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The Impact of E-CRM on Customer Loyalty

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<u>Dedication</u>

To my beloved parents — the roots of my strength and the light of my journey.

To my siblings — my steady shelter and endless encouragement.

To my true friends — who shared my struggles and celebrated my victories.

To myself — for daring to dream, to fight, and to endure when it mattered most.

To every soul who believed in me, even when the road was unclear.

May this work stand as a humble yet proud contribution to the endless journey of knowledge.

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INTRODUCTION

1. Introduction

In today's contemporary business landscape, the introduction of digital technologies has changed the way firms interact with their customers. Customer relationship management (CRM) has shifted from traditional methods to electronic platforms, giving rise to electronic customer relationship management (e-CRM). This paradigm change has not only transformed customer interactions but also created new opportunities and challenges for businesses, notably in terms of customer satisfaction and loyalty.

The transition from CRM to e-CRM marks a significant milestone in customer-centric strategies. E-CRM uses digital tools and platforms to enhance customer interactions, personalize services, and automate processes. This change is being driven by increased corporate digitalization and customer desire for seamless, omni-channel experiences (Parvatiyar and Sheth, 2001). Customers interact with businesses via considerably more information channels, thanks in part to e-CRM, which has generated a great level of excitement due to its relationship with a wide range of firms. From the customer's perspective, internet-based services significantly reduce the cost of searching, increase the number of sellers, enable better control over the products/services offered, and increase convenience (Anderson and Srinivasan 2003). As a result, e-CRM has become a significant tool for enhancing a company's profitability by allowing it to identify the best customer and satisfy its needs in order to make them loyal to the company's products or services (Nguyen and Mutum, 2012). E-CRM offers a range of benefits to organizations, including improved customer insights, enhanced communication channels, increased operational efficiency, and better customer service (Nguyen and Mutum, 2012). By integrating data analytics, automation, and personalized marketing strategies, e-CRM enables businesses to tailor their offerings to individual customer needs and preferences.

2. Problem statement

Despite its potential benefits, adopting e-CRM to increase customer loyalty presents several challenges, as highlighted by various researchers in customer relationship management and digital marketing. According to Greenberg (2014) and Payne and Frow (2013), one of the key challenges is integrating and managing customer data from numerous sources. This difficulty becomes more challenging when attempting to personalize customer interactions at scale, as emphasized by authors such as Kumar and Reinartz (2016). Maintaining a consistent and

personalized customer experience across several channels is critical to creating loyalty. Pineiro-Chousa et al. (2019) discuss the challenges of managing multichannel interactions, as well as the need for coordination and a unified customer view in e-CRM initiatives that aim to create loyalty. From this perspective, previous studies have shown that the impact of e-CRM on customer loyalty is influenced by various mediators, such as customer experience (Mokha and Kumar, 2022), value cocreation (Itani et al., 2022), service quality (Abdulfattah, 2012), and customer satisfaction (Karim et al., 2023). Despite advances in understanding these relationships, these mediators have typically been studied individually. There is a need for an integrated model that includes all these mediators to fully understand their combined effect between e-CRM and customer loyalty relationship.

Furthermore, specific sectors such as mobile telecommunication did not require sufficient intention in recent years. The mobile telecommunications sector stands out as a vibrant and dynamic industry that exemplifies the revolutionary power of customer relationship management (CRM) and electronic CRM (e-CRM) (Kumar and Reinartz, 2016). With the widespread adoption of mobile devices and the exponential rise of digital communication channels, telecommunication businesses are leading in adopting CRM strategies to improve customer experiences, create loyalty, and maintain competitive advantage (Rigby et al., 2013). Furthermore, the distinct characteristics of the mobile telecommunications industry, such as rapid technological innovation, intense market competition, and diverse customer segments, provide a rich and dynamic environment for investigating the impact of e-CRM on customer satisfaction, loyalty, and business performance (Pineiro-Chousa et al., 2019). By focusing on this sector, this study seeks to contribute empirically grounded insights and theoretical advancements to the broader discourse on CRM, e-CRM, and customer-centric strategies in the digital era. Moreover, most e-CRM studies have focused on developed countries, with only a few investigating developing economies. The context of these countries is unique, as their IT infrastructure is relatively weak (Love et al., 2009), and telecommunications firms must restructure to compete with global companies within their own markets (Almajali et al., 2022). To meet these demands and satisfy customers, an e-CRM system can address these requirements through digital media.

This scenario is particularly relevant for local organizations in developing countries such as Algeria (Jaber and Simkin, 2017). E-CRM is widely regarded as essential in modern business (González-Benito et al., 2017), and its practice and adoption in Arab countries are relatively

recent, especially for telecommunications companies. These companies are crucial enhancers of productivity throughout economies and societies. Over the last decade, telecommunications companies have significantly contributed to the economies of developing countries by providing more business development opportunities and playing a key role in the rapidly evolving environment. The number of contributors in this field is rapidly expanding, partly due to the effective management of these organizations. Consequently, studies are needed to evaluate the use and successful implementation of e-CRM (Al-Mamary et al., 2015). Al-Weshah et al. (2019) noted that there has been limited academic research on the efficiency of e-CRM, particularly in the telecommunications industry. Therefore, more empirical research is necessary to address this gap (Anaam et al., 2018). The Algerian telecommunications market is fiercely competitive, with multiple operators vying for market share and customer attention (Omarini, 2020). In such a dynamic and competitive landscape, understanding how e-CRM practices can influence customer loyalty becomes imperative for companies seeking sustainable growth and differentiation.

The decision to investigate the impact of e-CRM on customer loyalty within the Algerian mobile telecommunication sector is justified by several key contextual factors. Algeria is undergoing significant digital transformation, marked by increasing internet accessibility and widespread adoption of mobile devices (ITU, 2021). This digital evolution presents a ripe opportunity for telecommunication companies to leverage e-CRM strategies to deepen customer relationships and drive loyalty.

For the purposes of this thesis, the following research question was addressed:

What is the impact of e-CRM on customer loyalty within the Algerian mobile telecommunication sector?

This research question consisted of four sub-questions:

- Does e-CRM enhance Algerian customer experience and their value co-creation in the mobile telecommunication sector?
- What factors affect service quality in the mobile telecommunication sector?
- What is the link between customer satisfaction, word of mouth, and customer loyalty?
- What are th**e** variables that can mediate the relationship between e-CRM and customer loyalty?

3. Research hypothesis

The implementation of electronic Customer Relationship Management (e-CRM) strategies is hypothesized to positively influence customer loyalty by enhancing customer experience and satisfaction levels. in this context the study hypothesis would reveal the observable effect in customer loyalty where e-CRM strategies are actively employed. Consequently, if e-CRM is put to use, possible results may include higher levels of customer satisfaction, more frequent purchase patterns and higher values for customer loyalty than in cases when e-CRM is not in use. These outcomes serve as indicators of e-CRM's effectiveness in fostering stronger relationships and loyalty among customers. By systematically analyzing these outcomes, researchers can validate the study hypothesis that: **e-CRM initiatives indirectly lead to tangible improvements in customer loyalty**. This validation is vital for companies interested in building long-term customer relationships and using technologies to improve customer satisfaction and loyalty.

4. Research aim and objectives

The aim of this research is to investigate the impact of e-CRM on customer loyalty within the Algerian mobile telecommunication sector. To achieve this aim, the following objectives are outlined:

- Explore e-CRM practices and strategies employed by mobile telecommunication companies in Algeria.
- Analyze the factors influencing customer satisfaction and loyalty in the Algerian telecommunications market.
- Examine the relationship between e-CRM and customer loyalty by considering mediator variables such as customer experience, service quality, customer satisfaction, and word of mouth.
- Identify best practices and recommendations for enhancing e-CRM initiatives to improve customer loyalty in the Algerian mobile telecommunication sector.

5. Research significance

The significance of this research is multifaceted, encompassing academic and practical dimensions.

Academically, this study contributes to the evolving field of relationship marketing, particularly electronic CRM, by focusing on mobile telecommunication in Algeria as a case of developing countries, providing empirical insights and potentially enhancing existing theoretical frameworks. This academic contribution contributes to filling a gap in understanding the impact of e-CRM on customer loyalty within the context of the mobile telecommunication sector and developing countries, thus enriching scholarly discourse and advancing knowledge in the field.

Practically, this research has substantial implications for identifying best practices, challenges, and opportunities related to e-CRM and customer loyalty. The findings of this study offer actionable insights that can guide marketing managers to provide personalized customer experiences across digital platforms by implementing e-CRM techniques. This approach can be applied by using customer data insights to personalize services, communications, and interactions based on individual preferences, behavior patterns, and requirements. Consequently, a better understanding of customers' varying needs across segments leads to better planning of how to target marketing campaigns and investments for maximum competitive impact. This can enhance customer satisfaction, loyalty, and retention in the competitive mobile telecommunication market.

This practical guidance is invaluable for businesses seeking to enhance customer retention, satisfaction, and overall business performance in a competitive market environment.

6. Thesis outline

This thesis is structured into five distinct parts, each serving a crucial role in presenting a comprehensive study.

The thesis structure begins with the current introductory part which presents the main area of this research by presenting the background on the research topic, which is the impact of e-CRM on customer loyalty, outlining the research problem, stating the study hypothesis, identifying the aim and objectives of the research, and delineating the significance of the study within broader academic and practical contexts. Thereafter, brief description of each chapter is reported.

After providing a brief introduction to the area of research and establishing the scope of the thesis, a critical literature review and background of e-CRM and its relationship with customer satisfaction and loyalty are presented in the first chapter. Chapter one discusses the principles underlying CRM and its importance for improving customer satisfaction and loyalty. This

chapter presents the evolution of e-CRM from CRM, examines the difference between the two, and explains its strategies and how it boosts customer satisfaction and achieves customer loyalty and leads to positive word of mouth.

Chapter two presents a comprehensive review of previous studies and literature relevant to the impact of the e-CRM on customer loyalty, classifying them by journal and conference, year of publication, industry, country, research design, data collection method, data analysis method, and framework theory for laying the foundation for these research hypotheses and contributions.

Chapter three represents the heart of the thesis, encompassing the empirical study phase. This study provides an overview of the importance of selecting the mobile telecommunications sector. Then, the conceptual model of the study and the proposed hypotheses based on previous studies are presented, and the research methodology adopted is discussed, which explains the research design from data collection to data analysis and the method of analysis chosen to test the hypotheses. It also includes the presentation and discussion of the study findings.

The thesis concludes with a general conclusion, summarizing the main findings and presenting the main academic and managerial contributions of this study. Finally, to expand on some important points of scientific research, the limitations of this study and directions for future research were addressed.

CHAPTER ONE :

THEORITICAL BACKGROUND

1. Introduction

Customer relationship management (CRM) strategies are critical for companies to provide better services to their customers (Teo et al., 2006); however, researchers have found that CRM technologies alone rarely bring value directly to firms and are more effective when they are integrated with other resources. An integrated CRM strategy entails creating a process for communicating and providing value to customers at all points of interaction with the company. Companies can gain a competitive advantage by combining CRM with information technology tools to improve individual customer relationships (Buhalis, 2004), which is referred to as an electronic CRM (e-CRM) system.

