

**A SYSTEMATIC LITERATURE REVIEW OF RESEARCH ON HOW ARTIFICIAL
INTELLIGENCE IS USED FOR CUSTOMER ENGAGEMENT**

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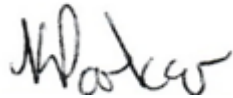
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DECLARATION:

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to another University or for another qualification



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October 2025
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DATE

II

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III

ABSTRACT

Research on artificial intelligence (AI) and customer engagement (CE) has expanded significantly as organisations integrate intelligent technologies into their engagement strategies. However, the literature remains fragmented regarding how AI supports CE. This study conducts a systematic literature review (SLR) of peer-reviewed sources to explore how AI is being used for CE. Findings reveal six key themes: emotional human-AI interaction, personalisation, responsiveness, data-driven insights, operational automation, and trust. These elements collectively enhance engagement by enabling natural interaction, tailored experiences, timely communication, credible data use, and efficient operations. The study provides a comprehensive understanding of how AI can foster meaningful and effective CE

Key terms: artificial intelligence; customer engagement; personalisation; responsiveness; automation; trust; data-driven insights

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The concept of artificial intelligence (AI) was first proposed in 1956 at Dartmouth University, leading to the formation of a new field focused on exploring how machines could simulate human cognitive abilities (Lu & Zu, 2018: 2103-2115; Zhang & Lu, 2021:1-2). The rapid development of AI has delivered substantial economic benefits, improved many aspects of everyday life, and propelled society into a new phase of advancement (Xu, 1999:1-2). As a result, research related to AI began gaining momentum among scholars toward the end of the 20th century (Naqvi, Hongyu, Naqvi & Kun, 2024). AI is a groundbreaking and disruptive technology with the capacity to reshape the way organisations and customers connect across different industries (Naqvi et al., 2024). AI broadly refers to the scientific field focused on simulating human intelligence. It involves using computers to replicate human behaviours, including learning, reasoning, judgment, and decision-making (Zhang & Lu, 2021:1-2). By combining computer science, logic, biology, psychology, philosophy, and many other fields, AI has produced advances in applications including intelligent robotics, speech recognition, picture processing, natural language processing, and the demonstration of automatic theorems (Zhang & Lu, 2021:1-2).

AI leverages both hardware and software to help organisations process data and engage with customers in real time, leading to tech-powered interactions that feel more natural and are tailored to individual customer needs and preferences (De Bruyn, Beh, Brock, Von & Viswanathan, 2020; Naqvi et al., 2024). These capabilities are reflected in a wide range of AI applications from chatbots and virtual assistants to predictive analytics and personalised recommendations which are playing an increasingly central role in shaping customer experiences. Additionally, AI-driven tools support organisations in gaining more profound understanding of customer perceptions and interactions with their products and services (De Bruyn, Beh, Brock, Von & Viswanathan, 2020), which contributes to improving future product or service offerings (Van Esch & Black, 2021). The incorporation of AI into marketing also creates opportunities for organisations to enhance customer relationships by enabling the design of more efficient relationship marketing strategies (Chatterjee, Khorana, Mikalef & Kizgin, 2024; Ashraf, Kumar & Nadeem, 2024:3). AI allows organisations to rapidly process

and interpret large amounts of customer data, providing important insights into customer behaviours, preferences, and perceptions (Chatterjee et al., 2024).

With the help of AI, marketers are able to predict customer needs, preferences, and desires more precisely, thereby assisting in the development of highly personalised value propositions (Van Esch & Black, 2021). Thus, AI can be used to support customer engagement (CE) efforts within organisations. CE involves the continuous strengthening of a relationship that extends beyond the initial transaction between an organisation and its customers. It is a purposeful and consistent strategy aimed at adding value to each customer interaction, thereby enhancing loyalty (Hentzen, Hoffman, Dolan & Pala; 2022; Hollebeek, Brady & Sprott, 2021; Hollebeek, Sharma, Pandey, Sanyal & Clark, 2022; Miller, 2023; So, Kim & King, 2021). Over the past ten years, CE has also become a primary priority for many managers, with a rising need to strengthen it by leveraging technological advancements such as AI.

CE is developed through interactions between customers and a brand, its offerings, or the wider organisation. By anticipating or responding to customer needs, AI can influence customers' investments in service experiences, including financial contributions, thereby shaping overall engagement (Nalluri, Chen & Mayopu, 2023; Prentice, Weaven & Wong, 2020). In practice, AI technologies, such as service robots, are increasingly used to engage customers and enhance their experiences by offering greater convenience and flexibility (Prentice et al., 2020). Customers increasingly expect not only high-quality products and services but also personalised interactions that reflect their individual needs and preferences (Gupta & Khan, 2024; Reddy, Kumar, Parfenov & Sadhu, 2023). Data collected from customer interactions is essential for effectively utilising AI in CE (Gupta & Khan, 2024). According to Nalluri, Chen and Mayopu (2023), organisations are making greater use of AI and machine learning to inform data-driven decisions, and maintain a competitive edge within the rapidly changing technological environment.

1.2 PROBLEM STATEMENT

When customers seek more personalised experiences, AI has emerged as an effective tool that organisations can employ to influence purchasing decisions (Dimitrieska et al., 2018; Kumar et al., 2019). AI's growing capabilities in processing vast amounts of data in real time enable organisations to deliver increasingly tailored experiences (McCarthy, Minsky, Rochester &

Shannon, 1955). However, despite advancements in both AI and CE literature, these two areas have predominantly been studied in isolation, resulting in limited insights into their intersection (Hollebeek et al., 2021). Although AI has demonstrated strong potential to transform customer experiences through hyper-personalisation, real-time interaction, and deeper customer insights (Chatterjee et al., 2024; De Bruyn et al., 2020; Naqvi et al., 2024; Van Esch & Black, 2021), research integrating AI within the context of CE remains fragmented.

Previous research often focuses on technological developments or CE strategies individually, without thoroughly examining their integration. Therefore, a systematic literature review (SLR) is needed to bring together the existing knowledge and provide a thorough understanding of how future research can be conducted to study how AI is being utilised in CE.

1.3 RESEARCH OBJECTIVES

1.3.1 PRIMARY OBJECTIVE

The primary aim of this study is to conduct a SLR review of research on how AI is used for CE. Against this objective, the following research question is posed: How is AI being utilised for CE? This review will comprehensively summarise and analyse existing research on AI-driven CE practices, identify gaps in the current literature, and highlight avenues for future research in this evolving field.

1.3.2 SECONDARY OBJECTIVES

- SO¹: To descriptively analyse journal publications focusing on how AI is used for CE across various industries.
- SO²: To explore the theories and methodologies applied in research focusing on how AI is being used for CE.
- SO³: To provide a comprehensive summary of the key insights and trends in the literature regarding how AI is used for CE.
- SO⁴: To identify gaps in the current literature and suggest future research directions on the integration of AI and CE.

1.3.3 METHODOLOGICAL RESEARCH OBJECTIVES:

- MO¹: To conduct a literature review on the nature and significance of AI as well as CE and these concepts' application across various industries.
- MO²: To identify and determine the most appropriate research methodology to address the primary and secondary research objectives.
- MO³: To utilise theoretical frameworks that will guide the collection and analysis of data related to how AI is being used for CE.
- MO⁴: To collect relevant data from academic journals, reports, and studies that focus on AI and CE.
- MO⁵: To analyse the collected data using suitable analytical methods.
- MO⁶: To draw conclusions and offer recommendations for future research regarding the integration of AI and CE.

1.4 SCOPE AND DELIMINATION OF THE STUDY

The primary aim of this research is to conduct a SLR of research on how AI is used for CE. Additionally, the data for this SLR is focused exclusively on scholarly articles on how AI is used for CE. These sources were retrieved from well-established academic databases, such as Google Scholar, Emerald Insight and Web of Science. Only full-text articles published in English were included in the analysis, and studies not specifically addressing how AI is used for or linked to CE were excluded.

1.5 SIGNIFIGANCE OF THE STUDY

The significance of conducting this study stems, in part, from the nature of a SLR. This research will explore the field of AI-driven CE, providing a comprehensive overview of how AI is being utilised for CE. Through this process, the study will identify existing gaps in the literature, offering valuable insights for future research directions. In addition to shaping future academic inquiries, this research could serve a practical purpose by helping organisations understand how to leverage AI to improve CE. This, in turn, could assist organisations in developing more effective strategies for fostering long-term customer relationship, loyalty and retention.

1.6 STRUCTURE OF THE STUDY

This research is presented in five chapters, each contributing to a comprehensive understanding of how AI is used for CE. A brief overview of the content of each chapter is provided below. Chapter One introduces the study by presenting its background and relevance. It outlines the research problem and articulates the study's objectives, namely the primary aim, supporting objectives, and methodological focus. This chapter also poses the central research question and clarifies the scope and boundaries of the investigation. Definitions of key concepts are provided to establish conceptual clarity. Chapter Two offers a broad review of existing literature related to the themes of AI and CE. It begins by discussing the defining features and significance of CE and then explores the growing role of AI in shaping customer interactions. This chapter also introduces the theoretical frameworks relevant to the study and reviews prior empirical findings to highlight how AI is being used for CE.

Chapter Three details the research methodology adopted for this investigation. It describes the overarching research paradigm, approach to theory development, methodological design, and the procedures for data collection and analysis. This chapter gives special attention to the SLR process, outlining each step taken to ensure transparency and rigour. Ethical considerations are also discussed. Chapter Four presents the empirical findings generated from the SLR. It begins with a descriptive overview of the selected studies and the academic journals in which they were published. The chapter then provides a thematic analysis, identifying and interpreting recurring patterns in how AI is utilised for CE.

Chapter Five serves as the final chapter. It begins with a summary of the preceding chapters and reflects on how the research objectives were achieved. This is followed by a discussion of the key findings and their practical and theoretical implications. A Conceptual framework is proposed, highlighting how AI is being used in CE. The chapter closes by noting the study's limitations and suggesting areas for future research.

CHAPTER TWO

ARTIFICIAL INTELLIGENCE IN CUSTOMER ENGAGEMENT: A LITERATURE REVIEW

2.1 INTRODUCTION

The sections to follow provide an overview of the nature and importance of AI, beginning with a description of AI, including its nature and importance. This is followed by an exploration of CE, focusing on its nature and importance. The chapter will then discuss the various challenges related to AI, CE, and the specific challenges linked to using AI for CE. Key concepts such as AI, CE, responsiveness, personalisation, and automation, which are central to how AI influences customer interactions, will be further illustrated. The chapter will then shift focus to relevant theoretical frameworks that can explain the how of AI in CE. Finally, an overview of existing studies on how AI is used for CE will be presented, offering insights into the practical applications and outcomes of AI in this field.

2.2 DESCRIBING ARTIFICIAL INTELLIGENCE

The term AI was introduced in the 1950s to create systems capable of cognitive tasks and autonomous functioning (Sheikh, Prins & Schrijvers, 2023:1–3). Initially of interest mainly to scientists, AI now has widespread societal impact. Major organisations like Amazon, Facebook, Google, Netflix, and Siri integrate AI into everyday tools, while European firms such as Siemens and Spotify use it to personalise services and optimise operations. Governments also adopt AI in areas like security, healthcare, and urban planning, making it a pivotal presence in public life and culture (Sheikh, Prins & Schrijvers, 2023:1–3).

AI refers to computer-controlled systems designed to mimic human intelligence by learning, interpreting, predicting, and responding (Bansod, 2023:46). It is applied across education, entertainment, healthcare, military, and science, often performing tasks beyond human capability and replacing repetitive precision work. Innovations like self-driving cars show AI's ability to operate without human supervision. While AI combines technologies enabling perception, learning, and action, it largely relies on programmed commands and lacks full human-like reasoning, though it continues to evolve toward greater autonomy (Bansod, 2023:46).

In business, AI allows organisations to analyse large datasets and respond in real time with personalised, responsive interactions (Naqvi et al., 2023). Machine learning also enhances strategic decision-making by providing insights into customer behaviour and market trends (Naqvi et al., 2023). The following section expands on the general description of AI by examining its nature.

2.2.1 THE NATURE OF ARTIFICIAL INTELLIGENCE

AI is a field of computer science focused on developing machines that can think, learn, and act intelligently, emulating human cognitive abilities (You, 2025). AI systems are powered by machine learning algorithms and neural networks, which enable them to learn directly from vast amounts of data (You, 2025). Rapid advancements in AI have been driven by breakthroughs in deep learning, increased data availability and computational power, and innovative applications of algorithms such as reinforcement learning (You, 2025). The remarkable progress of generative AI has enabled machines to match or even surpass human-level performance across an expanding range of cognitive tasks, sparking widespread interest and debate about AI's future impacts on employment, society, and the world at large. The pace of this progress shows no signs of slowing, suggesting that a future with reliable and capable AI may arrive sooner than previously anticipated (You, 2025). The next section builds on the discussion of AI's nature by highlighting its importance, examining the practical benefits, applications, and impact of AI across various fields and industries.

2.2.2 THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE

Recent advancements in AI have driven innovations across many fields, including communication, health, industry, informatics, medicine, military and space (Nalbant, 2021:1). AI technologies support areas such as child education and healthcare, while also helping users find accurate and valuable information online (Li & Du, 2017). By mimicking human intelligence, AI solves problems and makes decisions with benefits like cost-effectiveness, permanence, reliability and speed (Pothen, 2022:78-79). It is widely applied in diverse fields such as economics, engineering, law, manufacturing, medicine and notably on the Internet through search engines. AI preserves organisational knowledge by encoding decision-making processes, which remain useful as long as the relevant issues persist (Pothen, 2022:78-79).

AI enables faster decisions by automating tasks and efficiently analysing data. Unlike humans, AI's decisions are based on facts, free from emotional bias and not affected by fatigue (Pothen, 2022:78-79). Additionally, AI facilitates easy information sharing by allowing trained systems to be replicated. It reduces human errors and improves accuracy, particularly in healthcare, where it helps prevent mistakes caused by workload pressures (Pothen, 2022:78-79). AI can multitask, handle repetitive or complex tasks swiftly, and store more information than traditional methods. Industries benefit from AI through lower labour costs and reduced dependence on low-skilled workers. AI can also manage stressful tasks, completing work faster, discovering new objects in space and minimizing errors (Pothen, 2022:78-79). The following section shifts focus from AI to CE, examining its definition, nature and importance of CE.

2.3 DESCRIBING CUSTOMER ENGAGEMENT

CE is a marketing concept that emerged and gained attention in the years following the turn of the millennium. Although it appeared in academic literature as early as 2006, it did not achieve widespread prominence until around 2010. Since then, CE has been defined from multiple perspectives, yet no universally accepted definition exists (Algharabat, 2018; Daly, Evers, Harrigan & Miles, 2017). Some of the most widely cited definitions are offered by Brodie, Hollebeek, Ilić and Jurić (2011), Hollebeek (2011), Van Doorn, Leon, Mittal, Nass, Pick, Pirner and Verhoef (2010), as well as Vivek, Beatty and Morgan (2012).

