Towards a Model of Customer Satisfaction in the Digital Era: A Systematic Literature Review of the Impact of Artificial Intelligence on Customer Satisfaction

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Abstract

My research explores the effect of artificial intelligence (AI) capabilities on customer satisfaction. A systematic literature review methodology was conducted to achieve this research's objective by analysing 70 carefully selected journal articles in the marketing domain. By synthesising the findings from relevant, qualified peer-reviewed journal articles, the study synthesises a comprehensive understanding of AI's impact on service interactions and customer experience. My data analysis reveals five themes associated with AI and customer satisfaction: AI system quality, AI anthropomorphism, AI communication quality, AI competency, and customer trust.

Following the themes of AI and customer satisfaction identified from the data analysis, I propose a conceptual framework integrating AI and customer satisfaction themes with AI business value (automation and augmentation) and AI customer experiences (data capture, classification, delegation, and social experience). The framework provides a foundation for understanding the relationship between customer satisfaction factors and the interplay of current AI capability.

My research makes a notable theoretical contribution by addressing the need for a holistic view of AI and customer satisfaction, establishing clear definitions of AI functions, and integrating insights from diverse fields. Practical implications include providing managers with a multi-dimensional understanding of AI-driven customer satisfaction and a roadmap for aligning AI initiatives with customer experience priorities.

Future research directions involve empirically validating the proposed framework, exploring human-AI collaboration effects, and refining the AI-customer-experience (AI-CX) model proposed herein. The study's limitations include potential omissions of relevant research and the need for further validation of the AI-CX components.

Table of Contents

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Author's signature Date: 31st July 2024

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List of Figures

List of Tables

Chapter 1: Introduction

Customer satisfaction has been a central focus of research in various areas of marketing, including consumer behaviour, marketing strategy, and theoretical and empirical modelling (Rego et al., 2013; Kumar, 2016). Thus, despite the emergence of new metrics, customer satisfaction is still a standard practice within the marketing field and a dominant customer feedback metric, and many studies continue to explore the factors related to this metric (Lemon & Verhoef, 2016). According to Meyer and Schwage (2007), customer satisfaction results from multiple customer experiences. Lemon and Verhoef (2016) reaffirmed that satisfaction is a component of customer experience, which includes diverse dimensions, including cognitive, emotional, behavioural, sensorial, and social aspects. Thus, customer experience is considered as a customer journey with multiple touch points rather than limited to service encounters, as defined in prior research (Lemon & Verhoef, 2016). Furthermore, due to the growing adoption of new technologies and driven by new multichannels. Lemon and Verhoef (2016) point out that customer experience is also changing.

According to Ameen et al. (2021), companies could benefit and improve customer satisfaction by strategically deploying AI technologies at critical customer touch points. Ruiz-Equihua et al. (2022) stated that technology's ability to interact and form relationships with humans socially will have a substantial impact on customer service experiences. Thus, AI technology gets stronger attention, not only from companies, but also from academic studies and sites. For instance, Roser (2023) observed that AI systems exhibited continuous progress across domains like handwriting, speech, image, and reading comprehension, with certain benchmarks surpassing the average human performance from approximately 2018 onwards. Additionally, key aspects of AI's language understanding capacity have also markedly improved during this period (Roser, 2023). The recent rise of Generative AI, specifically the launch of ChatGPT, has gained considerable attention and expedited AI adoption globally. According to a survey conducted by McKinsey in March 2024 (Singla et al., 2022), AI adoption in professional services saw a notable rise to 72 percent, compared to 66 percent in 2023. The survey also revealed that companies are expanding their use of AI across different business areas, with marketing and sales dominating AI usage. In a while, the scope of research in AI and customer satisfaction from marketing literature also expanded. From our initial understanding of customer satisfaction factors driven by AI, such as 24/7 availability, speed of response, accuracy and reliability of the AI service, additional investigations on human-like interactions and emotion from AI. Despite the growing investigation of AI and customer satisfaction from marketing and service literature, several research gaps need to be addressed.

First, Lu et al. (2020) revealed that the existing understanding of AI service's impact on customer satisfaction is scattered and insufficiently studied. I also find that the existing literature focuses on specific aspects of customer satisfaction and siloed service situations, such as online chatbots, service encounters or service recovery. Hence,

the holistic view of AI technology and customer satisfaction is lacking. Second, while traditional service quality (SERVQUAL) dimensions like reliability, assurance, tangibility, empathy, and responsiveness are still relevant for evaluating customer interactions with AI chatbots, there is a need to identify additional service quality dimensions specific to AI-delivered services deal with the evolving real-world AI service settings (Lu et al., 2020). Third, Collins et al., 2021 pointed out that many research studies do not provide clear definitions of AI, making it challenging for future researchers to build upon existing studies. When researchers use different or vague definitions of AI, it becomes difficult to compare and synthesise results across studies, hindering the development of a coherent and cumulative body of knowledge on AI's impact on customer satisfaction (Collins et al., 2021).

As a result of these research gaps and to mitigate the gaps, the primary objective of this study is to provide a holistic view of AI technology's effect on customer satisfaction. Due to the fragmented scope addressed by different studies and the varying degrees of compatibility in researchers' underlying assumptions, I propose my research question (RQ):

RQ: How do AI's capabilities redefine customer satisfaction?

Hence, to address the primary research question, I conducted a systematic literature review to identify customer satisfaction with AI technology in marketing, including service marketing, retailing, consumer research, branding, and experiential marketing. By searching, extracting, reviewing, and analysing journal articles from Google Scholar and Scopus, I collected 70 articles that met my research criteria. From data analysis and identifying codes from selected articles, I developed five themes with related constructs that strongly relate to AI and customer satisfaction, as follows.

The first theme is AI system quality, which is related to the quality and attributes of an information system (IS). According to Achmadi and Siregar (2021), system quality is the measurement of the IS process that results from the interaction between the user and the system. Attributes related to system quality include availability, reliability, and response time (Prentice et al., 2020; Achmadi & Siregar, 2021; Nguyen & Malik, 2021). User-friendliness is an essential component of system quality (Achmadi & Siregar, 2021), particularly with the growing direct interaction between virtual service agents and chatbots (Li & Zhang, 2023). Moreover, system quality also encompasses the security risks associated with data privacy (Achmadi & Siregar, 2021; Gopinath & Kasilingam, 2023; Niu & Mvondo, 2024).

The second theme is AI anthropomorphism. According to Bartneck et al. (2008), anthropomorphism refers to "the attribution of a human form, human characteristics, or human behaviour to non-human things such as robots, computers, and animals." Moreover, Blut et al. (2021) point out that anthropomorphism is a basic cognitive process that aids in social interactions between humans and non-humans. Thus, the concept of anthropomorphism also extends to AI chatbots or service agents (Pizzi et al., 2023). Not only human characteristics but also intentions, emotions, and motivations are considered as anthropomorphism factors in AI chatbot studies (Noor et al., 2022;

Rizomyliotis et al., 2022). Hence, Dhiman et al. (2023) conclude that anthropomorphism has an insignificant influence on the value of AI technologies. Additionally, increasing the perceived humanity of the system can result in strengthening the connection between the customer and the AI (Matosas-López, 2024). Within the context of AI anthropomorphism in this research, human-like social interaction and emotional connection, such as greeting, apology, empathy, enjoyment, and warmth, are associated with customer satisfaction.

The third theme is AI communication quality. In the conversation between customers and AI chatbots, communication quality is mainly driven by accuracy and credibility (Cheng & Jiang, 2021; Baabdullah et al., 2022; Song et al., 2022). Additionally, within my theme of AI communication quality, I consider information quality, which Matosas-López (2024) further defines to include dimensions of value-added, relevance, timeliness, and an appropriate amount of information delivered by AI chatbots. Additionally, the understanding capability of AI, which demonstrates an awareness of and compliance with social rules and conventions (Söderlund, 2023), is also part of AI communication quality.

The fourth theme is AI competency. According to Gelbrich et al. (2021) and Pizzi et al. (2023), competence refers to the perceived ability of the social object, encompassing intelligence, skills, and effectiveness. In my research on AI and customer satisfaction, besides effectiveness, the intelligence and skills competency of AI is demonstrated by its capability of personalisation, usefulness, flexibility, and responsiveness in response to customer requests.

My final theme of AI and customer satisfaction is customer trust. According to Morgan and Hunt (1994), trust is based on one party's confidence in the reliability and integrity of their exchange partner. The confidence of the trusting stems from the firm belief that the trustworthy party is reliable, has high integrity, and possesses qualities such as being consistent, competent, honest, fair, responsible, helpful, and benevolent (Morgan & Hunt, 1994). Similarly, Eren (2021) argues that trust is crucial in using technological applications due to its impact on customers' adoption of new technologies and continued use (Gopinath & Kasilingam, 2023). In the AI service context, Trawnih et al. (2022) conclude that a strong sense of trust enhances the entire customer experience surrounding AI services.

Building upon the themes of AI and customer satisfaction found in my data analysis, I propose the AI and Customer Satisfaction (AI-CX) Framework, which integrates these themes with the automation and augmentation business values discussed by Collins et al. (2021) and Enholm et al. (2021). Additionally, the AI-CX Framework incorporates the AI customer experience model from Ameen et al. (2021), which includes data capture, classification, delegation, and social experience. Through this integration, the AI-CX Framework provides a more comprehensive understanding of customer experience, customer satisfaction factors, and AI's capabilities.

This research makes significant contributions to both theory and practice in the field of AI and customer satisfaction. From a theoretical perspective, my research findings provide a more comprehensive understanding of AI technology capabilities and customer satisfaction, addressing a gap in the current marketing literature.

Additionally, this research offers detailed insights into different AI systems and their current availability, focusing on the specific functions of Narrow/Weak AI. Narrow/Weak AI refers to AI systems designed to perform specific tasks within a limited scope, and exploring their capabilities is highly useful for practitioners and researchers seeking to clarify which AI technologies and capabilities can be addressed in studies or AI implementation strategies. Thus, this research responds to the call for a clear definition of AI, providing a foundation for future research.

Furthermore, the introduction of the AI-CX framework, which integrates AI business value (automation and augmentation) and AI customer experiences (data capture, classification, delegation, and social experience), offers a more detailed understanding of specific customer experiences with AI compared to existing models. The research provides valuable insights for practitioners and researchers in the field of AI and customer satisfaction, aiding them in understanding current approaches and guiding future studies. From a managerial perspective, the conceptual framework developed in this research synchronises business value and AI customer experience, serving as a reference or roadmap for managers to assess their AI and marketing strategies and align their resources with current AI technology.

The remainder of this research is structured as follows. Chapter 2 presents a comprehensive literature review that covers the definition of AI, types of Narrow AI functions, AI business value, and customer experience and satisfaction. Chapter 3 describes the research methodology, including the systematic literature review method, search strategy, selection criteria, qualification of journal articles, and data analysis procedures. Chapter 4 presents the data results, including themes development and constructs found captured within the selected journal articles. In Chapter 5, I propose the AI-CX conceptual framework with details of its structure and components. Finally, the conclusion contains theoretical contributions, managerial implications, future research directions, and limitations are discussed in detail.

Chapter 2: Literature review

2.1 Artificial Intelligence (AI) and its capabilities and functions

2.1.1 Artificial intelligence definition

Despite the increasing attention to artificial intelligence (AI), scholars still need to accept a complete definition of AI (Torra et al., 2018; Kaplan & Haenlein, 2019). According to Russell and Norvig (2021), the difficulty in reaching a consensus stems from differing views on what constitutes intelligence, with some researchers focusing on human-like performance and other scholars emphasising rationality. In addition, differences in terminology and cited sources used in prior research further contribute to this lack of a unified understanding (Collins et al., 2021). Hence, Collins et al. (2021) conclude that a multitude of viewpoints surround the concept of AI, making it challenging to find and establish a comprehensive definition.

Table 1: The literature's viewpoint about AI definition.

Source	Literature's viewpoint on AI definition
Torra et al. (2018)	"There is no definition of artificial intelligence accepted for all."
Kaplan & Haenlein, (2019)	"Although articles about AI are abundant in popular and business press in recent years, it is surprisingly difficult to define what AI is and what it is not."
Russell & Norvig, (2021)	"Historically, researchers have pursued several different versions of AI. Some have defined intelligence in terms of fidelity to human performance, while others prefer an abstract, formal definition of intelligence called rationality."
Collins et al. (2021)	"However, despite AI and Machine Learning being a large part of the primary studies, many did not provide a definition, or used definitions that were not cited."

Although scholars agree that there is no complete definition of AI, common terms such as intelligence, human-like behaviour, and human-like skills are often associated with AI. For instance, Torra et al. (2018) propose that AI is the theory and practice of computer systems that can perform tasks that typically require human intelligence. Enholm et al. (2021) similarly assert that AI involves equipping computers with abilities that mimic human intelligence, enabling them to perform tasks that typically require human-like skills.

Additionally, Within AI, there are different subfields, such as machine learning (ML) and deep learning (DL). Although ML and DL are often used interchangeably, they have distinct theoretical foundations and applications (Ashta & Herrmann, 2021). ML empowers computers to enhance their performance on specific tasks without explicit programming by developing algorithms (Duarte & Ståhl, 2018; Yao & Liu, 2013). Deep learning, a subset of machine learning, draws upon the structural characteristics of the human brain to construct artificial neural networks that possess the ability to acquire knowledge and predictive abilities (LeCun et al., 2015). Neural networks comprise multiple layers that analyse and extract characteristics from input data, enabling the system to acquire knowledge and adjust its behaviour based on the given examples. My research limits its scope to AI and

its impact on customers and their perceived satisfaction associated with AI systems or service and excludes studies or detailed investigation in the sub-functionality of AI, namely ML and DL techniques.

2.1.2 AI capabilities and functions

AI capabilities encompass diverse abilities, including speech recognition, visual perception, language translation, and decision-making (Torra et al., 2018). Russell and Norvig (2021) further expand on the definition of AI capabilities, stating that a computer can be classified as intelligent if it possesses a more extensive set of capabilities, such as natural language processing, knowledge representation, automated reasoning, machine learning, computer vision, and robotics. Despite the use of different technical terms, AI capability is classified into three types, including Narrow AI, General or Strong AI, and Superintelligent AI (Kaplan & Haenlein, 2019; Collins et al., 2021; Wang & Siau, 2022).

General Artificial Intelligence (AI), also known as strong AI, is intended to function more flexibly, resembling human cognitive abilities (Huang & Rust, 2018). The human-like intellect and adaptability of General AI driven by neural networks enable AI to learn from themselves, adapting and improving their performance over time (Collins et al., 2021). Thus, flexibility capability allows General AI systems to understand, learn, and apply information across a wide range of domains and tasks (Sufyan et al., 2023). While, Super Artificial is a concept that refers to an AI system with significant capabilities, outperforming humans in any task due to its advanced cognitive abilities (Sufyan et al., 2023; Dodiya et al., 2023). According to Dodiya et al. (2023), Super AI possesses essential capabilities, such as thinking, reasoning, puzzle-solving, decision-making, planning, learning, and independent communication. Moreover, Sufyan et al. (2023) point out that Super AI surpasses human abilities in problem-solving, acquiring new information, and making important decisions. At this point in time, General AI and Superintelligent AI are currently theoretical concepts (Collins et al., 2021; Dodiya et al., 2023).

In contrast, Narrow AI, also referred to as Weak AI, is the only type of AI that is currently available to marketers and the general population and is widely employed. Its popularity is due to its capacity to perform a single or limited range of tasks and its ability to excel in specific, well-defined problems (Wirth, 2018; Collins et al., 2021; Wang & Siau, 2022). Narrow AI includes language models such as OpenAI's ChatGPT, question-answering systems like IBM's Watson, and virtual assistants like Siri and Amazon's Alexa. Additionally, numerous AI systems designed for specific tasks or disciplines have emerged, augmenting human abilities across various domains. For instance, Dal-E specialises in design and data visualisation, while Suno focuses on music composition. Other examples include Glia Star, Adobe Firefly, and MidJourney, which cater to different creative pursuits. In the text generation and literature review, AI systems like Llama3, InWorld, Elicit, Gemini, Petal, and Claude have demonstrated their capacity to enhance human capabilities.

Table 2 shows the primary Narrow AI functions, which include natural language processing (NLP), speech recognition, computer vision, robotics, machine learning, and expert systems. Speech recognition converts spoken language into text, whereas NLP allows computers to understand and interpret human language. The primary

objective of computer vision is to instruct machines to extract and interpret valuable information from visual data, including object detection, facial recognition, and image recognition. Robotics is the process of automating repetitive and mundane tasks, whereas machine learning systems are designed to improve their methods and outcomes continuously as they accumulate more data. The aim of expert systems is to analyse enormous amounts of data to replicate human decision-making capabilities and leverage expertise to solve complicated issues.

Table 2: Narrow AI's functions.