The digital revolutions have broken the codes of traditional CRM, allowing companies to engage in interactions and conversations with their customers. Companies are eager to use various e-CRM strategies to create, attract, retain and improve customer relationships, which in turn leads to customer satisfaction and loyalty (Dubihlela and Khosa, 2014). The primary goal of e-CRM is to generate a satisfied and loyal customer base, and companies must include e-CRM in their business practices to build customer loyalty (Kelley et al., 2003). However, how can companies successfully use CRM in the digital era, and how it can affect customer loyalty?. Therefore, this research investigates the impact of e-CRM on customer loyalty.

This chapter provides an overview of relationship marketing theory and the literature with respect to the emergence and development of CRM to e-CRM, exploring the main differences between them and e-CRM opportunities and challenges. This chapter also explores e-CRM stages and the main importance of e-CRM related to customer satisfaction, which leads to customer loyalty and word of mouth.

2. Relationship Marketing

According to many academics and practitioners of marketing, relationships are the foundation of marketing (Bagozzi, 1979; Gummesson, 1994; Gronroos, 1995). Marketing professionals and academics are thought to have unanimous acceptance of relationship marketing (Barnes, 1995). Since the early 1990s, this idea has received much attention in the general marketing literature (Iacobucci and Ostrom, 1996; Bejou, 1997).

According to his definition of marketing, Gronroos (1996) stated that "marketing is to manage the firm's market relationships". Relationship marketing is also defined as "marketing based on interactions within networks of relationships" (Gummesson, 2002). Therefore, it is a term that

has emerged in the marketing literature to describe developing relationships with all of a firm's customers in all of its markets. Relationships are thought to develop and evolve through a number of stages as they develop over time.

As stated by Christopher et al.'s (1991) ladder, the goal of relationship marketing is to convert new customers into "clients" who make repeat purchases and then to gradually strengthen the relationship by turning clients into "supporters" and ultimately "advocates" for the company (Herington et al., 2006). According to relationship marketing theory, customers only engage in relational transactions with businesses when they are confident that the advantages outweigh the drawbacks (Hunt et al., 2006). The customer's trust in a specific partner is based on the belief that the partner will consistently deliver high-quality market offerings competently and without exploiting opportunities. This trust is reinforced by the shared values between the partner and the customer. Additionally, the customer's search costs are reduced, and they perceive a decreased risk associated with the market offering. The exchange is also seen as morally justifiable. Ultimately, the customer's needs, wants, tastes, and preferences can be better met through this partnership.

There are eight factors that affect the success of Relationship Marketing based strategy, which are based on relationship marketing theory and depicted in Figure 1.

- Relational factors (e.g. trust and commitment).
- Resource factors (e.g. complementary and idiosyncratic resources).
- Competence factors (e.g. alliance competences and market-relating capabilities).
- Internal marketing factors (e.g. internal market orientation and part-time marketers).
- Information technology factors (e.g. inter-organizational information systems and CRM).
- Market offering factors (e.g. quality and innovativeness).
- Historical factors (e.g. opportunistic behavior and termination costs).
- Public policy factors (e.g. property rights and contract law).

Figure 1: Factors accounting for relationship marketing success

Resource Factors	**Competence Factors**	**Internal Marketing Factors**
• Complementary • Idiosyncratic	• Alliance competences • Market-relating capabilities • Relationship portfolio management	• Internal market orientation • Part-time marketers

Relationship Marketing Success
- Competitive advantage
- Financial performance
- Satisfaction
- Learning
- Propensity to stay
- Acquiescence
- Decreased uncertainty

Relational Factors
- Trust
- Commitment
- Cooperation
- Keeping promises
- Shared values
- Communication

Information Technology Factors
- Interorganizational information systems
- Integrated infrastructure
- CRM
- Databases
- Data mining

Public Policy Factors
- Property rights
- Contract law
- Alternative governance mechanisms

Historical Factors
- Opportunistic behavior
- Termination costs
- Relationship benefits

Market Offering Factors
- Quality
- Innovativeness
- Customization
- Brand Equity

Source: Hunt and Arnett (2004)

These elements come from various literature streams and are all crucial to relationship marketing theory. As a result, they are frequently examined separately from one another. For instance, the strategic management literature is heavily referenced in the competence-based factors explanation of RM strategy success, while the relational factors view draws on the relationship marketing literature, and the information technology factors approach stems from the information technology literature. Each strategy is a part of relationship marketing theory, or at least it should be. Together, they offer a solid framework for creating relationship marketing theory.

In light of this, relationship marketing (RM) can be defined as a strategy for creating, preserving, and enhancing long-term relationships with customers and other stakeholders (Koiranen, 1995).

A fundamental presumption is that the relationship will allow all parties to achieve their goals. Another important element is that different factors have different strategic implications, which are: establishing, preserving, or enhancing the relationship. Accordingly, the organization must focus on various issues depending on its stage of development. Customer relationship management (CRM), which is defined as the process that identifies customers, generates customer knowledge, develops customer relationships, and shapes customers' perceptions of the organization and its solutions (Srivastava et al., 1999), may be a more expansive but related concept. From a CRM standpoint, relationship marketing is the phase that comes after customer data are gathered and before customer perceptions are formed. Relationship marketing makes a lot of sense, on one hand. Building a long-term relationship with a customer seems much more productive than pursuing ad hoc, possibly unrelated, exchanges. Relationship marketing expands on the "marketing concept" by incorporating the time component into the axiom that "the customer is king". Relationship marketing appears to be a promising strategy for gaining an advantage over competitors. The seller has the chance to establish a strong relationship with the customer by exchanging information and working together. This close relationship may be beneficial to both parties, and the tactic is most effective when both buyers and sellers are keen on long-term gains (Ganesan, 1994). In the twenty-first century, sellers can use information technology to mine vast databases and gain insightful knowledge of customer behavior and preferences. Information technology is being used by businesses to track and analyze customer behavior, making it simple to pinpoint customer segments and concentrate marketing efforts (Chen and Popovich, 2003). As a result, information technology is crucial to customer relationship management, which is described in more detail below.

3. Customer Relationship Management (CRM)

Ngai et al. (2009) claim that researchers cannot agree on a precise definition of CRM. According to Ab-Hamid and McGrath (2005), CRM generally refers to a broad organizational effort to create, develop, and maintain customer loyalty as well as encourage repeat buying habits. The process of attracting and keeping customers in order to maximize their value to a business is extensive and involves the use of business intelligence. According to RM theory, customers prefer long-term business relationships because they satisfy their psychological need for commitment (Kim et al., 2008). This psychological need to balance the interests of the

customer and the firm is the foundation of an effective CRM system. Relationship marketing theory, on which CRM is based, contends that building a long-lasting relationship between a business and its customers requires commitment, communication, customer satisfaction, and trust (Flavián and Guinalìu, 2006).

Chen et al. (2010) developed a model that businesses can use to assess the success of their business strategies using information obtained from CRM. The model is predicated on the idea that CRM helps a company comprehend the needs and desires of its customers and facilitates the development of a customer-focused marketing strategy, both of which add value for the customer. The CRM system helps businesses retain customers, which enables them to increase value. Moreover, CRM is a disciplined business strategy that is used to establish long-lasting, profitable customer relationships. It entails the collection, analysis, and customer data use to increase the sales of goods or services and motivate valuable customers to remain loyal to buy again (Greenberg, 2009; Bose, 2002; Dyche', 2002). Therefore, according to Teng and Chen (2010), CRM is a business strategy that aims to advance the understanding of each customer's needs and behaviors and foster the development of a close relationship with each customer.

In order to increase value for the organization, CRM is a method for coordinating business processes with business strategies (Kim et al., 2008). The CRM system allows a business to better serve its customers, which in turn increases customer retention and allows it to extract more value from each customer. To increase value for both parties in the relationship, it aims to increase customer and firm collaboration (Despoina, 2008). Simultaneously, businesses may feel pressured to adopt CRM due to market share pressures in a sector where other businesses have successfully developed a CRM system to manage customer relations (Kim et al., 2009). Sun (2009) asserts that customers are more likely to do business with companies that satisfy their perceived needs and wants. In order to persuade clients that the business can fulfill their needs and desires, the CRM system includes the necessary interactions. Customer satisfaction must therefore be at the heart of our research.

The objective of CRM is the acquisition, retention, and development of customers to increase value for the firm over the long term (Ali et al., 2008; Pezeshki, 2009). Reaching the customer, acquiring the customer, educating the customer about the value proposition, and retaining the customer are the phases involved in what is known as the customer lifecycle. Through all contact channels and throughout the various stages of the customer lifecycle, the CRM system is designed to manage relationships with customers. The four stages of customer identification,

customer attraction, customer retention, and customer development are a more precise definition of the customer lifecycle given by Ngai et al. (2009).

As mentioned above, various researchers define CRM differently depending on their field and viewpoints, but it appears that for the purposes of this study, definitions that combine marketing and information technology are preferable because they emphasize the use of software and internet capabilities to identify current and prospective customer segments and deliver long-term customer value at a profit, achieving win–win relationships with them (El Essawi and El Aziz, 2012; Payne and Frow, 2005). CRM enhances customer relationships, resulting in increased customer satisfaction and loyalty, which gives any organization a competitive edge in any industry. Therefore, the definition which conceptualizes CRM as a combination of IT and marketing, shows that CRM is not limited to technology and decision-makers who need to be aware of what they are implementing. This definition can be used for the purposes of this study because firm managers may not understand what CRM is, which is one of the main causes of CRM failure.

The specialized literature considers that the relationship marketing paradigm is the foundation of CRM (Zablah et al., 2004; Gummesson, 2004; Payne and Frow, 2005). This paradigm is based, in part, on the groundbreaking research of Berry (1983), which links it to the management of long-term relationships with customers. According to Grönroos (2000), this marketing strategy is a method for building and maintaining long-term relationships with customers. The main goal is the pursuit of profitability through customer loyalty, with the transactional goal of bringing in new customers being treated as a secondary concern (Kimiloglu and Zarali, 2009; Saarijärvi et al., 2013). From the point of view of marketing, CRM, which stands for customer relationship management, has evolved into a steadfast commitment to preserving goodwill with customers, building loyalty and increasing customer lifetime value, that is, the value of the life cycle of the customer (Verhoef and lemon, 2013).

3.1. CRM Benefits

According to Gray and Byun (2001), the benefits of CRM include improving an organization's capacity to acquire and retain customers, extending the average customer lifetime, and obtaining better service at lower costs. With CRM systems, customers receive better day-to-day service and require fewer of these services because they have access to more accurate information. Therefore, the customer satisfaction level increases if there is a reduction in the need to contact the company for various issues (Leach, 2003). CRM offers businesses a number

of additional benefits, which can typically be found in one or more of the following areas (Swift, 2001):

- Decrease the costs of recruiting customers;
- No need to have a great deal of customers to protect a stable volume of business;
- Lower costs of sales;
- Higher customer profitability;
- Increased customer retention and loyalty.