Building on this definitional diversity, CE has been studied from several angles. Van Doorn et al. (2010) approached it behaviourally, focusing on observable actions beyond transactions. Brodie et al. (2011) and Hollebeek (2011) conceptualised CE as a psychological state reflecting cognitive and emotional investment, while Vivek et al. (2012) emphasised customers' active involvement and connection with a brand. Collectively, these perspectives show that CE is a multidimensional construct designed to elicit outcomes such as stronger brand loyalty, positive attitudes, and increased purchase intent.

Due to its strategic relevance, CE has become central in marketing research. It is widely recognised as a key driver of customer satisfaction and long-term success, leading to rapid growth in scholarly interest over the past decade (Brodie et al., 2011; Harmeling, Arnold, Carlson Moffett, 2017; Hollebeek, Brodie & Conduit, 2016; Hollebeek, 2011; Roy, Balaji,

Lassar, Roy & Soutar, 2018; Vivek, Beatty, Dalela & Morgan, 2014). Much of this research explores marketing themes such as brand attachment, involvement, satisfaction, trust, commitment, loyalty, and value creation (France, Merrilees & Miller, 2016; Hollebeek, 2011; Prentice et al., 2020; Vivek et al., 2012). The next section builds on the discussion of CE by examining its nature, detailing the psychological processes, behaviours, and multidimensional aspects.

2.3.1 THE NATURE OF CUSTOMER ENGAGEMENT

CE is defined as a psychological process that models how loyalty may be maintained (Lingjie & Raeisi, 2017). This definition highlights that CE is dynamic, comprising behaviours and attitudes that develop customer loyalty. It reflects the degree of involvement and connection with an organisation's offerings, whether initiated by the customer or the organisation, and spans physical, emotional, and cognitive dimensions (Lingjie & Raeisi, 2017).

CE first appeared in academic literature around 2006 but gained wider recognition by 2010 (Ala, Kumar, Lim & Rasul, 2022). Despite growing attention, no universally agreed definition exists (Algharabat, 2018; Daly et al., 2017). Van Doorn et al. (2010) approached CE behaviourally, Brodie, Hollebeek, Ilić and Jurić (2011) psychologically, as well as Vivek et al., (2012) emphasised customer participation and brand interaction. Together, these perspectives suggest CE is multidimensional, fostering outcomes such as loyalty, purchase intent, and positive brand attitudes (Ala et al., 2022).

As a strategic marketing imperative, CE is linked to enhanced customer satisfaction and organisation performance, driving a surge in research over the past decade (Brodie et al., 2013; Harmeling et al 2017; Hollebeek, 2011; Hollebeek et al, 2016; Roy et al., 2018; Vivek et al., 2014). Studies largely explore marketing concepts such as brand commitment, involvement, satisfaction, trust, and value (France et al., 2016; Hollebeek, 2011; Prentice et al., 2012), showing that effective CE drives positive brand attitudes and long-term relationships (Ala et al., 2022). The next section examines the importance of CE, highlighting its benefits and strategic impact on organisations.

2.3.2 THE IMPORTANCE OF CUSTOMER ENGAGEMENT

The interaction between customers and organisations is a fundamental process essential to organisation effectiveness (Lingjie & Raeisi, 2017). In recent years, CE has gained significant attention in brand management research and practice, being linked to increased sales, competitive advantage, and improved stock returns (Clark, Hollebeek, Pandey, Sanyal & Sharma, 2022:293). While brands often focus on acquisition, conversions, and click-through rates, they may overlook the importance of sustained engagement between purchases (Ebisan, 2024). Fostering emotional connections during these periods can strengthen customer-brand relationships and enhance long-term retention (Ebisan, 2024). CE goes beyond traditional marketing touchpoints, involving ongoing, meaningful interactions that maintain brand salience during decision-making and improve the effectiveness of future marketing initiatives (Ebisan, 2024).

CE is recognised as a key marketing strategy for building lasting customer relationships (Aramendia-Muneta & Suraña-Sánchez, 2024), encompassing cognitive, emotional, and behavioural dimensions (Brodie et al., 2011; Hollebeek, 2011; Hollebeek et al., 2014; Kumar, 2020; Van Doorn et al., 2010). In an increasingly competitive and rapidly evolving environment, CE is a critical determinant of effective customer service (Brodie et al., 2011). Modern organisations face complex challenges, making CE more crucial than ever as a means to develop and sustain long-term competitive advantages. Service marketing researchers increasingly adopt CE as a strategic approach to co-create value and strengthen competitive positioning (Prahalad & Ramaswamy, 2004). Consequently, CE is used to foster competitive advantage, promote value co-creation, drive sales growth, and enhance profitability (Brakus, Schmitt & Zarantonello, 2009). The discussion now shifts to the challenges associated with AI and CE, highlighting the limitations and risks organisations face when implementing these technologies and strategies.

2.4 CHALLENGES OF ARTIFICIAL INTELLIGENCE

AI offers opportunities for competitive advantage through anthropomorphism, convenience, and personalisation, which drive value co-creation. However, it also presents challenges, including loss of control, privacy concerns, reduced human interaction, and technology anxiety, potentially causing value co-destruction (Chaturvedi & Verma, 2023). Technology anxiety

arises when users feel overwhelmed or uncertain about interacting with complex or opaque AI systems. Likewise, reduced human interaction in service contexts can create feelings of impersonality and detachment, affecting customer satisfaction and trust. Balancing these positives and negatives is essential for developing customer-centric service ecosystems (Chaturvedi & Verma, 2023).

AI systems process data through multiple stages, often producing outputs that create fragmented or biased digital personas, raising concerns about fairness and accuracy (Hagendorff & Wezel, 2020). Supervised machine learning relies on existing data to detect patterns, which can replicate past trends, perpetuate social biases, and limit innovation. Development is further constrained by a global shortage of experts able to tailor AI to specific contexts (Hagendorff & Wezel, 2020). AI fundamentally differs from human cognition; current neural networks capture only a fraction of brain complexity and lack true understanding or creativity. Its decision-making processes often remain opaque, with “black box” models challenging human interpretability despite efforts to improve explainability. AI systems are also vulnerable to cyberattacks, including adversarial inputs, data poisoning, and model theft, demonstrating that AI alone cannot guarantee cybersecurity or prevent cyberwarfare threats (Hagendorff & Wezel, 2020).

2.5 CHALLENGES OF CUSTOMER ENGAGEMENT

Developing responsible practices can create challenges and internal tensions within service organisations (Gallan, Hildebrand, Komarova, Rubin & Shay, 2024). These tensions extend to CE efforts, as organisations often face strain when designing and implementing socially responsible strategies that involve or impact customers (Gallan et al., 2024). Engaging customers in ethical or sustainability initiatives may invite scrutiny, demand transparency, or clash with short-term commercial goals, complicating the engagement process. Thus, CE becomes more complex when embedded within broader corporate responsibility frameworks. Many organisations view CE as vital for generating and enhancing value co-created within customer-firm relationships, ultimately improving the organisation’s performance (Bolton, 2011). Managers strive to foster positive CE, recognising that value should be co-created with customers through ongoing, interactive processes (Bolton, 2011). Despite this, there remains limited insight into how CE directly contributes to value co-creation (Bolton, 2011).

In recent competitive marketplace, customers face an overwhelming array of options, making it easy to switch brands (Sethi, Dash, Mishra & Cyr, 2023). This abundance of choice challenges organisations aiming to build and sustain CE and loyalty. Brands must differentiate through unique value propositions and exceptional customer experiences, while growing price sensitivity and shorter attention spans make long-term loyalty increasingly difficult (Sethi, Dash, Mishra & Cyr, 2023; Sharma, Sethi & Mrabet, 2025).

In the digital era, customers are well-informed and seek convenience and personalised experiences amid numerous options (Sethi et al., 2023; Sharma et al., 2025). Shorter attention spans, higher expectations, and a preference for exploration over loyalty mean customers demand frictionless, seamless interactions across all touchpoints. They place high importance on convenience, value, and personalised engagement, quickly abandoning brands that fail to meet expectations (Sethi et al., 2023; Sharma et al., 2025). The next section discusses challenges linked to using AI for CE, including technical, ethical, and interaction-related issues

2.6 CHALLENGES LINKED TO USING ARTIFICIAL INTELLIGENCE FOR CUSTOMER ENGAGEMENT

AI offers significant potential for enhancing CE by enabling human-like interactions, intuitive interfaces and personalisation that support value co-creation (Chaturvedi & Verma, 2023). However, these same capabilities present notable challenges when applied to CE. For example, overly automated or impersonal experiences may cause user anxiety or discomfort, leading to diminished emotional connection with the brand and reduced trust (Chaturvedi & Verma, 2023). Privacy concerns are particularly prominent, as customers may become wary of how their data is collected, stored and used, potentially disengaging from brands they perceive as intrusive.

Further, AI systems can reduce the degree of authentic human interaction that some customers expect, limiting opportunities for relationship building. Feelings of losing control, such as not understanding how recommendations are made, can also negatively impact customer satisfaction and engagement (Chaturvedi & Verma, 2023). Subhashree (2023) adds that algorithmic bias, data privacy issues and the formation of filter bubbles, which are personalised digital environments that limit users' exposure to diverse content, can hinder meaningful CE by reinforcing narrow preferences and potentially alienating or frustrating users over time.

The technical complexity of AI also poses engagement-related challenges. Implementing AI

requires not only financial investment but also specialised expertise to ensure systems are accurate, relevant and customer-friendly (Subhashree, 2023). When algorithms perform poorly or misinterpret customer needs, the resulting experience can feel disjointed, undermining loyalty and trust. When customers cannot understand or trust AI-driven interactions, their willingness to engage meaningfully with the brand may decline (Obiegbu & Larsen, 2024; Dubazana, 2024).

Ethical concerns further complicate AI-driven engagement. Customers increasingly expect fairness, informed consent and transparency in their interactions with AI (Subhashree, 2023). If these principles are violated, it may result in reputational damage and disengagement. Therefore, marketers must adopt responsible AI practices, prioritise data protection, and foster openness in customer-facing processes. Finally, as AI continues to evolve, marketers must continuously develop their skills and work within appropriate regulatory frameworks to ensure AI supports rather than hinders long-term CE (Subhashree, 2023). The next section explores the applications of AI in CE, highlighting how AI tools and strategies are used to enhance interactions, personalise experiences, and support informed decision-making

2.7 APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN CUSTOMER ENGAGEMENT

AI is transforming how organisations engage with customers. By analysing vast amounts of data, AI enables highly personalised and timely interactions that address unique customer needs (Kartal, Oztekin, Gunaskaran & Cebi, 2016; Naqvi et al., 2023). These personalised responses enhance satisfaction and foster long-term relationships. AI-powered tools such as chatbots, recommendation systems, and predictive analytics improve real-time responsiveness and service quality. Beyond interactions, AI also informs strategic decision-making by providing insights into customer behaviour, preferences, and market trends, supporting more agile and informed business strategies (Kartal et al., 2016). To better understand AI's role in CE, the next section defines AI and CE and explores key concepts underpinning this study: responsiveness, personalisation, and automation. The next section introduces the key concepts that explain how AI is used for CE.

2.8 KEY CONCEPTS

This SLR examines how AI is utilised for CE. The section starts by defining AI and CE to provide a clear foundation. After establishing these definitions, the study focuses on three key concepts: responsiveness, personalisation and automation, which are central to how AI is being utilised for CE. The following sections discuss these concepts in detail to support the SLR.

2.8.1 ARTIFICIAL INTELLIGENCE

Sheikh, Prins and Schrijvers (2023) explain that AI is typically described as a technology that enables machines to replicate a range of complex human capabilities. In computer science, AI encompasses the research and engineering efforts aimed at developing intelligent systems that drive technological advancement (Mahato, 2022). While it imitates human intelligence, it does not employ biologically observable methods (Mahato, 2022). One way to understand AI is as a research domain that applies computer models to solve the analytical and algorithmic components of problems (Mahato, 2022). According to Mahato (2022), AI, as a subfield of computer science, is focused on improving the intelligence of different computer systems.

2.8.2 CUSTOMER ENGAGEMENT

Although CE has been discussed in academic circles since 2006, it only gained significant attention around 2010 (Algharabat, 2018; Daly et al., 2017; Ala et al., 2022). Some of the most influential definitions have been provided by prominent scholars such as Brodie, Hollebeek, Jurić and Ilić (2011), Hollebeek (2011), Van Doorn et al., (2010), and Vivek et al., (2012). Van Doorn et al., (2010) approached CE primarily from a behavioural perspective, whereas Brodie et al. (2011) and Hollebeek (2011) focused on the psychological state of customers (Ala et al., 2022). Overall, CE can be interpreted through various lenses, but the common objective remains to influence desirable customer behaviours such as positive brand attitudes, purchase intentions and loyalty (Ala et al., 2022).

2.8.3 RESPONSIVENESS

Responsiveness refers to an AI system's ability to detect and react promptly to user input (Chen, Tran-Thien & Florence, 2021; De Visser, Monfort, Goodyear, O'Hara, Lee, Parasuraman & Krueger, 2017; DeLone & McLean, 2004; Tiwana, 1998). AI enhances real-

time interaction and responsiveness, meeting rising customer expectations for immediate service (Shakoor, 2024). Tools like chatbots and virtual assistants handle inquiries, speed up service, and ease employee workload (Hari, Iyer & Sampat, 2022), with higher responsiveness linked to perceptions of innovation (Chen, Tran-Thien & Florence, 2021). This capability plays a critical role in improving customer satisfaction and operational efficiency.

2.8.4 PERSONALISATION

AI-powered personalisation customises user experiences, recommendations, and content using advanced algorithms and machine learning. By analysing user behaviour, preferences, and past interactions, AI generates insights to deliver relevant content. As users interact with platforms, algorithms refine their understanding and adjust suggestions in real time, ensuring personalisation remains accurate as preferences evolve (Venkatachalam & Ray, 2022).

2.8.5 AUTOMATION

Advancements in automation and digital technologies are reshaping work and the economy, with AI emerging as a key tool for performing tasks once handled by humans, often more efficiently and cost effectively (Tyson & Zysman, 2022). Modern AI uses advanced computing and machine learning to automate tasks at or beyond human cognitive levels, driven by powerful hardware, large datasets, and refined algorithms. It enhances robots, production systems, and digital platforms that facilitate transactions. Through ongoing data collection and prediction, AI powers platforms like Amazon, Netflix, Uber, and Upwork (Tyson & Zysman, 2022). These developments are not only transforming industries but also redefining how value is created and delivered in the digital economy.

2.9 THEORETICAL FRAMEWORKS

A framework is essential in research, providing a structured foundation that guides the study and ensures systematic investigation. This study proposes three theoretical frameworks linking AI to CE in organisations: the Target Operating Model (TOM), Uses and Gratifications Theory (UGT), and Expectation Confirmation Theory (ECT). The TOM concept originated in management consulting and operations strategy as organisations sought structured methods to translate strategic objectives into execution (Bartletta, Beardsley, Donnadieu, Hapelt, Macé,

Maguire, Shub & Tang, 2014; Wijers, Liefers & Halfhide, 2012). While no single individual invented TOM, firms such as Boston Consulting Group (BCG) and McKinsey & Company played a major role in developing and popularising it during the late 20th and early 21st centuries (Bartletta et al., 2014; Jost, Mahadevan, Pralong & Sieberer, 2020).