Narrow AI function	**Description**	**Source**
Natural Language Processing (NLP)	A computer is trained to comprehend and interpret human language.	Russell & Norvig (2021)
Speech recognition	Refers to the technology that enables the conversion of spoken language into text.	Mitchell (1997), Russell & Norvig (2021)
Computer vision	The machine is trained to interpret and extract meaningful information from visual data, including image recognition and classification, facial recognition, object detection, object tracking, and content-based image retrieval.	Russell & Norvig (2021),
Robotics	Machines perform automated, repetitive, and mundane tasks.	Russell & Norvig (2021), Wang & Siau (2022)
Machine learning	Machine learning systems are designed to iteratively improve their methods and results as they accumulate more data over time.	Mitchell (1997), Russell & Norvig (2021), Enholm et al., (2021), Wang & Siau (2022)
Expert Systems (ES)	Machines imitate human decision-making abilities and harness their expertise to solve multifaceted problems by analysing copious amounts of data.	Russell & Norvig (2021)

Extensive discussions in the information systems literature by Russell & Norvig (2021), Enholm et al. (2021), and Collins et al. (2021) have been followed by recent attempts in the business and marketing literature to convert AI capabilities into organisational capabilities such as business and service tasks. According to Huang and Rust (2018), AI will replace human-handled service tasks by automatically performing routine, repeated tasks, problem-solving, or predictable tasks. In the future, supported by Strong AI technology, AI will handle complex, creative, chaotic, holistic, experiential, and contextual service tasks that require intuitive intelligence. Furthermore, social, emotional, communicative, interactive, and relational tasks will be delivered by AI with its empathetic intelligence (Huang & Rust, 2018). Similarly, based on the expected competencies of AI systems, including cognitive, emotional, and social intelligence, Kaplan and Haenlein (2019) argued that Analytical AI, Human-Inspired AI, and Humanised AI will deliver service tasks. Analytical AI prioritises cognitive intelligence and logical decision-making, whereas Human-Inspired AI integrates emotional intelligence to comprehend and consider human emotions. Humanised

AI, in its most advanced state, is likely to demonstrate cognitive, emotional, and social intelligence, although these capabilities are still theoretical (Kaplan & Haenlein, 2019). Humanised AI is still in its infancy and under development and will necessitate substantial advancements in AI technology, particularly in more advanced, and more intense comprehension of human cognition, emotions, and social dynamics.

To date, Narrow AI is limited in its ability to only augment specific, limited areas of human intelligence. AI systems are not yet capable of replicating the advanced aspects of human intelligence, such as intuitive, empathetic, emotional, or social intelligence as proposed by Huang and Rust (2018) and Kaplan and Haenlein (2019). Therefore, my systematic literature review focuses on those AI functions currently and commonly implemented in today's applications within the scope of Narrow AI functions.

In conclusion, despite the commonality of terms such as human-like intelligent tasks, a comprehensive definition of AI remains a topic of debate due to the varying viewpoints in the literature. Narrow AI is the only technology that is presently available and has major applications in natural language processing (NLP), speech recognition, computer vision, robotics, machine learning, and expert systems. The marketing and service literature discusses business and service tasks associated with AI technology, such as mechanical, analytical, intuitive, empathetic, or humanised AI. Currently, AI technology primarily delivers automation and analytics capabilities due to AI's limited adaptability and flexibility. For the purpose and scope of this study, I define AI as computers with abilities that mimic human intelligence, enabling them to perform tasks that typically require human-like skills, based on the definitions provided by Collins et al. (2021) and Enholm et al. (2021).

2.2 Business value of AI and customer experience

2.2.1 Business value of AI

According to Schryen (2013), the business value of information systems (IS) is "the impact of investments, in particular, IS assets on the multidimensional performance and capabilities of economic entities at various levels, complemented by the ultimate meaning of performance in the economic environment." Besides resources such as IT hardware, software, and human resources, IS management capabilities are the business value outcomes that play a crucial role in developing organisational capabilities (Mithas et al., 2011; Schryen, 2013).

The outcomes of IS management capability include not only process and performance management, which are more related to internal process design, on-product and non-service business growth processes, and performance measurement and analysis, but also customer management, which encompasses the organisational capacities of serving customers' requirements, expectations, and preferences. Mithas et al. (2011) pointed out that customer management reflects the quality of customer relationships regarding how well the firm is positioned to acquire, satisfy, and retain customers. Similarly, Gellweiler and Krishnamurthi (2021) revealed that business value is the result of IT investments that benefit customers and the organisation. In accordance with the research conducted by Treacy and Wiersema (1993, 1995), Gellweiler and Krishnamurthi (2021) demonstrated that investment in

information technology may result in customer intimacy should these be used to provide the most appropriate solution that is in accordance with the customer's needs, promptly responding to customer demands, personalising products or services to meet the individual's needs, and effectively resolving specific customer issues.

In the context of AI, Collins et al. (2021) and Enholm et al. (2021) emphasise the importance of accurately understanding how AI generates value for businesses. According to Collins et al. (2021), a considerable amount of the current research on AI's impact on business value lacks concrete evidence, empirical support, or established theories, relying instead on subjective opinions. This lack of empirical foundation poses significant challenges in terms of comparing various findings, recognising the synergies between different studies, and determining the research's limitations. Indeed, a gap exists in investigating the type of AI application which should drive business value, and the specific ways AI enhances business operations, decision-making, and outcomes should be well-defined (Collins et al., 2021). Similarly, Enholm et al. (2021) pointed out the importance of understanding the processes and mechanisms by which AI technologies lead to business value creation. Scholars Collins et al. (2021) and Enholm et al. (2021) highlight the significance of automation and augmented intelligence in their discussions of AI-driven business value.

Automation, a business value provided by AI technology, has a direct impact on customer experience. According to Collins et al. (2021), AI automation can transform back-office operations by increasing service quality, shortening delivery times, and lowering costs. In the context of service, Enholm et al. (2021) observe that the implementation of AI-powered digital and robotic services can have a major effect on the customer experience (CX). For instance, AI technologies are capable of giving customers more personalised, faster, and consistently high-quality experiences by automating a variety of customer interactions, including product recommendations, service delivery, and customer support. As a result, the automation capabilities of AI not only drive internal business value through cost reduction and process optimisation, but also contribute to enhancing customer satisfaction. Additionally, the business value of automation, as emphasised by Collins et al. (2021) and Enholm et al. (2021), is an important aspect of AI-driven value creation, as it directly influences the customer experience over and above operational benefits.

Various studies emphasise the assistive role of AI, where it supports and complements human capabilities rather than replacing them entirely. Gartner (2019) defines augmented intelligence as a human-centric collaboration between individuals and AI that aims to improve cognitive performance, including learning, decision-making, and creating new experiences. Enholm et al. (2021) also emphasise that integrating AI with human expertise enhances decision-making and optimises actions. Similarly, Collins et al. (2021) point out the unique value that AI brings to organisations by enabling them to gain insights, make data-driven decisions, and overcome the cognitive limitations of humans. Thus, the ability to process vast amounts of complex data in high-speed tasks well beyond human capabilities defines how AI can create business value (Enholm et al., 2021; Collins et al., 2021). In particular, human supervision and collaboration in mitigating the errors and limitations of these advanced AI

technologies, particularly when making critical decisions, solved the complexity of a digital society (Bassano et al., 2024). This perspective aligns with Gartner's (2019) view on the benefits of augmented intelligence in delivering customer convenience and personalisation at scale, while reducing mistakes. By leveraging AI algorithms to analyse vast amounts of data and provide accurate recommendations, organisations can minimise errors in customer-facing processes and offer tailored experiences based on individual preferences, needs and behaviours.

2.2.2 AI and customers' cognitive, emotive, sensorial and social experiences

Meyer and Schwager (2007) define customer experience as "is a multifaceted construct that encompasses a customer's unique reactions, feelings, and perceptions when interacting with a company through direct or indirect contact". While direct interactions are initiated by the customer and typically occur during purchase, use, and service (Meyer & Schwager, 2007), Lemon and Verhoef (2016) argue that customer experience spans multiple dimensions over the entire customer journey. As such, customer experience is a complex and holistic construct involving a customer's cognitive, emotional, behavioural, sensorial, and social responses to a company's products, services, and interactions (Lemon & Verhoef, 2016).

First, cognitive experience, as defined by Shavinina and Kholodnaja (1996), refers to an individual's unique way of perceiving, understanding, and interpreting their surrounding reality, driven by personal experiences, knowledge, beliefs, and mental processes. Keiningham et al. (2017) further argue that cognitive experience involves the customers' mental processes and perceptions when interacting with a product, service, or brand. Homburg et al. (2006) find that cognitive factors influence how customers form satisfaction judgments and that the specific cognitive aspects determining satisfaction can vary depending on a customer's familiarity with a product or service.

Second, emotional experience, as argued by Thoits (1989), is a multi-component process involving appraisals, bodily sensations, expressive gestures, and cultural labels. Keiningham et al. (2017) describe emotional elements of customer experience as the complex range of feelings and affective responses consumers have during their interactions with products, services, and marketing activities. Mattila and Enz (2002) demonstrate that customers' emotional responses to service encounters significantly influence their satisfaction and intentions to return. Similarly, in a service encounter context, Hume and Mort (2010) argue that customers' emotional evaluations of their experiences directly impact their overall satisfaction levels, with satisfaction being closely tied to the specific emotions arising from individual transactions or service interactions.

Third, sensorial customer experience refers to the influence of the artificial, firm-controllable surroundings within which service experiences occur (Keiningham et al., 2017). In online environments, sensorial elements, such as friendly interfaces, design cues, or fast responses, affect the customer experience of a website's features. Emerging visual-enabling technologies, such as augmented reality, 3D product visualisation, and 3D virtual environments, can enhance the engagement and enjoy ability of the online experience (Petit et al., 2019). Thus, consumer

experiences in both physical and online environments are influenced by multisensory information, with sensory information on websites significantly influencing consumer behaviour and decision-making (Petit et al., 2019).

Last, social customer experience is shaped by social interactions, relationships, and the presence of others, impacting how individuals engage and immerse themselves in an experience (Minkiewicz et al., 2013). It involves creating experiences with friends, family, and others while considering the role of employees in providing personalised and emotionally engaging customer experiences (Minkiewicz et al., 2013). Furthermore, social customer experience encompasses the various social interactions, relationships, and contexts that influence how customers perceive, engage with, and derive value from their experiences, including interactions with service staff, fellow customers, and the broader impact of their social networks and identities (Keiningham et al., 2017).

However, the emergence of new channels, such as mobile and e-commerce, has made the customer journey more complex. This complexity arises from various factors, including the interplay between channels, the direct interaction with the customer, the influence of social and psychological characteristics, the customer's assessment of benefits and costs, the impact of social dynamics, the use of different marketing strategies, and the customer's previous purchasing behaviour (Lemon & Verhoef, 2016). As a result, customer experience has become more dynamic and multifaceted. Recently, Becker and Jaakkola (2020) have shown that customer experience emerges in various contexts, such as service encounters, entire consumption processes, sets of interactions with a retailer, dynamic service ecosystems, customer journeys, online settings, or interactions with a brand. Moreover, AI is expected to lead to a new approach to defining customer experience, as AI is available in online and mobile environments (e.g., chatbots) and in physical settings (e.g., robots). Therefore, customer experience with AI is still a nascent field with limited research, particularly in connecting it with AI capabilities.

In this research, I adopted the Ameen et al. (2021) framework to synthesise customer experience with AI. By breaking down the AI ecosystem into fundamental components and associated capabilities, Ameen et al. (2021) provide a framework for understanding how AI systems collect, process, and utilise data to perform tasks that typically require human-like intelligence and decision-making. These components are data collection and storage, statistical and computational techniques, and output systems. Each component is associated with specific capabilities, including listening, predicting, producing, and interacting. The (1) data capture, (2) classification, (3) delegation and (4) social experiences are explained by Ameen et al. (2021) as follows.

(1) Data capture experience makes consumers feel as though they are being served by the AI, as their needs and preferences are being anticipated and met in a customised manner. By capturing data in different ways (including consumer data sharing), AI can enhance customer experience by offering personalised services, information, and entertainment, reducing decision-making's cognitive and emotional burden.

(2) The AI classification experience involves firms using AI's predicting capability to create highly personalised consumer offerings based on their data and behaviour. When AI systems provide accurate

and relevant recommendations, consumers may feel that the AI truly understands their preferences, needs, and behaviours. In addition, by being classified as a specific type of person by AI, consumers may feel that they are part of a desirable social group, which can contribute to their sense of self-worth and social identity.

(3) The AI delegation experience occurs when consumers involve an AI solution in a production process to perform tasks that they would have otherwise done themselves. By delegating tasks to AI, consumers can free up time and mental resources that would have otherwise been spent on those tasks. This allows them to redirect their energy towards activities that they find more fulfilling, enjoyable, or personally significant. AI delegation also enables consumers to delegate tasks they may need to be more skilled at or find challenging. By having AI handle these tasks, consumers can focus on activities matching their abilities and strengths.

(4) The AI social experience stems from AI's capability to engage in reciprocal communication with consumers. When AI serves as a vehicle for information exchange, it can help consumers feel more connected to the organisation in a natural, conversational way. In addition, AI social experiences can be particularly beneficial when the alternative is not human interaction. AI-powered chatbots or voice assistants enable consumers to get the information or assistance they need more efficiently.

Table 3: Consumer AI experiences proposed by Ameen et al. (2021).

AI experience	**Consumer perspective**
Data capture	− Feeling served by AI with no monetary risk, including customised services, information, and entertainment − Enjoyment about the outcome of decisions made by digital assistant − Matching personal preferences − Accessing personalised services − Reducing cognitive and emotional burden − Self-improvement by accessing customised services
Classification	− Inferring recommendations based on personal classification − Perceiving personal taste and preference − Sense of self-worth and social identity
Delegation	− Empowering delegation experience − Delegating challenging or less-skilled tasks − Freeing up time and mental resources
Social	− Perceiving AI as a vehicle for information exchange in a natural way − Fulfil alternative options of interaction efficiently

In conclusion, the business value of IT investments is associated with customer experience due to the outcome benefit of customer management capabilities. Automation and augmented intelligence capabilities are business values that AI technology can drive in the customer experience by automating interactions, improving decision-making processes, and delivering personalised experiences. Despite the multifaceted nature of the customer experience, which encompasses cognitive, emotional, sensorial, and social elements, AI is still in the green field. The concept of AI experiences, such as data capture, classification, delegation, and social experiences, demonstrates how consumers perceive and interact with AI technologies.

2.3 Customer satisfaction

Satisfaction is a complex and diverse concept in the research fields of products, services, and information technology. Prior marketing literature focused on the importance of customer expectations in determining satisfaction. This argument revolves around the consumer's evaluation of the benefits and drawbacks of a purchase in relation to their initial expectations. Nevertheless, Szymanski and Henard (2001) argue that differentiating between products and services results in distinct factors that are linked to customer satisfaction outcomes.

2.3.1 Customer satisfaction in product context

Churchill and Surprenant (1982) state that satisfaction in the context of a product is determined by the interaction of expectations, performance, disconfirmation, and the customer's cognitive and affective processes. Product performance and disconfirmation, which refers to the gap between customer expectations and their perception after purchase, are major factors in determining customer satisfaction. The findings of Churchill and Surprenant (1982) have been reaffirmed by Anderson and Sullivan (1993) and Szymanski and Henard (2001), who additionally noted the substantial influence of product performance and disconfirmation on customer satisfaction. Anderson and Sullivan (1993) observe that satisfaction is not directly affected by expectations. Performance levels influence satisfaction by means of the disconfirmation process, which entails comparing expectations to actual performance. Positive disconfirmation occurs when performance surpasses expectations, leading to increased levels of satisfaction. On the other hand, negative disconfirmation happens when the actual performance falls short of expectations, resulting in lower satisfaction (Churchill & Surprenant, 1982). Consequently, customer satisfaction is closely linked to product performance, level expectation of customer, and product attributes

2.3.2 Customer satisfaction in the service context

Compared to physical goods, services are characterised by a higher degree of intricacy, as they consist of a wide range of attributes, including responsiveness, information quality, accuracy, convenience, and the attitude of the staff (Parasuraman et al., 1985). Unlike marketing goods, marketing services involve intangible aspects and personal interactions (Lemon & Verhoef, 2016). As stated by Mittal et al. (2001), in the field of service marketing, the significance of a characteristic in determining overall satisfaction varies over time because consumers' consumption goals and perceptions of attribute performance change. As customers' requirements, preferences, or expectations develop, what factors they deem most significant in determining their contentment may likewise alter.

For instance, a customer who initially prioritised the quickness of service may subsequently assign greater significance to personalisation as their requirements evolve. Customers' perceptions of service performance attributes can impact the importance they allocate to those attributes (Keiningham et al., 2017).

In addition, Chiou (2006) defined the differences between attribute satisfaction and overall satisfaction. Attribute satisfaction refers to a consumer's cognitive satisfaction with specific characteristics resulting from a combination of separate evaluations of satisfaction. However, overall satisfaction is an aggregate evaluation that develops gradually by incorporating various transaction experiences, rather than being based solely on a single transaction (Chiou, 2006). Thus, Lemon and Verhoef (2016) insist that customer satisfaction is an integral part of the broader customer experience, particularly emphasising how customers perceive their experience. Similarly, Schwager (2024) argued that customer satisfaction is fundamentally the result of various customer experiences. According to Chiou's (2006) study, interactive service quality, regarded as a part of service quality, has an impact on the overall satisfaction of customers. Furthermore, the ability to offer customised services to meet the varied needs of customers has a significant impact on how customers perceive the quality and satisfaction of the service (Coelho & Henseler, 2012).