The CRM system's emphasis on customers makes it possible to identify those who are making higher margin payments among their customers. The analysis of those customers' conditions and the identification of additional procedures or product features that can be beneficial to them is made simple once those customers have been identified (Nastaran et al., 2014). By using this process, businesses can outperform their rivals when negotiating with customers. They can accomplish this by utilizing cost reduction measures offered by the company's products and services (Nasershariati and Khan, 2011). Additionally, the CRM system helps in identifying customers who do not pay "fair" margins (Leach, 2003). CRM systems thereby become a central part of business processes and can provide a better use of inventory if customer needs are known (Nasershariati and Khan, 2011). Finally, building enough data on each customer's business trends can also be aided by CRM. As a result, the company will be better able to understand the thoughts of its customers and determine how to interact with them during the purchasing process (Bose, 2002). A company can use these data to tailor its marketing strategies as it gets to know its current customers.

3.2. Managing Customer Relationships on the internet

With the development of the internet, a new method for managing customer relationships has emerged. A value-added website has become a crucial factor in persuading customers to visit a company's website and learn about its products and services in an age where customers can find the information they need by simply browsing the internet from anywhere (Alhaiou, 2011). The company's website plays an important role in attracting customers and encouraging them to stay with the company. The key to using the internet for customer relationship management is not to launch an online store or develop new ways to offer rewards or discounts but rather to use this technology to forge closer bonds with customers and foster mutually beneficial relationships, with the ultimate goal of increasing customer loyalty (Newell, 2000). As a result, a new online strategy for handling this relationship has been developed.

CRM is utilized to manage and improve the value of B2C relationships. However, while CRM implementation helps in customer acquisition and retention, it also raises operational costs. In particular, where cross-divisional communications are necessary to meet customer needs, managing customer relationships is expensive and time-consuming. Web-based CRM makes use of the internet to streamline and integrate customer-related business processes. This lowers the cost of operations that interact with customers and increases customer interaction and self-service (web Associates, 2000).

CRM would not exist as it does today if it were not for the internet. The data generated by customers can be easily fed into applications for marketing, sales, and customer service thanks to internet technologies. The ability to measure and alter the success or failure of these initiatives in real time has raised customer expectations even more. In the world connected by the internet, CRM is now a necessity, not a source of competitive advantage (Tan et al., 2002). The internet can help companies understand the needs and desires of their customers, meet those needs through the development of customer-centric marketing programs, and create value for customers by managing data and offering tailored goods and services (Iyer et al. 2003; Sheth et al., 2000). Companies can create connections, categorize and retain customers through the online channel (Campbell, 1997), and maintain customer loyalty (Forchit and Cochran, 1999). According to Chaston and Mangles (2003), integrating CRM and internet technologies allows companies to forge closer bonds with their customers and boost customer satisfaction (Cavaliere et al., 2021). Some believe that without the assistance of internet tools, CRM cannot be effective (Feinberg and Kadam, 2002; Kincaid, 2003). Therefore, the application of information technology, which tracks and analyzes customer behaviors, allows firms to easily identify segments of customers and to focus on marketing efforts (Chen and Popovich, 2003). Therefore, information technology plays a significant role in customer relationship management, which is further explained below.

3.3. The evolution from CRM to e-CRM

The main objective of CRM is to better understand and serve customers in order to increase loyalty and profits. The idea has gradually evolved from direct mail and marketing strategies to its present form, which is distinct from these earlier initiatives by emphasizing "reshaping relationships between companies and customers instead of trying to sell" (Rudolph, 1999; Tan et al., 2002).

CRM has undergone a technological revolution in recent years, as Bull (2003) demonstrates in his overview of the idea that while CRM is a business process that is based on the efficient management of customer relationships, another crucial aspect of CRM is its technological orientation. In a similar perspective, Chen and Popovich (2003) assert that CRM is an integrated strategy for managing customer relationships through the integration of three crucial components: people, processes, and technology.

As technology is one of the key components of a CRM strategy, it frequently contributes significantly to improving organizational and business processes. In fact, developing and changing processes are among the main outcomes of implementing CRM strategies (Badwan et al., 2017). Thus, the recent boom in technological advancements has had a significant impact on this business process and its organizational outcomes. The evolution of information and communication technologies (ICTs) has changed the behavior of customers towards business strategies (Daud and Aziz, 2019). Internet technology offers opportunities to market services and develop closer bonds with customers (Fjermestad and Romano, 2003). Through the maintenance of enduring customer relationships over time, the traditional customer relationship management process identifies, attracts, and keeps profitable customers (Hendriyani and Raharja, 2018). Therefore, there is no doubt that the use of technology can enable and facilitate the collect, store, and distribute data and then turn it into useful information; understanding customer behavior through data mining and statistical analysis; specifying and distribute the business rules that will be used for every customer interaction; make it possible to customize a wide range of goods and services to meet the needs of each customer, and enable real-time tailoring of interactions with customers depending on their characteristics and how the interaction has progressed thus far, particularly for companies with large numbers of customers. Value-added services are now the focus of competition as a result of technological advancement. The rapid development of internet technology has accelerated the support of customer relationship management (CRM) systems for customers (Bhanu and Magiswary, 2010). Hence, electronic CRM (E-CRM) systems have emerged.

4. E-CRM

E-CRM was developed as a result of the rapid advancement of internet technology in the middle of the 1990s. All customer relationships that can be managed online using web browsers or other electronic touch points are included in e-CRM (Bataineh, 2015). According to Al-Dmour et al. (2019), it is the newest method that businesses use to improve and expand their marketing knowledge and capabilities. Customers can access their services directly through e-CRM

because it offers multiple electronic channels, making it a customer-facing or outward-facing piece of technology (Bernett and Kuhn, 2002). E-CRM refers to the wide range of technologies used to support a company's CRM strategy. It was born out of the merger of traditional CRM and e-business applications. The booming internet market and the shift to customer-centric strategies have led to the emergence of e-CRM (Bradway and Purchia, 2000). E-CRM has been defined by Hendriyani and Raharja (2018) as a web-centric approach to synchronizing customer relationships across communication channels, business functions, and audiences. E-CRM is sometimes referred to as web-based CRM.

E-CRM is also defined as a system of information that enables businesses to establish enduring relationships with their customers online by using a variety of electronic communication channels, including emails and web browsers (Chuang et al., 2012). The purpose of e-CRM is to increase a company's efficiency in creating and managing customer relationships, enhancing customer service, and retaining customers to increase profitability (Adlin et al., 2019). According to Popli and Rao (2015), it is more profitable to keep an existing customer than to win new ones. Businesses are eager to use a variety of e-CRM strategies to develop, attract, maintain, and improve customer relationships, which in turn boosts customer loyalty and organizations' profitability (Dubihlela and Khosa, 2014). The primary goal of e-CRM is to create a satisfied and devoted customer base, and organizations must use e-CRM as a crucial component of their operational processes to foster customer loyalty (Kelley et al., 2003).

When a customer is satisfied, they will likely return for more of the good or service and recommend it to their friends and family -word of mouth- which will increase their likelihood of remaining a loyal customer. Delivering high-quality services is a skill for achieving customer satisfaction, and only through customer satisfaction will organizations be able to grow their base of loyal customers (Taylor and Hunter, 2002). E-CRM records all interactions with customers over time, enabling businesses to quickly resolve their issues and give customers a distinctive and memorable experience (Klaus and Maklan, 2013).

4.1. E-CRM types and components

The idea and application of e-CRM enable the enterprise-wide distribution, integration, and capture of data gathered at the company's website (Abdulfattah Fatthwia, 2012). E-CRM aligns business processes with customer strategy by supporting technologies to attract and retain valuable customers while evicting non-valuable or less lucrative ones (Rigby et al., 2002; Romano and Fjermestad, 2009; El Essawi and El Aziz, 2012). According to Dyche (2002),

there are two main types of e-CRM: analytical e-CRM, which is concerned with processing customer data using technologies, and operational e-CRM, which is about customer touch points as organizational points of customer contact from start to finish, including e-mail, websites, or social media. El Essawi and El Aziz (2012) claim that e-CRM can be analytical, operational, or collaborative. Technology is necessary for analytical e-CRM, which involves continuously gathering customer data. Social media and emails are examples of operational e-CRM, which is all about customer touchpoints. The goal of collaborative e-CRM is to improve customer satisfaction, loyalty, and service quality through the gathering of customer data.

In summary, e-CRM has frequently been described as an essential component of online distribution and marketing that expands traditional CRM techniques by integrating the technologies of new electronic channels, such as web and voice technologies, and fusing them with e-business applications into the overall CRM strategy of an enterprise (Sivaraks et al., 2012). To avoid failure and reap the rewards of e-CRM implementation, it is therefore necessary to investigate e-CRM components before any e-CRM implementation is made into an enterprise. E-CRM processes consist of four main components: engage, purchase, fulfillment and support (Jutla et al., 2001), as shown in Figure 2.

Figure 2: E-CRM Components
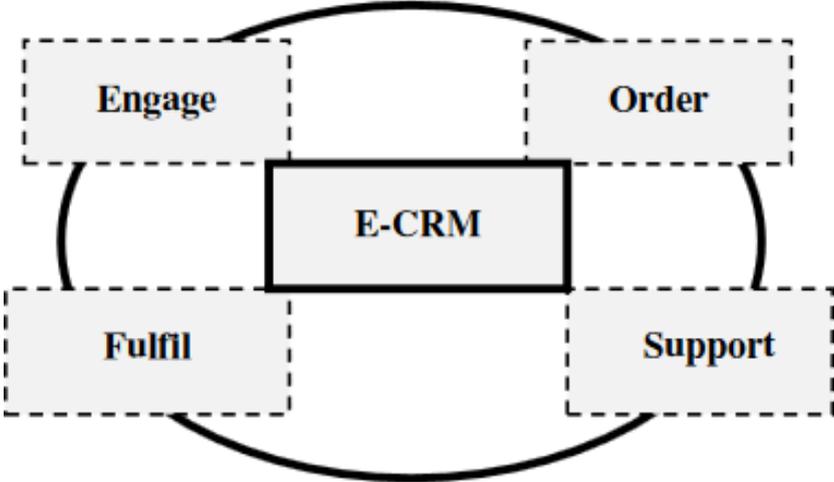
Source: Jutla et al. (2001)

4.1.1. Engage component

According to Jutla et al. (2001), this component refers to the process of network-enabling the right customers to purchase a good or service. When a customer starts searching for information about a product or service online, they engage in content browsing, searching, configuring, and

interacting; therefore, e-CRM must support these activities, identify needs and address customer problems. Jutla et al. (2001) claim that explaining the product or service to meet the customer's needs falls under the category of Engage Order Support Fulfill e-CRM's identifying needs and solving customer problems.

4.1.2. Order component

Ordering is the act of choosing a product and committing to buy it. This includes a range of order management, payment, and selection mechanisms. Among the payment methods are credit cards, electronic fund transfers, cash on delivery, and other non-cash payment methods such as contracts and invoices. These mechanisms must permit non-refutation of the transaction. Customer ordering is connected to enterprise resource planning (ERP), just-in-time (JIT) inventory control, and other logistical and customer-focused tools. This is why CRM values supply chain visibility. Because the customer is given accurate information regarding the delivery date and order status, it leads to customer expectations that are more accurate (Jutla et al., 2001).