Bartletta et al. (2014) describe TOM as a comprehensive operational and technological framework that supports strategic objectives, resource allocation, innovation, market expansion, and client relationships. It enhances customer satisfaction, transparency, compliance, cost efficiency, flexibility, and profitability through three main components: process and technology, work structure, and organisational design. Building on these perspectives, TOM provides a foundation for applying AI to CE. Aligning AI with TOM's processes, technology, and design allows organisations to improve personalisation, responsiveness, and automation across customer touchpoints. AI-driven analytics support targeted marketing, while chatbots and virtual assistants streamline interactions, ensuring timely, consistent service. Embedding AI within TOM also strengthens governance, accountability, and ethical decision-making, maximising AI's impact on satisfaction, loyalty, and value creation.

FIGURE 2.1: TARGET OPERATING MODEL



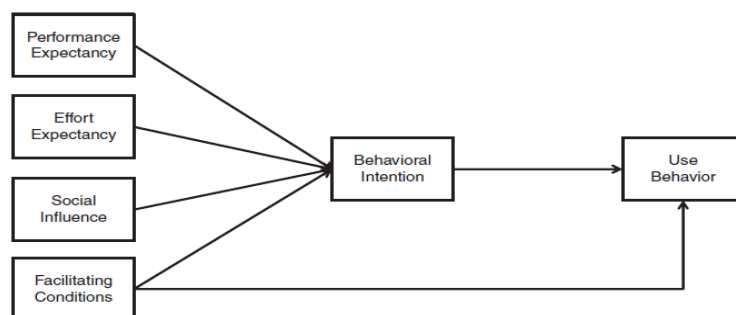
Source: Researcher's construction

Figure 2.1 presents a hierarchical TOM as a pyramid. At the base are Enablers/Resources, covering allocation, scalability, flexibility, and transparency. Above this is Work Structure/Organisational Design, defining roles, responsibilities, accountability, and ethics.

The next level, Process and Technology, highlights AI-enabled personalisation, responsiveness, automation, and analytics. At the apex are Strategic Objectives, representing improved customer satisfaction, loyalty, and value creation, illustrating that outcomes rely on a solid foundation of resources, organisational design, and technology-enabled processes.

The second framework is the Uses and Gratifications Theory (UGT). Initially applied to media studies (Stacks & Salwen, 2009), UGT now extends to new media and technologies such as video games, the internet, and mobile phones (Foregger, 2008), with relevance growing alongside the rise of digital communication. UGT posits that users actively select media to meet their needs (Severin & Tankard, 1997; McQuail, 2010), and the same media may serve different purposes for different audiences (Severin & Tankard, 1997). Customers deliberately choose media to satisfy their needs, acting as proactive agents (Moon et al., 2022 & Katz, Blumler & Gurevitch, 1974). In this study, UGT is applied to AI in CE to identify customer needs and motivations (Figure 2.2). Combined with constructs from the Technology Acceptance Model (TAM), performance expectancy, effort expectancy, social influence, and facilitating conditions, research shows that AI-driven personalisation, responsiveness, and automation shape CE by satisfying needs for convenience, tailored experiences, and efficiency. Integrating UGT and TAM demonstrates how control, rapid responses, and seamless automation drive engagement and sustain satisfaction.

FIGURE 2.2: USES AND GRATIFICATION THEORY



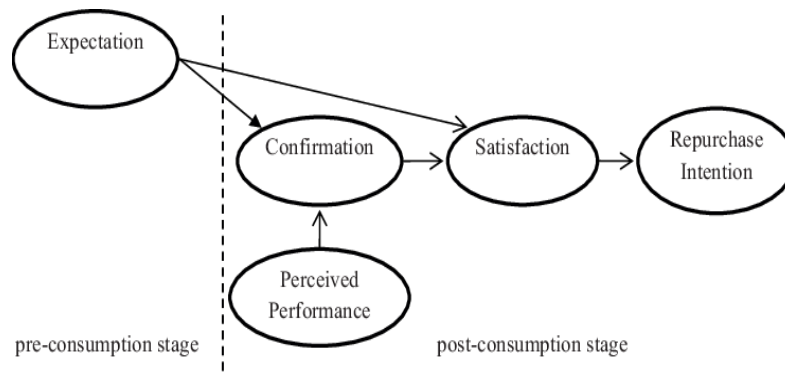
Source: Andre, Sutrisno and Susilawati, 2021

Figure 2.2 illustrates the core concepts of the Uses and Gratifications Theory (UGT), highlighting users' active role in selecting media based on needs such as convenience, information, and social interaction. These motivations drive CE with AI, emphasising the importance of systems that meet customer expectations to enhance engagement and satisfaction.

The third framework, Expectation Confirmation Theory (ECT), posits that satisfaction depends on how well products or services meet expectations (Al-Gasawneh, AlZubi, Anuar, Padlee, ul-Haque & Saputra, 2022; Al-Gasawneh, Khoja, Al-Qeed, Nasairat, Hammouro & Anuar, 2022; Oliver, 1980; Villarin, 2021), reflecting the customer's psychological state shaped by emotional responses and initial expectations (Al Sokkar & Law, 2013; Oliver, 1980; Wen, Prybutok & Xu, 2011). Proposed by Oliver (1980) as Expectation Disconfirmation Theory, ECT has been widely applied in areas such as product repurchase, service satisfaction, and information systems continuance.

ECT suggests that repurchase intentions stem from satisfaction with prior use (Oliver, 1980), as comparing expectations with performance produces positive, simple, or negative confirmation: positive or aligned performance enhances satisfaction and repurchase, whereas unmet expectations reduces both (Jin, Zhou, Lee & Cheung, 2013). ECT is particularly relevant to this study, as pre-use expectations and post-use perceptions shape satisfaction and behavioural intentions, and AI that delivers timely, personalised, and seamless experiences is more likely to meet or exceed expectations, boosting engagement. While this study does not empirically test confirmation or disconfirmation, ECT provides a useful lens for interpreting literature on how expectation confirmation influences satisfaction and engagement in AI-mediated contexts (Figure 2.3).

FIGURE 2.3: EXPECTATION CONFIRMATION THEORY



Source: Cheung, Jin, Lee, Oliver and Zhou, 2013

Figure 2.3 illustrates the application of Expectation Confirmation Theory (ECT) to AI-driven CE. It shows how satisfaction arises from comparing pre-use expectations with the perceived performance of AI features such as personalisation, responsiveness, and automation. Confirmation or disconfirmation shapes satisfaction, which in turn influences continued

engagement. The figure highlights how ECT explains the psychological mechanisms driving ongoing interactions with AI-enabled platforms.

2.10 SUMMARY

Chapter Two discussed the nature and importance of AI and CE, the challenges associated with both, and those arising when AI is used for CE. It reviewed previous research to provide context and introduced three frameworks: TOM, UGT, and ECT, each offering insights into customer behaviour and engagement in AI contexts. The next chapter outlines the research design and methodology, detailing the SLR and empirical processes used to examine how AI is utilised for CE.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

Following the literature review outlined in Chapter Two, Chapter Three will detail the research design and methodology employed in this study, covering both the SLR and the empirical investigation.

3.2 LITERATURE REVIEW METHODOLOGY

A literature review systematically collects and synthesises existing research to provide a comprehensive understanding of key concepts, their nature, and importance within the study's scope (Baumeister & Leary, 1997; Tranfield, Denyer & Smart, 2003). This review defines AI as a field developing intelligent systems that emulate human cognitive abilities, and CE as a dynamic, multidimensional process fostering ongoing customer loyalty and interaction.

AI's importance lies in its transformative impact across industries, enabling automation, improved decision-making, and personalised experiences. CE drives satisfaction, loyalty, and long-term success. Challenges for AI include technology anxiety, privacy concerns, ethical issues, and limitations, while CE faces engagement sustainability, evolving expectations, and balancing emotional and transactional relationships. Applying AI to CE also brings risks such as impersonal experiences, data privacy issues, algorithmic bias, and reduced human interaction. The review highlights AI applications in CE, focusing on responsiveness, personalisation, and automation, which enhance real-time interactions and value co-creation, while identifying knowledge gaps and supporting theoretical frameworks central to this study (Snyder, 2019).

The review in Chapter Two was conducted via structured searches in databases like Google Scholar and Emerald Insight. Initial searches used separate keywords for AI and CE, followed by combined terms, "AI and CE," "AI in customer service," "AI-driven personalisation," "automation in AI," "responsiveness of AI," and "AI chatbots", to capture peer-reviewed literature on AI applications in CE across industries. This strategy ensured a broad, relevant collection of sources aligned with the study's focus.

3.3 EMPIRICAL INVESTIGATION METHODOLOGY

Table 3.1 presents a description and rationale for the decisions and selections made in relation to the empirical investigation of this study. It is followed by a detailed explanation of the research strategy, along with the methods and procedures used for data collection and analysis.

TABLE 3.1: RESEARCH METHODOLOGY CHOICES

Descriptor	Options	Description of choice and justification of use
Philosophy / approach		
Philosophy/ paradigm	Positivism	Positivism, common in natural and social sciences, sees reality as observable phenomena and treats researcher and subject as independent, aiming for objective, value-free knowledge (Karupiah, 2022). It suits this study by enabling an objective investigation of AI utilisation in CE.
Approach to the theory of development	Deductive research	A deductive approach tests pre-existing theories by formulating hypotheses and designing strategies to assess them, whereas an inductive approach starts with data to develop new theories (Haque, 2022). Deduction is suitable for this study, enabling examination of established AI and CE theories using empirical data.
Research design		
Purpose of the study	Descriptive	Descriptive research, quantitative or qualitative, focuses on observing and describing phenomena without manipulation (Borg & Gall, 1989). Qualitative research entails the careful gathering and analysis of diverse empirical data (Denzin and Lincoln, 2005). This design suits the study as it provides a structured understanding of how AI is utilised for CE across contexts.
Methodological choice	Mixed method (quantitative and qualitative)	Mixed-method research combines qualitative and quantitative methodologies to gain a deeper understanding, with emphasis on one or both methods depending on the design (Taherdoost, 2022; Crocker & Heigham, 2009). It is suitable for this study as it integrates quantitative data from databases with qualitative insights into customers' motivations and experiences, providing both broad patterns and detailed understanding of AI-driven CE.
Research strategy	SLR	A SLR is a structured method for collecting, identifying, and evaluating studies (Pati & Lorusso, 2018), providing an overview of recent literature (Carrera-Rivera, Ochoa, Larrinaga & Lasa, 2022) and highlighting key knowledge areas and research gaps (Kitchenham, Brereton, Budgen, Turner, Bailey & Linkman, 2009).

Source: Researcher's construction

TABLE 3.1: RESEARCH METHODOLOGY CHOICES (CONTINUED)

Descriptor	Options	Description of choice and justification of use
Time dimension	Cross-sectional	A cross-sectional study seeks to describe general relationships between different variables or conditions at a single point in time (Blankenagel and Hunziker, 2024). This time frame is suitable for the study as it enables a snapshot assessment of how AI is currently applied to enhance CE across various industries.
Techniques and procedures for data collection and analysis	Monitoring study	According to Kariuki (2014), monitoring involves ongoing evaluation of project activities based on timelines and resource use, while Valadez and Bamberger (2004) it refers to making sure that all planned activities are executed as intended and identifying causes and corrective actions when they do not. This study draws on these definitions to frame the evaluation of AI utilisation for CE, emphasising continual assessment and improvement.
Data collection	Desk research	Desk research, also known as secondary research, involves analysing existing data and literature to extract meaningful insights (Gupta, 2024). This method is appropriate for the study as it allows for the efficient examination of prior research on AI and CE, helping to identify patterns, gaps, and opportunities for further investigation.
Data analysis	Thematic analysis	Thematic analysis, a qualitative approach, identifies patterns and themes through repeated reading of data (Sovacool, Iskandarova & Hall, 2023), allowing for deeper exploration of customer experiences and perceptions in AI-driven CE.

Source: Researcher's construction

3.3.1 RESEARCH STRATEGY

This study utilises SLR, which is a methodical approach to gathering, identifying, and evaluating existing studies (Carrera-Rivera et al., 2022; Kitchenham et al., 2009; Pati & Lorusso, 2018), summarising current literature and highlighting critical research gaps. This approach allows a comprehensive analysis of recent research on AI in CE, capturing current trends and identifying knowledge gaps. Table 3.1 outlines the SLR phases and steps.

3.3.2 STEPS IN UNDERTAKING A SYSTEMATIC LITERATURE REVIEW

Conducting an SLR effectively requires a structured series of phases and steps, ensuring a comprehensive, transparent, and replicable process for identifying, selecting, and analysing relevant studies. Each phase, from identifying research gaps and defining research questions to synthesising literature, is critical for maintaining rigor, minimizing bias, and enhancing the reliability of findings.

TABLE 3.2 : STEPS OF A SYSTEMATIC LITERATURE REVIEW

Phases	Steps
Phase 1: Topic information	1 Identifying the research gap 2. Conceptualising the topic and research question. 3. Decide upon a theoretical approach. 4. Define the theoretical framework.
Phase 2: Literature scope and identification	5. Determining inclusion and exclusion criteria. 6. Selecting sources and databases. 7. Developing search terms that are critical for ensuring the comprehensiveness and relevance of the review.
Phase 3: Literature search	8. Utilises the previously identified sources and search terms to review and synthesise relevant studies.
Phase 4: Selection of relevant literature	9. Inclusion/ exclusion decisions. 10. Quality appraisal are essential for ensuring reliability and validity of the review findings.
Phase 5: Literature synthesis and analysis	11. Ensuring rigour and trustworthiness. 12. Conducting descriptive and thematic analysis. 13. Synthesising the literature entails identifying and combining the key insights from the reviewed studies
Phase 6: Reporting and findings	14. Presenting the findings from Phase 5. 15. Discussing the core findings presented and giving insights. 16. Describing implications for future research are standard practises disseminating systematic outcomes

Source: Farenhof and Fermandes, 2016; Watson and Xiao, 2017

In this study, the need for a SLR was established by reviewing existing literature on AI and CE, which helped identify research gaps and formulate the question: "How is AI being utilised in CE?" Theoretical frameworks were selected, and a deductive approach guided the analysis. Clear inclusion and exclusion criteria ensured only high-quality literature was considered: articles had to be peer-reviewed, in English, relevant to AI in CE, either final publications or in press, and available in full text. Databases searched included Scopus, Web of Science, and Google Scholar, using terms such as "AI and CE," "AI in customer service," "AI-driven personalisation," "automation in AI," "responsiveness of AI," and "AI chatbots."

Relevance was assessed through titles, abstracts, and full texts. Articles not meeting the criteria were excluded, while qualifying studies were analysed for quality and content to ensure reliability. Selected studies were synthesised to assess rigour, summarise publication details, and extract key insights, with data organised into broad themes derived from relevant theoretical frameworks for a structured understanding of AI's impact on CE.

Finally, results were reported, core themes and findings discussed, interpretations drawn, and implications examined in relation to the research question. Suggestions for future research were provided, offering a comprehensive presentation of the study's contributions and laying the foundation for further investigation.