2.3.3 Customer satisfaction in the information technology context

In the information technology (IT) field, Berkley and Gupta (1994) claim that the advantages of investing in IT should extend beyond just increasing productivity and efficiency. Researchers argue that equal attention should be given to improving customer service. Berkley and Gupta (1994) propose that strategic investments in IT can attain key service quality components, including reliability, responsiveness, competence, access, communication, security, and customer understanding. Mithas et al. (2016) find further evidence supporting this viewpoint, linking customer satisfaction to the economic value of IT investments. The research highlights how managing information through IT is connected to managing customers, emphasising its role in improving customer satisfaction.

Therefore, the online services offered by IT systems, such as online retail, significantly impact customer satisfaction in terms of reliability and personalisation (Jun et al., 2004; Mithas et al., 2016). An online system’s capacity to deliver the promised service with accuracy, reliability, promptness, and time is a crucial indicator of customer satisfaction (Jun et al., 2004). A digital platform that consistently fulfils its service commitments and promptly addresses customer inquiries is likely to have satisfied customers. According to Coelho and Henseler (2012), the progress of computing and Internet technologies improves service providers’ ability to offer more personalised services. By personalising services to meet specific customer needs, online systems such as online retailers can improve customer connections and enhance satisfaction. Individualised experiences and personalised services are made possible by the online system capacity, as mentioned by Jun et al. (2004).

In summary, there are different approaches to defining customer satisfaction. Extending to the customer expectations and their perception commonly used in marketing literature, disconfirmation and performance effects are also associated with customer satisfaction due to the product's performance and the customer's level of

expectation. In addition, in service marketing and IT technology, the intangible services, interaction between human and human, or human and other channels like technology, and the continuous changing of consumers' consumption goals and perceptions of attribute performance, customer satisfaction is more dynamic. Significantly, the emerging digital technology will disrupt and define a new approach to how consumers construct their satisfaction.

Next, in Chapter 3 on methodology, I will discuss the systematic literature review research method used widely to examine and synthesise discussion from past literature regarding AI and customer satisfaction. I will also provide details on the procedures, how data is collected, the criteria to qualify articles suitable to my research question, and the data analysis process.

Chapter 3: Methodology

My research objective is to synthesise findings of existing marketing literature investing AI effect in service interactions and links to customer experience and satisfaction. To address my research objective, I conducted a systematic literature review (SLR) which helped to fulfil a comprehensive and interdisciplinary understanding of the aspects of artificial intelligence (AI) technology towards customer satisfaction of existing marketing literature. Based on findings from SLR, I proposed a conceptual framework about AI capability and customer satisfaction, which can be used for future research.

3.1 Systematic literature review (SLR) approach

The SLR method approach is suitable for my research due to its advantages: (1) address comprehensive synthesis of existing research for conceptual framework development, (2) ability to identify gaps and direct future research, and (3) effectiveness in minimising bias. I expanded these advantages and rationale in the next three sub-sections.

3.1.1 Address comprehensive synthesis of existing research for conceptual framework development

SLR is a research method that provides an evidence-based synthesis of current knowledge on a given topic by systematically gathering and analysing relevant findings from prior research, as noted by Tranfield et al. (2003). Compared to research methods like qualitative or quantitative studies, which have limitations such as a specific sample study, geography, or scope of research questions, SLR can produce a new integrated result or conclusion by combining data from different research studies. In results, SLR brings together different types of evidence to explore or explain meaning (Pollock & Berge, 2017) or lead to new understandings (Rocco & Plakhotnik, 2009).

Moreover, the comprehensive understanding gained by conducting an SLR is crucial for developing a well-grounded conceptual framework. As Rocco and Plakhotnik (2009) argue, a conceptual framework is built upon solid foundations of relevant findings and insights using an SLR to gather and analyse existing research systematically. In the marketing field, by employing the SLR research method, Xiao and Nicholson (2012) proposed a framework of impulse buying that consolidated four theoretically distinct meta-constructs, each supported by a distinct theory and theoretical perspective. The result of the SLR study by Xiao and Nicholson (2012) is more advanced than prior research, which is limited to only one or two dimensions of impulse buying or narrowed to individual or cultural and environmental levels of analysis. Similarly, by employing SLR, Becker and Jaakkola (2020) propose a conceptual framework/model of customer experience which consolidated insights from eight key literature fields that resolved challenges, including diverse conceptualisations or boundaries between the customer experience (CX) construct.

Therefore, SLR is a suitable research methodology for my study that can address how prior research has examined AI's impacts on customer experience. Furthermore, by reconciling findings through literature, SLR can contribute to the development of a conceptual framework that integrates insights from diverse research fields and provides a comprehensive understanding of AI's effects on customer satisfaction.

3.1.2 SLR's ability to identify gaps and guide future research

Through a comprehensive synthesis of evidence gathered from relevant literature, SLR aids researchers in uncovering gaps in theories, methods, and contexts, directing future studies (Paul & Criado, 2020; Paul et al., 2021). In addition, by establishing a relatively objective benchmark for evaluating future research and evidence on specific interventions (Mallett et al., 2012), SLR helps researchers assess the quality and relevance of new studies, guaranteeing that future research contributes meaningfully to the existing body of knowledge.

Thus, the effectiveness of SLR in identifying gaps and guiding future research extends beyond medical fields to various domains, including marketing. The studies by Xiao and Nicholson (2012) and Følstad and Kvale (2018) demonstrate the effectiveness of SLR in identifying research existing gaps of consumer behaviour theory like impulse buying (IB) or customer journey. Lacking empirical evidence on the causal relationship between mood management and incomplete integration of all IB phases was addressed despite of the dominance of empirical papers constitute this cognitive behaviour since the 1950s (Xiao and Nicholson, 2012). Similarly, through the SLR study on customer journeys, Følstad and Kvale (2018) revealed a lack of coherence in customer journey terminology across the reviewed papers. For example, the term "touchpoint" was used inconsistently, sometimes referring to instances of interaction or communication between a customer and a service provider and other times to the channels or physical surroundings. In addition, through a structured analysis of the customer journey approaches discussed in each paper, Følstad and Kvale (2018) find that while customer journey mapping was well-covered in prior studies, there was a notable lack of detailed descriptions of customer journey proposition, the generative design activities within a customer journey perspective. Finally, future research directions are addressed based on the results of the systematic literature review (SLR). For instance, Xiao and Nicholson (2012) identify future research such as testing the proposed model across different types of buyers or investigating potential moderators, such as social context, in the IB model. Similarly, Følstad and Kvale (2018) point out future research around the customer journey, including establishing standard definitions of customer journey and touchpoints.

In summary, by critically analysing and synthesising evidence from diverse studies relevant to the research question, SLR enables researchers to establish a knowledge base and identify gaps in theories, methods, and contexts. The findings of SLR inform future research, ensuring that new studies meaningfully contribute to the existing body of knowledge and address identified research gaps.

3.1.3 Effectiveness' SLR in minimising bias

One of the fundamental aspects of SLR over the traditional literature review is their ability to minimise bias. Traditional literature review has limited coverage of the literature that the authors are already familiar with, which can lead to a significant bias in the selection of studies (Mallett et al., 2012). In addition, publication bias resulting from the omission of unpublished or statistically nonsignificant data and the dependence on primary data sources that may contain inherent biases or vary in quality can influence systematic reviews (Drucker et al., 2016). The

bias can result in an incomplete or misrepresented understanding of the research topic, as essential studies may be overlooked or excluded.

Therefore, SLR employs comprehensive protocols with predefined search criteria, multiple databases, and a wide range of search terms (Booth et al., 2016; Patole, 2021). These protocols ensure a thorough and unbiased search process, reducing the risk of overlooking significant studies or overrepresenting certain perspectives. To further enhance the reliability and credibility of the evidence base, SLR prioritises the inclusion of studies from high-quality, top-ranked journals (Boland et al., 2017). Furthermore, standardised appraisal checklists are used to evaluate the methodological quality of the selected studies, ensuring that the findings are based on rigorous and trustworthy research (Moher et al., 2009).

Additionally, SLR must have a structured report to communicate results clearly to the broader community (Patole, 2021). This transparency allows for a careful examination of the review process, enabling other researchers to assess the thoroughness and objectivity of the search and selection procedures (Moher et al., 2009). The clear documentation of the search strategy, inclusion and exclusion criteria, and data extraction methods enhance the reliability of the review and reduces the potential for bias (Patole, 2021).

In conclusion, SLR effectively minimises bias in research by employing comprehensive protocols, predefined search criteria, and transparent reporting. This methodology addresses the limitations of traditional literature reviews, reduces the risk of selection and publication bias, and enhances the reliability and credibility of research findings.

3.2 Source

Scopus and Google Scholar serve as the primary sources for this research to achieve enough quality studies on AI in marketing. Scopus is among the largest curated abstract and citation databases (Baas et al., 2020). According to numbers released in January 2023, there are 90 million records in the Scopus database, with 27,950 active peer-reviewed journals. Scopus offers comprehensive access specifically to high-quality, peer-reviewed empirical research published in both technology and marketing academic journals, including crucial titles such as Journal of Marketing, Journal of Services Marketing, Journal of Service Theory and Practice, Journal of Retailing and Consumer Services, Journal of Service Research, and Journal of Consumer Research. The trustworthiness of Scopus has led to its use as a bibliometric data source for large-scale analyses in research assessments and research landscape studies (Baas et al., 2020).

Google Scholar is a search engine that provides access to a wide range of academic literature, including both peer-reviewed and grey literature, non-formal published studies, which includes research and committee reports, government reports, conference papers, and ongoing research with aiming to incorporate all documented evidence and minimise bias (Haddaway et al., 2015; Paez, 2017). Thus, Google Scholar's ability to search and retrieve bibliographic records from journal websites and provide access to articles and article citations has made it an

attractive tool for researchers. Empirical studies have shown that Google Scholar's coverage is extensive, with Antell et al. (2013) noting that it includes nearly all journals in subscription-based Authority and Instruction (A&I) services. Gusenbauer's (2018) study estimated that Google Scholar had approximately 389 million records, making it the largest academic search engine, followed by WorldWideScience with 323 million records. The comprehensive nature of Google Scholar's database and its ease of use have contributed to its widespread adoption among researchers conducting literature searches.

3.3 Searching keywords

I identified a set of search terms related to AI and customer satisfaction. Search terms such as "artificial intelligence and service encounters", "artificial intelligence/machine learning and customer experience", "Artificial intelligence and customer satisfaction" will be used to retrieve articles exploring AI technologies and their implications for customer experience, service quality perceptions and customer satisfaction. In addition, search strings will be constructed by combining AI-related terminology with customer experience factors and outcome terms such as: ("artificial intelligence" OR "machine learning") AND ("customer satisf*" OR "service quality" OR "customer experience" AND (reconceptual* OR integrat* OR transform*). Table 4 presented possible term that resulted from string searching with using an asterisk (*). The search string used in both databases was identical, except for the different criteria selection. The search string used in both databases was identical, except for the different criteria selection.

Table 4: String search terms and term variations.

String searching	**Terms**
customer satisf*	customer satisfaction
	customer satisfied
	customer satisfy
	customer satisfying
	customer satisfactory
reconceptual*	reconceptualization
	reconceptualizing
	reconceptualize
	reconceptualized
integrat*	integrate
	integrated
	integration
	integrating
	integrative

transform*	transformation
	transforming
	transformed
	transformative

3.4 Inclusion and exclusion criteria

The search criteria were limited to peer-reviewed academic journal articles and reviews written in the English language. We excluded articles documented as conference papers, book chapters and reports. The year published of articles is during the period 2019-2024, corresponding with rapid advancements made in AI capabilities over recent years. Roser (2023) notes that AI systems have demonstrated steady improvements across domains like handwriting, speech, image, and reading comprehension, with some benchmarks even exceeding average human performance from 2018 onwards. Alongside, key aspects of AI's language understanding capacity also began markedly improving over this period (Roser, 2023). Furthermore, driven by these AI developments, elucidation of the multifaceted value contributed by AI technology across vectors of productivity, personalisation, time-savings and quality has become increasingly explicit in recent publications (Maheshwari, 2024).

The articles that were collected belong to the fields of marketing, service marketing, consumer behaviour, retail service, and business service. Due to the different search techniques employed by Scopus and Google Scholar, the selected subject areas are as follows:

3.4.1 Scopus

The inclusion criteria for the subjects are presented in Table 5.

Table 5: Subject criteria applied for articles from Scopus database

Criterion type	**Criteria**
Database	Scopus
Publication type	Research article, literature review
Subject	– Business, Management and Accounting, – Psychology, – Economics, Econometrics and Finance,
Cover period	2019 – 2024 (March)

3.4.2 Google Scholar

Inclusion criteria of the subjects are presented in Table 3.

Table 6: Subject criteria applied for articles from Google Scholar database.

Criterion type	**Criteria**
Database	Google Scholar
Publication type	Research article, literature review
Subject	– Journal of Marketing, – Journal of the Academy of Marketing Science, – European Journal of Marketing, – Journal of Services Marketing, – Psychology and Marketing, – Journal of Research in Interactive Marketing – Journal of Service Theory and Practice, – Journal of Service Research, – Journal of Consumer Research, – Journal of Retailing and Consumer Services, – International Journal of Consumer Studies, – Service Business, – Journal of Service Management, – Journal of Business Research.
Cover period	2019 – 2024 (March)

3.5 Data extraction

In the first step in the data extraction process, I ran a query for each keyword and applied criteria, including the year of publication and the selected subject criteria.

As a second step, non-English articles, conferences, book chapters, and reports were excluded. Each keyword search's Scopus and Google Scholar records were saved and labelled differently.

In the next step, I consolidated all records extracted from the Scopus and Google Scholar databases with key information, including author name(s), article title, year published, source title, abstract, and document type. In total, I retrieved 2,620 published articles from both Scopus and Google Scholar databases that met my study criteria.

In the fourth step, I cleaned the consolidated database by removing duplicate records and articles published outside the criteria year range of 2019 to 2024. This process involved identifying and eliminating 308 duplicated articles and 43 articles published outside the specified year range.

The result had a count of 2,268 published articles. Breaking down the results presented in Table 7, "artificial intelligence and customer satisfaction" has the highest total of 898 records, indicating a strong focus on understanding how AI impacts customer satisfaction. The "artificial intelligence and customer experience" followed closely with a total of 613 search records. The “artificial intelligence and service encounters” and “machine learning and customer experience” have 227 and 175 records, respectively. Finally, the complex search query, which included terms related to reconceptualization, integration, and transformation, returned 355 records.

Table 7: The result of keyword search from Scopus and Google Scholar database after removing duplicated articles.

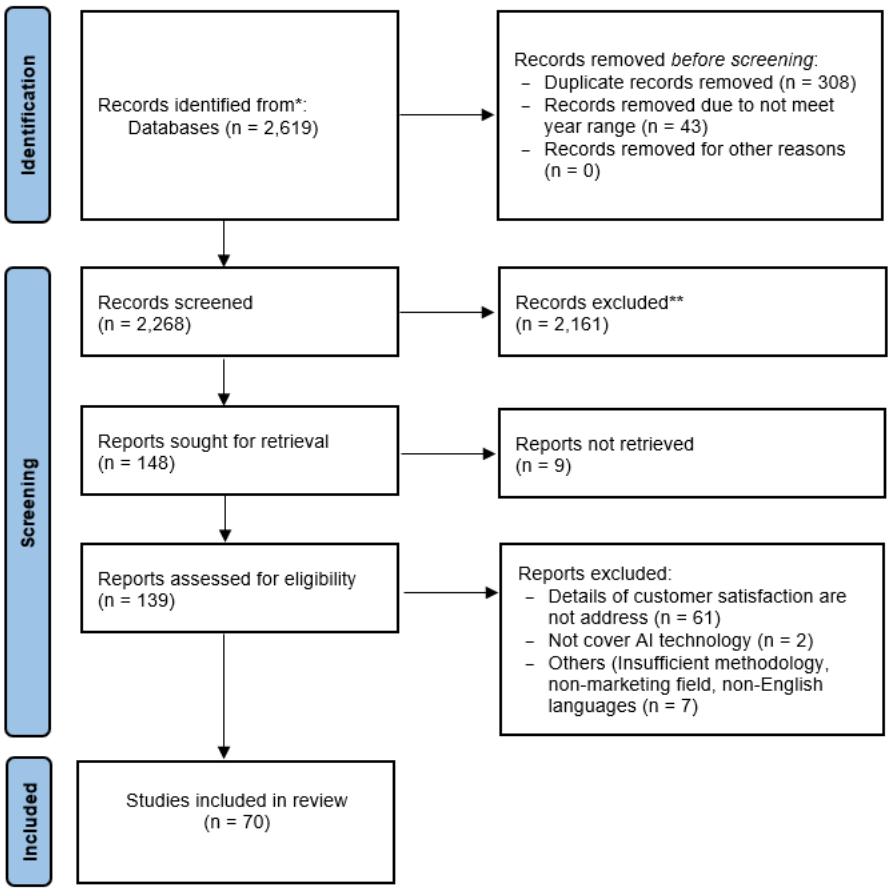
Keyword search	**Google Scholar**	**Scopus**	**Total**
Artificial intelligence and service encounters	202	25	227
Artificial intelligence and customer experience	216	397	613
Machine learning and customer experience	64	111	175
Artificial intelligence and customer satisfaction	663	235	898
(“artificial intelligence" OR "machine learning") AND ("customer satisf*" OR "service quality" OR "customer experience") AND (reconceptual* OR integrat* OR transform*)	91	264	355
Total	1,236	1,032	2,268

3.6 Screening

I carried out the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020, which was introduced by Moher et al. (2009). The PRISMA procedures are used as a basis for reporting systematic reviews of other types of research (Moher et al., 2009). Through PRISMA, the clarity, transparency, quality, and value of SLR reports are also enhanced (Sohrabi et al., 2021). Therefore, the adoption of PRISMA has been extended beyond health care to other research areas, including marketing studies such as consumer behaviour (Khan & Pandey, 2023), technology and customer experience (Gajda, 2023), and consumer and AI interaction (He & Zhang, 2022).