4.1.3. Fulfillment component

Fulfillment involves controlling data regarding the flow of goods or services. Given that it necessitates knowledge of product movement or supply chain data, it is a subset of knowledge management. Back-end process integration, delivery capability, and global sales governance are the key enablers of fulfillment (Jutla et al., 2001).

4.1.4. Support component

The ability of the system to meet customers' requirements is part of the support function, which combines personalization and trust. One of the best examples is having all of the customer's information available in a net-centric environment with provisions for customer-level information updates and amendments. One of the most well-known applications for self-service is order tracking (Jutla et al., 2001).

4.2. Differences between the CRM and E-CRM

CRM helps organizations design services and products based on customer preferences. According to Pepper et al. (1999), CRM can be used to create personalized, one-to-one experience that make individual customer feel cared for, thus opening up new marketing opportunities based on customer preferences and history. CRM is considered a customer-centric

business strategy that aims to create customer satisfaction and loyalty by providing a more responsive and personalized service to each customer (Croteau and Li, 2003). Currently, customers want to obtain all the information about products via the internet, wireless, mobile technologies or what is called e-CRM. This section highlights the key differences between the two concepts (CRM and E-CRM) that organizations should consider when using these technologies.

In the 1990s, a new software called Enterprise Resource Planning (ERP) emerged that integrates several related systems used in "back-end" operations and facilitates the exchange and sharing of information across companies. Until then, companies used many specialized servers distributed throughout the organization, each performing a specific function. ERP systems allow companies to collect data from one department or part and integrate it through other departments and processes. ERP systems are useful in managing back-office processes; however, they have not been developed to capture marketing data such as marketing campaigns and customer references (Abdulfattah, 2012). On the other hand, CRM systems were developed for "front office" activities and were quickly adopted by organizations (Chandra and Strickland, 2004). Despite the minor differences between CRM and E-CRM (which are very important to organizations), both are about the use of technology and interfaces with users and other systems. For example, many e-CRM systems offer a self-service browser-based window through which customers can place orders, check the status of the order, review the purchase history, request more information about the product, or even send emails and engage in many other activities. These options give customers freedom in terms of location and time. Customers are no longer required to contact the organization during regular business hours, and the organization is under no obligation to contact the other party directly with customers' requests (Abdulfattah, 2012).

Figure 3: Technology map of CRM and E-CRM

Figure 3 shows the main differences between the CRM and e-CRM systems. CRM systems typically use customer-server technology where all applications run on one or more central servers. The front office operations of the system are linked to the back office operations through traditional ERP systems. CRM systems do not use data warehouses. In CRM, the ERP system acts as a data warehouse and captures data from front-end and back-end operations. Typical customer touch points are retail stores and the organization's customer service centers, including telephone, fax, chat, and so on. On the other hand, in e-CRM, not only is the connection or interface between front-end and back-end operations implemented through ERP, but the business is also managed using a data warehouse, which is a collection of information gathered from various databases used to support business activities. This means that data warehouses are multidimensional databases (Haag et al., 2004). Customer touchpoints in e-CRM systems include, in addition to traditional touchpoints, the internet, the Web, and, in some cases, wireless devices such as cell phones and personal digital assistants (PDAs). CRM provides access through a set of default settings that cannot be changed or modified by system users. Any customization requires system-level changes. While e-CRM allows people to modify or customize the system through a web-based interface.

The application programs in a CRM focus on back-end operations such as data collection and the interface with the customer computer. Web-based CRM systems involve downloading

special programs (applets) to customer computer, which is considered a time-consuming process. In addition, web-based CRM systems require each application to be rewritten for different platforms, and any changes must be included in all versions. Furthermore, the information provided may not be modified quickly. On the other hand, all applications of e-CRM have been developed for web interaction and experience. Customers do not need to download special programs (applets) to access applications. A browser is an environment that provides access to relevant information regardless of the customers' platform. CRM systems are developed around jobs. The applications are designed to allow departments or employees to access customer-related databases to provide better customer service. In contrast, in an e-CRM system, applications are designed with customers as the focus point. Each user has a different perspective on the amount of information, goods and services available (Abdulfattah, 2012). Typically, CRM is planned around a single business unit or department rather than across the organization. In e-CRM, all applications are designed for the entire organization, including all types of customers. Unlike traditional CRM, current e-CRM solutions support marketing, sales and service (Pan and Lee, 2003). Thus, e-CRM is more technically oriented and adopts advanced ICT tools, whereas traditional CRM is more human oriented and based on personal approach (Bhatnagar and Saxena, 2013).

Table 1 and Figure 4 summarize the key differences between the two technologies, CRM and e-CRM.

Table 1: Major Differences between the CRM and E-CRM

Criterion	CRM	E-CRM
Customer Contacts Means	Customer contacts usually initiated through traditional means of retail store, telephone, or fax.	In addition to telephone, contact also initiated through the internet, e-mail, wireless and cell phone
System Interface	Works with the back-end applications through ERP systems	Designed for front-end applications, which in turn interface with back-end applications through ERP systems, data warehouses, and data marts.
System Overhead (client computers)	Web-enabled applications require PC client to download various applets and applications. These applications and applets would have to be rewritten for different platforms.	No such requirement; the browser is the customer's portal to E-CRM.

Customization and Personalization of Information	Different audiences require different views and types of information. Personalized views for different audiences are not possible. Individual customization requires programming changes.	Highly individualized "dynamic" and personalized views based on purchases and preferences are possible. Each audience individually customizes the views.
System Focus	System is designed around products and job functions (for internal use). Web-enabled applications are designed for one department or business unit.	System is designed around the customer needs (for external use). Enterprise wide portals are designed which are not limited to a department or a business unit.
System Maintenance and Modification	Implementation is longer and management is costly because the system is situated at various locations and on several servers.	Reduced time and cost. System implementation and expansion can be managed in one location and on one server.

Source: Chandra and Stickland (2004); Pan and Lee (2003)

Figure 4: Differences between CRM and e-CRM
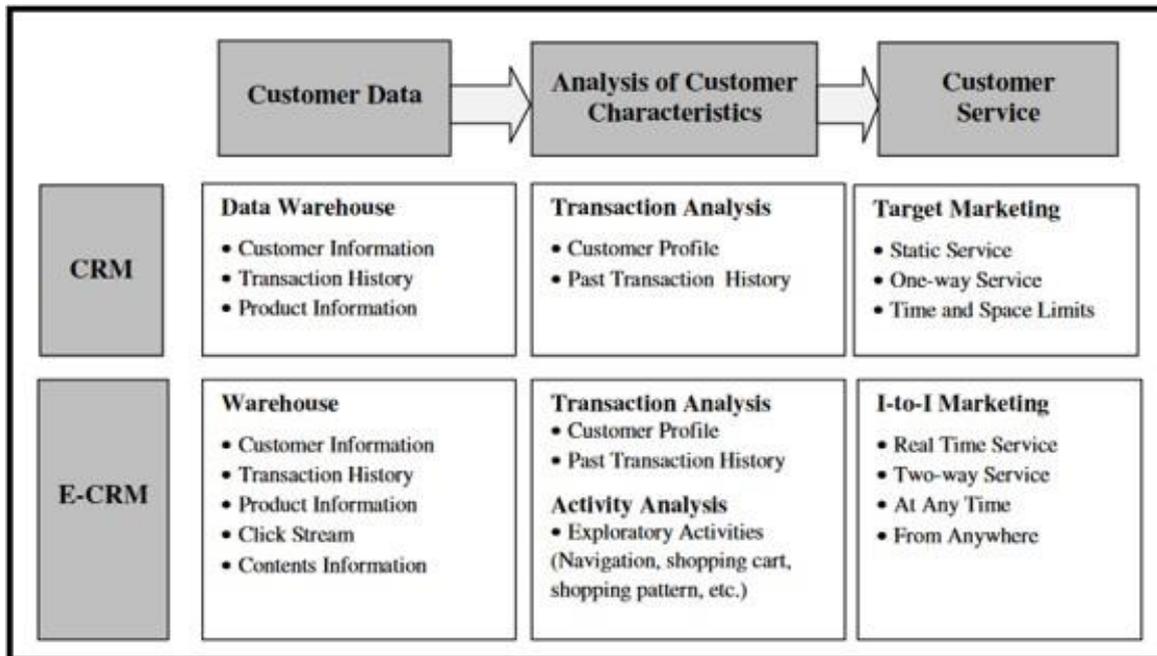
Source: Pan and Lee (2003)

4.3. Stages of establishing e-CRM

E-CRM is particularly a modern business weapon and a set of strategic tools that provide businesses with a comprehensive view of their current state of customer management, how they stack up against competitors, and how they may further enhance their operations. Customers

can enjoy greater flexibility and convenience via e-CRM, while businesses can maximize cost savings. The implementation of an enterprise-wide e-CRM strategy is fraught with problems. The main phases in putting enterprise-wide e-CRM into practice are: understanding customers; using web analytics to develop information and technology infrastructure; understanding people and organization; management commitment; process management; understanding competitors; enforcing customer management activity; and measuring customer activity (Dawn and Chowdhury, 2011; Ferhoul et al., 2022). If implemented, then businesses will function more effectively and be able to retain customers in the long run.

Figure 5: Stages of establishing e-CRM
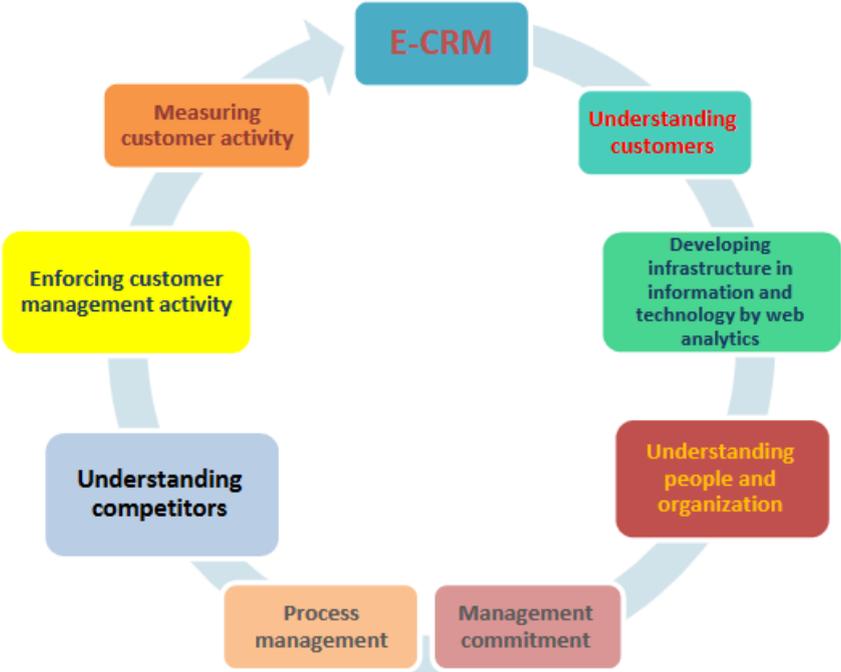
Source: Ferhoul et al. (2022)

4.3.1. Analytical planning

Understanding the value and behavior of distinguished customers and groups is where e-CRM begins. This understanding, which comes mostly from internal data and knowledge sources, prompts further inquiries that support external analysis and competition evaluation efforts. Customers and prospects must be divided when a thorough understanding has evolved in order to maximize the effectiveness of planning efforts.