3.3.3 RESEARCH RIGOUR

Qualitative researchers must clearly justify their choice of validation criteria to ensure credibility and research strength (Adler, 2022; Tobin & Begley, 2004). Trustworthiness is essential in evaluating qualitative research, with transparency as its key component (Adler, 2022). Unlike quantitative research, which assumes credibility through systematic methods, qualitative research relies on the researcher as the primary instrument, making their transparency and trustworthiness critical (Adler, 2022). Some qualitative studies may adopt flexible or creative approaches rather than traditional scientific frameworks (Adler, 2022). Regardless, a trustworthy qualitative study must clearly describe its methods and theoretical foundations (Adler, 2022). Table 3.3 outlines how trustworthiness will be established and maintained in this study.

TABLE 3.3: ENSURING TRUSTWORTHINESS IN THE CURRENT STUDY

Trustworthiness	Actions to be taken in this research
Credibility	The aim of this study is to identify how AI is being used for CE. Using a SLR it researches key factors. Statistical analysis evaluates publication trends, while thematic analysis explores central themes. Reputable databases such as WoS, Google Scholar, and ResearchGate provided access to relevant literature.
Transferability	To ensure the transferability of the findings, Chapter One and Chapter Two offer a thorough and comprehensive overview of the research topic, providing a clear understanding of the context in which the research problem developed.

Source: Researcher's construction

TABLE 3.3: ENSURING TRUSTWORTHINESS IN THE CURRENT STUDY (CONTINUED)

Trustworthiness	Actions to be taken in this research
Dependability	Dependability refers to providing a trustworthy service by avoiding failures and ensuring correct and safe operation (Avižienis, Laprie, & Randell). Key aspects include availability, reliability, safety, confidentiality, integrity, and maintainability. Table 3.2 outlines the SLR phases and steps, which were carefully followed throughout the study to ensure rigor and data protection.
Confirmability	Ahmed (2024) defines confirmability as the objectivity and neutrality of research findings, ensuring they are not influenced by researchers' biases or personal preferences. In this study, confirmability was maintained by keeping a transparent and traceable audit trail throughout the SLR process.

Source: Researcher's construction

Researchers establish credibility by spending extended time in the research setting, consistently observing, and applying triangulation techniques (Dodgson & Hum, 2019). Transferability refers to how well findings can apply to other contexts (Haq, Akther, Rasheed & Rashid, 2023; Riazi, Ghanbar & Rezvani, 2023). To support this, qualitative researchers provide rich descriptions of the study's context and methods, enabling readers to judge relevance and applicability.

Dependability concerns the consistency of findings over time (Haq et al., 2023). Researchers ensure this by documenting data collection and analysis procedures in detail (Amin, Nørgaard, Cavaco, Witry, Hillman, Cernasev, Desselle, 2020) and maintaining an audit trail of decisions throughout the study (Eryilmaz, 2022). Confirmability relates to the neutrality and objectivity of findings, preventing researcher bias (Haq et al., 2023). Meeting these four criteria strengthens the quality and trustworthiness of qualitative research.

3.4 ETHICAL CONSIDERATIONS

This study utilised desk-based research, meaning that all data was gathered from existing, publicly available sources without direct interaction with human participants. As the data used was neither private nor personal and did not involve any form of human engagement, there was no requirement for ethical clearance. However, to ensure full compliance with the ethical standards of Nelson Mandela University, the researcher completed and signed the institutional ethics declaration (Form E), along with the study supervisor and the Head of the Department of Business Management. A copy of the signed form is included as Annexure A.

3.5 SUMMARY

Chapter Three outlined the research design and methodology employed in this study, covering both the literature review and the empirical investigation. It provided a detailed explanation of the various options considered, the choices made, and the justification for those decisions related to the empirical component. Additionally, the chapter described the research strategy as well as the methods and procedures used for data collection and analysis. Chapter Four, which presents the empirical findings, will report on the outcomes of implementing Phases Three to Five as outlined in Table 3.2.

CHAPTER FOUR

FINDINGS AND INTERPRETATION OF DATA

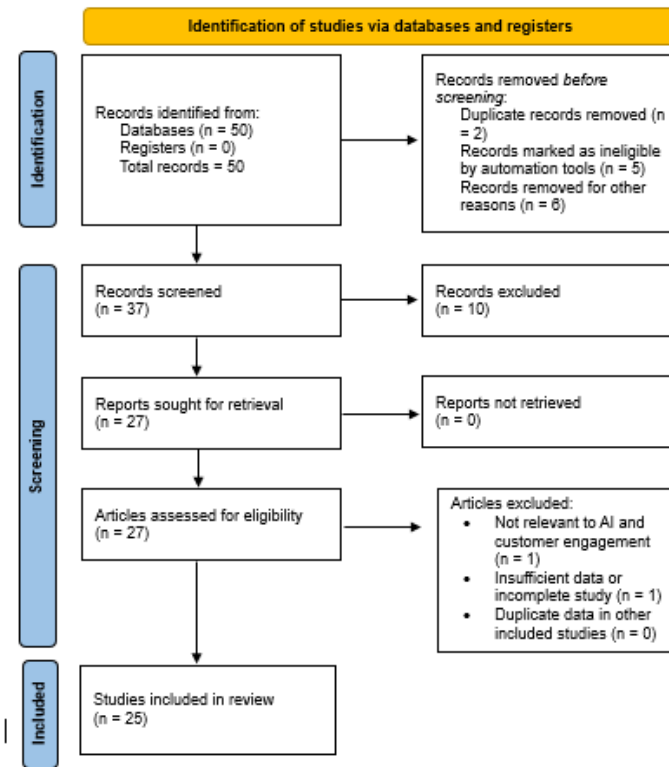
4.1 INTRODUCTION

This chapter presents the findings derived from the SLR conducted to explore how AI is utilised to enhance CE across various industries. The analysis centres on identifying and interpreting recurring patterns within the academic literature, offering insights into both the practical applications and theoretical dimensions of AI-driven CE. Guided by the research objectives and methodological framework and a structured thematic analysis was employed to synthesise the data. Through an iterative process of coding and categorisation, 25 articles were reviewed and analysed, leading to the identification of key themes aligned with the study's core conceptual dimensions: personalisation, responsiveness, and automation.

This chapter is organised around the major themes, each representing a key pathway through which AI contributes to deeper and more effective CE. These themes are examined in detail, supported by relevant academic literature. Where appropriate, connections between themes are highlighted to illustrate the integrated nature of AI technologies in practice. This chapter also presents the findings of the SLR, beginning with a descriptive analysis of the selected studies, followed by a thematic analysis. The findings are then examined in terms of their interconnections and interpreted in relation to the theoretical frameworks introduced in Chapter 2, namely the Target Operating Model (TOM), Uses and Gratifications Theory (UGT), and Expectation Confirmation Theory (ECT).

4.2 PRISMA

To ensure a rigorous and transparent selection of literature, a SLR process was followed using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. The PRISMA diagram in Figure 4.1 illustrates the detailed flow of identification, screening, eligibility assessment, and final inclusion of articles in this study.

FIGURE 4.1: PRISMA FLOW DIAGRAM

Source: Researcher's construction

The initial search across multiple academic databases yielded 50 articles on AI and CE. After removing duplicates and screening titles, abstracts, and full texts against inclusion criteria, focusing on publication date, peer-reviewed status, and thematic relevance, 25 articles were selected for in-depth review. As detailed in Chapter 2 and Annexure D, only peer-reviewed journal articles published between 2003 and 2025 were included, ensuring quality and relevance to AI's use in CE.

4.3 DESCRIPTIVE ANALYSIS

This section provides a quantitative overview of the 25 articles included in the SLR. It outlines the number, types, and key characteristics of the selected studies, offering context for the thematic analysis and illustrating the breadth and focus of AI research in CE as introduced in Chapter 2. The 25 articles analysed were carefully and systematically selected through the process detailed in the PRISMA flowchart (Figure 4.1). This rigorous selection process ensures that the descriptive statistics presented here accurately reflect a well-curated and representative sample of the current literature on AI-enabled CE.

4.3.1 NUMBER AND DISTRIBUTION OF ARTICLES

A total of 25 articles were selected for this study, covering publications from 2011 to early 2025, reflecting growing scholarly interest in AI and its application to CE. Temporal analysis shows a clear upward trend from 2020 onwards, aligned with rapid technological advancements and wider AI adoption in marketing, service delivery, and customer relationship management. Early studies, particularly before 2015, were largely conceptual, focusing on definitions, frameworks, and foundational discussions. Empirical and applied research gained prominence from 2019, emphasising AI-driven personalisation, responsiveness, and operational automation. Nearly half of the studies were published in 2024–2025, highlighting a surge in practical research on AI for enhancing CE.

The articles were sourced from journals and books spanning multiple regions, including India, Switzerland, the USA, New Zealand, Taiwan, China, the Middle East, and global studies. Journals include *Journal of Service Research*, *Journal of Business Research*, *International Journal of Human–Computer Interaction*, *International Journal of Retail and Distribution Management*, *Journal of Interactive Marketing*, *Information Systems Frontiers*, *Australasian Marketing Journal*, *International Journal of Intelligent Networks*, *International Journal of Information Management Data Insights*, *Computers and Industrial Engineering*, *Journal of Modelling in Management*, *Sustainability*, *International Journal of Data and Network Science*, and *Journal of Hospitality Management*. Books and edited volumes include *Artificial Intelligence in Customer Service*, *AI: The New System Technology*, *Learning Outcomes of Classroom Research*, *Springer Nature Switzerland*, and *Developing Relationships, Personalization, and Data Herald in Marketing 5.0*. Overall, the upward trend in publications, alongside the interdisciplinary sources and international representation, demonstrates the growing academic interest and practical relevance of AI-enabled CE across diverse business contexts.

4.3.2 TYPES OF JOURNALS AND DISCIPLINES COVERED

The 25 articles reviewed were published across multiple journals and book chapters, reflecting a broad disciplinary scope. In marketing and service management, outlets such as *Journal of Service Research*, *Journal of Business Research*, *Australasian Marketing Journal*, and *Journal of Interactive Marketing* explore CE, AI-driven personalisation, and service automation.

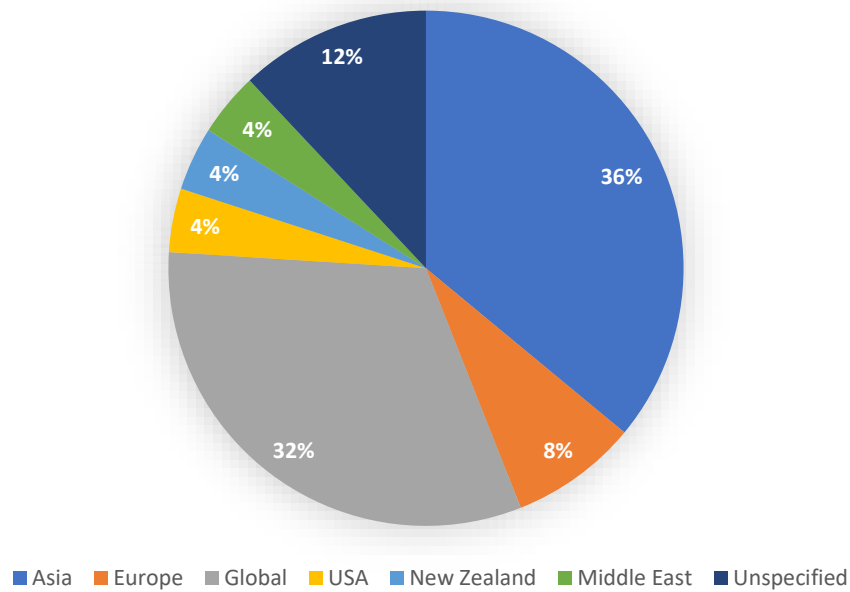
Information systems and technology journals, including *Information Systems Frontiers* and *International Journal of Human–Computer Interaction*, focus on integrating AI into customer relationship management and digital platforms.

Sector-focused journals, such as *International Journal of Retail and Distribution Management* and *Journal of Hospitality Management*, provide applied insights into retail, e-commerce, and customer interactions. Books and edited volumes, including *Artificial Intelligence in Customer Service* and *Developing Relationships, Personalization, and Data Herald in Marketing 5.0*, also contributed. The selection prioritised peer-reviewed and widely cited sources to ensure credibility and relevance, highlighting the multi-dimensional academic interest in how AI enhances CE across contexts.

4.3.3 SUMMARY OF MOST CITED ARTICLES

To highlight the academic influence of the reviewed literature, Annexure D presents the 25 selected articles included in this SLR. These publications have shaped current understanding of how AI is used for CE across marketing and service contexts, providing insights into mechanisms such as personalisation, responsiveness, and automation, alongside supporting mechanisms like trust, user experience optimisation, and human-AI interaction design. Annexure D details the authors, publication information and citation counts, reflecting their scholarly impact.

The geographical distribution shows a strong concentration in Asia, with 10 articles from India, China, and Taiwan. Europe contributed two studies from Switzerland and the Netherlands, while seven articles were classified as Global, examining multiple regions or positioned as globally relevant. The USA and New Zealand each contributed one article, and the Middle East was represented by one study focusing on Jordan. This regional spread demonstrates that while Asia dominates empirical research, global and collaborative studies also exert strong influence. Europe and North America hold significant theoretical contributions, and regions such as the Middle East are increasingly shaping knowledge on AI-driven CE.

FIGURE 4.2: REGIONS OF ARTICLE PUBLICATIONS

Source: Researcher's construction

Figure 4.2 shows the geographic distribution of the 25 articles included in this review. Most studies were conducted in Asia, particularly India, China, and Taiwan, followed by research classified as Global and studies from Europe (Switzerland and the Netherlands). The USA, New Zealand, and the Middle East are also represented, though less frequently, while three studies did not specify a region. This distribution highlights global interest in AI-driven CE, with a concentration in Asia and Global studies alongside emerging contributions from other regions.

4.3.4 JOURNALS

The 25 articles in this SLR were published across 15 journals and 5 books/edited volumes, reflecting diverse disciplinary outlets. Three journals, the *Journal of Service Research*, *Journal of Business Research*, and *International Journal of Retail and Distribution Management*, each published two articles, while the remaining outlets contributed one each.

Impact factors were not consistently reported; some journals, such as *Journal of Service Research* and *Journal of Business Research*, are widely recognised, while others, including *International Journal of Intelligent Networks*, *International Journal of Data and Network Science*, *Australasian Marketing Journal*, and *Journal of Modelling in Management*, may not report an impact factor. Books and edited volumes, such as *Artificial Intelligence in Customer*

Service and Developing Relationships, Personalization, and Data Herald in Marketing 5.0, also contributed but are not assigned impact factors. The analysis highlights the diversity of publication outlets and the varying academic influence of journals and books, demonstrating both interdisciplinary reach and a mix of established and emerging sources in AI and CE research.

4.3.5 RESEARCH METHODOLOGIES IN THE REVIEWED STUDIES

Where reported, the studies included in this SLR employed a range of research methodologies to investigate AI in CE. Several studies adopted qualitative approaches, using conceptual analyses and literature-based frameworks to explore AI-driven engagement mechanisms (Bansal, Pruthi & Saini, 2023; Chaturvedi & Verma, 2022; You, 2025). Others employed quantitative methods, including surveys and data-driven analyses, to examine the effects of AI tools on customer satisfaction, loyalty, and interaction patterns (Hari et al, 2022, Iyer & Sampat, 2022; Naqvi et al., 2024; Van Esch & Black, 2021). A subset of studies applied mixed-method approaches, combining empirical data with conceptual discussion to capture both practical and theoretical insights into AI-enabled CE (De Bruyn et al., 2020; Chatterjee et al., 2022).