In the first screening, I scanned the titles and read the abstracts of the papers. As a result, I excluded 2,118 papers that did not address customer satisfaction and AI technology or did not belong to the marketing field. In the second stage, I retrieved and read the full articles to ensure that customer satisfaction and AI technology were addressed in each research paper. Papers with insufficient details on methodology, not extractable, or not relevant to marketing, were also excluded. Finally, I have 70 papers that are qualified for my SLR study.

Figure 1: Flow diagram of article selection for SLR using the PRISMA protocol.



3.7 Data analysis

3.7.1 Method

To address my research objective which aims to build an umbrella of the AI's capability and customer satisfaction, I adopted thematic analysis, a widely used qualitative method for identifying, analysing, and reporting patterns or themes within data. There are two primary reasons for choosing this method.

First, processing a large data set of 70 selected articles required well-defined and structured procedures, as data management was imperative to the success of this extensive study (Nowell et al., 2017). In particular, the well-structured approach by Braun and Clarke (2006) based on the thematic analysis concept, with each phase as a building block for the next one, allowed raw data from each article in my study to be captured and organised systematically. Thus, this systematic methodology ensures consistent, robust findings and the ability to replicate the study. Additionally, by adopting this structured methodology, thematic analysis enhances the consistency of data analysis, in which the method aids in establishing transparent and traceable connections between raw data – providing scientific rigour, credible and reliable interpretations, and conclusions (Naeem et al., 2023). To facilitate this process, I used the NVivo software version 14 to organise and sort data and assist with coding and theme development.

Second, thematic analysis, an essential aspect of understanding science, contributes to comprehending prior literature (Kuch, 1982). As my SLR aims to explore and synthesise findings across multiple AI and customer satisfaction studies, thematic analysis is particularly suitable. This method enables the connection of findings to more significant theoretical or conceptual issues by applying coding mechanics and qualitative data analysis (Clarke & Braun, 2018; Lochmiller, 2021). Additionally, Braun and Clarke's (2006) six-stage process involves the construction of a conceptual model, aiding the development of a unique data representation frequently guided by established theories (Naeem et al., 2023). By addressing the final phase of this process in the context of my selected prior studies and aligning identified patterns with a predetermined theoretical or conceptual framework, the method aids my data analysis to develop a conceptual model of AI and customer satisfaction. This AI-CX model will provide a comprehensive understanding of the relationship between these two concepts, drawing upon the themes identified through the analysis of existing literature.

The data analysis procedure followed the six phases of thematic analysis from Braun and Clarke (2006) by thoroughly examining the existing literature to identify key themes and patterns and provide a comprehensive understanding of how AI can enhance customer satisfaction. The following table outlines the six phases of the thematic analysis process, along with a concise description and the expected outcome for each step in the context of my research.

Table 8: Braun & Clarke' six phases framework for thematic analysis.

Analysis step	**Process**	**Outcome**
Familiarising yourself with the data	Read the full text of each article's key sections to understand the existing studies on AI and customer satisfaction comprehensively.	Overview discussion of existing studies related to AI and customer satisfaction.
Generating initial codes	Identify key terms and phrases related to AI's impact on customer satisfaction and note conceptual and theoretical frameworks.	Initial codes served as the foundation for developing a coding book that addresses various aspects of AI and customer satisfaction.
Searching for themes	Review coded data to identify overarching themes and subthemes that reflect AI and customer satisfaction patterns across studies.	The connections between the codes and grouping them into potential themes capture the key findings from the selected literature.
Reviewing themes	Review the coded data of each subtheme.	All themes accurately represented the patterns and relationships between AI and customer satisfaction identified in the selected literature.
Defining and naming themes	Define and name each theme, describing its scope and content, and establish a well-defined set of themes for the findings section.	A well-defined set of themes was ready to be presented in the findings section.

Finalise themes	Synthesise themes and insights to develop a comprehensive understanding of how AI enhances customer satisfaction and creates a clear narrative for reporting.	The finalised thematic analysis served as the foundation for my report's discussion and conclusion sections.

3.7.2 Coding procedures and theme development

In this study, I employed a manual coding process with 4 key steps including generating initial codes, creating selective groups and subgroups, reviewing and deducting codes, and merging subgroup codes (see Figure 2). NVivo software was used to create codes, subgroups, and group codes. Concurrently, Excel software was employed to develop a comprehensive database consolidating article information, including sources, research context, research methods, service sector types, AI and customer satisfaction factors.

First, the coding process started with the familiarisation phase, following Braun and Clarke's (2006) thematic analysis framework. According to Rossman and Rallis (2017), the deep familiarity with the data is achieved through categorisation, which is essential for thematic analysis. Thus, I adopted an inductive coding approach, which, according to Naeem et al. (2023), enables researchers to identify patterns and themes that naturally emerge from the data. Furthermore, breaking the data into pieces allowed me to validate existing concepts within the context of AI capabilities and customer satisfaction across articles in my SLR. The selected articles in my Excel database, listed in alphabetical order, were thoroughly read. Key customer satisfaction factors, along with keyword terms or phases associated with the definitions, were recorded in NVivo software.

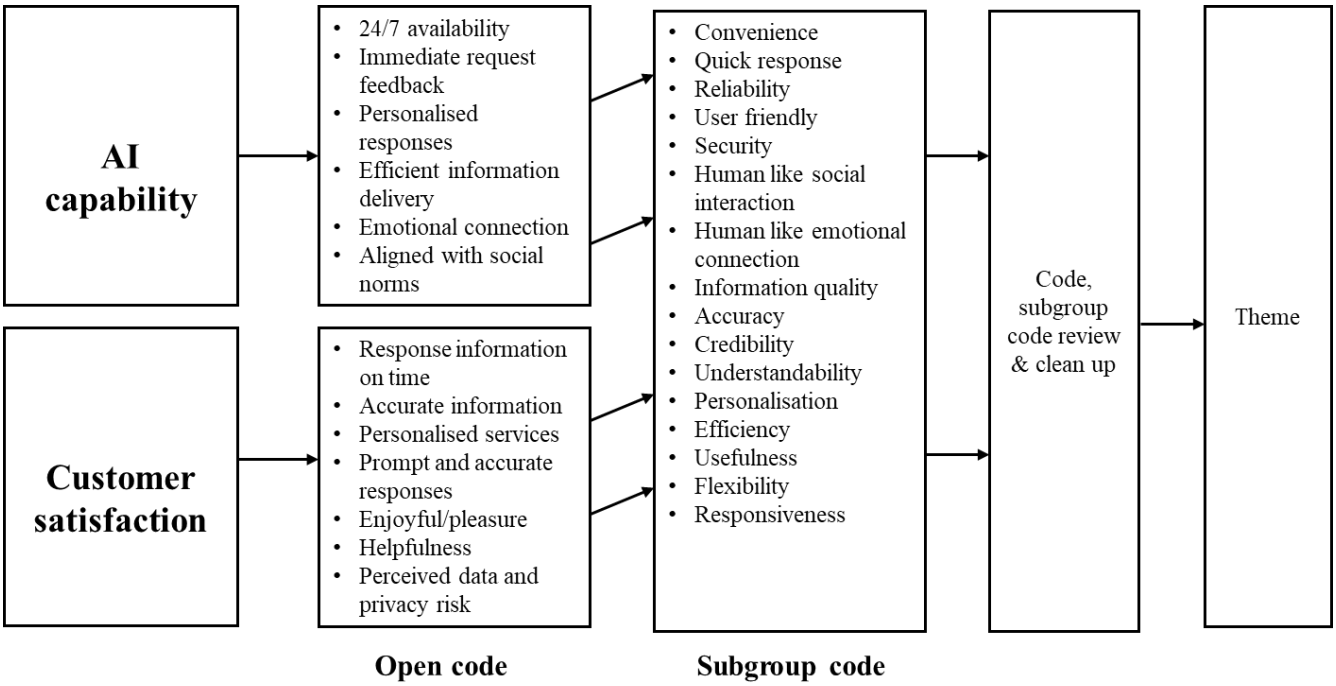
Second, as initial codes were established with keyword terms or phases, inductive coding continued to be applied for the remaining articles. The appropriateness of predefined codes was reviewed if any code definitions provided more comprehensive explanations. This phase was particularly important given the different terminology associated with AI capabilities and customer satisfaction across the literature.

Third, named group codes and subgroup codes were created. In this phase, I examined the relationships between code groups and subgroups to identify potential thematic patterns. This involved analysing the frequency of codes, their co-occurrence across articles, and the contextual relationships between research contexts. In addition, I compared existing AI and customer satisfaction model in the literature in my SLR. As a result, codes with similar terminology were grouped together.

Next, after completing the analysis of all selected articles, I reviewed each code group, subgroup, and individual code. During this selective refinement process, any codes that were not strongly aligned with the research questions or did not have a sufficient definition related to AI capability and customer satisfaction were evaluated for removal.

Lastly, after finalising selective codes, related subgroup codes were reviewed. The purpose of this final phase was to identify subgroup codes that could be merged into larger group categories.

Figure 2: Coding procedures and theme development of AI capability and customer satisfaction



Chapter 4: Findings

This chapter covered my findings and results after conducting a comprehensive reading of 70 selected articles in PRISMA progress. The findings focused on answering my research question of how AI can refine customer satisfaction. My analysis constructed five main themes most relevant to my research question. The first theme concerns the quality of AI systems and how it affects customer satisfaction. The second theme is related to anthropomorphism, which involves giving human qualities to AI, and its impact on customer perceptions and satisfaction. The third theme focuses on the communication quality of AI and how it influences customer interactions and satisfaction. The fourth theme focuses on the competence of AI systems and their role in shaping customer satisfaction. Lastly, the fifth theme is the importance of trust in the context of AI and customer satisfaction.

4.1 AI system quality

Wei and Prentice (2022) argue that the quality of AI services depends on users' perceptions and evaluations of their experiences with AI-powered tools and applications. Following Oostenbrink's (2015) argument about the success of the IT model, Trivedi (2019) reaffirmed that AI system quality needs to be measured by response time, usability, reliability, availability, and adaptability. When customers perceive the AI service quality to be high, they are more likely to develop a strong sense of internal and external engagement (Wei and Prentice, 2022). Internal engagement refers to the emotional connection and satisfaction customer's experience during interactions with AI-powered tools (Wei and Prentice, 2022). In contrast, external engagement involves their active participation in and promotion of the AI service (Wei and Prentice, 2022). This increased customer engagement, in turn, leads to enhanced customer loyalty, as satisfied and engaged customers are more inclined to continue using the AI service and recommend it to others.

Furthermore, Yang (2023) argues that high-quality AI services led to a more satisfying overall co-creation experience for the customer. When the AI system performs well and meets or exceeds customer expectations, it creates a positive and engaging environment that encourages customers to invest their time and effort in co-creation. As a result, the quality of the AI service becomes a key factor in fostering successful and rewarding customer-AI co-creation experiences. From selected literature in my systematic literature review, I find that customer satisfaction is associated with AI system quality, which includes constructs like convenience, quick response, reliability, user-friendliness, and security. Table 9 shows the key terms presented according to each construct of AI system quality.

4.1.1 Convenience

Customer satisfaction associated with AI systems is central to a range of convenience factors that include 24/7 accessibility, uninterrupted service, timely information retrieval, interactive communication, and visibility of communication content (Klaus & Zaichkowsky, 2020; Wei & Prentice, 2022; Yang et al., 2022; Rizomyliotis et

al., 2022; Calvo et al., 2023; Lee & Li, 2023; Pappas et al., 2023). Accessing service around the clock is a must-have capacity for any successful IT system model. Thus, the constant availability of AI-powered chatbots and virtual assistants ensures that customers can receive support anytime (Li et al., 2021). Moreover, with the growing digital platforms such as online websites and mobile apps, AI accessibility must also be fulfilled (Calvo et al., 2023).

Additionally, the key advantages of AI systems are machine learning and deep learning, which help AI provide more informed responses. Thus, Chen et al. (2022) argue that the time saving benefits drive customer satisfaction when AI systems enable customers to access relevant information quickly. Two-way communication is another advantage of AI systems as it relates to convenience. The real-time response of AI systems facilitated by AI chatbots allows customers to ask questions and receive immediate, personalised responses (Kang & Choi, 2023). Thus, the visibility of communication content provided by AI systems ensures transparency and allows customers to refer to the information as needed (Sharma et al., 2023).

> "Consumers increasing adoption of new AI bot technologies mirror the rise of convenience as a key influencer of the customer experience." (Klaus & Zaichkowsky, 2020)

4.1.2 Quick response

Customer satisfaction related to the quick response to AI service is associated with offering instant service interactions, quick routine task handling, and timely need fulfilment. Li et al. (2021) point out how AI's ability to create instant service environments and deal with routine matters quickly makes interactions more convenient for customers. One of the most appreciated aspects of AI chatbots is its capability of immediate response to customer's requests (Chen et al., 2022). This quick response time is a significant advantage over human-based customer service claimed by Koc et al. (2023). AI-generated responses to customer complaints took only 46.37 seconds, compared to human experts who took an average of 37.09 minutes to provide a personalised response (Koc et al., 2023).

> "One of the aspects the users satisfy with AI chatbots most is responsiveness. Anytime customers make requests to AI chatbots, they receive feedback immediately." (Chen et al., 2022)

The quickness of AI's response is consistent in both online and physical environments. Kang and Choi (2023) find that consumers are willing to interact with AI-powered chatbots when shopping online because consumers believe chatbots will make the process quicker and easier. In addition, in physical environments like restaurants, AI-powered robots can significantly reduce wait times for orders, potentially improving customer satisfaction (Sharma et al., 2023).

4.1.3 Reliability

Reliability determines customer satisfaction with AI-powered chatbots, as evidenced by recent studies. Yang (2023) find that reliability positively impacts customer satisfaction in chatbot conversations. Similarly, Le et al.

(2023) identify reliability as an essential factor for customer satisfaction in AI communication, in addition to responsiveness and interactivity. Several key reliability aspects have been identified in the literature as contributing to customer satisfaction. These include adaptability and timeliness in delivering customised services and accurate information. Prentice et al. (2020) and Li et al. (2021) both emphasise the importance of adaptability in AI systems for enhancing customer experiences and perceptions. Prentice et al. (2020) highlight that an AI system's adaptability, or its capacity to provide customised services, directly impacts customers' perceptions and assessments of their experiences, which leads to shape positive customer perceptions.

> "Reliability indicates the dependability of AI-powered systems. Flexibility represents adaptability and customisation that is provided for individual customers. Timeliness relates to the responsiveness of AI tools. These system indicators influence customer experience with AI, which affects their perceptions and assessments. Although these services are offered by AI-powered tools, from the customer's perspective, they are part of the firm's service offering and influence customers' overall quality perception." (Prentice et al., 2020)

Similarly, Li et al. (2021) stress the importance of leveraging diverse AI technologies to deliver tailored services. By utilising the adaptability of AI technologies, service providers can better understand and cater to individual customers' unique needs and preferences. The result of customisation is better customer experiences and higher levels of satisfaction.

Additionally, timeliness, the ability to answer quickly, is another component of reliability that affects customer perceptions of AI-powered systems. Nguyen and Malik (2021) argue that the responsiveness of AI tools is directly linked to the perceived quality of the AI system, driven by the exchange of knowledge that leads to improved employee knowledge, skills, and expertise to serve customers better. Prentice et al. (2020) further emphasis that timeliness, along with reliability and flexibility, is a key system indicator that influences customer experience with AI. Customers' perceptions and assessments of AI-powered services are affected by the responsiveness of these tools. Although AI-powered tools offer these services, customers view them as part of the firm's overall service offering, ultimately influencing their perception of service quality.

4.1.4 Security

For any IT system, including AI, security gets users' attention about perceived data and privacy risks, identity disclosure, and privacy assurance. Gopinath and Kasilingam (2023) and Nicolescu and Tudorache (2022) find that perceived privacy and high privacy risks significantly negatively impact users' attitudes and intentions towards using AI-powered services, particularly in privacy-sensitive domains like finance. Users worry about the potential misuse, unauthorised access, or loss of their personal information, which can hinder their adoption of AI-enabled services. Furthermore, privacy assurance, which involves measures taken by AI service providers to protect user data and ensure its confidentiality, is crucial for fostering positive user experiences and encouraging continued use of AI systems (Nicolescu & Tudorache, 2022; Niu & Mvondo, 2024).