4.3.2. Formulation chart as in Proposition

Propositions must be formulated using a notion of charting the tools that will match the needs of those customers and that will be sufficiently alluring for new customers once the customers

to be managed are sufficiently clear. There will be distinguished propositions formulated for distinguished groups. In order to drive the experience, the customer can expect to interact with the company, its products and its partners/channels; these propositions need to be specified in great depth.

4.3.3. Information Technology Outsourcing

Technology makes it easier for businesses to gather, handle, and use the enormous amount of data required for precise customer management. An organization must be aware of the information that it has access to, what information is missing, and how to manage that information. The technology then must provide the most recent information to the relevant people at the right time for them to carry out their responsibility of managing customers. Businesses have been forced to alter procedures, adopt best practices and slash costs, and introduce efficiencies into supply chain management, customer relationship management, and internal operations as a result of accompanying internet-enabled software applications, such as enterprise resource planning (ERP) packages, e-commerce applications, relationship management packages, and enterprise portal applications. ERP vendors offer supply chain management, enterprise resource planning, and customer relationship management packages in their truest forms. One of the customer relationship management software packages, SIEBEL, has solutions for the automotive, communication, consumer goods, apparel and footwear, health care, finance, technology and energy sectors.

4.3.4. People and organization

People and the organizations within which they work have the greatest impact on customer relationship management as a whole. The customer management people of a business should be recruited, managed, developed, and motivated by a comprehensive support system that is devoted to the predefined function. The scattered nuances mainly covered by people and organizations are organizational structure, role identification, competency analysis and gap analysis, training requirements, objective/goal setting, monitoring and evaluation, supplier selection and management, and ambience/working environment.

4.3.5. Process Management

For continuous improvement in all facets of customer relationship management, consistent processes are necessary. Additionally, processes should be constantly reviewed for acceptability from the point of view of the firm and its customers. Process management

primarily addresses the following disjointed nuances: process identification, documentation, communication, acceptability monitoring, benchmarking, and process improvement.

4.3.6. Customer Management Activity

Targeting both new and old customers is the primary focus of customer management activities. In addition to offer fresh and enhanced services to new customers, existing services are redesigned and given new life. Asking about an individual's interest in products is the first step in this activity. Other activities include greeting new customers and strengthening ties with current customers, understanding their needs, building rapport by using appropriate segmentation techniques, and handling issues by taking intensive care. This approach guarantees more consistent results while also enhancing the solutions provided to customers. Additionally, it lowers the cost per customer call by enhancing the quality of customer handling.

4.3.7. Cause effect measurement

Every aspect of customer management action is measured, and the results provide input for planning that guarantees continual improvement. Additionally, it makes it possible for channels and individuals to comprehend how they are performing their responsibilities and how much they are adding to the organization's overall achievement in customer relationship management. Understanding customer experience in dealing with the organization should be added to the measurement activity. To increase customer loyalty, it is imperative to comprehend the connections between customers' preferences and feelings. Customer experience includes the following: tracking customer happiness, analyzing customer loyalty, and benchmarking.

4.3.8. Feedback and Survey Methodology

A concept known as feedback and survey methodology (FSM) ensures a customer's proper return value, which in turn ensures overall performance. The feedback and survey methodology can be represented as a two-component module that includes an estimating sub-module and a deviation sub-module. The comparison between the pre-defined estimate and the actual extraction achieved is provided by the estimating sub-module. The standard deviation of the expected outcome from the actual outcome and the graphical depiction showing the deviation sub-module. Three subcategories of feedback and survey methodology (FSM) exist: electronic FSM, residential FSM, and questionnaire FSM.

4.4. E-CRM benefits

Numerous distinct benefits of using e-CRM have been discovered by prior research. In fact, it would be reasonable to say that using e-CRM systems for information capture and management can help businesses provide better levels of customer service than traditional, non-Internet-based CRM systems could. In order to better serve customer needs and increase customer loyalty, an organization should implement an e-CRM strategy (Darajeh, and Tahajod, 2010). This will increase the organization's efficiency and profitability.

Since maintaining relationships with customers is every company's top priority, e-CRM helps in achieving these objectives while also enhancing customer service and support, reducing costs, increasing customer loyalty, and achieving online marketing effectiveness (Navimipour and Soltani, 2016; Scullin et al., 2002). Through the use of e-CRM, businesses can interact with their customers, keep tabs on their behavior, and take action to meet each customer's specific needs based on the data gathered from them. Additionally, e-CRM offers quick response times and services to customers' inquiries at any time and from anywhere, as well as serving as a two-way service relationship for any business. By implementing e-CRM, businesses can expect to see greater gains in relationship outcomes and customer relationship quality (Sivaraks et al., 2011). In other words, e-CRM helps organizations build long-term relationships with their customers and retain existing relationships by increasing trust, convenience, and satisfaction.

In conclusion, maintaining relationships with customers is every company's primary goal in digital marketing. An organization can accomplish this goal with the help of e-CRM. The following benefits can be attained with appropriate e-CRM: increased customer loyalty, more effective marketing, improved customer service and support, increased efficiency, and cost reduction (Scullin et al., 2002).

4.5. E-CRM Opportunities and Challenges

One of the main objectives of e-CRM is to significantly improve a company's marketing by giving organizations opportunities to provide value to their customers while also helping to reduce communication costs (Scullin et al., 2004). Additionally, it enables enhanced customer service, permits tailored communications, keeps loyal customers, and helps in the collection of copious amounts of data for the analysis of customer behavior and preferences (Fjermestad and Romano, 2003), allowing businesses to react quickly to customer demands and providing more value to customers. E-CRM can be used to manage interactions not only with customers but also with employees, suppliers, partners, and other stakeholders. One important opportunity of

e-CRM is the personalization of relationships. E-CRM enables businesses to customize their offerings and forecast future behavior by electronically tracking customer purchase histories and providing the metrics needed to calculate each customer's profitability (Crosby and Johnson, 2002). An illustration would be personalized emails that present the ideal product to the ideal customer at the ideal time. Compared to a larger competitor, an organization's key competitive advantage is its inherent flexibility, which can be enhanced through such customization (Carson et al. 1995; Chaston and Mangles 2003). E-CRM enhances the personalization of an organization's communication and product offerings (Bradshaw and Brash, 2001), which essentially can improve an organization's customer service levels.

Despite the opportunities mentioned, Lituchy and Rail (2000) noted that a decrease in in-person customer interactions is a common problem for businesses implementing e-CRM. A company must strike the right balance between face-to-face and online communication because both can serve different and complementary purposes. According to Swift (2001), internet technologies have the potential to sever customer relationships when used improperly. When trust and security already exist, internet technologies are best suited for establishing face-to-face relationships (Flavián et Guinalíu, 2005). The business should also take into account the viewpoint of the customer, for whom the lack of in-person interaction is an issue (Ragins and Greco, 2003). The need to satisfy customer expectations and maintain customer loyalty becomes more crucial as businesses become more and more dependent on customer demand and customer persistence, seriously destabilizing e-CRM in the process. The main challenges of e-CRM, according to Sterne (2000), are determining the true cost of winning, maintaining a long-term relationship with customers, gauging business effectiveness, achieving customer loyalty, and enhancing customer service. The competition involves only one click. If companies do not get it right, whether by breaking their promises or by using the data in an inappropriate way, the customer will just go to a competitor. In these remote channels, there are no second chance to fix mistakes. Particularly if companies do not deliver, information spreads much more quickly. Offline, it is common knowledge that if a business makes a mistake, a customer will tell ten people about it. They can inform tens or hundreds of people online in a flash with a single email or comment on social media, and they frequently do so (Fairhurst, 2001).

4.5.1. The opportunity for value co-creation

The CRM strategy helps companies increase the value generated from customers' lifetime transactions. Because CRM technologies are strongly connected and supported, they must keep pace with technological advances and their implications for business operations, customer

behavior, and expectations. E-CRM has evolved from simply supporting transactions and automation to improve and innovate customer experiences. E-CRM enables companies to quickly and efficiently collect, analyze and use market information to better understand their customers and personalize interactions during the customer journey (Küpper et al., 2015; Dutot, 2013; Ahuja and Medury, 2011; Chathoth et al., 2014). Companies should focus on e-CRM, which aims to personalize customer experiences and interactions (Trainor, 2012; Acker et al., 2011; Faase, 2011), therefore, co-created and collaborative customer experience is an important part of e-CRM and a mediator in realizing business benefits (Jiang and Zhao, 2013). Others (Lipiäinen, 2015; Choudhury and Harrigan, 2014; Küpper et al., 2015; Dutot, 2013) consider value co-creation, customer engagement and conversation management instead of customer management as the new philosophy of CRM. Value co-creation is a desirable goal facilitated by advanced platforms supported by a better understanding of customer perspectives and a process of identifying customer expectations, needs and wants (Lusch and Vargo, 2006). Companies have to understand customer needs through engagement platforms based on the principles of transparency, accessibility and conversation (Ramaswamy and Ozcan, 2016).

New-age CRM enables conversation, which involves continuous, open participation and a mutual inclination towards active engagement (Ramaswamy, 2011). This requires platforms and environments that enable structured and useful communication and promote shared learning, which should revolve around topics of common interest that help build trust between customers and companies (Prahalad and Ramaswamy, 2004). Co-creation is a resource integration process in which customers are attracted to a value proposition and motivated to share resources during collaborative activities and interactions (Frow et al., 2016). The basis of value creation between customers and organizations is continuous, collaborative communication (Prahalad and Ramaswamy, 2004).

The need to view and manage customers as active participants in value co-creation reflects the limitations of traditional CRM, which considers customers as passive value customers who create business value only through purchases (Sigala, 2018). Consequently, companies do not have to manage their customer relationships, moving away from a personal approach to business-to-customer (B2C) relationship management and moving from a transactional to a conversational mindset (Acker et al., 2011; Trainor et al., 2014). Furthermore, as customers increasingly use self-service (mobile) technologies not because they wish to avoid humans and their interaction but also because they want to avoid human error (Greenberg, 2011), companies should rethink how they can integrate these technologies into a new CRM implementation

approach that empowers customers to co-create reliable, valuable, personalized and meaningful customer interactions and experiences. Therefore, e-CRM adopts a value co-creation approach (Grönroos and Gummerus, 2014; Sheth, 2017) that aims to support the development and collaborative management of relationships in a customer ecosystem consisting of different stakeholders (business partners, customers, suppliers, and customer communities) who interact, exchange and integrate resources to create value (Enquist et al., 2015; Burdon et al., 2015). The co-creation CRM approach is consistent with the evolution of marketing theory, which recognizes digital channels such as social media as powerful tools that allow customers to become co-creators, controllers and influencers of brand values and relationships (Nguyen et al., 2015; Knuz et al., 2017). E-CRM refers to a proactive marketing approach that helps companies change the way they manage customer relationships from a controlling and commanding mindset to one of engaging and collaborating with customers.