By reporting the methodologies employed, this review not only highlights the diversity of approaches used to study AI in CE but also addresses the study's second objective (SO2), which aims to evaluate how AI is applied across research contexts. Collectively, these methodological approaches provide a comprehensive understanding of both conceptual and empirical advancements in the field.

4.4 THEMATIC ANALYSIS

This section presents the findings of the qualitative synthesis conducted during the SLR. The 25 selected articles were systematically examined to identify recurring applications of AI in CE, such as tailoring interactions, automating processes, providing timely responses, and analysing customer behaviour. These observations formed the basis for developing categories that capture how AI is used for CE, which are discussed in the following sections.

TABLE 4.1: THEMES EMERGING FROM RESEARCH ON THE UTILISATION OF ARTIFICIAL INTELLIGENCE FOR CUSTOMER ENGAGEMENT

KEYWORDS/PHRASES	CODES	THEMES
Mimic human-like intelligence A1; Empathy enhanced by human-AI interaction A2; Emotional attachment A2; Emotional engagement A2	Simulated empathy	Emotional human-AI interaction
Chatbots A3, A4; Virtual assistants A3, A5; Cognitive engagement A6	AI-driven conversations	
AI-enabled CRM A7, A17, A18; Generative AI interaction A6	AI-relationship-like interactions	
Free from emotional bias A8; Reduce human errors A8	Non-human-like interactions	
Personalised A2, A20; AI-enabled personalisation A5, A7, A15, A10; Personalise services A9; Tailored recommendations A5, A15	Individualised offerings	Personalisation
Curated offerings A5, A10; Relevant content A11, A12; Customer centric A2;	Relevance	
Responsiveness A13, A14; Respond in real time A13, A15; Real-time feedback A13, A14, A15	Instant feedback	Responsiveness
Interactions A5, A15; Real-time interaction A5, A7, A10, A15	Dynamic exchanges	
Analyse data A5, A15; Insights into customer behaviour and trends A13; Predictive analytics A5, A13; Recommendations systems A13; Making predictions A1	Data-driven insights	
Multi-task A8; Optimise operations A9; Automating tasks A8; Repetitive tasks A8; Operational consistency A4, A9	Operational automation	

Source: Researcher's construction

TABLE 4.1: FACTORS IN THE UTILISATION OF ARTIFICIAL INTELLIGENCE FOR CUSTOMER ENGAGEMENT (CONTINUED)

KEYWORDS/PHRASES	CODES	THEMES
Perceptions of innovation A4	Trust to bring innovation	Trust
Customer experience A5	Trust in positive experiences	
Trust A2	Trust	
Loyalty A18, A22, A24; Satisfaction A2, A13, A17, A23; Continuance intention A18	Long-term trust	
Privacy concerns A2; Privacy management A2	Privacy trust	

Source: Researcher's construction

Based on Table 4.1, the following sub-sections present a detailed discussion of the key themes identified in the SLR. Each theme is linked to how AI is being used for CE.

4.4.1 THEME ONE: EMOTIONAL HUMAN-AI INTERACTION

AI systems that mimic human-like intelligence facilitate more natural interactions, allowing customers to engage with technology in ways that resemble human communication, often through features such as personalization and anthropomorphism that create the perception of human-like understanding (Bansod, 2023; Chaturvedi & Verma, 2023). Chatbots and virtual assistants enable users to obtain information, guidance, or support efficiently, fostering a sense of interaction even in the absence of human agents (Hari et al., 2022; Chen et al., 2022; De Bruyn et al., 2020). These AI-driven systems support cognitive engagement, enabling customers to participate actively in dialogue and decision-making processes, which enhances emotional and interactive experiences while remaining free from human errors (You, 2025; Pothen, 2023).

By leveraging AI-powered virtual assistants and responsive chat systems, organisations can provide interactions that feel human-like, facilitate dynamic engagement, and reduce operational errors associated with human agents (De Bruyn et al., 2020; Hari et al., 2022). Furthermore, generative AI interactions allow the system to anticipate user needs, creating a more personalised and responsive experience (You, 2025). Based on this theme, it is evident

that AI is used for CE because it enables emotional and cognitive interactions that combine human-like qualities with the operational advantages of technology.

4.4.2 THEME TWO: PERSONALISATION

AI-enabled personalisation allows organisations to tailor content, services, and recommendations based on individual customer preferences (Chatterjee et al., 2024; De Bruyn et al., 2020; Naqvi et al., 2024; Van Esch & Black, 2021). By delivering tailored recommendations, AI enhances customer-centric interactions, improving satisfaction and engagement (De Bruyn et al., 2020; Naqvi et al., 2024; Haleem, Javaid, Qadri, Singh & Suman 2022; Venkatachalam and Ray, 2022).

Personalisation can also take the form of curated offerings, helping organisations meet the unique preferences of customers and reinforce relevance in interactions (De Bruyn et al., 2020; Van Esch and Black, 2021). By applying these AI features, organisations create individualised experiences that strengthen the relationship between the customer and the organisation (Chaturvedi & Verma, 2023; Bansal et al., 2022; Sheikh et al., 2023). This theme shows that AI-enabled personalisation is used by organisations to foster CE.

4.4.3 THEME THREE: RESPONSIVENESS

AI-enabled interactions via chatbots and virtual assistants allow organisations to provide timely and relevant responses (Chatterjee et al., 2024; De Bruyn et al., 2020; Naqvi et al., 2024; Van Esch & Black, 2021), while also offering instant feedback that enhances the quality of service. These systems enable organisations to address customer needs promptly, supporting satisfaction and ongoing engagement. By leveraging AI tools, organisations can maintain consistent communication and dynamic exchanges while minimizing delays in service delivery (Kartal et al., 2016; Shakoor, 2024; Naqvi et al., 2023). Real-time engagement ensures that interactions remain relevant and responsive, strengthening overall customer experience and promoting ongoing interaction. This theme shows that the responsiveness capability of AI is used by organisations to foster CE.

4.4.4 THEME FOUR: DATA-DRIVEN INSIGHTS

AI enables organisations to analyse data, produce insights into customer behaviour and trends, and implement predictive analytics and recommendation systems (Kartal et al., 2016; Naqvi et al., 2023; Bansod, 2023:46; De Bruyn et al., 2020). These capabilities allow organisations to anticipate customer needs, optimise decision-making, and improve engagement strategies. By using AI-driven data analytics, organisations can identify patterns in customer behaviour, support real-time interaction, and provide targeted responses that enhance satisfaction and retention (Kartal et al., 2016; Naqvi et al., 2023). Data-driven insights support the design of personalisation and responsiveness features, creating a feedback loop that strengthens overall CE. This theme shows that AI's capacity for data analysis and predictive insights is used by organisations to foster CE.

4.4.5 THEME FIVE: OPERATIONAL AUTOMATION

Operational automation is achieved through AI systems that manage repetitive tasks, multi-tasking, and optimising operations to improve efficiency (Pothen, 2022:78-79; Sheikh et al., 2023; Chen et al., 2021). Automation reduces human error and ensures consistent service delivery across customer touchpoints. AI-enabled CRM and virtual assistants streamline workflows, enabling organisations to maintain operational consistency while freeing human resources for more strategic functions (Chatterjee et al., 2024; De Bruyn et al., 2020). By embedding automated processes into service delivery, organisations enhance scalability and efficiency, providing reliable and seamless customer experiences (Pothen, 2022; Sheikh et al., 2023). This theme shows that AI-enabled operational automation is used by organisations to foster CE.

4.4.6 THEME SIX: TRUST

AI systems contribute to trust by ensuring unbiased decision-making and reducing the likelihood of human errors, which strengthens customer confidence in AI-mediated processes (Pothen, 2022:78-79). These features help customers feel that interactions are reliable and consistent, which fosters confidence in the organisation and reduces concerns about mistakes that could affect service quality. Trust is further reinforced when AI platforms consistently deliver reliable services and support positive customer experiences, fostering perceptions of innovation and credibility in the organisation (Chaturvedi & Verma, 2023; De Bruyn et al.,

2020). These positive experiences signal to customers that the organisation is competent in handling their needs, thereby increasing their willingness to continue engaging with AI-driven services.

Moreover, AI features that safeguard privacy and manage data securely enhance customer confidence, reinforcing privacy trust and long-term loyalty (Al-Gasawneh et al., 2022; Al-Gasawneh et al., 2022; Villarin, 2021). By actively protecting sensitive information and maintaining transparency, organisations demonstrate reliability and accountability, which encourages customers to share data and interact more openly with AI. This theme shows that AI's ability to ensure reliable, unbiased, and privacy-conscious interactions is used by organisations to foster CE.

4.5 INTERPRETATION OF FINDINGS IN RELATION TO THEORETICAL FRAMEWORKS

The empirical insights gained through the SLR align closely with the three theoretical frameworks discussed in Chapter 2: Target Operating Model (TOM), Uses and Gratifications Theory (UGT), and Customer Engagement Theory.

4.5.1 TARGET OPERATING MODEL

The TOM provides a structured approach for aligning organisational processes, technology, and work structures with strategic objectives (Bartletta et al., 2014; Wijers et al, 2012). In AI-driven CE, TOM shows how personalisation, responsiveness, and operational automation can be embedded into processes to enhance satisfaction and loyalty. Personalisation delivers tailored experiences through AI recommendations and curated offerings (Chatterjee et al., 2024; De Bruyn et al., 2020; Naqvi et al., Van Esch & Black, 2021), which can also foster emotional human-AI interaction by simulating empathy and supporting cognitive engagement. Responsiveness ensures timely interactions via chatbots or virtual assistants (Kartal et al., 2016; Shakoor, 2024), helping address customer needs promptly and reinforcing satisfaction. Operational automation optimises repetitive tasks to maintain efficiency and consistency (Pothen, 2022:78-79; Sheikh et al., 2023; Chen et al., 2021), while also reducing errors and increasing reliability to build trust.

Furthermore, TOM can incorporate trust by embedding processes that ensure unbiased decision-making and secure handling of data (Pothen, 2022:78-79; Al-Gasawneh et al., 2022), and data-driven insights through AI analytics can guide decision-making and improve CE strategies (Kartal et al., 2016; De Bruyn et al., 2020). Integrating these AI capabilities within TOM allows organisations to systematically convert technology into strategic value while strengthening engagement across multiple dimensions.

4.5.2 USES AND GRATIFICATIONS THEORY

UGT posits that users engage with technology to fulfil specific needs. AI supports this by providing personalised content, responsive communication, and automated service processes (Chatterjee et al., 2024; Kartal et al., 2016; Pothen, 2022:78-79), while also fostering emotional human-AI interaction by simulating empathy and enabling cognitive engagement (Bansod, 2023; Chaturvedi & Verma, 2023; You, 2025). Personalisation delivers tailored recommendations to meet customers' need for relevance (Chaturvedi & Verma, 2023; De Bruyn et al., 2020), responsiveness satisfies immediacy through real-time interactions and instant feedback (Kartal et al., 2016; Naqvi et al., 2023), and automation enhances efficiency, supporting consistent and reliable experiences while reducing human errors (Sheikh et al., 2023:1–3; Pothen, 2022:78-79). In addition, these AI mechanisms help build trust by ensuring reliable, unbiased, and secure interactions (Al-Gasawneh et al., 2022; Villarin, 2021) and generate data-driven insights that inform future engagement strategies (Kartal et al., 2016; De Bruyn et al., 2020). Together, these mechanisms meet functional, cognitive, and emotional needs, fostering comprehensive CE.

4.5.3 CUSTOMER ENGAGEMENT THEORY

CET frames engagement across emotional, cognitive, and behavioural dimensions. Emotional engagement occurs when AI mimics human-like intelligence, fostering interactive experiences and empathy that encourage customers to connect with the system on an emotional level (Bansod, 2023:46; Hari, Iyer & Sampat, 2022; You, 2025). Cognitive engagement is supported through personalisation, which delivers individualised offerings and prompts active participation in decision-making (Chatterjee, Khorana, Mikalef & Kizgin, 2024; Sheikh, Prins & Schrijvers, 2023:1–3). Behavioural engagement is facilitated by responsiveness, where AI provides timely interactions and instant feedback, prompting repeated use and ongoing interaction (Kartal et al., 2016; Shakoor, 2024).

Furthermore, trust strengthens emotional engagement by ensuring reliable, unbiased, and error-free AI performance (Pothen, 2022:78-79; Chaturvedi & Verma, 2023; De Bruyn et al., 2020), while data-driven insights enhance cognitive engagement by informing personalised and relevant offerings that increase satisfaction and retention (Kartal, Cebi, Gunaskaran & Ozrwwin, 2016; Bansod, 2023:46). Operational automation supports behavioural engagement by maintaining consistent service delivery, optimising workflows, and freeing human resources for strategic tasks (Sheikh, Prins & Schrijvers, 2023:1–3; Pothen, 2022:78-79).

4.6 SUMMARY

This chapter presented findings from the SLR using descriptive and thematic analyses. The descriptive analysis highlighted publication trends and methodological characteristics, providing context for the study.

The thematic analysis identified six main themes: personalisation, responsiveness, operational automation, emotional human-AI interaction, trust, and data-driven insights—that illustrate how AI enhances CE (Tables 4.1 and 4.2). These themes are interconnected: operational automation enables scalable and consistent engagement, responsiveness ensures timely and relevant interactions, and personalisation enhances relevance, trust, and satisfaction.

The review of research methodologies demonstrates that SO² has been achieved, as it shows how AI is applied across different research contexts. Studies included in this review used qualitative approaches to explore AI-driven engagement mechanisms (Bansal et al., 2023; Chaturvedi & Verma, 2022; You, 2025), quantitative methods to examine the effects of AI on satisfaction, loyalty, and interaction patterns (Hari et al., 2022; Naqvi et al., 2024; Van Esch & Black, 2021), and mixed-methods approaches combining empirical data with conceptual discussion (De Bruyn et al., 2020; Chatterjee et al., 2022).

Interpreting these findings through the TOM, UGT, and CET frameworks confirms that AI drives meaningful, human-like engagement across emotional, cognitive, behavioural, and operational dimensions. Guided by the PRISMA framework, the systematic study selection provides a robust foundation for thematic and theoretical insights, setting the stage for Chapter Five, which presents practical implications, recommendations, and future research directions.

CHAPTER 5

SUMMARY, RECOMMENDATIONS, AND CONCLUSIONS

5.1 INTRODUCTION

Chapter Five is the final chapter of this study. It begins with an overview of the research, highlighting its purpose and scope in exploring how AI is utilised to enhance CE. The chapter then presents the key findings from the descriptive and thematic analyses, focusing on how AI applications influence CE. The findings show how AI is being utilised for CE through these key areas: emotional human-AI interaction, personalisation, responsiveness, data-driven insights, operational automation and trust. These areas could collectively contribute to improved customer satisfaction, loyalty, engagement depth, and operational efficiency, all seen as part of CE. The chapter also addresses the limitations of the study, outlines its contributions to theory, practice, and future research, and concludes with a summary of the study.