> "This study postulated that perceived privacy risk has significant negative impact on attitude […] and intention […]. The meta-analytic findings revealed perceived privacy risk to be a significant negative predictor of attitude." (Gopinath & Kasilingam, 2023)

4.1.5 User friendly

According to Li and Zhang (2023), AI interfaces should be designed to make it easy for users to see and comprehend the available communication options. This simplicity can be achieved through text, symbols, icons, or other visual cues that guide users toward effective interaction with the service agent. Additionally, the ease of switching between AI agents and humans contributes to AI functions' user-friendliness. Customers may feel more comfortable interacting with an AI chatbot by providing easy access to AI and human customer service options within the same interface (Chen et al., 2022). Therefore, the ease of access and flexibility can significantly enhance user satisfaction and overall experience with the AI-powered service.

> "The affordance of visibility allows service agents to communicate efficiently with customers with the aid of text or symbols." (Li and Zhang, 2023)

Table 9: AI system quality's theme and related constructs.

Theme	**Constructs**	**Representative keywords/Phrases**	**Source**
AI system quality	Convenience	− Service's availability at anytime − Constant and uninterrupted service − Time saving due to retrieve needed information instantly − Two-way communication − Visibility of communication content	Klaus & Zaichkowsky, 2020, Wei & Prentice, 2022, Yang et al., 2022, Rizomyliotis et al. (2022), Calvo et al. (2023), Lee and Li (2023), Pappas et al. (2023)
	Quick response	− Instant service interactions − Quick routine task handling − Timely need fulfillment − Immediate request feedback − Outperform task speed	Li et al., 2021, Chen et al. (2022), Kang and Choi (2023), Koc et al. (2023), Sharma et al. (2023)
	Reliability	− Adaptability to diverse need and customised services − Response information on time	Prentice et al. (2020), Li et al., 2021, Nguyen and Malik (2021), Le et al. (2023), Yang (2023)
	Security	− Perceived data and privacy risk − Privacy assurance	Blut et al. (2021), Nicolescu and Tudorache (2022), Trawnih et al. (2022), Niu and Mvondo (2024)
	User friendly	− Visible interface by text and symbols	Chen et al. (2022), Li and Zhang (2023)

4.2 AI's anthropomorphism

Guido and Peluso (2015) define "anthropomorphism as how people perceive inanimate objects as having human characteristics". Chen et al. (2022) argue that customers expect AI chatbots to possess human-like characteristics, contributing to a more natural, engaging, and satisfying interaction experience. Thus, human-like concepts have been extended to AI-powered technologies like chatbots, where human-like characteristics can be expressed through visual appearance, relational style, and gestures (Pizzi et al., 2023). Prior AI literature studies find that human-like characteristics enhance diverse facets of customer experience. For instance, Rizomyliotis et al. (2022) and Noor et al. (2022) reveal that when chatbots are anthropomorphised, it leads to positive customer experiences. Similarly, Blut et al. (2021) find a positive relationship between anthropomorphism and perceived ease of use, usefulness, safety perception, and social presence. Given the positive relationship between anthropomorphism and perceived usefulness, Li and Wang (2021) argue that anthropomorphism leads to customers' positive attitudes, acceptance, and intention to use service robots. However, Blut et al. (2021) point out that anthropomorphism is not always ideal because negative emotions can affect customer experience caused by humanlike AI. Prior studies reveal that anthropomorphic robots can elicit intense negative feelings, such as discomfort, eeriness, strain, and a sense of threat (Blut et al., 2021).

In my data analysis, two major aspects of anthropomorphism emerge as key factors influencing customer satisfaction, including human-like social interaction and emotional connection. The construction of human-like social interaction encompasses several elements, such as greeting, apology, politeness, and verbalising. The emotional connection constructs include empathy, enjoyment, and warmth. When AI can demonstrate empathy, express enjoyment, or convey warmth, customers form positive emotional bonds that increase customer satisfaction.

4.2.1 Human-like social interaction

Huang et al. (2021) find that when a robot is designed with human-like characteristics, people may instinctively treat it as a social entity, applying similar social norms and expectations as they would in human-to-human interactions. This finding is consistent with anthropomorphism, where people attribute human-like qualities, intentions, and emotions to non-human entities. Blut et al. (2021) further explain that anthropomorphism facilitates social interactions between humans and AI-powered technologies, driven by the fundamental psychological process of inductive inference that allows individuals to treat non-human entities as social actors.

The effect of anthropomorphism on social interactions towards AI has been observed in prior literature. Nicolescu and Tudorache (2022) find that anthropomorphising chatbots with human-like characteristics, such as gender, can facilitate more engaging and enjoyable social interactions between customers and AI chatbots. Similarly, Kim and Kim (2024) discover that when interacting with voice-activated devices (VADs), customers want to feel like they are interacting with a highly intelligent human rather than a machine, leading to positive emotional states and

favourable behaviours towards VADs. Moreover, Pizzi et al. (2023) find that when a chatbot appears to maintain eye contact or direct its attention towards the customer, these social cues can help to establish trust and credibility, making the interaction feel more natural and human-like.

> "By contrast, social presence, emotions, and anthropomorphism positively influence customer experience from the use of chatbots. The study reveals that anthropomorphism of chatbots can lead to positive experiences, similar to prior research." (Rizomyliotis et al., 2022)

From social interaction cues, Jeon (2022) points out that attributing human-like roles and hierarchies to AI-powered technologies can create a more relatable and trustworthy social presence, improving user satisfaction and engagement.

4.2.1.1 Verbalising

Klaus and Zaichkowsky (2020) argue that integrating voice capabilities creates a more engaging, convenient, and emotionally resonant user experience. Similarly, Rzepka et al. (2021) find that customers perceive speech-based interactions with AI-powered service platforms as more beneficial in efficiency, cognitive effort, and enjoyment, leading to higher service satisfaction levels. Additionally, usability refers to how easily users can understand, interact with, and control an intelligent customer service robot. By accurately and quickly understanding customers' needs, AI-powered robots can make customers feel in control and valued, leading to higher levels of satisfaction and a more positive user experience (Gao et al., 2022). Thus, Söderlund (2023) argues that human-like capabilities, such as verbalising thoughts, enhance the robot's potential to be a thought-provoking customer's worldview. In other words, when a service robot can express its thoughts in a way that resembles human communication, it may stimulate users to think more deeply about their own beliefs, assumptions, and perspectives.

> "Specifically, we show that customers perceive speech-based interactions to be more beneficial in terms of efficiency, cognitive effort, and enjoyment, and, subsequently, in terms of service satisfaction." (Rzepka et al., 2021)

4.2.1.1.1 Apology

The apology from an AI chatbot can significantly impact the customer experience in service recovery (Shen & Wang, 2022; Koc et al., 2023; Liang et al., 2024). In particular, Shen and Wang (2022) find that apologies from robots are more likely to be more effective for consumers who have a lower perception of their ability to influence others or control their environment. In post-service recovery, using polite language and behaviour, the chatbot satisfies the customer's desire to maintain a positive self-image and feel respected, subsequently leading to increased post-recovery satisfaction (Song et al., 2023).

Moreover, Liang et al. (2024) argue that the effectiveness of different symbolic recovery strategies, in which the chatbot apologises or expresses appreciation in response to the service failure, may vary depending on the perceived gender of the chatbot. The potential of generative AI language models, such as ChatGPT, to generate high-quality and effective apologies in service recovery. Koc et al. (2023) find that experts rated the ChatGPT-

generated apology as extremely satisfactory because it was perceived more as sincere, substantive, and customised than actual management responses.

"The way the apology expressed in the ChatGPT generated management response was considered to be much better, 4,78 out of 5, i.e. extremely satisfactory. This was probably due to the fact that the ChatGPT-4 response was considered by the experts that did not merely pay lip service as several actual management responses do." (Koc et al., 2023)

4.2.1.1.2 Greeting

Blümel et al. (2023) argued that social-oriented communication, like customary greetings by AI, can enhance customer satisfaction. Moreover, how customers are greeted is also an important part of the conversation. For instance, Huang and Rust (2024) argue that AI, a machine-based technology, does not inherently possess the biases, stereotypes, or prejudices that humans might consciously or unconsciously hold against certain groups of people. As a result, AI can generate responses and create experiences that are uniformly kind and friendly.

> "The literature review shows that greetings by name positively impact consumer engagement, satisfaction, and brand likability." (Blümel et al., 2023)

Table 10: Human-like social interaction sub-theme and related constructs.

Theme	**Sub-theme**	**Constructs and Representative keywords/Phrases**	**Source**
AI's anthropomorphism	Human like social interaction	− Verbalising: voice, effortless interpretation	Klaus & Zaichkowsky, 2020, Rzepka et al. (2021), Gao et al. (2022), Yun and Park (2022), Söderlund (2023)
		− Apology: recovery strategies, chatbot gender, quality of apology	Shen & Wang (2022), Koc et al. (2023), Liang et al. (2024), Song et al., 2023
		− Greeting: name, kindly response	Blümel et al. (2023), Huang and Rust (2024)

4.2.2 Human like emotional connection

Ruan and Mezei (2022) define emotions "as subjective mental states that result from cognitive appraisals, have physiological effects, and impact behaviour". Extending to marketing literature, Huang and Rust (2024) argue that emotion is a multi-element experience with varying levels of observability, including physical expression, physiological response, subjective experience, and cognitive appraisal. Ruan and Mezei (2022) and Zhang et al. (2024) find that chatbots' emotional expressions affect customer satisfaction. This customer satisfaction is driven by customers' demand for emotional expressions from AI chatbots. Chen et al. (2022) point out that customers desire emotional understanding, hoping these virtual agents can recognise and respond to their emotional expressions throughout their interactions.

Similarly, Ruan and Mezei (2022) reveal that by using emoticons and cyber-speak, AI chatbots can replicate human emotional expressions. Additionally, when chatbots adopt a social-oriented communication style, customers perceive them as warmer, positively impacting their attitudes toward chatbots (Maar et al., 2022). Moreover, Huang and Rust (2024) conclude that a strong emotional bond between the AI and the user can improve the user's emotional well-being. Thus, the improvement in emotional bonding between the customer and AI results from the deepened relationship and the emotional support provided by the AI companion.

4.2.2.1 Empathy

Beyond just empathy and understanding, Yet Menon and Dubé (2007) point out that emotional support provides empathetic and reassuring expressions that aid individuals in emotional management. Yun and Park (2022) argue that empathy, which involves considering customers' needs and establishing a personal connection with them, is crucial for brands seeking to improve customer satisfaction. Recently, Huang and Rust (2024) argue that empathy needs to satisfy two essential capabilities, including understanding the customer's perspective and emotions and reacting to those emotions and problems in an appropriate and supportive manner.

According to Chen et al. (2022), customers value human-like empathy during interactions with AI chatbots. When chatbots demonstrate empathy through their dialogue, customers feel cared for and appreciated on a personal level. This implies that customers are not just looking for efficient problem-solving from chatbots, but also for emotional support and understanding. Similarly, Liu-Thompkins et al. (2022) find that AI agents can detect a person’s distress and create a sense of empathy and concern.

More importantly, Liu-Thompkins et al. (2022) conclude that when empathy levels are high, AI agents can deliver effective and social customer experience quality comparable to human agents. Liu-Thompkins et al. (2022) reveal the capacity of empathy to drive positive customer experiences through AI. When developing emotional attachments to AI technology, Gao et al. (2022) argue that customers may exclusively experience passion or strong positive emotions through their interactions with intelligent voice robots. Moreover, in a service context, empathy in AI means understanding and appropriately reacting to human thoughts, emotions, behaviours, and experiences (Ho & Chow, 2023).

In the context of a service encounter, human frontline employees’ empathy and supportive attitudes can improve social interactions, and deliver more satisfying experiences overall (Haupt et al., 2023). The effects of empathy can occur and extend beyond humans, with the interaction of customers and AI service robots. For instance, in service recovery, Shen and Wang (2022) find that consumer empathy toward robots plays a crucial role in perceptions and reports of consumer satisfaction. Similarly, according to Xu et al. (2023), in service failure, the customer’s intention to use the service can be enhanced by the easiness of the AI service recovery, building a positive customer relationship, and reducing negative emotions supported by the empathy capacity of AI. Therefore, Le et al. (2023) find that as the emotional responses in virtual service assistants’ (VSA) conversations increase, the influence of guaranteed and empathetic responses on satisfaction improves.

> "When people attribute the chatbot as responsible for the failure, only the empathy message is preferable. In that case, the solution message had no indirect effect on satisfaction (via competence), while the empathy message had a positive indirect effect on satisfaction." (Haupt et al., 2023)

Empathy can be induced by different factors. Blümel et al. (2023) find that adjusting conversation style to be more empathetic and aligned with the customer's emotional state , can result in better customer service outcomes, including satisfaction, engagement, loyalty, and overall customer experience. Even when the chatbot is not held responsible for the failure, an empathetic message is a very appropriate strategy to retain customers (Blümel et al., 2023). Additionally, Haupt et al. (2023) point out that an empathy message, when compared to a solution message (a response that focuses on providing a fix or resolution to the problem), has a more positive indirect impact on customer satisfaction. Gelbrich et al. (2021) conclude that in service failure situations, emotional support provided by AI service chatbots can create perceived warmth that enhances customer satisfaction.

4.2.2.2 Enjoyment

According to Rizomyliotis et al. (2022), perceived enjoyment refers to the entertainment and fun customers experience when using a technology or service, like chatbots. Related to AI service robots, customers' interactions with robots can result in perceived enjoyment, which is their subjective experience of pleasure and satisfaction (Sharma et al., 2023). Further, Noor et al. (2022) point out that enjoyment, as a hedonic element of AI service agent interactions, is a key factor in how consumers rate service quality. Similarly, Dhiman et al. (2023) argue that customers perceive higher value from AI tools when they experience enjoyment while using them. Therefore, AI should meet functional needs and provide an engaging and enjoyable experience to enhance customer satisfaction, perceived service quality, and overall value.

> "Our study also demonstrated that customers would perceive higher value from the AI tools when they feel enjoyment while using them." (Dhiman et al., 2023)

In the literature on AI and customers, enjoyment appears to be a multifaceted concept encompassing various factors, including playfulness, novelty, humour, text-based communication, and emojis. Gopinath and Kasilingam (2023) find that playfulness strongly predicts attitude and intention to use chatbots, indicating that engaging and entertaining interactions are crucial for customer adoption. Furthermore, chatbot-expressed humour has enhanced customers' entertainment and improved service satisfaction through an emotional pathway (Blümel et al., 2023; Xie et al., 2024). Moreover, due to interacting with new technology like AI, the novelty effect can create customer engagement that results in an enjoyable and satisfying customer experience (Sharma et al., 2023). Finally, in interactions with AI chatbots, using emojis in text-based communication helps conversational AI identify with human operators and facilitates pleasant customer interactions (Ranieri et al., 2024).

4.2.2.3 Warmth

According to Gelbrich et al. (2021), warmth is associated with the perceived intentions of the social object, including traits like trustworthiness, sincerity, and friendliness. Similarly, Pizzi et al. (2023) define warmth "as how a customer perceives a chatbot's intentions, including friendliness, helpfulness, sincerity, trustworthiness, and

morality". Based on an empirical study, Jiménez-Barreto et al. (2021) find that in airline service, customers primarily see these chatbots as functional tools for completing tasks and obtaining information, rather than as entities with which they can form emotional or social connections. However, Gelbrich et al. (2021) argue that perceiving warmth from the system, like a digital assistant, directly correlates with increased satisfaction, as it signifies positive intentions. By fostering warmth perceptions, digital assistants can improve user satisfaction in the short term and encourage long-term use and loyalty.

> "Warmth perceptions directly increase satisfaction because they indicate good intentions from the system that signals these intentions. In turn, satisfaction reinforces the use of the service, leading to greater persistence." (Gelbrich et al., 2021)

Recent improvements in AI technology, particularly the rollout of Generative AI like ChatGPT, have witnessed more studies investigating emotional factors like warmth with AI. Pizzi et al. (2023) have consistently find, across multiple empirical studies, that the anthropomorphism aspect plays a role in shaping people's perceptions of warmth towards interacting with AI chatbots. Similarly, Haupt et al. (2023) point out that people's perceptions of emotions like warmth can help explain how they react to technology integration in service settings.

Table 11: Human-like emotional connection sub-theme and related constructs.