4.6. The importance of adopting an e-CRM system

The integration of new technology has improved the level of marketing within organizations, as it laid the groundwork for the creation of an e-CRM system (Usman et al., 2012). It is evident that the majority of businesses that successfully use e-CRM have more benefits than drawbacks, and they also ensure intense competition in the strategic business environment. When e-CRM is used optimally, the organization can increase customer loyalty implicitly and achieve a highly flexible communication level. Additionally, it will provide opportunities to understand customer expectations for the three key components of competition—quality, price, and time. Any path within the organizational structure must comprehend and realize the technological level of customers, suppliers, and competitors to identify strengths to exploit available opportunities and diagnose weaknesses to avoid threats. This makes technological intelligence a crucial component of any organization, particularly in light of changes in the business environment. Most likely, the most significant asset that any company can possess is its careful application of e-CRM to precisely analyze and understand its customers and the ability to efficiently activate the components of the marketing mix (Ferhoul et al., 2022).

An effective e-CRM system allows a company to communicate with its customers using a single and consistent voice, regardless of the communication channel. This is because e-CRM gives all employees within a company access to the same transaction history and customer data. An organization can determine the true expenses of acquiring and keeping each individual customer by using the data that an e-CRM system captures (Ferhoul et al., 2022). Having access to these data enables the business to concentrate its attention and resources on the most profitable

customers (Jukic et al., 2002). An organization can manage the "best" customers more effectively by categorizing them as a premium category while understanding that treating every customer in the same manner is neither required nor wise. Personalization is one tool that a business can use in the pursuit of customer loyalty (Waltner, 2001). Real-time profiles are created for every customer by personalization software tools using information from a variety of sources, including transaction systems, click stream data, and customer databases. Every time a specific customer buys from the company, the tool chooses the best deal based on what it "knows" about that customer. The personalization engine incorporates the customer's acceptance or decline of an offer into their profile, enabling more informed offers in the future (Greenberg, 2001).

In summary, customers are in the strongest position in term of power. Hence, it is time for businesses and marketers to recognize this and work diligently to enhance their loyal customers' base. E-CRM can be considered the definite solution for both customers as well as the organizations. The implementation of e-CRM is expected to result in significant value for companies and customers when people connect (Jih and Lee, 2012). Therefore, with the increasing use of the internet, e-CRM is an appropriate solution for companies to maintain relationships with customers and increase customer satisfaction and loyalty. The position of power that customers hold is strongest; hence, it is imperative that companies and marketers realize this and make a concerted effort to increase the number of their loyal customers. E-CRM can be considered the ultimate answer for businesses and customers alike. When people connect, the implementation of e-CRM is anticipated to produce major benefits for businesses and customers (Jih and Lee, 2012). Therefore, given the increasing use of the internet, e-CRM is the right way for businesses to maintain contact with customers and increase customer satisfaction and loyalty.

Figure 6: The importance of e-CRM in an organization
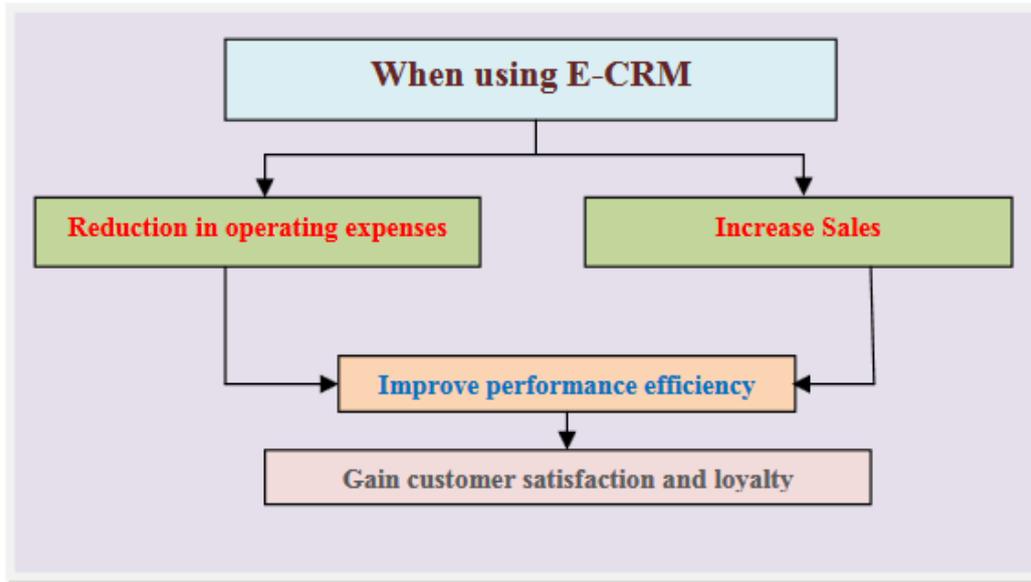
5. Customer satisfaction

Customer satisfaction has been a major objective of marketing for more than three decades (Heitmann et al., 2007). Peter Drucker first conceptualized customer satisfaction in 1954 (Sulphey and George, 2017). Howard and Sheth (1969) claimed that customer satisfaction measures a customer's "mental state" regarding whether they have received the required satisfaction after weighing the benefits or rewards of a product or service they have acquired against the costs incurred (Wang and Lin,2010). According to Johnson and Fornell (1991), satisfaction is now recognized as a comparable and measurable theoretical term. Customer satisfaction, which has increasingly grown to be a crucial aspect of organizational strategy, is said to be the primary driver and differentiator of an organization's competitive edge in a competitive marketplace where businesses compete with one another for customers (Felix, 2017; Sao et al., 2017).

Kotler (2000) defined satisfaction as "a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to their expectations". Hoyer and McInnis (2001) stated that satisfaction can be associated with feelings of acceptance, happiness, relief, excitement and delight. Anderson and Sullivan (1993) claim that satisfaction is the customer's actual evaluation of the service experience and can be interpreted as positive emotions, indifference or negative emotions. Furthermore, Bloemer and De Ruyter (1998) define satisfaction as the result of a subjective process of evaluating alternative choices or an outcome that exceeds expectations. In addition, Swan and Oliver

(1989) describe satisfaction as a post-purchase orientation that is affective or cognitive and focuses on the evaluation of product performance. In other words, satisfaction comes from meeting or exceeding customer expectations. This leads to profitable long-term customer relationships (Carpenter and Fairhurst, 2005). Therefore, customer satisfaction or dissatisfaction is one of the most important marketing concepts. Companies seek to increase customer satisfaction and gain competitive advantage as primary strategic objectives (Mittal and Kamakura, 2001; Patterson et al., 1997).

Therefore, it is clear from the above explanations that there is not a single definition of what constitutes customer satisfaction. The definitions given by the authors above appear to share a number of similarities, including the following: customer fulfillment, differences between expectations and perceptions, differences between sacrifices and gains, and an assessment of a product or service's performance.

5.1. Perspectives of customer satisfaction

For every business to survive and turn a profit, customer satisfaction is critical. Thus, it is critical to understand the different perspectives that lead to customer satisfaction. The present section examines several perspectives related to satisfaction: customer-based perspective, firm-based perspective, societal-based perspective, transactional-specific perspective, emotion-based satisfaction, and cumulative/overall satisfaction.

5.1.1. The customer-based perspective

In customer behavior studies, an individual's level of satisfaction is determined mostly by the product or service they use to attain their desired goals (Oliver, 2015). The satisfaction customer-based perspective is propelled by an individualistic notion. Oliver (2015) provides three justifications for why certain customers want to feel satisfied. First, satisfaction is an expected result of consumption or patronization; it is a reinforcing and enjoyable experience. Second, it avoids the need for additional activities or the expenses associated with making poor decisions. Third, the customer's decision-making process is validated by satisfaction. The latter implies that a well-satisfied purchase is a significant accomplishment. The outcome of an individual's understanding of what has been experienced based on the customer's pre-expectations is also referred to as the customer-based perspective of satisfaction (Oliver, 2015). The customer-based perspective of satisfaction is applicable when customers are satisfied, based on the outcome of their experience value obtained on the basis of their pre-expectations.

5.1.2. The firm-based perspective

Oliver (2015) indicated that from an organizational or firm perspective, customer satisfaction is viewed through the lens of business profitability. In order to increase corporate profitability, it is crucial for businesses to encourage repeat purchases (Oliver, 2015). Even with durable products that have a long-term purchase interval (i.e., appliances and automobiles), satisfaction is still important because of referral purchases through word of mouth (WOM). Oliver (2015) argues that customer satisfaction would not have been a goal for purely profit-oriented firms if, among other things, customers thought of a company's goods or services as a one-time purchase, there was no level of regulation to check the performances of firms, and there were only a few communication channels available to the customers. Oliver (2015) argues that government authorities have relied on documented harm to limit the level of customer satisfaction since sectors have historically been scrutinized for their positive or negative effects on customers. Modern organizations are in place to maintain customer satisfaction. Customer satisfaction is becoming a regulatory policy as a result of the implementation of specific legislation in many countries and the start of similar initiatives by municipal governments around the globe (Oliver, 2015). Government laws are enforced to guarantee customer protection and enable businesses to optimize customer satisfaction. A firm-based perspective would essentially highlight how businesses adhere to laws in order to guarantee customer delight.

5.1.3. The societal-based perspective

According to studies on quality of life from a societal perspective, satisfied members of society have superior life outcomes, such as excellent health, financial security, and social and mental satisfaction (Oliver, 2015). From a societal perspective, customers' life satisfaction is still a worthwhile objective, although it can occasionally be challenging to discern between perceived quality of life and favorable life outcomes. According to Canel and Luoma-aho (2019), citizen satisfaction -also known as customer satisfaction- has been shown to enhance the quality of life for members of society (Morgeson, 2014). Research shows that public sector organizations are now using customer satisfaction indices to measure a wider range of satisfaction, including characteristics related to life, in addition to goods and services (Canel and Luoma-aho, 2019; Olufemi, 2018). An organization may gain customer appeal by prioritizing green environmental practices within its operations. Customer satisfaction may increase as a result of this response (Yu et al., 2017). Oliver (2015) states that a number of businesses and regulated industries have realized how important it is to put customer satisfaction first because the public becomes more active in this concern. It is only a matter of time until public utilities, regulatory bodies (such

as the Food and Drug Authority), and the Internal Revenue Service realized that the pursuit of satisfaction would eventually become a component of their "business" model. Social protection and satisfactory social services for customers are considered aspects of society's perspective on customer satisfaction.

