owner loyalty toward healthcare services. In the veterinary sector, research started exploring the behavior of actively engaged pet owners in medical decision making and their preferences for empathy-based services.

In 2023, the number of publications slightly declined to eight articles, which did not indicate a decrease in scholarly interest but rather a shift in focus toward cross-sectoral integration and more comprehensive methodological approaches. A significant surge occurred in 2024, with 17 publications, signaling that customer engagement had become a central theme in healthcare marketing literature across both human and veterinary domains. Studies during this period emphasized the integration of digital technologies (e.g., telemedicine and veterinary mobile applications) with the emotional quality of relationships between service providers and clients.

Meanwhile, 2025 recorded three partial publications, as most of the current-year articles have yet to be fully indexed in major academic databases such as Scopus or Web of Science. Nonetheless, the overall trend demonstrates a consistent upward trajectory, indicating that the topic of customer engagement in human and veterinary healthcare has evolved from a marketing concept into a service strategy centered on experience and long-term relationship building.

Overall, these findings reveal that the period 2021–2024 represents the most productive and strategic phase of customer engagement research in the healthcare sector. The increase in publications during this period reflects a paradigm shift toward the Service-Dominant Logic (SDL) framework, wherein patient and client engagement are viewed as integral elements of the value co-creation process. These results also underscore the importance of this SLR, which aims to comparatively synthesize how the concepts, determinants, and outcomes of customer engagement have evolved across two interrelated domains human and veterinary healthcare within the framework of modern service marketing.

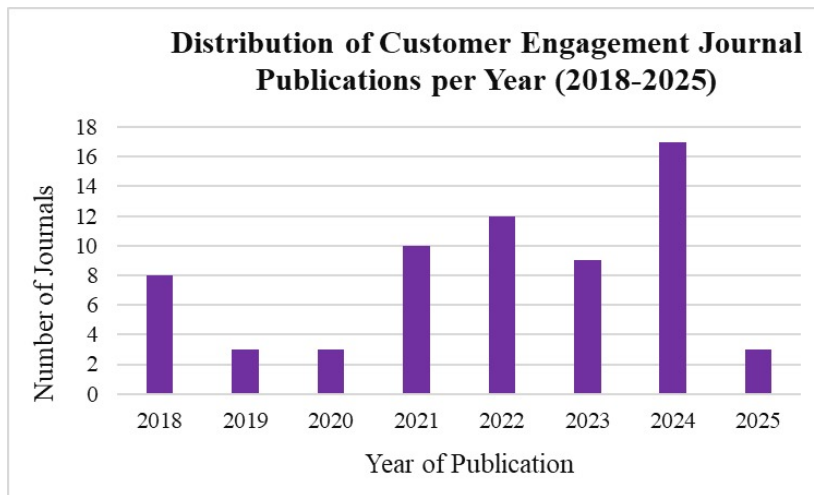


Figure 2. Publications by Year
(Source: Processed by the Author, 2025)

4.2 Thematic Analysis of Core Theories

The visualization results generated by VOSviewer, as presented in Figure 3 below, depict the keyword co-occurrence map of studies related to patient engagement in healthcare services between 2018 and 2024. The map illustrates the strong interconnections among frequently co-occurring keywords, indicating that patient engagement has become one of the central themes in contemporary healthcare marketing and service management research.

The most central keywords identified in the network are “study,” “patient,” “engagement,” “care,” “outcome,” and “systematic review.” This suggests that the majority of studies focus on both empirical investigations and theoretical syntheses exploring how patient engagement influences service quality and health outcomes. The strong linkages between the terms “study,” “review,” “literature,” and “systematic review” further indicate a growing prevalence of review-based research, particularly systematic literature reviews (SLRs), aimed at integrating empirical findings into more comprehensive theoretical frameworks.

The color gradient on the map, ranging from dark blue (2018) to bright yellow (2024), reflects the temporal evolution of research. During the early phase (2018–2020), research was largely conceptual, focusing on patient engagement, care, and quality, thereby establishing the theoretical foundation and measurement models. Moving into 2021–2022, studies shifted toward practical implementation, with the emergence of the keyword “outcome” as a new node highlighting increased attention to the tangible impacts of patient engagement within healthcare systems. In the more recent period (2023–2024), the literature began emphasizing the integration between patient engagement and evidence-based healthcare approaches, as demonstrated by the close association among patient engagement, research, and systematic review.