Theme	**Sub-theme**	**Constructs and Representative keywords/Phrases**	**Source**
AI's anthropomorphism	Human-like emotional connection	− Empathy: service recovery, service failure, empathy' capability, conversation style adjustment, emotional connection	Gelbrich et al. (2021), Chen et al. (2022), Gao et al. (2022), Liu-Thompkins et al. (2022), Lv et al. (2022), Shen & Wang (2022), Yun and Park (2022), Blümel et al. (2023), Haupt et al. (2023), Kang and Choi (2023), Le et al. (2023), Xu et al. (2023), Yang (2023), Huang and Rust (2024)
		− Enjoyment: playfulness, humour, novelty, pleasure, text based and emoji	Noor et al. (2022), Blümel et al. (2023), Dhiman et al. (2023), Pappas et al. (2023), Sharma et al. (2023), Ranieri et al. (2024), Xie et al. (2024)
		− Warmth: trustworthiness, sincerity, friendliness, helpfulness	Jiménez-Barreto et al. (2021), Gelbrich et al. (2021), Pizzi et al. (2023) Xu et al. (2023)

4.3 AI's communication quality

The growing popularity of online services, such as e-commerce, has increased demand for instant and 24/7 customer service. As customers expect quick and efficient support, retailers invest more in AI-powered chatbots to meet these expectations. Chung et al. (2020) discover that customers' satisfaction with AI-driven e-service agents in luxury retail brands depends on how they perceive the quality of communication. Moreover, Chung et al. (2020) argue that the effectiveness of AI-powered chatbots in improving customer satisfaction significantly depends on their ability to offer concise, useful, and relevant information that meets or surpasses customer expectations. Furthermore, in service recovery, Hsu and Lin (2023) find that AI bot conversational quality had the most substantial influence on customer satisfaction. When an AI-powered chatbot can communicate naturally and intuitively, customers are more likely to be satisfied, particularly when dealing with service issues or complaints.

The key dimensions of communication quality in interactions with AI-powered chatbots have been addressed by Cheng and Jiang (2021) and Jiménez-Barreto et al. (2023). According to Cheng and Jiang (2021), accuracy, credibility, and competence are dimensions of communication quality. Jiménez-Barreto et al. (2023) further explore the role of language in shaping consumer perceptions of chatbot competence and user satisfaction. Jiménez-Barreto et al. (2023) conclude that using concrete language makes the chatbot seem more competent and enhances consumers' perceived self-competence during the interaction, leading to a positive self-expansion experience.

Besides the accuracy and credibility mentioned by Cheng and Jiang (2021), from the analysis of my selected literature, I find that constructs like information quality and understandability are more associated with communication quality.

4.3.1 Information quality

According to Matosas-López (2024), perceived information quality refers "to an information receiver's subjective evaluation of the quality of the information they receive". Similarly, Ranieri et al. (2024) argue that customer experience is influenced by the quality of interaction between chatbots, and customers driven by the perceived level of quality in their conversation. The effect of information quality provided by AI on customer satisfaction is confirmed by prior literature (Prentice et al., 2020; Ruan & Mezei, 2022). Prentice et al. (2020) report that customers value information and system quality, but information quality has a stronger influence on satisfaction. Similarly, Ruan and Mezei (2022) reveal that perceived information quality directly affects customer satisfaction, besides perceived waiting time and pleasure in the interaction between AI chatbot and customer.

> "The results show that information and system quality are equally important to customers, given that both simultaneously affect customer satisfaction, but that information quality has a larger effect." (Prentice et al., 2020)

The dimensions of information quality provided by AI continue to expand through the literature. According to Prentice et al. (2020), customers' perceptions and assessments of AI information quality are driven by accuracy and currency. Extending to the findings of Prentice et al. (2020), Niu and Mvondo (2024) emphasise that dimensions of information quality, such as relevance, reliability, conciseness, and quickness, have a significant impact on customer satisfaction. In an empirical study of banking services, Calvo et al. (2023) find that customers prefer receiving up-to-date information about financial trends via AI tools. As AI offers relevant and organised information, customers experience positive feelings because they can make informed decisions. Matosas-López (2024) also confirms that besides comprehensiveness, up-to-date information provided by AI significantly influences users' perceptions of brand credibility, which impacts customer satisfaction.

Thus, Matosas-López (2024) argues that perceived information quality should be broken down into intrinsic and contextual information quality. Intrinsic information quality lies in the inherent attributes of the information, including its completeness, accuracy, validity, and trustworthiness (Matosas-López, 2024). On the other hand, contextual information refers to information's quality within the specific task context that includes quality value-added nature, relevance, timeliness and sufficiency of information (Matosas-López, 2024).

The literature covered additional factors related to accuracy and credibility in information quality, which I provided in detail.

4.3.1.1 Accuracy

The competence of task-oriented AI devices is heavily influenced by accuracy, which affects users' perceptions. Yang et al. (2022) find that task-technology fit (TTF), related to accuracy, influences customers' evaluation of AI interactions. Similarly, Chung et al. (2020) argue that providing precise and reliable information enhances online communications between customers and brands. Moreover, the accuracy of an AI chatbot's feedback determines how customers judge its understanding (Chen et al., 2022), which can impact customer experience. More importantly, in time-sensitive situations, consumers prioritise chatbot reliability and accuracy over politeness (Song et al., 2023).

> "Under heavy time pressure, consumers place a higher priority on the accuracy and dependability of chatbots than on their politeness." (Song et al., 2023)

Furthermore, accuracy goes above and beyond simply delivering accurate information. Chen et al. (2022) reveal the significance of accurate, personalised recommendations in shaping users' perceptions of AI chatbots. In addition, the importance of AI's accuracy in delivering typo and grammar-free content in multiple languages, as highlighted by Koc et al. (2023), directly influences customer experience.

4.3.1.2 Credibility

According to Meyer-Waarden et al. (2020), perceive credibility is important for building trust, as customers are more likely to rely on and engage with chatbots that they believe possess the knowledge and skills necessary to

provide valuable assistance. Thus, to establish credibility, the chatbot needs to be perceived as an expert who is well-informed and qualified (Meyer-Waarden et al., 2020). Moreover, the efficiency of AI's capacity in generating management responses impacts customers' perception of credibility. Koc et al. (2023) state that the AI-generated response establishes credibility by effectively handling the complaint through competence and responsiveness.

4.3.2 Understandability

According to Baabdullah et al. (2022), the AI chatbot acts as an intermediary between the customer and the organisation, facilitating the transfer of information and insights. Thus, by empowering customers to express their needs clearly and enabling organisations to understand and meet these needs effectively, a successful flow experience with chatbots enhances the chances of achieving higher levels of consumer satisfaction (Baabdullah et al., 2022). In the context of human-robot interactions, Söderlund (2023) argues that understandability is influenced by the degree to which a robot's behaviour and communication adhere to social norms and expectations. A robot with high understandability would demonstrate an awareness of and compliance with the social rules and conventions that govern human interactions, making its actions more predictable and relatable to customers (Söderlund, 2023). Moreover, not only the capability to understand and respond accurately to customers' inquiries, but customers are also likely to develop a stronger sense of ownership, like a feeling of attachment, possession, or personal connection towards the device (Söderlund, 2023).

Table 12: AI's communication quality theme, sub-theme and related constructs.

Theme	**Sub-theme**	**Constructs and Representative keywords/Phrases**	**Source**
AI's communication quality	Information quality	− Accuracy − Update to date − Comprehensive relevance − Quickness − Reliability	Prentice et al. (2020), Calvo et al. (2023), Ruan and Mezei (2022), Matosas-López (2024), Niu and Mvondo (2024), Ranieri et al. (2024)
	Accuracy	− Accurate information − Accurate personalized recommendation − Understand customer's feedback correctly − Response in different languages with no spelling and grammar error	Chung et al. (2020), Chen et al. (2022), Yang et al. (2022), Koc et al. (2023), Song et al. (2023)
	Credibility	− Expert level − Handling customer's complaint effectively	Meyer-Waarden et al. (2020), Koc et al. (2023),

Understandability	− Accurate response to customer's inquiry − Aligned with social norms	Baabdullah et al. (2022), Söderlund (2023)

4.4 AI's competency

Gelbrich et al. (2021) argue that intelligence, skills, and effectiveness are the determining factors for the perceived competence of a social object. Likewise, Pizzi et al. (2023) restate the importance of the chatbot's ability to effectively and reliably carry out frontline tasks, such as intelligence, skill, and efficacy assessments. In their study, Jiménez-Barreto et al. (2021) find a significant connection between individuals' need for competence and their feelings of security and self-confidence during interactions with chatbots. In such situations, individuals actively seek opportunities to express and demonstrate their capabilities, whether by displaying their knowledge about a particular subject or by solving a specific task. Furthermore, when customers perceive a higher level of AI competence, they are more likely to experience a flow state during their interactions (Yang et al., 2022).

Moreover, when customers interact with a chatbot that demonstrates high levels of competence, they are less likely to be doubtful or suspicious about the AI's capabilities and intentions (Pizzi et al., 2023). Identification with the AI chatbot and the brand is also created and driven by AI's competency capability. This implies that when customers use a chatbot in an effective and efficient manner to gather information or address issues, they are more likely to view the chatbot as a representation of themselves (Lee & Li, 2023). As a result, a sense of competence translates into higher service satisfaction levels. By understanding customer needs, providing accurate information, and effectively assisting, the competency of AI leads to customer satisfaction (Kallel et al., 2023). Thus, Xie et al. (2024) claim that increased chatbot competence results in greater satisfaction with the service.

The findings from Lee and Li (2023), Nicolescu and Tudorache (2022), and Chen et al. (2022) highlight AI competency capabilities in shaping consumer perceptions and expectations. Lee and Li (2023) argue that AI capabilities, such as being accessible anytime and anywhere, connecting information, providing visibility, and offering interactivity, lead to perceiving the associated competency of the brand. According to Nicolescu and Tudorache (2022), AI chatbots are seen as competent and trustworthy when they effectively understand requests, give relevant responses, resolve customer problems, and save time and effort. Moreover, Chen et al. (2022) reveal that customers have evolving expectations for AI chatbots. After a period of use, customers anticipate that chatbots will continuously update AI's knowledge base, expand their ability to answer a broader range of questions, understand problems more accurately, and have better problem-solving capabilities.

Additionally, gathering information becomes more efficient as AI capability allows for immediate retrieval of vast data from expansive knowledge bases. Thus, AI competency is more advanced in communicating and observing customer's emotions. For instance, Jiménez-Barreto et al. (2023) find that the AI chatbot triggers a psychological process by using concrete language in a consumption context where customers seek immediate help. This process

leads consumers to perceive the chatbot as knowledgeable and competent, and ultimately, consumers incorporate this perceived competence into their sense of competence. Moreover, Koc et al. (2023) point out that Generative AI capabilities, like ChatGPT, lead to more precise problem identification, better prioritisation of issues, and more targeted solutions. In particular, Generative AI's capabilities enhance service recovery effectiveness when AI can distinguish, assess, measure, and assign scores to determine the anger level and severity in each problem area (Koc et al., 2023).

Besides efficiency mentioned by Pizzi et al. (2023), through literature conducted in my SLR related to AI and customer satisfaction, I find that there are dimensions that can be associated with perceived competency from customers, including personalisation, efficiency, usefulness, flexibility and responsiveness.

4.4.1 Personalisation

Rizomyliotis et al. (2022) define customisation as "the process of modifying and personalising offerings, such as products, services, or experiences, to cater to the unique needs and preferences of individual customers". Personalisation has emerged as a critical factor in shaping customer satisfaction, loyalty, and overall brand experience. AI technology is refining customer service by delivering highly personalised experiences that cater to individual preferences and needs. For instance, compared to traditional banking channels, AI chatbots have more advanced capabilities in providing personalised services (Eren, 2021). By leveraging AI's ability to analyse customers' personal data, detect preferences, and predict unique requirements, chatbots can offer tailored recommendations, relevant products, and customised solutions (Wei & Prentice, 2022; Li & Zhang, 2023; Demir & Demir, 2023). Therefore, the level of personalisation not only meets customers' expectations for individualised attention (Chen et al., 2022) but enhances the overall service experience by improving responsiveness and convenience (Baabdullah et al., 2022; Kang & Choi, 2023).

> "Similarly, a positive and strong causal relationship was find between personalisation and responsiveness. A high level of personalisation makes chatbots more able to match customers' requirements and expectations, and accordingly, a higher responsiveness that customers could perceive in their interaction with such interactive systems." (Baabdullah et al., 2022)

According to Ho and Chow (2023), by engaging customers through personalised communications, customised product introductions, and individualised service experiences, AI chatbots enhance positive brand experiences. Personalisation is particularly evident in ChatGPT, which significantly influences service individualisation and value co-creation by predicting consumers' unique requirements and offering personalised recommendations (Demir & Demir, 2023). Thus, managers as key stakeholders consider personalisation the most important dimension of online customer experience when implementing AI systems (Ho & Chow, 2023).

4.4.2 Usefulness

According to Meyer-Waarden et al. (2020), perceived usefulness is the efficiency of the chatbot in carrying out the task and delivering the required service, which drives customers' intention to use a chatbot. Similarly, Blut et al.

(2021) argued that the human-like qualities of chatbots lead to increased customer confidence in their ability to provide better services. Perception about the usefulness of AI chatbots is significant in a service context, where customers expect personalised and efficient support. Li and Zhang (2023) find the role of chatbots in facilitating associations between customers and relevant information or products. By connecting users with the information they need, chatbots become an integral part of the customer experience (Li & Zhang, 2023). Not only relevant information, according to Gopinath and Kasilingam (2023), but the perceived usefulness of AI also extends to the capacity to provide actionable, up-to-date information to customers. More importantly, AI chatbots' advice and suggestions help customers make purchase decisions (Kang & Choi, 2023).

> "In the case of customer experience through a chatbot, the reuse of the service is strongly driven by the perception of the chatbot's ability to efficiently perform the task and deliver the service required." (Meyer-Waarden et al., 2020)

Therefore, from the prior literature's perspective on AI's usefulness, Niu and Mvondo (2024) conclude a comprehensive definition of perceived usefulness in the context of AI chatbots. Customers' perceptions of a chatbot's usefulness are based on four key dimensions, including AI's capability to provide practical benefits, improve efficiency, increase productivity, and enhance overall effectiveness.

4.4.3 Efficiency

According to Eren (2021), customer satisfaction relies on productivity and efficiency benefits. In the service context, the ability to provide quick services with similar information quality is the customer's perception of AI's efficiency in delivering service (Chen et al., 2022; Ruan & Mezei, 2022).

> "The benefits in terms of productivity and efficiency play a crucial role in customer satisfaction." (Eren, 2021)

With the growing adoption of AI technology in service, Bharti et al. (2023) highlight that efficiency is tied to both the coherence of the new technology and resource optimisation. This means that AI tools must integrate seamlessly with existing systems and processes while efficiently utilising available resources to deliver maximum value. Dhiman et al. (2023) provide additional evidence of AI's efficiency by showing that the utility of AI tools has a direct impact on users' perceptions of value. Customers are more inclined to view AI tools as valuable and beneficial when they assist them in accomplishing tasks with efficacy. Moreover, following the dimension of AI Service Quality (AISAQUAL), Noor et al. (2022) confirm that AI's efficiency provides utilitarian value to consumers by streamlining processes and enabling quick and effective task completion. Likewise, Hsu and Lin (2023) conclude that customer loyalty is influenced by efficiency in AI bot service quality, as it enables customers to easily obtain the desired information or service outcome.

Therefore, Niu and Mvondo (2024) report that ChatGPT's post-human ability has a direct impact on user satisfaction. Customers are more likely to perceive their needs as being adequately addressed when they engage with technology that can deliver answers, aid, or task fulfilment with greater efficiency and accuracy than humans

(Niu & Mvondo, 2024). Recognising that AI not only meets but exceeds customer expectations leads to satisfaction driven by efficiency.

4.4.4 Flexibility

Li et al., 2021 point out that AI chatbots can enhance on-site service management by providing a flexible and intelligent service atmosphere. Chen et al. (2022) argue that AI chatbots alone may not be sufficient to achieve the highest level of service quality, mainly when dealing with complex customer requirements. In such cases, the collaboration between AI chatbots and manual workers becomes essential. In addition, Chen et al. (2022) find that customers desire seamless transitions between AI and human assistance. Similarly, Ranieri et al. (2024) argue that by giving customers control over the transition from autonomy to assistance, businesses can create personalised experiences. Thus, high-level service quality can be achieved by combining the efficiency and adaptability of AI with the expertise and emotional intelligence of human workers.

4.4.5 Responsiveness

Chatbot responsiveness, as stated by Chen et al. (2021), significantly enhances the intrinsic values of customer experience. Chatbots provide prompt and accurate responses, making it effortless for customers to obtain the necessary information. AI's efficiency saves time and increases customers' perceived value of the service (Chen et al., 2021). Additionally, Al-Araj et al. (2022) find a significant association between AI and the responsiveness dimension of service quality. The foundation of this relationship relies on AI-powered systems' willingness to assist customers and provide transparent information about service completion times. Furthermore, according to Yang (2023), customer response capabilities are expanded upon, highlighting the ability of AI services to co-create value with customers in a highly effective and efficient manner. By improving customer response capabilities, AI service quality directly enhances the co-creation experience, fostering a collaborative and satisfying relationship between customers and AI.

Table 13: AI's competency theme and related constructs.