5.2 OVERVIEW OF THIS STUDY

Chapter One introduced the study, outlining the research problem, objectives, and the research question on how AI enhances CE across industries. It described the study scope, key concepts, significance, and chapter structure. Chapter Two reviewed the literature, covering key concepts and theoretical frameworks, including the Target Operating Model (TOM), Uses and Gratifications Theory (UGT), and Customer Engagement Theory, and examined AI applications in personalisation, responsiveness, and automation.

Chapter Three detailed the research design and methodology, including the paradigm, approach to theory development, methodological choice, time dimension, data collection and analysis, steps for the SLR, rigour measures, and ethical considerations using publicly available data. Chapter Four presented findings from 25 articles. Descriptive analysis covered publication trends, journals, geographic distribution, and methods. Thematic analysis identified six areas where AI enhances CE: emotional human-AI interaction, personalisation, responsiveness, data-driven insights, operational automation and trust, which collectively could strengthen satisfaction, loyalty, and efficiency, forming CE. Findings were also interpreted through the TOM, UGT, and CET.

Chapter Five will discuss practical implications, provide recommendations, and suggest areas for future research on AI-enabled CE. Table 5.1 presents a summary of how the primary, secondary, and methodological research objectives were accomplished across the chapters of this study

TABLE 5.1: ACCOMPLISHMENT OF RESEARCH OBJECTIVES PER CHAPTER

Research objective	Chapter
Primary research objective: Undertake a systematic literature review on how AI is used for CE	Chapter 4
Secondary research objectives:	
SO ¹ : Descriptively analyse journal publications focusing on how AI is used for CE across various industries	Chapter 4
SO ² : To explore the theories and methodologies applied in research focusing on how AI is being used for CE	Chapter 4
SO ³ : To provide a comprehensive summary of key insights and trends in the literature regarding how AI is used for CE	Chapter 4
SO ⁴ : To identify gaps in the current literature and suggest future research directions on the integration of AI and CE	Chapters 4 and 5
Methodological research objectives	Chapter
MO ¹ : To conduct a literature review on the nature and significance of AI as well as CE and these concepts' application across various industries	Chapter 2
MO ² : To identify and determine the most appropriate research methodology to address the primary and secondary research objectives	Chapter 3
MO ³ : To utilise theoretical frameworks that will guide the collection and analysis of data related to how AI is used for CE	Chapter 2
MO ⁴ : To collect relevant data from academic journals, reports and studies that focus on AI and CE	Chapter 4
MO ⁵ : Analyse the collected data using suitable analytical methods	Chapter 4
MO ⁶ : To draw conclusions and offer recommendations for future research regarding the integration of AI and CE	Chapter 5

Source: Researcher's construction

As shown in Table 5.1, all primary, secondary, and methodological research objectives were successfully attained through the SLR and analysis presented in Chapters Two to Five.

5.3 DISCUSSION OF EMPIRICAL FINDINGS

This section presents a discussion of the empirical findings derived from the descriptive and thematic analyses conducted in Chapter 4. It focuses on how AI is utilised to enhance CE across various industries, structured according to descriptive insights and thematic findings.

5.3.1 DESCRIPTIVE FINDINGS RELATING TO JOURNAL PUBLICATIONS

The descriptive analysis examined 25 peer-reviewed articles and book chapters published between 2011 and 2025, with a noticeable increase from 2020, reflecting growing interest in AI for CE. Most studies originated from Asia (India, China, Taiwan), with contributions from Europe, the USA, New Zealand, the Middle East, and global studies, highlighting AI's international relevance.

The studies covered disciplines including marketing, service management, information systems, retail, and hospitality. Leading journals included the *Journal of Service Research*, *Journal of Business Research*, and *International Journal of Retail and Distribution Management*, alongside book chapters on AI applications. Quantitative methods predominated, while qualitative studies provided insights into emotional human-AI interaction and cognitive engagement. Common theoretical frameworks included the TOM, UGT, and CET, offering multiple lenses to interpret AI-driven CE.

5.3.2 THEMATIC FINDINGS

The thematic analysis identified six key areas through which AI enhances CE: emotional human-AI interaction, personalisation, responsiveness, data-driven insights, operational automation and trust. These themes collectively illustrate the practical applications, supporting dimensions, and outcomes of AI-enabled CE.

5.3.2.1 Emotional human-AI interaction

AI systems that mimic human-like intelligence enable natural and interactive customer experiences. Tools such as chatbots, virtual assistants, and generative AI allow customers to engage in conversations, obtain information quickly, and make decisions collaboratively, fostering both cognitive and emotional participation. These interactions simulate human engagement while reducing dependency on human labour, supporting continuous and dynamic dialogue (Bansod, 2023; Hari et al., 2022; You, 2025).

5.3.2.2 Personalisation

AI-driven personalisation allows organisations to tailor content, services, and recommendations to individual customer preferences. Curated offerings, relevant content, and adaptive recommendations create individualised experiences that strengthen customer relationships and increase engagement depth. Personalisation enhances customer satisfaction, perceived relevance, and loyalty (Chatterjee et al., 2024; De Bruyn et al., 2020; Van Esch & Black, 2021).

5.3.2.3 Responsiveness

AI enhances responsiveness by enabling real-time feedback and timely interactions with customers through chatbots, virtual assistants, and other AI-driven systems. This ensures that queries are addressed promptly, improving perceived service quality and customer satisfaction. Real-time engagement reinforces dynamic exchanges, strengthens trust, and supports ongoing interaction (Kartal et al., 2016; Shakoor, 2024; Van Esch & Black, 2021).

5.3.2.4 Data-driven insights

Through data analysis, AI enables organisations to generate actionable insights into customer behaviour, anticipate needs, and provide predictive recommendations. These insights support decision-making, inform personalisation and responsiveness features, and enhance overall CE by aligning services with customer expectations (Kartal et al., 2016; Naqvi et al., 2023; Bansod, 2023).

5.3.2.5 Operational automation

Operational automation allows AI systems to manage repetitive tasks, multi-tasking, and process standardisation, improving efficiency and consistency across customer touchpoints. Automated workflows, AI-enabled CRM, and virtual assistants free human resources for strategic functions while maintaining high-quality service delivery. This scalability ensures seamless customer experiences across large customer bases (Pothen, 2022; Sheikh et al., 2023; De Bruyn et al., 2020).

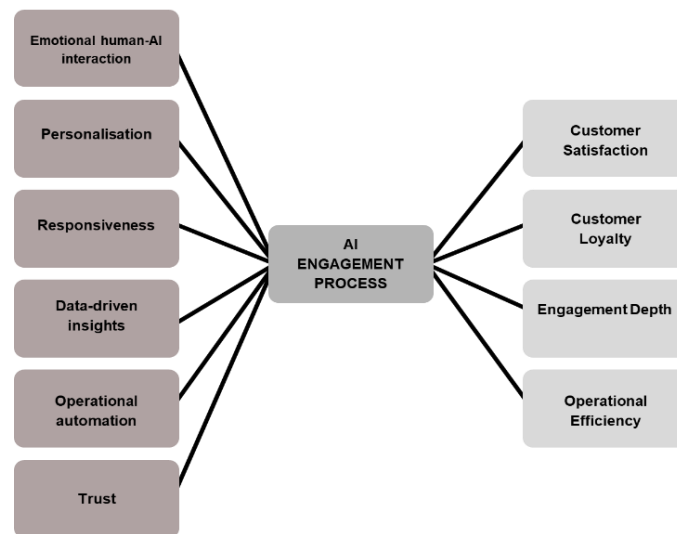
5.3.2.6 Trust

AI contributes to building customer trust by reducing human errors, providing unbiased decisions, and delivering reliable, consistent service. Accurate, relevant, and responsive AI interactions reinforce confidence in the technology and foster long-term satisfaction and loyalty. Transparency and secure data handling further enhance trust in AI-mediated engagement (Pothen, 2022; Chaturvedi & Verma, 2023; Al-Gasawneh et al., 2022).

5.4. CONCEPTUAL FRAMEWORK OF FACTORS INFLUENCING AI-ENHANCED CUSTOMER ENGAGEMENT

Based on the thematic findings in Section 5.3.2, the conceptual framework in Figure 5.1 illustrates how AI mechanisms, supporting mechanisms, and outcomes collectively influence customers' intention to engage with AI-enabled systems.

FIGURE 5.1: CONCEPTUAL FRAMEWORK OF FACTORS INFLUENCING AI-ENHANCED CUSTOMER ENGAGEMENT



Source: Researcher's Construction

The Conceptual framework illustrates how six AI related aspects: emotional human-AI interaction, responsiveness, personalisation, trust, data-driven insights, and operational automation, enhance CE. Emotional human-AI interaction enables natural conversations and collaborative decision-making, fostering cognitive and emotional participation (Bansod, 2023; Hari et al., 2022; You, 2025). Responsiveness provides timely feedback and real-time interactions, improving service quality (Kartal et al., 2016; Shakoore, 2024; Van Esch & Black,

2021), while personalisation tailors services to individual preferences, increasing engagement depth (Chatterjee et al., 2024; De Bruyn et al., 2020; Van Esch & Black, 2021). Trust is established through reliable and transparent AI interactions (Pothen, 2022; Chaturvedi & Verma, 2023; Al-Gasawneh et al., 2022), data-driven insights guide personalised and responsive strategies (Kartal et al., 2016; Naqvi et al., 2023; Bansod, 2023), and operational automation ensures efficiency and consistency across touchpoints (Pothen, 2022; Sheikh, Prins & Schrijvers, 2023; De Bruyn et al., 2020). Together, these aspects show how organisations use AI to enhance satisfaction, loyalty, engagement depth, and operational efficiency, thus ensure CE.

5.5 AVENUES FOR FUTURE RESEARCH

To address SO4, several avenues for future research arise from the six key themes. Emotional human-AI interaction enables interactive experiences, yet studies could explore how advanced AI, such as generative AI and virtual assistants, affects engagement across customer groups and over time (Bansod, 2023; Hari et al., 2022; You, 2025). Responsiveness improves service quality, but its interplay with other AI aspects and long-term effects on customer relationships warrants further investigation (Kartal et al., 2016; Shakoor, 2024; Van Esch & Black, 2021). Personalisation strengthens engagement, yet research could examine how it interacts with data-driven insights and operational automation to influence satisfaction and loyalty (Chatterjee et al., 2024; De Bruyn et al., 2020; Van Esch & Black, 2021).

Trust underpins engagement, but its mediating or moderating role alongside other AI factors remains underexplored (Pothen, 2022; Chaturvedi & Verma, 2023; Al-Gasawneh et al., 2022). Data-driven insights support predictive and personalised engagement, yet their application across industries merits further study (Kartal et al., 2016; Naqvi et al., 2023; Bansod, 2023). Operational automation enhances efficiency, yet research could examine how it integrates with human-like interaction and responsiveness to maintain meaningful engagement (Pothen, 2022; Sheikh et al., 2023; De Bruyn et al., 2020). Together, these areas can deepen understanding of how AI themes sustain effective CE.

5.6 LIMITATIONS OF THIS STUDY

This study is limited to 25 articles sourced from Google Scholar, WoS, and Scopus. While sufficient to identify key AI applications in CE, a broader search could provide additional insights. The study did not examine the interplay between personalisation, responsiveness, and automation, nor how mechanisms like trust, user experience optimisation, and human-AI interaction influence engagement outcomes. Focus was on positive outcomes, with limited consideration of potential negative effects, such as reduced emotional connection or disengagement from overly automated systems. Additionally, reliance on cross-sectional studies restricts understanding of how AI engagement mechanisms evolve over time.

5.7 CONTRIBUTIONS OF THIS RESEARCH

This study contributes by systematically analysing how AI is being utilised for CE through six key themes: emotional human-AI interaction, responsiveness, personalisation, trust, data-driven insights, and operational automation. It highlights how these themes could collectively influence customer satisfaction, loyalty, engagement depth, and operational efficiency since these related to CE. The findings provide practical insights for organisations aiming to design AI-enabled systems that balance operational automation, responsiveness, and data-driven personalisation while maintaining trust and human-like interactions.

5.8 CONCLUSION

The study demonstrates that emotional human-AI interaction, responsiveness, personalisation, trust, data-driven insights, and operational automation work together to support CE. Emotional human-AI interaction enables natural and collaborative experiences, responsiveness ensures timely interactions, and personalisation tailors services to individual preferences. Trust and data-driven insights underpin reliability and informed engagement strategies, while operational automation improves efficiency and consistency across touchpoints. Understanding how these themes interact is essential for organisations to leverage AI effectively, creating engagement that is both operationally efficient and meaningful for customers.

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ANNEXURE A: FORM E

NELSON MANDELA
UNIVERSITY

**FACULTY OF BUSINESS AND ECONOMIC SCIENCES
DEPARTMENT OF BUSINESS MANAGEMENT**

ETHICAL CONSIDERATION FOR HONOURS TREATISE (non-publication route)

INSTRUCTIONS

- Should be completed by study leader and student.
- Must be signed off by the student, study leader and HOD.
- Submit the completed and signed form to the module coordinator who will submit to Mrs Kim.Alexander@mandela.ac.za.
- Please ensure that a summary of the research methodology section of the treatise is attached to this form (*Complete Annexure A to this Form*).
- **Please note that by following this ethics route, the study will NOT be allocated an ethics clearance number.**

SECTION A – STUDENT ACKNOWLEDGMENT

- The student acknowledges that their research project is for academic qualification purposes only. As such, the research report or any sections thereof **may not be published**.
- The student also acknowledges that their research project **will be a desktop study** and will **make use of publicly available documents or secondary data**. No human subjects will be involved in the study as primary sources of data.

Secondary data, in this instance, refers to data that was collected and processed by someone else for some other purpose but is now being used by the researcher for another reason (Tripathy, 2013). Research utilising secondary data that both exists and has been collected in a public, academic database, for example Google Scholar, is considered desktop research, and generally does not require full ethical approval (Creswell & Poth 2017).

SECTION B – STUDENT AND RESEARCH PROJECT DETAILS

Student name & surname	KAYLA PARKER
Student number	224126067
Title of treatise	A SYSTEMATIC REVIEW OF RESEARCH ON HOW ARTIFICIAL INTELLIGENCE IS USED FOR CUSTOMER ENGAGEMENT
Qualification	BCOM HONS BUSINESS MANAGEMENT
Department	BUSINESS MANAGEMENT
Study leader	PROF. C ROOTMAN

ANNEXURE A: FORM E (CONTINUED)

SECTION C – ETHICS CRITERIA

	(Please tick the appropriate block)	YES	NO
1.	Is there any risk of harm, embarrassment of offence, however slight or temporary, to the participant, third parties or to the communities at large?		✓
2.	Is the study based on a research population defined as 'vulnerable' in terms of age, physical characteristics and/or disease status?		✓
2.1	Are subjects/participants/respondents of your study:		
2.1.1	Children under the age of 18?		✓
2.1.2	NMU staff?		✓
2.1.3	NMU students?		✓
2.1.4	The elderly/persons over the age of 60?		✓
2.1.5	A sample from an institution (e.g. hospital/school)?		✓
2.1.6	Handicapped (e.g. mentally or physically)?		✓
3.	Does the data that will be collected require consent of an institutional authority for this study? (An institutional authority refers to an organisation that is established by government to protect vulnerable people)		✓
3.1	Are you intending to access participant data from an existing, stored repository (e.g. school, institutional or university records)?		✓
4.	Will the participant's privacy, anonymity or confidentiality be compromised?		✓
4.1	Are you administering a questionnaire/survey that:		
4.1.1	Collects sensitive/identifiable data from participants?		✓
4.1.2	Does not guarantee the anonymity of the participant?		✓
4.1.3	Does not guarantee the confidentiality of the participant and the data?		✓
4.1.4	Will offer an incentive to respondents to participate, i.e. a lucky draw or any other prize?		✓
4.1.5	Will create doubt whether sample control measures are in place?		✓
5.	Do you wish to publish any research output (i.e. article) from this study?		✓

Please note that if **ANY** of the questions above have been answered in the affirmative (**YES**) the student will need to complete the full ethics clearance form (MEOS REC-H application) and submit it with the relevant documentation to the Faculty RECH (Ethics) committee.