5.1.4. Transactional-specific satisfaction

An assessment of a service encounter at a particular moment in time is known as transactional-specific satisfaction (Zhao et al., 2012). The experience of a service encounter, including the appearance of service providers' staff and their interactional behavior (Truong et al., 2020), is also based on transactional-specific satisfaction (Zhao et al., 2012), which is influenced by particular service attributes. Truong et al. (2020) list a few of these characteristics, including the total innovative service environment ambience that is felt by customers using all five senses to fulfill their transactional specific satisfaction. According to Srivastava and Kaul's research (2014), a customers' passionate response stemming from their most recent transactional encounter with a company represents a transactional specific approach. Transactional-specific satisfaction is the degree to which a customer is satisfied with goods or services at a particular moment in time (Namkung and Jang, 2007). In other words, it explains how customers evaluate a good or service at a specific moment (Mensah and Mensah, 2018). Koufteros et al. (2014) state that there are four important factors that affect transactional-specific customer satisfaction. These are timeliness, availability, condition and billing accuracy. According to Koufteros et al. (2014), timeliness is the degree to which the customer received goods or services on time or within the stipulated period. Accordingly, timeliness is defined as processing speed and successfully delivering prompt services that satisfy customers (Othman et al., 2019). Second, the customer will not be satisfied with the lack of service or product availability. Third, customer satisfaction may be impacted by the state of goods or the manner in which services are provided. Customers will not be satisfied, for instance, if products that are expired are offered on the shelves (Koufteros et al., 2014). Finally, customer satisfaction is also impacted by the efficiency and accuracy of billing at the point of sale (POS). Customers may become dissatisfied, for instance, if they choose a product or service at a price that is posted but are charged a different amount at the register. Customer satisfaction is assisted by the proper execution of the transactional-based perspective's four dimensions.

5.1.5. Emotion-based satisfaction

Numerous aspects, including customer emotions, are taken into account when creating customer satisfaction (Cheng et al., 2020; Torres et al., 2019; Xu, Liu and Gursoy, 2019). Depending on the level of arousal linked with an event or object, the customer's valence reactions to it as a result of mental changes in character are known as emotional satisfaction (Oliver, 2015). Mehrabian and Russell (1974) proposed the three-dimensional primary emotional state of the customer, namely, arousal, pleasure and dominance. The pleasure dimension of emotion refers to the level to which a customer becomes joyful, happy, feels good, or satisfied as a result of a certain situation, while arousal is the state in which a customer feels excited, inspired, attentive, or active in a particular condition (Cheng et al., 2020; Mazaheri et al., 2014). Finally, the dominance dimension of emotion captures how much the customer feels in charge, free to behave in a specific circumstance (Cheng et al., 2020; Mazaheri et al., 2014). Emotionally based satisfaction is described as customers' pleasure and joy resulting from a positive experience with a specific buyer or an affective state induced by goods or services (Sadachar and Fiore, 2018).

Correia et al. (2019) assert that a customer's emotions are a reflection of the mood, behavior, and attitude. One instance is when a buyer makes an impulse purchase while feeling happy or in a good mood. Emotions require less thought than attitudes since they are more impulsive. Anger and happiness are examples of basic emotions that are thought to have biological roots (Oliver 2015). Positive emotions such as excitement and happiness have a positive impact on customer satisfaction and behavioral intentions, while negative emotions such as anger, dejection, and anxiety have a negative impact (Foroughi et al., 2019). According to the literature, emotion-based satisfaction has been found to be one of the most important predictors of behavioral intentions (Bufquin et al., 2020; Cheng et al 2020).

5.1.6. Cumulative/Overall satisfaction

The sum of the evaluations of all product or service encounters over a period of time is called cumulative or overall satisfaction, and it provides insight into how well the organization is performing in terms of service (Zhao et al., 2012). According to Oliver (1993), cumulative satisfaction is a measure of the total satisfaction with a service provider's performance or a summation of the satisfaction with a particular product or service that the service provider has provided (Srivastava and Kaul, 2014). Customer satisfaction is the customer's evaluation of the overall consumption of a product or service as a whole that influences post-purchase

experiences, including attitude change, repeat purchase and loyalty (Johnson and Fornell 1991; Namkung and Jang, 2007). According to Mensah and Mensah (2018), the term "cumulative" or "overall satisfaction" refers to the customer's assessment of the entire product or service consumption experience, which also influences the customer's post-purchase behavioral intentions. For the retail sector, both transactional specific and cumulative or overall customer satisfaction are significant (Srivastava and Kaul 2014).

5.2. Outcomes of customer satisfaction

Every organization wishes to respond and act in a reasonable manner in order to satisfy its customers. Customer satisfaction may influence the customer's decision to use or not use a specific product or service (Namkung and Jang, 2007). A customer's response, whether positive or negative, is determined by how satisfied or dissatisfied the costumer is with a specific product or service. Customer satisfaction leads to positive behavioral intentions, including customer loyalty (Awoke and Wollo, 2015; Vannarajah and Medis, 2020). Customer loyalty frequently leads to positive word-of-mouth behavior and repeat intent as a result of satisfaction (Kim et al., 2019; Vannarajah and Medis, 2020).

These outcomes are critical to the business's survival by contributing to revenue, competitive advantage, and profit (Awoke and Wollo, 2015). Similarly, customer dissatisfaction leads to unfavorable customer behavioral intentions, which leads to disloyalty and negative word-of-mouth behavior, as well as switching to a competitor's products and services (Bhatnagar et al., 2019; Kim et al., 2019). Customer switching is a decision made by a customer to end an existing relationship with a service provider by no longer purchasing a product or using the service provider's services but instead establishing a new relationship with a similar service provider (Bhatnagar et al., 2019). Dissatisfaction has the negative consequence of reducing a company's profit and sales, as well as losing its competitive advantage. Successful organizations are focused on delivering customer satisfaction; hence, organizations must prioritize customer interests (Jin et al., 2019). Researchers believe that "it is more expensive" for service providers to obtain new customers than to retain an existing customer due to customer replacement costs (Nastasoiu and Vandenbosch, 2019). According to Pizam et al. (2016), the cost of replacing a new customer is approximately five times that of retaining a loyal customer in terms of monetary, time, and resource costs in order to attract new customers to the business.

6. Customer loyalty

Customer loyalty is probably one of the best measures of success for any company. Therefore, developing, maintaining and enhancing customer loyalty remains a major concern in the marketing activities of many companies (Dick and Basu, 1994). By definition, loyalty is a deep-seated commitment to continue to repurchase a particular product or service in the future, resulting in repeated consumption of the same brand (Oliver, 1999). Loyal customers help companies reduce marketing costs, attract more customers, effectively increase market share, and increase their willingness to pay higher prices (Aaker, 1996; Dick and Basu, 1994; Reichheld, 1996). Therefore, increasing customer loyalty is an important focus among marketing specialists and practitioners (Zeithaml et al., 2018). Overall, previous research suggests that loyalty encompasses both behavioral and attitudinal dimensions (Aaker, 1991). Behavioral loyalty measures patronage resulting from repeated purchases of a brand over time, while attitudinal loyalty measures dispositional commitment based on the specific benefits of the intrinsic value associated with the brand (Chaudhury and Holbrook, 2001). Most previous studies define loyalty as the repeated purchase of a product or service (Homburg and Giering, 2001). Berry et al. (2002) argue that "customer loyalty emphasizes the interactive nature of involvement with a company". Loyal customers are important to companies because they remain loyal to a brand despite the marketing influence of substitutes. According to Oliver (1999), customer loyalty formation process involves four stages: first, cognitive; second, attitudinal; third, conative; and fourth, behavioral.

6.1. Concept of loyalty within relationship marketing

Relationship marketing seeks to understand how long-term relationships between companies and their customers develop (Christopher et al., 2002). This relationship marketing framework includes all actions focused at building, developing, and maintaining successful relational exchanges (Morgan and Hunt, 1994). It covers all focal relationships (Morgan and Hunt, 1994; Gummesson, 2004), relational marketing (Dwyer et al., 1987), relational contracting (MacNeil, 1980), and collaborative partnerships and strategic alliances (Day George, 1990).

The primary goal of relationship marketing is to build mutually favorable relationships between buyers and sellers (Christopher et al., 2002). Relationship marketing is marketing focused toward strong, lasting connections with individual accounts (Jackson, 1985). Although initial studies yielded mixed results (Fournier et al., 1998), raising concerns about investment in relationship marketing (Colgate and Danaher, 2000), relationship marketing can be complex

and can range from discrete transactions to relational exchanges (Anderson and Narus, 1991). Customer loyalty has received significant attention in the relationship marketing literature (Singh and Sirdeshmukh, 2000). Loyalty is regarded as a crucial indicator of organizational performance and success (Nyadzayo and Khajehzadeh, 2016), contributing to long-term growth and profitability (Rai and Srivastava, 2012; Almomani, 2019). It has also been recognized as a competitive advantage for companies (Chen, 2012). While developing customer loyalty is any company's primary marketing goal, establishing loyalty and securing its rewards is difficult (Watson et al., 2015). Therefore, it is vital to determine the best recipe for customer loyalty (Russo et al., 2016).

6.2. Loyalty stages

Oliver (1999) defines loyalty as a deep-seated commitment to continuously repurchase or support a preferred product/service in the future, resulting in repeated purchases of the same brand or combination of brands, regardless of situational influences or marketing efforts having the potential to induce a variety of actions. Oliver (1999) developed a four-stage model of loyalty that classifies loyalty into four categories, as shown in Figure 7.

Figure 7: The Four-stage Model of Loyalty
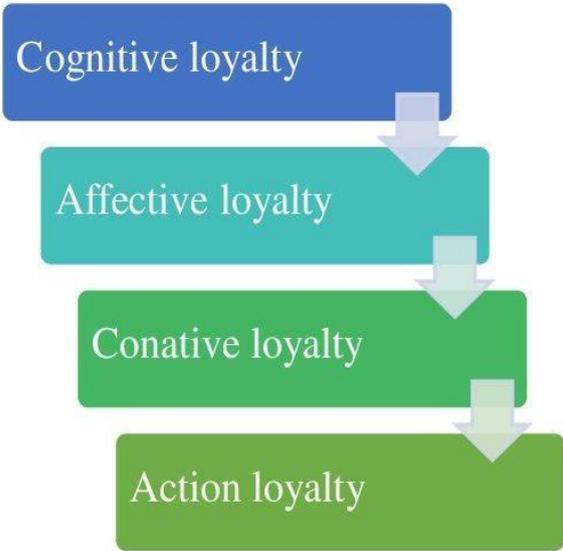
Source: Oliver (1999)

In the first stage, cognitive loyalty, customers prefer a particular company or brand over others. After satisfaction, affection occurs, and at this point, the customer moves into the stage of emotional loyalty. At this stage, the customer develops a positive attitude toward the company. Following a positive experience, customers enter the conative loyalty stage. This is when they feel the obligation to repurchase. This purchase commitment becomes the intention to act as a

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result of the previous three steps. This stage is called the behavioral loyalty stage, where customers have a high level of intention to continuously repurchase from that preferred brand or company. On the other hand, customers can show their loyalty in many ways. Whether or not continuity is defined as a relationship, they may choose to stay with a provider or increase the number of purchases, the frequency of purchases, or both. They can also advocate for the company in question, playing a strong role in others' decision-making (Hallowell, 1996; Reichheld et al., 2000; Zeithaml, 2000).