Theme	**Constructs**	**Representative keywords/Phrases**	**Source**
AI's competency	Personalisation	− Personalised services − Personalised responses − Customers' preferences − Individualized recommendations − Service individualization	Eren (2021), Baabdullah et al. (2022), Chen et al. (2022), Wei & Prentice, 2022, Demir and Demir (2023), Ho and Chow (2023), Kang and Choi (2023), Li and Zhang (2023)
	Efficiency	− Assist completing task − Provide efficient information in a short time	Eren (2021), Chen et al. (2022), Noor et al. (2022),

	− Simply service processes	Ruan and Mezei (2022), Bharti et al. (2023), Dhiman et al. (2023), Hsu and Lin (2023), Niu and Mvondo (2024)
Usefulness	− Perform task and information service efficiently − Provide relevant and up to date information − Better productivity	Meyer-Waarden et al. (2020), Blut et al. (2021), Gopinath and Kasilingam (2023), Kang and Choi (2023), Li and Zhang (2023), Niu and Mvondo (2024)
Flexibility	− Collaboration between human resource and AI − Seamless transitions between AI and human assistance	Li et al., 2021, Chen et al. (2022), Ranieri et al. (2024)
Responsiveness	− Prompt and accurate responses − Efficient information delivery	Chen et al. (2021), Al-Araj et al. (2022)

4.5 Customer's trust

The impact of trust on customer satisfaction is widely debated in marketing literature. For example, Brill et al. (2019) highlight that trust perception has a beneficial impact on moderating the relationship between expectation confirmation and customer satisfaction. The more customers trust an AI service, the more significant the impact of meeting their expectations on their satisfaction. In the specific context of banking, Eren (2021) find that customers' perceived trust in a bank's chatbot service directly influences their satisfaction. Trust concerns of customers are especially important because customers have initial concerns and insecurities regarding technology-based financial products or services. Thus, Bharti et al. (2023) claim that trust is the most critical factor for greater customer satisfaction with AI.

Regarding IT systems like AI, transparency is essential for customers to interact openly and freely with chatbots, particularly when sensitive information is shared during conversations (Baabdullah et al., 2022). Moreover, Trawnih et al. (2022) find that trust plays a crucial role in shaping the overall AI-powered customer experience, including apparent sacrifice, personalisation, and AI-powered service quality. The meta-analysis conducted by Gopinath and Kasilingam (2023) provides robust evidence of the importance of trust in driving chatbot adoption and usage. Furthermore, the study by Dhiman et al. (2023) suggest that customers' perception of AI technology

value is significantly influenced by trust. When customers trust an AI system, they are more inclined to appreciate its benefits, find it useful, and consider it a valuable addition to their experiences.

4.6 Service sectors and AI capability and customer satisfaction

Banking, retailing, and hospitality emerge as the three dominant sectors in my SLR, accounting for 26 studies. These studies primarily explore the effects of AI technology and customer satisfaction within different research contexts, including customers' experiences with AI in online shopping, product or service information acquisition, service booking, service failure, and service recovery. Through the findings of research context from these studies, I found that certain AI technologies on customer satisfaction themes such as AI system quality, anthropomorphism, communication quality, competency, and customer trust occurred across these service sectors.

However, certain AI capabilities receive more research attention in specific service sectors. For instance, while banking services in my SLR have more research experiments about the competency capabilities of AI, both retail and hospitality focus on the effects of anthropomorphism factors. In addition, while AI system quality such as convenience, reliability, and user-friendliness was extensively studied, empirical research in my SLR specifically addressing AI security was comparatively scarce. This finding is particularly significant given the critical importance of security in AI-driven customer interactions. Thus, as AI continues to handle increasingly sensitive customer data and transactions, there is a pressing need for more robust empirical studies that examine the security measures, potential vulnerabilities, personal data and privacy, and customer perceptions of AI system security in service sectors.

4.6.1 Banking sector

According to Ho and Chow (2023), driven by the digitalisation of the banking sector, customers are demanding more seamless, digitalised financial services. The literature’s research context in my SLR focuses on investigating customer satisfaction with AI tools for banking services, such as enquiries about financial products and services. However, none of the reviewed literature addresses service failure contexts. The sample research includes customers with experience using AI-enabled bank chatbot services. The research experiments examine factors such as service quality, perceived performance, trust, accessibility, customisation, competency, and efficiency. The findings of these studies on the effects of AI on customer satisfaction range from AI system quality, anthropomorphism, competency, and communication quality to customer trust.

Compared to anthropomorphism in the banking service sector, scholars show more interest in examining AI system quality and competency. According to Yang (2023), AI system quality with minimal technical errors or faults is fundamental to the success of commercial banking services. Moreover, Li and Zhang (2023) find that the visibility of information in AI systems, presented through various media formats such as text, videos, pictures, and hyperlinks, enhances user-friendliness by allowing for efficient communication and facilitating smooth interaction

between users and AI. Thus, high AI service quality leads to increased customer satisfaction and enjoyment in co-creation experiences (Yang, 2023).

Regarding AI competency, Ho and Chow (2023) point out that banking customers now have heightened expectations for products and services, particularly in terms of personalised and relevant information and tools. Kallel et al. (2023) point out that customer satisfaction is influenced by how competent customers perceive the AI chatbot to be during their interactions. As a result, when customers experience a high level of competence from AI tools, they are not only more satisfied with the banking service but also maintain their willingness to engage with AI (Kallel et al., 2023).

Table 14: The effect of AI on customer satisfaction in banking sector

Research context	AI and customer satisfaction theme & constructs	Source
• Customers evaluate banking services quality by using AI. • Customers have experience to use AI for banking services. • Customers interact with the AI agent for banking services.	**AI system quality** – Accessibility – Anytime/anywhere connectivity – Response speed – Reliability – Visibility (AI's information content) – Security **AI anthropomorphism** – Empathy **AI competency** – Competence – Customisation – Efficiency – Personalisation – Usefulness **AI communication quality** – Information – Response expertise **Customer trust** – Trust – Transparency	Eren (2021) Al-Araj et al. (2022), Bharti et al. (2023), Ho and Chow (2023), Kallel et al. (2023), Lee and Li (2023), Li and Zhang (2023), Yang (2023)

4.6.2 Retail sector

In the retail environment, my systematic literature review revealed that AI impacts various facets of customer experience, particularly in online shopping and service recovery contexts. These studies demonstrate diverse effects of AI on customer satisfaction, ranging from basic service interactions to complex emotional engagement (see Table 15). For example, in luxury fashion retail, Chung et al. (2020) examined how AI tools can replicate the personalised customer care traditionally delivered through face-to-face interactions. In service recovery,

significant attention has been given to the effectiveness of chatbot politeness strategies, with studies exploring how AI assists in resolving customer issues through emotional conversation management and timely responses (Le et al., 2023; Song et al., 2023).

Similar to the banking sector, AI system quality significantly influences customer satisfaction in retail. Chen et al. (2021) found that ease of access, AI availability, and quick chatbot responses significantly enhance customer experience by reducing the effort required to obtain information. In the e-retailing environment, Ranieri et al. (2024) demonstrated that user-friendliness not only helps customers navigate information quickly but also encompasses the effective use of text, visuals, and emojis by AI systems to facilitate pleasant customer interactions.

Furthermore, empathy emerges as an AI capability for delivering emotional responses similar to those of humans. Xu et al. (2023) argue that despite being non-human, in socially oriented contexts, customers perceive more warmth from anthropomorphic delayed responses performed by AI, resulting in increased customer satisfaction. Moreover, according to Liu-Thompkins et al. (2022), when AI is programmed to display high levels of empathy, it can perform on par with human agents in creating positive emotional and social experiences for customers. In negative social encounters, AI's empathy capability can help defuse tension, make interactions feel more natural and understanding, and potentially lead to better outcomes (Liu-Thompkins et al., 2022). For instance, in service recovery contexts, Kang and Choi (2023) point out that by giving personalised attention and showing genuine interest in customers' concerns, AI demonstrates emotional empathy, improving the overall customer experience.

Lastly, AI communication quality is another driver of customer satisfaction, where AI capabilities fulfil customer requests by providing accurate, up-to-date, and comprehensive information. For instance, in a luxury retail study, Chung et al. (2020) point out that quality communication, in which AI provides accurate and reliable information, helps build positive customer relationships, resulting in increased satisfaction. Additionally, Ranieri et al. (2024) argue that AI’s ability to handle complex information and fulfil specific customer requests, such as providing detailed product, order, or delivery status information, demonstrates strong information quality. Conversely, inaccurate or insufficient information, as well as unfavourable responses from AI, can lead to unpleasant interactions, prompting customers to leave the conversation (Ranieri et al., 2024).

Table 15: The effect of AI on customer satisfaction in retail sector.

Research context	AI and customer satisfaction theme & constructs	Source
• Customers use AI for online shopping. • Customers interact with AI for service recovery (product return).	**AI system quality** – Availability – Easy to contact – Quick reply – Reliability – Ease of use **AI anthropomorphism** – Appreciation – Empathy – Expressed humour – Face concern impression – Warmth **AI competency** – Competence **AI communication quality** – Accuracy – Communication competency – Credibility – Information quality **Customer trust** – Trust – Guarantee	Chung et al. (2020) Chen et al. (2021), Liu-Thompkins et al. (2022), Ruan and Mezei (2022), Kang and Choi (2023), Le et al. (2023), Song et al. (2023), Xu et al. (2023), Ranieri et al. (2024), Xie et al. (2024)

4.6.3 Hospitality sector

The hospitality literature in my SLR includes more experiments on anthropomorphism compared to the competency and communication quality capabilities of AI. The research context covers travel inquiries, accommodation bookings, service failures, and dining experiences in restaurants (see Table 16).

In hospitality services, such as hotels, AI system quality drives customer satisfaction (Prentice et al., 2020; Wei & Prentice, 2022). Moreover, according to Prentice et al. (2020), high-quality AI services can enhance customers' deeper connection with the service provider. Response speed and reliability are essential components of AI service quality. In particular, the capability of AI to provide quick replies reflects customers' assessment of AI service quality (Prentice et al., 2020). Furthermore, for an AI system to be considered truly reliable, it must not only function correctly but also consistently, precisely, and in line with user expectations (Prentice et al., 2020). Similarly, Wei and Prentice (2022) conclude that AI system reliability is a fundamental requirement for service quality.

Regarding anthropomorphism, scholars have focused on emotional drivers such as emotional expression, enjoyment, and politeness strategies performed by AI. For instance, Zhang et al. (2024) conclude that emotional expressions of concern increase customer satisfaction and reduce expectancy violations. Similarly, Lv et al. (2022) point out that high-empathy responses, where AI demonstrates a strong level of understanding and emotional intelligence in its communication with customers, can smooth the service recovery process and establish a positive relationship with customers. Moreover, Shen and Wang (2022) find that service robot apologies evoke greater empathy from customers, which in turn leads to higher satisfaction levels. Specifically, customers who perceive themselves as having less power are more likely to respond empathetically to a robot's apology (Shen & Wang, 2022).

Table 16: The effect of AI on customer satisfaction in hospitality sector.

Research context	AI and customer satisfaction theme & constructs	Source
• Customers use AI for flight searching and make a booking. • Customers interact with AI for hotel services. • Customers interact with AI for service recovery (hotel check-in). • AI robots serve the food in the restaurant.	**AI system quality** – Response speed – Reliability **AI anthropomorphism** – Apology – Empathy – Enjoyment – Emotional expressions – Novelty **AI competency** – Autonomy – Competence **AI communication quality** – AI information quality (accuracy, currency)	Lv et al. (2022), Prentice et al. (2020), Jiménez-Barreto et al. (2021), Sharma et al. (2023), Shen & Wang (2022), Wei & Prentice, 2022, Zhang et al. (2024)

To conclude, my data analysis from 70 selected journal articles revealed that the effect of AI's capabilities on customer satisfaction is dynamic and evolving, particularly with the recent emergence of Generative AI and its more advanced augmentation. The theme of customer satisfaction with AI spans from system quality to communication quality, anthropomorphism, competency, and customer trust, with more studies conducted on Generative AI's capability for personalisation and emotion in service counters, service recovery, and customer service contexts. Additionally, the prominence of certain themes related to customer satisfaction can vary significantly across different service sectors, largely due to the specific context of the research or the inherent nature of the service being provided. The importance of sector-specific research is revealed by this variability in accurately capturing the nuances of customer satisfaction drivers in AI-enabled services.

In my last chapter, I proposed my conceptual framework in a general discussion, followed by the theoretical and managerial contributions of my research, future research directions, and limitations.

Chapter 5: Discussion

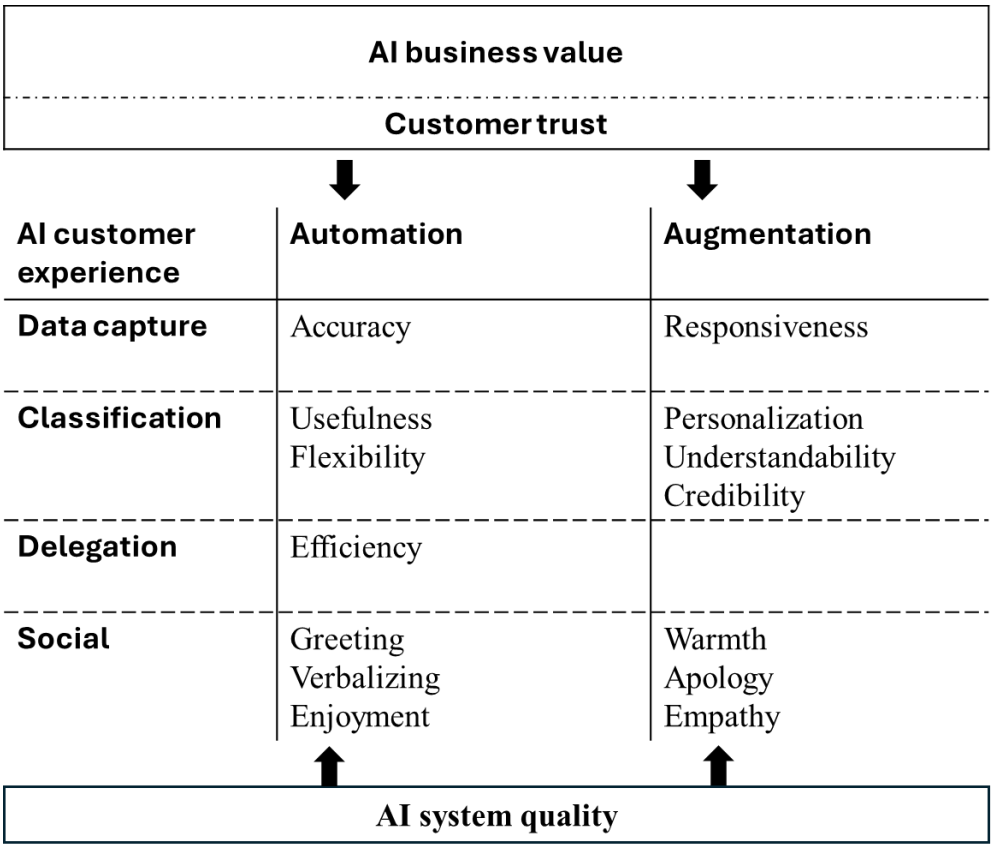
5.1 Discussion

Capturing the growing attention of marketing and services literatures about AI technology with customer experience, my research aimed to explore how artificial intelligence' capabilities redefine customer satisfaction. In this study, I conducted a systematic literature review (SLR) to synthesise comprehensive AI and customer satisfaction. By using SLR' method, PRISMA's framework process and data analysis procedures, I identified, classified, analysed and finalised 70 studies relevant to my research question. After fully reading and analysing each study and using NVivo software to create relevant code, I find five themes relevant to AI and customer satisfaction. The first theme is AI system quality with related constructs, including convenience, quick response, reliability, security and user friendly. The second theme is anthropomorphism of AI with sub-theme human-like social interaction and human-like emotional connection. Social interaction of AI, such as greeting, verbalising and apology, has an impact on customer satisfaction. Similarly, the literature in my SLR finds a strong customer satisfaction with human-like emotion such as empathy, enjoyment and warmth. The third theme is about AI's communication quality with a focus on information quality and understanding that drives customer satisfaction. The fourth theme is AI's competency in which personalisation, usefulness, efficiency, flexibility, and responsiveness are found to influence customer satisfaction. My last theme of AI and customer satisfaction is customer trust, which impacts customers' perception of using AI as information exchange. By delving into each service sector, I found that, depending on the nature of the service and research context, the drivers of AI and customer satisfaction can be more prominent in certain sectors. For instance, in the banking sector, AI competency receives more attention than emotional drivers. In contrast, emotional drivers and social interaction play a more dominant role in the retail and hospitality sectors.

5.2 Conceptual framework

Based on theme, sub-theme and related constructs from data analysis of selected articles, I propose a conceptual framework that integrates with business value (automation, augmentation) and the AI customer experience (data, classification, delegation and social experience). I propose the structure of the conceptual framework for AI and customer satisfaction as follows.

Figure 3: : Conceptual Framework of AI and Customer Satisfaction (AI-CX Framework).



Source: My propose conceptual framework (AI-CX Framework)

5.2.1 AI business value

In the top of framework is AI business value, which streams down to customer trust, automation and augmentation. AI is the IT system, thus followed IT business value is achieved when the benefits of IT investments are realised by both customers and the organisation (Gellweiler & Krishnamurthi, 2021). This dual focus of AI business value ensures that the company's IT initiatives are aligned with customer needs and preferences while also contributing to the organisation's overall goals and performance.

Furthermore, according to Perifanis and Kitsios (2023), digital transformation of organisations is often driven by technological developments. As new technologies like AI emerge and mature, they offer opportunities for organisations to innovate, optimise processes, and create new products and services. Hence, integrating AI capabilities with both business and IT strategies is an enabler for aligning the overall digital transformation and achieving business value outcomes, including enhancing customer experience (Perifanis & Kitsios, 2023).