The student hereby certifies that he/she has given his/her research careful ethical consideration and full ethics approval is not required.

ANNEXURE A: FORM E (CONTINUED)

SECTION D – INFORMATION TO BE INCLUDED INTO THE RESEARCH REPORT

(The section below should be edited and aligned to the specifics of the study)

1. ETHICAL CONSIDERATIONS

This study will follow the ethical research considerations that apply to all research in the social sciences, which are defined as moral rules and professional codes of conduct to the collection, analysis, reporting, and publication of information about research subjects (Pietilä, Nurmi, Halkoaho & Kyngäs, 2020:49). The research will, at all times, adhere to the following ethical considerations:

1.1 Informed Consent

Where data is freely available on the Internet, books or other public forum, permission for further use and analysis is implied, however, the ownership of the original data must be acknowledged (Tripathy, 2013).

1.2 Anonymity and Confidentiality

To ensure privacy and to protect individuals or institutions within the secondary data, a privacy plan or protocol will be in place to protect the confidentiality of the users. This may include removing identifiable information, securely storing the data and removing any sensitive information prior to distribution of the outcome of the study (where needed).

1.3 Action and Competence of Researchers

The study will be undertaken in an ethically correct manner. Under no circumstances would the researcher in this study make judgments about data, falsify data or plagiarise.

1.4 Respect of Intellectual Property

Intellectual property is the creation arising from intellectual activity, and this study will acknowledge and reference all ideas and sources used in the study.

1.5 Beneficence

The study topic being researched is for degree purposes only and will not be published.

1.6 Non-Maleficence

Non-maleficence makes sure that what is being done is not harmful and that harm is not done by omitting care or treatment. This study will make sure that no harm will come to anyone connected to the study. This body of work and the documents consulted will also adhere to the Protection of Personal Information Act (PoPIA). POPIA governs the collection, processing and sharing of personally identifiable information (PII).

1.7 Applying for ethical consideration

The researcher will apply for ethical consideration from the *Department of Business Management* (Nelson Mandela University) to have the right to research within the intended domain. The research

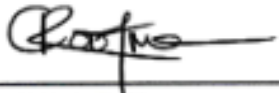
ANNEXURE A: FORM E (CONTINUED)

process, in particular data collection, may only be conducted once ethical clearance has been granted, i.e., the ethics form has been signed by the student, the study leader and the Head of Department.

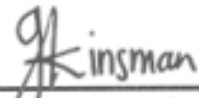
SECTION E – SIGNATURES AND DATES


STUDENT

07/05/2025
DATE


STUDY LEADER

7/5/2025
DATE


HEAD OF DEPARTMENT

8 May 2025
DATE

REFERENCES

- Cilliers, L. & Viljoen, K. (2021). A framework of ethical issues to consider when conducting internet-based research. *South African Journal of Information Management*, 23(1).
- Creswell, J.W. & Poth, C.N. (2017). *Qualitative inquiry and research design: Choosing among five approaches*, Sage, London.
- Pietilä, A. M., Nurmi, S. M., Halkoaho, A. & Kyngäs, H. (2020). Qualitative research: Ethical considerations. In *The application of content analysis in nursing science research*, Cham. Springer, 49-69.
- Tripathy, J.P. (2013). Secondary Data Analysis: Ethical Issues and Challenges. *Iran Journal of Public Health*. 42(12): 1478–1479.

ANNEXURE A: FORM E (CONTINUED)

ANNEXURE A: BCOM HONOURS TREATISE – SUMMARY OF RESEARCH METHODOLOGY

Please provide a summary of the research design and methodology employed in the study by completing the following template.

Treatise details	Title of treatise
	A SYSTEMATIC REVIEW OF RESEARCH ON HOW ARTIFICIAL INTELLIGENCE IS USED FOR CUSTOMER ENGAGEMENT
Background to the study	Introduction and background <i>Artificial intelligence (AI), formally introduced in 1956, has evolved into a transformative force reshaping industries and customer interactions. By replicating human intelligence, AI enables businesses to process data in real time, personalise customer experiences, and strengthen engagement strategies. As organizations increasingly leverage AI tools—from chatbots to predictive analytics—customer engagement has become more dynamic, data-driven, and essential for competitiveness. This systematic review explores how AI is currently being applied to enhance customer engagement across industries.</i>
	Problem statement <i>As customers increasingly seek personalised experiences, AI has emerged as a powerful tool for shaping purchasing decisions and enhancing engagement. While AI's real-time data processing and personalisation capabilities have transformed customer experiences, research on the integration of AI and customer engagement remains fragmented. This systematic review aims to bridge that gap by consolidating current knowledge and offering a clearer understanding of how AI is being used to drive customer engagement.</i>
Objectives of the study	Primary objective <i>The primary objective of this study is to conduct a systematic literature review (SLR) on the role of AI in enhancing customer engagement. Against this objective, the following research question is posed: How is AI being utilised for customer engagement? This review will comprehensively summarise and analyse existing research on AI-driven customer engagement practices, identify gaps in the current literature, and highlight avenues for future research in this evolving field.</i>
	Secondary objectives <i>SO1: To descriptively analyse journal publications focusing on how AI is used to enhance customer engagement across various industries. SO2: To explore the theories and methodologies applied in research examining the role of AI in customer engagement practices. SO3: To provide a comprehensive summary of the key insights and trends in the literature regarding AI's impact on customer engagement. SO4: To identify gaps in the current literature and suggest future research directions on the integration of AI in customer engagement strategies</i>
	Methodological objectives <i>MO1: To conduct a literature review on the nature and significance of AI in enhancing customer engagement, as well as its applications across various industries. MO2: To identify and determine the most appropriate research methodology to address the primary and secondary research objectives.</i>

ANNEXURE A: FORM E (CONTINUED)

	MO3: To develop the theoretical frameworks that will guide the collection and analysis of data related to AI's role in customer engagement. MO4: To collect relevant data from academic journals, reports, and studies that focus on AI and customer engagement. MO5: To analyse the collected data using suitable analytical methods that align with the research objectives. MO6: To draw conclusions and offer recommendations for future research in the intersection of AI and customer engagement.
Research design & methodology	Research philosophy / Paradigm (positivism, interpretivism etc.)
	Positivism: Positivism is a philosophical approach that seeks to establish the scientific study of human organisation within the social sciences (Turner, 2001). It emphasises the identification and evaluation of general laws through both theoretical and empirical research (Turner 2001). Although it is not universally accepted, positivist principles can be observed in various subfields of social science (Turner, 2001).
	Approach to theory development (inductive, deductive, abductive)
	Deductive: A deductive approach involves applying existing theory to the data in order to test it (Bingham, 2023). It's a "top-down" method of data analysis (Bingham, 2023). In qualitative analysis, this typically means using predefined codes, which can either be organisational tools or derived from concepts in the literature, theory, or propositions developed by the researcher (Bingham, 2023).
	Purpose of study (descriptive, exploratory, comparative)
	Descriptive: Descriptive research design is a valuable method for researchers to collect information about a specific group or phenomenon (Sirisilla, 2023). It offers a detailed and accurate depiction of the traits and behaviours of a population or subject (Sirisilla, 2023). Through observation and data collection, descriptive research enables researchers to gain a comprehensive understanding of a particular issue, providing valuable insights that can guide future research (Sirisilla, 2023).
	Methodological choice (mono, multi, mixed methods)
	Mixed method: Mixed methods' is a research approach whereby researchers collect and analyse both quantitative and qualitative data within the same study (Shorten and Smith, 2017).
	Research approach (quantitative, qualitative, mixed)
	Mixed methods is a research approach that involves gathering and analysing both quantitative and qualitative data within a single study (Shorten and Smith, 2017).
Data collection*	Research strategy (SLR, literature review, archival research, case study)
	Systematic literature review (SLR): A Systematic Literature Review (SLR) is a research method used to systematically collect, identify, and critically evaluate existing studies, such as articles, conference papers, books, and dissertations, while following a structured process (Carrera-Rivera, Ochoa, Larrinaga and Lasa, 2022)
	Time dimension (cross-sectional, longitudinal)
	Cross – sectional: Cross-sectional studies are observational in nature and involve analysing data from a population at one specific point in time.
	Technique and procedures (desktop study / desk research)

ANNEXURE A: FORM E (CONTINUED)

	<i>This study will use a desktop study (desk research) approach, drawing on publicly available documents and secondary data such as journal articles and online publications. Specific URLs are not required, as data will be sourced from a range of credible and relevant materials.</i>
	Search strategy: Data inclusion criteria
	<i>The search strategy involves using Emerald Insight and other relevant databases, with keywords related to AI and customer engagement, focusing on studies from the last 5 years. Inclusion criteria are limited to peer-reviewed articles that are relevant, methodologically rigorous, and available in full text.</i>
	Search strategy: Sources of data (databases, websites etc.)
	<i>The sources of data for this study will include academic databases such as Emerald Insight, Google Scholar and relevant websites like ResearchGate.</i>
Data analysis*	Search strategy: Search terms or word strings
	<i>The search strategy will involve using specific keywords and word strings such as "artificial intelligence," "AI in customer engagement," "AI applications in customer service," "customer experience AI," "AI-driven customer interactions," and "AI in customer engagement".</i>
Data analysis*	Data analysis techniques (content analysis, thematic analysis)
	<i>Thematic analysis is a research method that focuses on identifying and interpreting patterns or themes within a dataset, often resulting in new insights and deeper understanding (Boyatzis, 1998; Elliott, 2018; Thomas, 2006).</i>
Trustworthiness*	Quality criteria (credibility, dependability, transferability, and confirmability) (How will each of the aforementioned be ensured?)
	<i>To ensure credibility, only peer-reviewed, recent studies from reputable databases will be included. Dependability will be maintained by documenting the research process for replication. Transferability will be achieved by providing detailed descriptions to allow findings to apply to similar contexts. Confirmability will be ensured through systematic documentation and an audit trail to prevent researcher bias.</i>

* The details in these section could vary. Be guided by your study leader.

REFERENCES:

- Hall, J., 2020. What do we need for better monitoring? [online] Available: <https://www.betterevaluation.org/blog/what-do-we-need-for-better-monitoring> [Accessed 23 April 2025].
- Boyatzis R. E. 1998. Transforming qualitative information: Thematic analysis and code development. Sage.
- Elliott V. 2018. Thinking about the coding process in qualitative data analysis. Qualitative Report, 23(11), 2850–2861. DOI: 10.46743/2160-3715/2018.3560
- Thomas D. R. 2006. A general inductive approach for analysing qualitative evaluation data. American Journal of Evaluation, 27(2), 237–246. DOI:10.1177/1098214005283748

ANNEXURE A: FORM E (CONTINUED)

Carrera-Rivera, A., Ochoa, W., Larrinaga, F. and Lasa, G. 2022. How to conduct a systematic literature review: A quick guide for computer science research. *MethodsX*, 9, 101895. DOI: 10.1016/j.mex.2022.101895

Shorten, A. and Smith, J. 2017. Mixed methods research: expanding the evidence base. *Evidence-Based Nursing*, 20(3), pp.74–75. DOI: 10.1136/eb-2017-102699

Sirisilla, S., 2023. Bridging the gap: Overcome these 7 flaws in descriptive research design. [online]. Available at: <https://www.enago.com/academy/descriptive-research-design/> [Accessed 23 April 2025].

Bingham, A.J., 2020. Qualitative analysis: Deductive and inductive approaches. Available at: <https://www.andreaingraham.com/resources-tips-and-tricks/deductive-and-inductive-approaches-to-qualitative-analysis> [Accessed 23 April 2025].

Turner, J.H., 2001. Positivism: Sociological. In: N.J. Smelser and P.B. Baltes, eds. *International Encyclopedia of the Social & Behavioural Sciences*. Pergamon, pp. 11827-11831. DOI: 10.1016/B0-08-043076-7/01941-0

ANNEXURE B: LEARNING AGREEMENT

FACULTY OF BUSINESS AND ECONOMIC SCIENCES
LEARNING AGREEMENT BETWEEN STUDY LEADER AND POSTGRADUATE
STUDENT FOR BCOM HONS MINI-TREATISE QUALIFICATIONS

The aim of this learning agreement is to provide postgraduate students and their study leaders an opportunity to develop a sound and productive working plan. This document should be read in conjunction with the following Nelson Mandela University Policy documents:

- The General Prospectus
- Faculty of Business and Economic Sciences Prospectus
- University Code of Ethics Policy
- Policy on Intellectual Property
- Promotion of Academic Integrity and Prevention of Plagiarism

These documents are available on the Nelson Mandela University's website (<http://my.mandela.ac.za/default.asp?id=308&IRCno=>)

The Faculty of Business and Economic Sciences requires all postgraduate students and their study leader(s) to complete a learning agreement. Postgraduate students and their study leader(s) should discuss the issues outlined in this agreement, to have clarity and consistency regarding the conduct of the Postgraduate student and study leader. The document should be signed in each other's physical presence.

The postgraduate student and study leader should keep a copy of this learning agreement, and a copy must be sent to the module coordinator (Shelley.Farrington@mandela.ac.za).

PART A: DETAILS OF POSTGRADUATE STUDENT, STUDY LEADER(S) AND QUALIFICATION

NAME & SURNAME:	KAYLA PARKER
STUDENT NUMBER:	224126067
QUALIFICATION:	BCOM HONS BUSINESS MANAGEMENT
YEAR OF REGISTRATION:	2025
DEPARTMENT:	BUSINESS MANAGEMENT
STUDY LEADER:	PROF. C ROOTMAN

ANNEXURE B: LEARNING AGREEMENT (CONTINUED)

PART B: ROLES AND RESPONSIBILITIES OF THE POSTGRADUATE STUDENT AND STUDY LEADER(S)

• POSTGRADUATE STUDENT:

As a postgraduate candidate, the student is expected to apply him- or herself to meeting the following reasonable responsibilities.