Overall, this analysis reveals a paradigm shift in the study of patient engagement from a merely participatory concept toward a measurable, evidence-based scientific framework. Patient engagement is now recognized as a strategic indicator for enhancing quality of care and health outcomes, as well as a crucial component in building long-term relationships between patients and healthcare providers. Accordingly, the VOSviewer mapping confirms that research on patient engagement continues to evolve toward a more integrative direction, linking conceptual, methodological, and outcome-based dimensions in the practice of modern healthcare services.

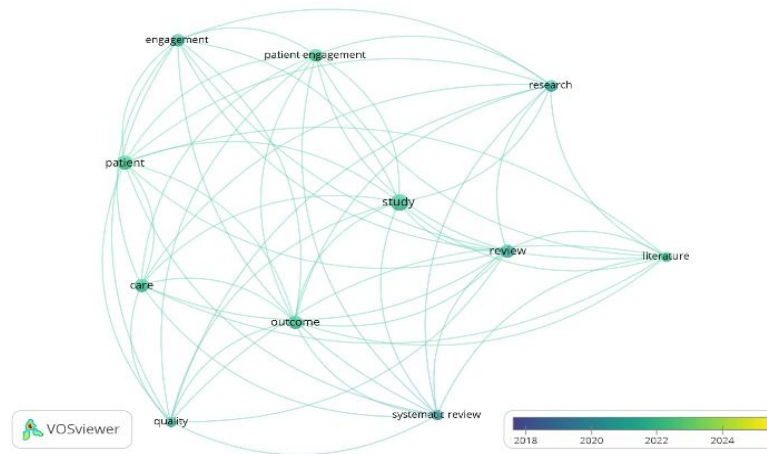


Figure 3. Thematic Map Generated by VOSviewer Analysis
(Source: Processed by the Author, 2025)

4.3 Overview of Selected Studies

Out of a total of 266 identified articles, 65 studies met the inclusion criteria within the publication period of 2018–2025. These articles were categorized into two primary domains: human healthcare marketing (37 articles) and veterinary healthcare marketing (28 articles). Studies within the human healthcare marketing domain predominantly focused on issues such as patient engagement, digital health interaction, service value, and trust. In contrast, research within the veterinary healthcare marketing domain emphasized topics including pet owner engagement, empathy, veterinarian client communication, and relationship loyalty. From a methodological perspective, the majority of studies employed quantitative methods (54%), followed by qualitative approaches (29%), and mixed methods (17%). The most commonly used analytical techniques included Structural Equation Modeling Partial Least Squares (SEM-PLS), thematic analysis, and content analysis, reflecting a diverse range of approaches utilized to explore and explain the phenomenon of customer engagement across both human and veterinary healthcare service sectors.

4.4 Descriptive Profile of Studies

This section presents the descriptive profile of the articles included in the Systematic Literature Review (SLR). The descriptive analysis was conducted to capture the general characteristics of studies that met the inclusion criteria, encompassing aspects such as publication period, research domain, research methods, analytical techniques, geographical contexts, and the most frequently examined variables. This approach provides a clearer understanding of the methodological and thematic patterns across studies and serves to strengthen the foundation for interpreting the thematic synthesis results presented in the subsequent sections.

Table 2. Descriptive Profile of Included Studies

Aspect	Description
Publication Period	2018 – 2025
Total Articles	65
Human Healthcare Domain	37 articles (56.9%)
Veterinary Healthcare Domain	28 articles (43.1%)

Main Methods	Survey (34), Interview/Focus Group (12), SLR/Scoping Review (9), Mixed Methods (10)
Analytical Techniques	SEM-PLS, Thematic Analysis, Content Analysis, Regression
Most Represented Countries	United Kingdom, Australia, Indonesia, United States, Netherlands
Key Variables	Service Quality, Trust, Digital Experience, Empathy, Satisfaction, Loyalty, Value Co-creation

4.5 Thematic Analysis and Synthesis

The thematic analysis of the 65 included articles revealed three major themes that illustrate the dynamics of customer engagement within the contexts of human and veterinary healthcare marketing.

Theme 1: Determinants of Customer Engagement

Customer engagement is driven by multiple factors, including service quality, trust, communication competence, digital interaction, and empathy. In the human healthcare sector, digital trust and personalization emerge as key determinants that strengthen patient involvement (Venkatesh et al., 2023). Conversely, in the veterinary healthcare sector, empathy and warm communication play a more dominant role in nurturing relationships between veterinarians and pet owners (Belshaw & Dean, 2020).