Moreover, Mithas et al. (2011) point out that AI business value has an impact directly to information management capabilities of a company. Thus, according to Mithas et al. (2011), a company's information management capability plays a vital role in developing and enhancing its customer management capability. By effectively managing customer data and insights, companies can make informed decisions, personalise offerings, and respond quickly to customer needs. The outcome of customer management capability leads to better customer acquisition, satisfaction, and retention.

5.2.2 Customer trust

In the AI-CX conceptual framework, I propose that the customer trust factor covers the entire framework and affects both automation and augmentation. The reason for this approach is that Erdem and Swait (2004) argue that a brand's credibility is crucial in shaping customer perceptions. Brand's credibility is demonstrated by displaying expertise and trustworthiness in consistently fulfilling the brand's product or service commitments. More importantly, Erdem and Swait (2004) find that consumers perceive a brand's trustworthiness as more important for credibility than its expertise. Extending to the technology field like AI, Matosas-López (2024) points out that trustworthiness is also a construct of brand credibility, which is widely discussed in prior marketing literature. However, according to Enholm et al. (2021), building trust between humans and machines in their interaction is a complex undertaking. Thus, according to Perifanis and Kitsios (2023), how businesses promote AI trust is crucial for successful AI capability conceptualisation due to AI-responsible principles related to privacy and data governance. Moreover, as AI technologies become more prevalent in the workplace, employees might find themselves working in collaboration with AI systems. Consequently, Enholm et al. (2021) argue that trust in AI systems becomes critical, as employees rely on AI-generated insights for decision-making.

5.2.3 AI system quality

The foundation of my conceptual framework lies in the role of AI system quality, driving the execution of automation and argument AI services. Empirical studies across various service fields like banking, hotels, and e-commerce have confirmed that the online system's quality, including factors like availability, adaptability, and response time, strongly influences customer satisfaction. For instance, according to Rod et al. (2009), online information system quality has a stronger impact on overall Internet banking service quality than online customer service and banking service product quality. Similarly, in the hospitality service, Trivedi (2019) find that system quality has the most significant influence on customer experience. Furthermore, according to Kumar and Lata (2021), the system quality of a website, including availability, adaptability, and response time, directly influences customer satisfaction.

Additionally, according to Prentice et al. (2020), customer satisfaction is affected by the quality of AI systems, including accuracy, currency, reliability, flexibility, and timeliness. Furthermore, Nguyen and Malik (2021) conclude that the exchange of knowledge among employees is more effective when they perceive the AI system

to be of high quality. Consequently, the improved knowledge sharing facilitated by high-quality AI tools can indirectly contribute to increased customer satisfaction.

In today's digital landscape, AI system quality, including aspects such as availability, speed of response, and security, has become a fundamental requirement for any online information system. As Matosas-López (2024) points out, features that were once considered differentiating factors in evaluating Voice-Activated Shopping Assistants (VASAI), such as service interruptions, response times, and ease of use, are now seen as basic requirements. Failure to meet these essential system quality standards can negatively impact customers' attitudes towards the brand (Matosas-López, 2024).

5.2.4 Data capture experience

5.2.4.1 Automation - Data capture experience

AI automated data capture capability revolves around accurately understanding customers' questions or requests and providing instant, precise responses, including non-complex personalised recommendations. This aligns with the accuracy component of communication quality, which I suggest is part of the data capture experience. As stated by Ameen et al. (2021), AI systems gather data from diverse sources, such as customer databases or inputs, and in exchange for sharing their data, consumers receive personalised services. Thus, the accuracy in data capture not only benefits consumers but also streamlines the overall workflow from an automation perspective by minimising the need for manual interruption and error correction. In addition, depending on the company's operation strategy, AI accuracy capability can be fulfilled in different languages.

5.2.4.2 Augmentation - Data capture experience

Augmented data capture experience represents a more advanced capability in which AI proactively interacts with customers. In this context, I propose that the construct of responsiveness enables AI systems to communicate promptly with customers and provide accurate responses actively. According to Awa et al. (2021), prompt response is not a one-size-fits-all solution, but instead a strategic tool that should be adjusted to fit the specific context and nature of the customer's problem. By prioritising prompt response, company can foster long-lasting relationships with customers (Awa et al., 2021). Thus, by actively communicating with customers, AI can cultivate a collaborative connection that encourages them to openly communicate their individual needs and preferences. As a result, AI can capture and understand valuable customer insights, which can be used to provide more personalised and relevant experiences. Moreover, Huseynov (2023) argues that by prompting responses, AI chatbots can streamline customer service processes and ensure timely initial responses, improving overall customer experience.

5.2.5 Classification experience

5.2.5.1 Automation – Classification experience

I propose the competency usefulness and flexibility constructs for the automated classification experience. The usefulness focuses on AI's capability in enhancing the efficiency experience by providing not only accurate

information but also relevant and up-to-date information. This AI capability is more advanced compared to the automated data capture experience. Additionally, the flexibility of AI in the automated classification experience can create personalised recommendations that match customers' preferences. The personalisation can be done by AI or through collaboration between human resources and AI. As Awa et al. (2021) state, customers may infer that the recommendations they receive are based on the AI system or the company behind it classifying them as a particular type of person.

5.2.5.2 Augmentation – Classification experience

I propose that augmented classification experience is an advanced AI capability in acknowledging requests from customers with an expert level of understanding. According to Awa et al. (2021), personalised predictions are enabled by AI technologies that analyse consumer data, behaviours, and preferences to generate tailored content and recommendations. Thus, personalisation and credibility are proposed to be components of AI's augmented classification experience, enabling it to handle customers' requests effectively and deliver personalised services and recommendations. Additionally, AI's understandability capability allows it to provide accurate responses to customers' inquiries and adapt to social norms. As a result, customer experience is enhanced through personalisation, credibility, and understanding, facilitated by AI's classification expertise, leading to a feeling of being understood by consumers (Awa et al., 2021).

5.2.6 Delegation experience

5.2.6.1 Automation – Delegation experience

Consumers experience delegation when they use AI solutions to complete tasks they would have done themselves or tasks they are not good at (Awa et al., 2021). This reliance on AI is facilitated by its ability to process vast amounts of data quickly and provide relevant, accurate information (Jordan & Mitchell, 2015). As a result, customers can confidently delegate tasks to AI, trusting in its efficiency and effectiveness.

Therefore, efficiency is a key component of the automated delegation experience. By streamlining and simplifying complex tasks that customers would otherwise perform themselves, AI helps customers save time and effort by reducing their cognitive load (Awa et al., 2021). Thus, when AI consistently demonstrates efficiency in completing delegated tasks, AI delegation experience results in a positive overall customer experience.

5.2.7 Social experience

5.2.7.1 Automation – Social experience

According to Awa et al. (2021), the capacity for AI to engage in reciprocal communication can foster a social experience. Thus, non-complex social interaction components, such as greeting and verbalising constructs, should be part of the automated social experience. Awa et al. (2021) point out that AI enables consumers to have natural social experiences with firms, facilitating information exchange and benefiting both parties. Hence, greeting customers by name or providing a kind response through text or voice is a part of natural communication.

Additionally, the enjoyment construct can enhance the social experience for customers by incorporating humour or playfulness through text and emojis during conversations or interactions with AI.

5.2.7.2 Augmentation – Social experience

In my conceptual framework, augmented social experience is an advanced AI's capability in which AI can establish the emotional connection with the customer. I propose apology, warmth and empathy are dimensions of emotional connection.

- Apology

According to Tarofder et al. (2016), an apology is an expression of regret where the service provider acknowledges their responsibility for the occurrence and admits their fault. However, following prior literature, Atanga et al. (2024) point out that an apology also indicates an explicit acknowledgement that there are rules and norms that guide behaviour and that those standards have been breached. By apologising, the service provider recognises that they have violated the expected norms and rules, which has led to the service failure or negative experience. Additionally, an apology serves as a remedy to restore the relationship between the service provider and the customer (Atanga et al., 2024). Particularly in the service recovery context, the apology strategy has been found to be effective in trust recovery satisfaction (Tarofder et al., 2016; Bozic & Kuppelwieser, 2019). Moreover, Atanga et al. (2024) find that customers with a tight orientation who value strict adherence to rules and norms appreciate and respond more positively to an apology as a symbolic recovery strategy. Thus, AI's apology with augmented technology will enhance the social experience of customers.

- Warmth

According to Güntürkün et al. (2020), warmth refers to how we perceive others and the characteristics they possess that are essential for maintaining relationships and social functioning, such as friendliness, helpfulness, and sincerity. Furthermore, Huang and Ha (2020) point out that in service and communication, warmth can arise from friendliness, bedside manner, and customer focus. Particularly in service recovery, Huang and Ha (2020) find that warmth-oriented responses are more effective in creating positive customer perceptions. Similarly, Fan and Mattila (2020) argue that when customers desire a deeper, more personal connection with a company, they are drawn to service recovery responses that exhibit warmth, care, and sincerity.

Thus, by perceiving the service recovery response as relevant and sincere, customers are more likely to be satisfied with the complaint-handling process (Huang & Ha, 2020) and to form a relational bond with service providers (Güntürkün et al., 2020). Additionally, in service encounters, Fan and Mattila (2020) point out that customers who desire a relational connection with the company prioritise warmth-oriented responses involving humanlike robots.

- Empathy

Empathy, a multidimensional construct consisting of distinct cognitive and affective dimensions, plays a crucial role in service contexts (Delpechitre et al., 2019). Cognitive empathy refers to understanding another person's emotional state (Delpechitre et al., 2019; Sheth et al., 2024), while affective empathy involves the emotional reaction to another person's emotional response. Prior literature has focused on the impact of salesperson empathy on customer satisfaction (Aggarwal et al., 2005; Delpechitre et al., 2019). However, with the growing importance of service, Sheth et al. (2024) have pointed out that empathy is a significant factor in the context of services, as it fosters emotional reactions, reflects service excellence, and leads to customer satisfaction.

As AI technologies continue to advance, augmented AI capabilities have the potential to enhance social connections through advanced capturing and asserting emotional empathy. By leveraging these capabilities, AI systems can better understand and respond to customers' emotional states, improving the overall service experience. Augmented social experience enhanced empathetic ability can lead to more personalised and emotionally intelligent interactions between AI and customers, ultimately driving higher customer satisfaction.

5.3 Research contribution

5.3.1 Theoretical contribution

First, despite the growing study of AI in recent years, marketing literature still lacks a comprehensive picture of customer satisfaction driven by AI technology. Thus, through the SLR methodology to synthesise findings with related themes and constructs from existing marketing literature, my research responds to Lu et al.'s (2020) research call by providing a comprehensive understanding of AI and customer satisfaction dimensions. While IT literature has emphasised the role of technology in enhancing service quality and efficiency (Berkley & Gupta, 1994), marketing has focused on the intangible aspects and personal interactions that shape customer experiences (Lemon & Verhoef, 2016). Therefore, not only the requirements for AI system quality, such as availability, speed of response, or data security, but also communication quality, competency, and the social interaction and emotional capability of AI contribute more to shaping customer satisfaction. Consequently, the results of my research highlight the need for marketing theory to consider the technological aspects of AI in marketing including service encounters, and service recovery. Thus, my research offers the foundation for researchers to explore more nuanced layers of customer satisfaction with AI interactions.

Second, my research addresses the types of AI systems and their technological availability, followed by a description of Narrow AI functions derived from IS literature. This aspect of my SLR research responds to Collins et al. (2021)'s call for a clear AI definition. By addressing Narrow AI's capabilities, such as comprehending and interpreting human language through NLP, interpreting and extracting meaningful information through computer vision, and imitating human decision-making using Expert Systems, my research provides current approaches to studies about AI. Combining these findings with the results of themes and related constructs, my research highlights future investigations about AI and customer satisfaction by building upon existing studies.

Finally, by drawing marketing and information systems literature, my conceptual AI-CX framework integrates AI business value (automation and augmentation) and AI customer experiences (data capture, classification, delegation, and social experience). As I mentioned earlier, customer experience with AI is still a nascent field. So, my AI-CX framework highlights the multifaceted nature of customer experience, encompassing cognitive, emotional, sensorial, and social dimensions (Keiningham et al., 2017; Petit et al., 2019). Additionally, compared to the AI services tasks model with mechanical, analytical, intuitive, and empathetic dimensions by Huang & Rust (2018), my AI-CX framework leverages more details of specific customer experiences with AI. Thus, it opens a new path for future research with more empirical studies to validate the customer experience and AI model.

5.3.2 Practical contribution

The results of my SLR study provide managers with a multi-dimensional understanding of customer satisfaction driven by AI capabilities. My conceptual framework integrates AI business value with different layers of AI customer experience, such as data capture, classification, delegation, and social experience. This framework serves as a roadmap for managers to align AI initiatives with the prioritisation of customer satisfaction while considering the company's resources and marketing strategy.

In addition to AI system quality dimensions such as convenience, quick response, reliability, and user-friendliness, managers should pay closer attention to social interaction and emotional connections in AI customer experiences. As Ruiz-Equihua et al. (2022) point out, the future of customer service will be influenced by how technology connects with customers on a social level. Therefore, companies can foster stronger bonds with customers by designing AI systems that exhibit human-like social interaction and emotional intelligence. This is particularly important in critical situations like service recovery, where effective and high-quality empathetic and warmth-oriented responses from AI can significantly enhance customer experience and satisfaction.

5.4 Future research

First, my research primarily focuses on developing a conceptual framework based on synthesising existing literature. While my research approach provides the theoretical foundation, it is essential to recognise that my conceptual framework requires further refinement and validation through empirical studies with primary data. Future studies can address this limitation by conducting empirical investigations to test the proposed relationships of themes and related constructs.

Second, in my AI-CX framework, there is still a lack of literature investigating the delegation experience with AI. According to Ameen et al. (2021), a delegation experience occurs when consumers involve an AI solution in a production process to perform tasks they would have otherwise done themselves. As mentioned by Ameen et al. (2021), the tasks that AI can perform on behalf of consumers can include booking an appointment (e.g., Google Assistant), helping write emails (e.g., Smart Compose), or adjusting temperature preferences (e.g., Nest

Thermostat). Thus, future research can explore more aspects of the delegation experience from the customer's perspective, focusing on their satisfaction with AI's capabilities in performing these tasks.

Third, although my systematic literature review aimed to cover a wide range of service sectors, only 26 out of the 70 articles were conducted specifically in a services context. As a result, the effects of AI capabilities on customer satisfaction are concentrated within certain service sectors. Future research could explore the impact of various AI capabilities on customer satisfaction within specific service domains. For instance, in the banking sector, scholars could expand their focus beyond AI competency to examine emotional drivers in critical service scenarios, such as service recovery. Similarly, in the retail and hospitality sectors, further research should investigate the role of AI competency in enhancing customer satisfaction.

Finally, there are concerns about AI replacing humans with service tasks. For instance, Huang and Rust (2018) pointed out that since AI can think and feel like humans, it can take over all tasks/jobs. However, Wilson (2019) argued that firms achieve the most significant performance improvements when humans and AI join forces. For instance, by providing relevant information and generating new insights, AI can enhance human cognitive strengths, including analytical skills, decision-making, and creativity (Wilson, 2019). Similarly, Le et al. (2024) argue that by actively communicating and coordinating tasks between humans and AI, businesses can create a more seamless and cohesive service delivery process, leading to increased customer satisfaction. Hence, future research can explore the effect of human and AI collaboration in enhancing customer experience and satisfaction.

5.5 Research limitations

First, although I used various keyword combinations to identify journal articles discussing AI and customer satisfaction from Scopus and Google Scholar, I acknowledge that relevant studies may not be captured during my searching. This missing could be due to authors using different terminology in their titles, abstracts, or keywords or due to the inclusion of relevant studies in databases or sources not consulted in this review. As a result, some pertinent research may have been inadvertently omitted.

Second, the AI customer experience in my conceptual framework is based on Ameen et al. (2021) study that focuses on experiences related to data, classification, delegation, and social aspects. However, there should be more future research to validate the relevance and effectiveness of the customer experience components from Ameen et al.'s (2021) model in the context of my research.

5.6 Conclusion

My SLR provided a comprehensive understanding of AI capabilities with customer satisfaction. This was achieved by identifying literature from Scopus and Google Scholar in period (2019 - 2024) in which selected articles strongly relevant to my research question. Themes associated with AI and customer satisfaction were identified that included AI system quality, communication quality, anthropomorphism, competency, and customer trust. Then,

my proposed conceptual framework offers a holistic understanding of the interplay between AI capabilities, business value, and customer experiences.

By resolving fragmentation, offering clear definitions, and integrating insights from marketing literature, my study advances the theoretical understanding of AI and customer satisfaction research. Moreover, managers can benefit from my research findings as they gain a multi-dimensional perspective on AI-driven customer satisfaction. By aligning AI initiatives with customer experience priorities, the proposed framework enables managers to harness the full potential of AI.

Looking ahead, I call for future research to empirically validate my proposed framework and explore the effects of human-AI collaboration. With the rapid advancement of AI technologies, it is essential to explore how these developments can improve customer experiences and satisfaction.

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