The postgraduate Student accepts and undertake the following responsibilities:

DESCRIPTION	INITIAL
Complete all the required components of the academic programme as stipulated.	K.P
Plan and execute the research study as agreed to with the guidance of the study leader (and co-study leader, where applicable).	K.P
Ensure that the research proposal (Chapter 1-3) is submitted at the stipulated date.	K.P
Adhere to the principles of accepted safety and health standards, ethical research practice as per Nelson Mandela University Code of Conduct for Researchers (IRC 404.01), Policy on Research Ethics (IRC 404.02), specific codes of the discipline (where applicable) and conventions regarding plagiarism as per Nelson Mandela Policy for the Promotion of Academic Integrity and Prevention of Plagiarism (IRC 305.04).	K.P
Make regular appointments with study leader(s) to update study leaders(s) on progress or any difficulties encountered in executing the academic project as planned to ensure timeous remedial action where required.	K.P
Keep written record of supervision sessions and the decisions agreed to.	K.P
Submit regular outputs from the academic project to ensure effective guidance and input by study leader(s).	K.P
Ensure that written work submitted has been proofread and of an acceptable academic standard.	K.P
Ensure that the necessary amendments or revisions decided upon with study leader(s) are made regularly and resubmitted as agreed for further guidance.	K.P
Take responsibility for the final production of the treatise for examination and final submission at the specified dates.	K.P
Submit a manuscript to the study leader prior to the time of the approval of examiner reports (for purpose of awarding the doctoral degree).	K.P
The postgraduate student has read all the relevant strategic and policy documents related to their relevant qualification.	K.P
The postgraduate student has familiarised him- or herself with the internet-based plagiarism detection service; Turnitin software.	K.P
The postgraduate student endeavours to partake in workshops and training related to the research project	K.P

• STUDY LEADER / CO-STUDY LEADER:

The responsibilities outlined below are reasonable expectations of academics or any other persons who are undertaking the supervision of candidates.

The study leader(s) accepts and undertake the following responsibilities:

DESCRIPTION	INITIAL
Clarify respective roles of student, study leader, and co-study leader (where relevant) to ensure that student and study leader (s) are clear about channels of communication as well as expectations. Preferably such clarification should be contained in a study leader or learning agreement	
Confer or make contact with the student regularly (minimum once a month) to provide academic guidance to ensure the development of research skills and competencies	

ANNEXURE B: LEARNING AGREEMENT (CONTINUED)

relevant to the discipline and the specific study, and to ensure adherence to university requirements and/or discipline standards.	a
Monitor progress of the student and submit reports on student progress as required by the university and by relevant scholarship funding bodies.	a
Keep a record of supervision sessions and provide feedback, within the timeframe agreed upon, to enable student progress.	a
Study leaders must maintain an adherence to accepted safety and health standards, as well as ethical research practice as per Nelson Mandela University Code of Conduct for Researchers (IRC 404.01), Policy on Research Ethics (IRC 404.02), specific codes of the discipline (where applicable) and conventions regarding plagiarism as per Nelson Mandela Policy for the Promotion of Academic Integrity and Prevention of Plagiarism (IRC 305.04) and advise their students to maintain these standards as well.	a
Provide the relevant information to the student so that the candidate submits the treatise for examination and final submission on the correct date and format.	
The study leader(s) to consult Turnitin report submitted by the student to the internet-based plagiarism detection service; Turnitin software.	a

PART C: TERMS OF LEARNING AGREEMENT

FREQUENCY OF COMMUNICATION	
The contact details of the study leader(s) were provided to the postgraduate student.	YES ☒ NO ☐
Specify frequency and communication channel for meetings (i.e. telephone, email, face-to-face).	Both in-person and email.
In case of the appointment of a co-study leader(s), how will meetings and communication between all be organised?	N/A
Specify who is responsible for scheduling meetings and how far in advance these meetings should be scheduled.	Both student and supervisor. Request at least a week before the needed meeting.
Specify the procedure for changing the meeting date and time.	Via email at least a day before the scheduled meeting.
Specify frequency and duration of meetings (approx.).	Monthly meetings. If not in-person at least some feedback via Teams or an email every 2nd week
Specify who will set the agenda and take notes.	Agenda depends on research progress, student to take notes.
Clarify whether there will be any expectation regarding regular email communication.	Yes, at least every 2 weeks.
Indicate the availability of communication of study leader during period of research and/or ordinary leave.	No expected communication when supervisor is on leave. Dates will be communicated in advance
List the roles, responsibilities of study leader, co-study leader(s) and student.	As per normal policy and SG guidelines.
Comments:	
RESEARCH PLAN / TIMEFRAME	
Specify the research plan and timeframe	As per EBML module guide.
Specify how changes to the research plan / timeframe will be dealt with.	By module coordinator.
Was the postgraduate student informed of the timeframes	YES ☒ NO ☐
Specify remedial action if schedule is not adhered to?	Managed by module coordinator.
Comments:	

ANNEXURE B: LEARNING AGREEMENT (CONTINUED)

SUBMISSION OF WRITTEN MATERIAL AND FEEDBACK	
Specify how often written work should be submitted to the study leader(s).	As per EBML module guide, module coordinator, and as agreed by supervisor and student in meetings and via email.
Specify the timeframe for feedback.	At least 14 working days.
Specify remedial action if feedback agreement is not adhered to?	Managed by module coordinator.

ETHICS APPROVAL		
	YES	NO
The postgraduate student was informed that all research projects require ethical approval?	☒	☐
The postgraduate student was informed that it is his/her responsibility to apply for ethics?	☒	☐
Comments:		

INTELLECTUAL PROPERTY		
	YES	NO
The postgraduate student was informed that all intellectual property resulting from research conducted for postgraduate degrees, including all publications, is governed by the Intellectual Property Policy (IRC 401.01)	☒	☐
The student was informed that the intellectual property rights resulting from a postgraduate's research shall vest in the University	☒	☐
Comments:		

The **STUDENT** and the **STUDY LEADER** confirms that:

1. They have read and understood this Learning Agreement,
2. They agree to accept its content for the duration of the study period as per the qualification stipulated above.

SIGNATURES:

Student:



Date:

23/4/2025

Study leader:



Co-study leader:

N/A

Date:

23/4/2025

ANNEXURE C: GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN WRITING PROCESS – USAGE DECLARATION

According to Nelson Mandela University's Institutional Position Statement on the use of Generative Artificial Intelligence (AI) (D_71_24 (2025-02-07), the following are considered recommended uses and unacceptable uses of AI by students and staff.

Recommended uses:

- Search engine
- Enhancing understanding
- Gaining insights
- Gathering information
- Clarifying concepts
- Critically evaluating information

Unacceptable uses:

- Copy and paste generated intellectual work.
- Claiming a generated product (text, image, creation) as your own.
- Generating information for assessments, projects, and assignments, unless this is explicitly instructed by the academic, who has provided clear guidelines in the form of permissions and prohibitions as to the appropriate use thereof as part of an assessment designed around the use of AI.
- Used for unfair advantage – when you are determined to deceive and do not use something in an appropriate manner.
- Making use of AI and not appropriately referencing the sources represented in the generated text, image and/or other product.
- Makes use of AI and does not ensure that the sources represented in the generated text, image and/or other product are accurate and represent the actual work of existing sources.
- Generating information via AI that may or may not represent the intellectual work of another person, people or AI and thereafter making further use of AI to disguise this information and then present it as one's own.
- When you do not follow permissions and prohibitions provided in assessment guidelines.
- When you are not transparent about its use, do not reference and acknowledge your sources.

Student declaration:

During the undertaking of preparing and writing this mini treatise,

I Kayla Parker [NAME AND SURNAME], with student number

224126067, declare that (please tick the appropriate circle indicating whether you have used AI or not):

ANNEXURE C: GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN WRITING PROCESS – USAGE DECLARATION (CONTINUED)

☒ I have not used AI in an unacceptable manner as described by Nelson Mandela University's Institutional Position Statement on the use of Generative Artificial Intelligence.

I further declare that I have used [NAME TOOL(s) / SERVICE] in order to [REASON(s)]. [LIST THE NAME AND REASON FOR USING EACH TOOL HERE]

• Chatgpt - to clarify concepts and enhance my understanding of key ideas related to AI and CE.
It was purely used as a guidance and learning tool.
• Grammarly - to check grammar and spelling, ensuring clarity and readability of the text.

I also acknowledge that I am ultimately responsible and accountable for the contents of this mini treatise.

☐ I have not used AI at all during the completion of my treatise.

SIGNATURE STUDENT:

Harker

DATE:

12/10/2025

[NOTE: Students must declare in their mini treatise the use or not of AI and AI-assisted technologies in the process of writing their treatise by completing this declaration statement. This statement must be included as an Appendix/Annexure in their mini treatise. AI and AI-assisted technologies do not include basic tools for checking grammar, spelling, references etc. Using AI and AI-assisted technologies in their mini treatise without completing this declaration amounts to academic dishonesty. Should AI and AI-assisted technologies not have been used in the process of writing, *the appropriate circle should be ticked*. Students should note that the use of AI is detected by Turnitin and in addition to this declaration a Turnitin report is required as an Appendix/Annexure to their mini treatise.

ANNEXURE D: INCLUDED ARTICLES

ID	Article	Authors	Citations	Region	Journal	Book
A1	Developing customer engagement through artificial intelligence tools: roles and challenges	Bansod, R., Pruthi, N. & Singh, R.	24	India	–	Developing Relationships, Personalization, and Data Herald in Marketing 5.0
A2	Opportunities and challenges of AI-driven customer service	Chaturvedi, R. & Verma, S.	80	Switzerland	–	Artificial Intelligence in Customer Service
A3	Customer brand engagement through chatbots on bank websites– Examining the antecedents and consequences	Hari, H., Iyer, R. & Sampat, B.	113	India	International Journal of Human–Computer Interaction	–
A4	Usability and responsiveness of artificial intelligence chatbot on online customer experience in e-retailing	Chen, J.S., Tran-Thien-Y, L. & Florence, D.	507	Taiwan	International Journal of Retail & Distribution Management	–
A5	Artificial intelligence and marketing: Pitfalls and opportunities	De Bruyn, A., Viswanathan, V., Beh, Y.S., Brock, J.K.U. & Von Wangenheim, F.	690	Global	Journal of Interactive Marketing	–
A6	The Nature of Intelligence	You, B.J.	1	China	–	Springer Nature Switzerland

Source: Researcher's Construction

ANNEXURE D: INCLUDED ARTICLES (CONTINUED)

ID	Article	Authors	Citations	Region	Journal	Book
A7	Assessing the implementation of AI integrated CRM system for B2C relationship management: Integrating contingency theory and dynamic capability view theory	Chatterjee, S., Mikalef, P., Khorana, S. & Kizgin, H.	71	Global	Information Systems Frontiers	–
A8	Artificial intelligence and its increasing importance	Pothen, A.S.	20	India	–	Learning outcomes of classroom research
A9	Artificial Intelligence: Definition and Background	Sheikh, H., Prins, C. & Schrijvers, E.	504	Netherland	–	AI: The new system technology
A10	Artificial intelligence (AI): Revolutionizing digital marketing	Van Esch, P. & Black, J.S.	268	USA	Australasian Marketing Journal	–
A11	Artificial intelligence (AI) applications for marketing: A literature-based study	Haleem, A., Javaid, M., Qadri, M.A., Singh, R.P. & Suman, R.	1256	India	International Journal of Intelligent Networks	–
A12	How do context-aware artificial intelligence algorithms used in fitness recommender systems? A literature review and research agenda	Venkatachalam, P. & Ray, S.	61	India	International Journal of Information Management Data Insights	–

Source: Researcher's construction

ANNEXURE D: INCLUDED ARTICLES (CONTINUED)

A13	An integrated decision analytic framework of machine learning with multi-criteria decision making for multi-attribute inventory classification	Kartal, H., Oztekin, A., Gunasekaran, A. & Cebi, F.	160	–	Computers and Industrial Engineering	–
A14	Real-Time AI Responses	Shakoor, F.	–	India	–	–
A15	Impact of service agents on customer satisfaction and loyalty: mediating role of chatbots	Naqvi, M.H.A., Hongyu, Z., Naqvi, M.H. & Kun, L.	36	Global	Journal of Modelling in Management	–
A16	Marketing performance sustainability in the Jordanian hospitality industry: The roles of customer relationship management and service quality	Al-Gasawneh, J., AlZubi, K., Anuar, M., Padlee, S., ul-Haque, A. & Saputra, J.	56	Middle East	Sustainability	–
A17	Mobile-customer relationship management and its effect on post-purchase behaviour: The moderating of perceived ease of use and perceived usefulness	Al-Gasawneh, J., Khoja, B., Al-Qeed, M., Nusairat, N., Hammouri, Q. & Anuar, M.	66	India	International Journal of Data and Network Science	–
A18	Past, present, and future of customer engagement	Lim, W., Rasul, T., Kumar, S. & Ala, M.	566	Global	Journal of Business Research	–
A19	Customer engagement: Conceptual domain, fundamental propositions and implications for research in service marketing	Brodie, R.J., Hollebeck, L.D., Juric, B. & Ilić, A.	6485	New Zealand	Journal of Service Research	–

Source: Researcher's construction

ANNEXURE D: INCLUDED ARTICLES (CONTINUED)

ID	Article	Authors	Citations	Region	Journal	Book
A20	Developing customer engagement through artificial intelligence tools: roles and challenges	Bansal, R., Pruthi, N. & Singh, R.	24	India	Developing Relationships, Personalization, and Data Herald in Marketing	-
A21	Reshaping the contexts of online customer engagement behaviour via artificial intelligence: A conceptual framework	Perez-Vega, R., Kaartemo, V., Lages, C.R., Razavi, N.B. & Männistö, J.	292	Global	Journal of Business Research	-
A22	Linking AI quality performance and customer engagement: The moderating effect of AI preference	Prentice, C., Weaven, S. & Wong, I.A.	343	Global	Journal of Hospitality Management	—
A23	Decreasing the Load on Manual Service Support by Improving the Confirmation Process in a Web-based Issue Reporting System	Villarin, F.	2	—	—	—
A24	Rise of the Machines? Customer Engagement in Automated Service Interactions	Hollebeek, L.D.; Sprott, D.E.; Brady, M.K.	270	Global	Journal of Service Research	—
A25	How AI encourages consumers to share their secrets? The role of anthropomorphism, personalisation, and privacy concerns and avenues for future research	Kronemann, B.; Kizgin, H.; Rana, N.; Dwivedi, Y.K.	94	Global	Spanish Journal of Marketing-ESIC	—

Source: Researcher's construction

ANNEXURE E: TURNITIN REPORT

PARKER - S224126067 - TURNITIN.docx			
ORIGINALITY REPORT			
10%	6%	6%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
PRIMARY SOURCES			
1	Submitted to Nelson Mandela Metropolitan University Student Paper	1%	
2	Barco J. You. "Chapter 50 The Nature of Intelligence", Springer Science and Business Media LLC, 2025 Publication	1%	
3	"Innovation, Technologies, and Business Management (ICTIM)", Springer Science and Business Media LLC, 2025 Publication	1%	
4	researchbank.swinburne.edu.au Internet Source	<1%	
5	Mhlongo, Nokuthula Nomcebo Thelma. "Managing Online Teaching and Learning in Mpumalanga TVET Colleges", University of South Africa (South Africa) Publication	<1%	
6	hdl.handle.net Internet Source	<1%	
7	www.igi-global.com Internet Source	<1%	
8	Noha El-Bassiouny, Wolfgang Amann, Dina El-Bassiouny, Christian Hauser. "Artificial Intelligence and Responsible Management Education - Current Applications and Future Directions", Routledge, 2025 Publication	<1%	