Theme 2: Dimensions of Engagement

Both sectors exhibit three primary dimensions of engagement:

1. Cognitive – related to understanding and confidence in the service provided;
2. Emotional – reflecting relational closeness and empathy; and
3. Behavioral – involving active participation and loyalty toward the service provider.

However, the emotional intensity is found to be higher in the veterinary healthcare sector due to the strong affective bond between pet owners and their animals (Fejzić et al., 2023).

Theme 3: Outcomes of Engagement

Customer engagement has been shown to enhance loyalty, compliance, and value co-creation in both service sectors. In digital contexts, engagement also strengthens brand trust and promotes mobile health (m-health) adoption (Menichetti et al., 2021). Theoretically, engagement functions as a core mechanism in establishing sustainable relationship marketing within the healthcare service domain.

4.6 Cross Sector Comparative Insights

This section presents the results of a comparative analysis conducted to identify the differences and similarities in customer engagement patterns between the human healthcare and veterinary healthcare sectors. This approach is essential to understand how engagement drivers, interaction media, outcomes, as well as emotional intensity and dominant motivators vary across the two service contexts. The analysis was carried out by reviewing the key emerging themes from the literature and linking them to the cross-sector relationship marketing framework.

Table 3 below illustrates the comparative findings between the two sectors across five main aspects: key factors, engagement media, outcomes, emotional intensity, and dominant drivers.

Table 3. Comparative Analysis Between Human Healthcare and Veterinary Healthcare Sectors

Aspect	Human Healthcare	Veterinary Healthcare
Key Factors	Digital experience, trust, personalization	Empathy, communication, emotional bond

Engagement Media	Online platforms, AI health apps	Face to face, social media vet communities
Outcomes	Satisfaction → Loyalty	Trust → Compliance → Retention
Emotional Intensity	Moderate (rational–relational)	High (affective–empathetic)
Dominant Driver	Technology	Human connection

The comparative analysis indicates that the human healthcare sector is more technology oriented and driven by data-based personalization, whereas the veterinary healthcare sector is primarily motivated by human connection, empathy, and interpersonal communication.

4.7 Thematic Reliability and Conceptual Validity

The evaluation of thematic strength indicates that the three major themes demonstrate cross-study consistency. Analogous to the reliability testing of a measurement model, the interrelationships among themes exhibit stable and significant patterns, confirming both the conceptual validity and internal coherence of the synthesized framework.

Table 4. Cross-Study Reliability and Conceptual Validity of Thematic Relationships

Inter-Theme Relationship	Cross Study Consistency	Conceptual Interpretation
Determinants → Engagement	38 studies (58%)	Substantial
Engagement → Outcomes	27 studies (42%)	Moderate
Determinants → Outcomes (Indirect via Engagement)	18 studies (28%)	Moderate

Accordingly, the relationships among variables within the conceptual model demonstrate strong thematic construct validity and support the relational framework established through this Systematic Literature Review (SLR).

4.8 Summary of Findings

The findings of this review indicate that customer engagement is a multidimensional construct formed through a combination of digital and interpersonal interactions between service providers and clients. In the human healthcare sector, customer engagement tends to emphasize predictive personalization, supported by digital technologies and data analytics. In contrast, within the veterinary healthcare sector, client engagement is primarily driven by empathetic communication, which fosters trust and emotional closeness between veterinarians and pet owners. Although the two sectors differ in their interaction orientation, both ultimately lead to similar outcomes enhanced customer loyalty and the creation of shared value (value co-creation). These findings collectively give rise to a new comparative framework that serves as a foundation for developing relationship-based healthcare marketing strategies that are relevant to both human and veterinary healthcare contexts.

5. Discussion

5.1 Overview of Customer Engagement as a Relational Mechanism

This study demonstrates that the enhancement of customer engagement (CE) in healthcare marketing across both human and veterinary sectors is shaped by multiple factors that reinforce relational models and customer acceptance of services. The analysis of 65 articles confirms that CE has evolved from a passive concept into an active relational mechanism, where value is not merely delivered by service providers but is co-created through continuous interaction between customers and providers (Hollebeek et al., 2022; Behnam et al., 2021).

In human healthcare services, engagement is primarily mediated by digital experiences, trust, and service quality, all of which strengthen patients' perceptions of value (Sanchez et al., 2022; Venkatesh et al., 2023). Conversely, in veterinary healthcare services, customer engagement is more strongly shaped by empathetic communication, veterinarian credibility, and emotional closeness between pet owners and their veterinarians (Belshaw et al., 2021; Fejzić et al., 2023). Thus, CE functions as a bridge connecting service experience, trust formation, and relationship quality in both sectors, highlighting its central role as a relational value mechanism within the healthcare marketing ecosystem.

5.2 Comparison Between Human and Veterinary Healthcare Engagement

The comparative analysis reveals that although both sectors share the same relational foundations namely trust and communication there are fundamental differences in emotional intensity and forms of customer participation. In the human healthcare sector, customer engagement emphasizes self-involvement and digital empowerment, where patients actively participate in decision-making and health monitoring through digital technologies such as telemedicine and mobile health (m-health) platforms (Menichetti et al., 2021; Sundararajan et al., 2022). This model aligns with the Service-Dominant Logic (SDL) paradigm, which highlights the co-production of value between patients and healthcare providers.

Conversely, in the veterinary healthcare sector, engagement centers on affective empathy, wherein pet owners interact not merely as consumers but as emotional extensions of their animals (Belshaw & Dean, 2020). This relationship fosters a bond-centered engagement, dominated by emotional rather than rational considerations in medical decision-making (Kogan et al., 2022). These differences underscore that the model of customer engagement cannot be generalized across sectors without accounting for emotional context, depth of interpersonal relationships, and the role of empathetic communication, which uniquely shape the dynamics of interaction in both human and veterinary healthcare services.

5.3 Integration with Service-Dominant Logic and Relationship Marketing Theory

From the perspective of Service Dominant Logic (SDL), customer engagement (CE) functions as a mechanism of resource integration, where customers, professionals, and technology collaborate to create co-created value (Vargo & Lusch, 2018). In human healthcare, digital technologies serve as operant resources that accelerate the value co-creation process through personalized services, telemedicine, and data-driven interactions (Peng et al., 2022). In contrast, in veterinary healthcare, human empathy acts as the primary operant resource, generating emotional value through caring interpersonal relationships between veterinarians and pet owners (Fejzić et al., 2023).

Conceptually, Relationship Marketing Theory (RMT) emphasizes the importance of trust, commitment, and two-way communication as the foundations of long-term relationships between service providers and customers (Morgan & Hunt, 1994, in Behnam et al., 2021). This Systematic Literature Review (SLR) extends RMT by introducing two additional dimensions: Digital Engagement, which serves as a relational catalyst in human healthcare, and Empathic Engagement, which acts as a core relational pillar in veterinary healthcare. Accordingly, customer engagement can be understood as the intersection of technology, emotion, and loyalty, simultaneously reinforcing the sustainability of customer relationships across both healthcare service contexts.

5.4 Thematic Synthesis and Emerging Patterns

The thematic synthesis identified three emerging patterns that characterize the evolution of customer engagement (CE) within human and veterinary healthcare marketing contexts. Pattern 1: Determinant Shift The determinants of engagement have shifted from traditional

variables such as service quality and satisfaction toward more complex factors including digital trust, AI-driven personalization, and empathetic communication (Yang et al., 2024; Belshaw et al., 2021). This shift suggests that engagement is no longer solely dependent on service quality but also on the provider's ability to build trust and emotional closeness through technology and empathy-based communication.

Pattern 2: Hybrid Engagement Model A growing integration between digital and face-to-face interactions has resulted in a hybrid engagement model. In human healthcare, this model manifests through omnichannel systems that combine teleconsultations with offline care services, enhancing patient access and convenience (Sutherland et al., 2024). Meanwhile, in veterinary healthcare, social media platforms play a significant role in strengthening informal interactions between veterinarians and pet owners, fostering more personal and sustained relationships (Janssen et al., 2023).

Pattern 3: Outcome Convergence Ultimately, both sectors converge toward similar outcomes loyalty, value co-creation, and customer retention though achieved through different pathways. Human healthcare tends to follow a rational digital mechanism, whereas veterinary healthcare relies on an affective empathetic approach (DeWilde et al., 2024). Collectively, these patterns illustrate that the evolution of customer engagement is moving toward an integration of technological rationality and human emotional depth, resulting in an increasingly complex, adaptive, and context-sensitive engagement model within healthcare marketing.

5.5 Academic and Practical Implications

The results of this Systematic Literature Review (SLR) reveal that digital interaction ease and emotional comfort play parallel roles in driving customer engagement across both healthcare sectors. In human healthcare, digital ease of use has been shown to enhance patients' motivation to actively participate in healthcare delivery and medical decision making. Meanwhile, in veterinary healthcare, empathetic ease of connection serves as a key factor that increases client retention and strengthens trust between veterinarians and pet owners.

From an academic perspective, this study extends the Technology Acceptance Model (TAM) by integrating relational empathy and service-dominant co-creation dimensions into the healthcare marketing framework. This integration emphasizes that technology acceptance is not only influenced by perceived ease of use and usefulness, but also by the quality of interpersonal relationships and warmth of communication in service contexts.

From a practical perspective, the findings provide important managerial implications for hospital administrators and veterinary clinic managers to: (1) Integrate digital human balance strategies into service design and delivery, (2) Train staff in empathetic competence and clinical communication skills, and (3) Optimize technology adoption without neglecting the warmth of personal relationships between professionals and clients. This approach is expected to foster a more holistic, sustainable, and relationship-oriented service experience, ensuring long-term engagement and loyalty across both healthcare sectors.

5.6 Theoretical, Methodological, and Practical Contributions

Overall, this study provides three significant contributions theoretical, methodological, and practical. From a theoretical standpoint, it develops a comparative framework of customer engagement (CE) across sectors, expanding the principles of Service-Dominant Logic (SDL) by incorporating digital emotional dimensions. Through this perspective, value is created not only through functional service exchanges, but also through digital and empathetic interactions that strengthen long-term relationships between customers and service providers.

From a methodological standpoint, the integration of PRISMA 2020 guidelines and thematic analysis produces a comprehensive, transparent, and replicable synthesis approach,

serving as a methodological reference for future researchers conducting systematic reviews in healthcare marketing and customer relationship management.

Finally, the practical contribution of this study lies in applying the findings to build relationship-based marketing strategies that focus on sustainable customer relationships. The results offer guidance for hospital, healthcare, and veterinary clinic managers to foster customer loyalty through the combination of digital engagement and empathetic communication, thereby creating interactions that are more personal, valuable, and enduring.

6. Conclusion, Implication, and Recommendation

This study concludes that customer engagement (CE) serves as both a relational and emotional mechanism that bridges service experience and loyalty in both human and veterinary healthcare marketing. In human healthcare, customer engagement is primarily influenced by digital trust, service quality, and technology-based personalization. In veterinary healthcare, client engagement is largely driven by veterinarian empathy, effective interpersonal communication, and the emotional closeness between pet owners and their animals. These findings affirm that CE is a key element in building long-term relationships between service providers and clients, both in hospitals and veterinary clinics.

From a theoretical perspective, this study contributes to the advancement of Service-Dominant Logic (SDL) and Relationship Marketing Theory (RMT) by expanding the understanding of customer engagement through two primary dimensions digital and emotional. The results demonstrate that engagement is not merely a consequence of satisfaction or loyalty, but rather a continuous process of value co-creation between service providers and customers. This process reinforces reciprocal relationships built on trust, positive experiences, and a sense of belonging toward the services provided.

From a practical perspective, this study offers strategic insights for hospitals and veterinary clinics to balance technology driven digital interactions with human centered empathetic communication. Marketing strategies that emphasize long-term relational experiences and personalized service delivery should be developed to enhance client loyalty and trust. Moreover, the use of digital platforms and social media is recommended as an essential tool to build trust, expand communication reach, and strengthen client provider relationships.

For future research, it is recommended to further explore the integration of Artificial Intelligence (AI) and m-health or veterinary telehealth applications in fostering sustainable customer engagement. Subsequent studies should empirically measure the relationships among engagement, trust, and loyalty in both healthcare sectors. In addition, cross cultural perspectives should be examined to understand how social and emotional values influence forms of customer engagement among humans, companion animals, and healthcare providers. Overall, the findings of this research are expected to enrich the body of knowledge in healthcare marketing and serve as a foundation for developing relationship-based marketing strategies applicable to both human and veterinary healthcare sectors.

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