6.2.1. Attitudinal loyalty

The attitudinal aspect is related to the cognitive, affective, and conative phases, whereas the action phase is related to the behavioral aspect of customer loyalty (Han and Hwang, 2015).

6.2.1.1. Cognitive loyalty

Cognitive loyalty is a customer's preference for one brand, product, or service over another (Childs et al., 2019). It is the customer's commitment which is based on the costs and advantages connected with the performance of products or services (Kim et al., 2015). In other words, cognitive loyalty is determined by a product's functional characteristics. The cognitive loyalty stage occurs when customers seek information about products, services, and service providers. Cognitive loyalty is also formed based on the value propositions supplied by service providers to customers (Tariq and Mat, 2018). Customers with cognitive loyalty can easily switch to a different competitor when they discover that a competitor's product offering is superior in terms of price and features. For example, cognitively loyal customers may be individuals who are interested in monetary savings, such as discounts, payback, and price reduction sales. This implies that if customers do not receive monetary savings, they will be dissatisfied and may engage in negative behavior by switching to a competitor.

6.2.1.2. Affective loyalty

Affective loyalty refers to a customer's attitude toward a brand or product, which encompasses both appreciation for the product and satisfaction with the brand (Kim et al., 2015). At the affective stage, customers are interested in searching for products (brands) and services given by service providers, and as a result, they build a positive perception of the service provider, which influences the customer satisfaction level (Tariq and Mat 2017). According to Matthews et al. (2014), affective loyalty refers to customers' feelings, inclinations, and emotional reactions to a product or brand. Matthews et al. (2014) compared customers' affective loyalty

to brand emotional value and satisfaction. The study revealed that a customer's positive attitude toward a product or brand enhanced consumer satisfaction with the product or brand.

6.2.1.3. Conative loyalty

Conative loyalty refers to the customer's behavioral intent to repurchase specific products and brands (Kim et al., 2015). Customers will "trust" the service provider at the conative stage if they have been satisfied during the affective stages (Tariq and Mat, 2017). Customer trust is defined as the customer's view of the service provider's trustworthiness, dependability, and accountability (Tariq and Mat 2018), which enables the customer to remain loyal (conative) to the service provider. Kim et al. (2015) and Tariq and Mat (2018) argue that conative loyalty is more fundamental than cognitive and affective loyalty in terms of customer commitment. Yeng and Mat (2013) discovered a link between customer commitment and conative loyalty. Customer commitment is divided into two categories: affective and calculative/continuance commitment. The customer's affective commitment reflects their sense of belonging and connection to the service provider, while customers who are consistently devoted are loyal, and they display their commitment by sharing their satisfaction with others (Yeng and Mat 2013).

6.2.2. Behavioral loyalty

The action stage, also known as the behavioral loyalty stage, is the result of the preceding three stages, which are cognitive, affective, and conation loyalty (Lee et al., 2018). Behavioral loyalty refers to a customer's repeat purchase or the number of times they choose the same products or services from the same service provider, whereas attitudinal loyalty refers to the customer's desire to maintain a relationship with the service provider (Tankovic and Benazic, 2018).

6.2.2.1. Action loyalty

Action loyalty refers to a customer's attitude that leads to a purchase (Kim et al., 2015). Customers will take action after being satisfied via the affective stage and developing trust and loyalty for the service provider throughout the conation stage (Tariq and Mat, 2017). Customers in the action loyalty phase will translate behavioral intentions into actual behavior and be prepared to fight any interruptions to such action (Tariq and Mat, 2018). According to Tariq and Mat (2017), the action state occurs when customers acquire and continue to purchase the same provider's products and services while ignoring the more appealing products and services offered by competitors. At the action stage, customers suggest and recommend the providers'

products and services to their friends and family. Aside from the four stages of customer loyalty, loyalty may be divided into two-dimensional approaches.

Khajeheian and Ebrahimi (2021) distinguish between behavioral loyalty and attitudinal loyalty by stating that behavioral loyalty results in repeat purchases of products or services, whereas attitudinal loyalty is a personal attitude that includes emotions developed toward products or services. Attitudinal loyalty does not guarantee that customers will patronize the provider's products or services, while attitudinal loyalty may not guarantee that customers purchase products or use services but rather that they provide word of mouth recommendations to others (Khajeheian and Ebrahimi, 2021; Cossío-Silva et al., 2016). Attitudinally loyal customers advocate for service providers and actively encourage other potential customers to patronize service providers' services through word of mouth (Valipour et al., 2019). Attitudinal loyalty is just as important as behavioral loyalty in determining a customer's level of loyalty in a business in the context of contemporary marketing research (Mustapha et al., 2019). In order to accurately determine the exact loyalty level of customers, it is vital to consider both behavioral and attitudinal loyalty (Han and Hwang, 2015). The firm should prioritize both behavioral and attitudinal loyalty because they have a favorable relationship (Ali et al., 2018).

6.3. Customer loyalty ladder

A major innovation in the area of quantifying customer loyalty comes from Payne (1994), who examined customers' progress up and down the so-called "loyalty ladder" from prospects to customers, clients, supporters, advocates and, eventually, partners. According to Payne (1994), the relationship marketing approach views customer loyalty as a ladder that reflects the development of the customer relationship with an organization (see Figure 8).

Figure 8: Customer Loyalty Ladder
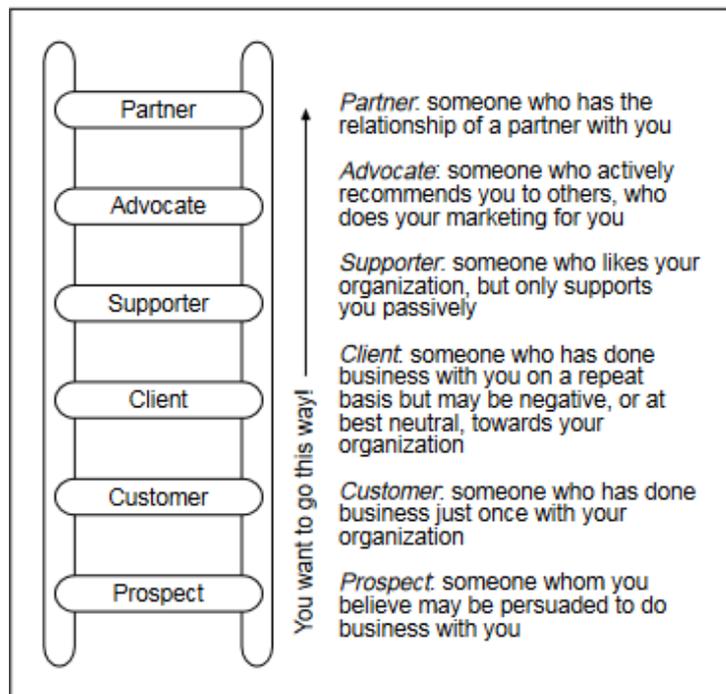
After converting a prospect into a customer, the next marketing challenge is to generate repeat patronage from that customer. At this point, the customer becomes a client who has a neutral, positive or negative attitude towards the brand. When a client's attitude towards a brand is positive, they usually become a supporter (not an outspoken). At the next level, an advocate is someone who is happy with the brand and who actively recommends it to others. The final stage (partnership) refers to a situation where a very close and long-term relationship is developed between the brand and the customer based on the satisfaction of mutual requirements. This final stage is mainly business-to-business relationships. According to the author, this evolution requires greater dialog between exchange parties, commitment and trust, which evolves from the perspective of the customer.

The concept of the customer loyalty ladder stems from relationship marketing and brand management, which address long-term customer relationships (Wijaya and Suprapti, 2019). The cost of acquiring new customers is 4-6 times that of conducting business with current customers (Aneeshkumar, 2021). As a result, it is worthwhile for any firm to retain its present customers who are happy and satisfied to make them more profitable. The customer loyalty ladder thus helps a firm in carefully planning its engagement strategy so that customers are tempted to move up the ladder. Customer loyalty is a highly significant concept because it functions as a post-purchase assessment of offerings, including positive word-of-mouth

communication and revisit intentions (Ayuni, 2017). Any firm that wishes to survive must have loyalty since it offers it a competitive edge and helps it increase its market share (Gunawan, 2019). In the context of this study, loyalty is defined as a customer's positive behavioral desire to remain dedicated and faithful to a given product or service as a result of the value acquired from their experience.

6.4.   Methods of measuring customer loyalty and classifying customers

It is difficult to develop a specific method for measuring customer satisfaction. Measuring customer loyalty is much more complicated. The main reason for this is that, whereas customer satisfaction represents the current set of attitudes, customer loyalty is based on long-term attitudes developed in response to a variety of factors, which can be internal (personal experience) or external (advertising, reported experiences, social factors, etc.). The literature contains a variety of ways to assess the level of customer loyalty, ranging from very simple to relatively complicated. The examples below illustrate the various levels of complexity (Madzík and Shahin, 2021).

The net promoter score (NPS) is a simple method for demonstrating customer loyalty. Reichheld (2003) introduced the NPS to measure customer loyalty, engagement, and enthusiasm. The NPS is based on a 0- to 10-point scale for evaluating customer satisfaction and loyalty. Customers are assigned to one of three categories based on the value they report. Customers who report values ranging from 0 to 6 are classified as "detractors," while values of 7 or 8 indicate "passively satisfied," and values of 9 or 10 indicate "promoters," who have the greatest potential to share positive and favorable recommendations. The NPS scholars interpreted this scale as expressing lower levels of customer satisfaction and higher levels of customer loyalty. Thus, they simply integrated the link between satisfaction and loyalty into this scale, with the goal of making it as simple as possible to interpret customer opinions about the company or product. NPS is intended to embody universal concepts and be applicable in every context. Despite these obvious benefits, there are some compelling reasons why NPS cannot be the primary KPI for quality improvement (Madzík and Shahin, 2021).

According to Kristensen and Eskildsen (2011), the NPS is an inefficient and unreliable measure of customer loyalty, and there are several more appropriate metrics for the same purpose, such as the American Customer Satisfaction Index (ACSI) or the European Performance Satisfaction Index (EPSI). It should be emphasized that the connections between the NPS and the ACSI or EPSI are very evident, as both primarily assess customer satisfaction (NPS on lower scale

levels). Evaluating loyalty only with the NPS causes issues with accuracy, diagnostics, and, eventually, more problematic quality improvement. The loyalty ladder approach provides a significantly more nuanced understanding of loyalty than does the NPS approach. This is a more extensive segmentation of customers into groups based on their level of loyalty (Madzık and Shahin, 2021). The literature contains a variety of definitions for the stages of the loyalty ladder. Kuusik and Varblane (2009), for example, classify customers into five categories: leavers, reducers, dubious, loyal, and committed. Other studies provide a more extensive description of the "upper" levels of the loyalty ladder. Narayandas (2005) divides customer loyalty into several levels: (1) wants to grow the relationship; (2) endorses products; (3) resists competitors' blandishments; (4) is willing to pay premiums; (5) seeks to collaborate on new product development; and (6) may invest in you. This viewpoint enables more precise customer categorization and a better estimate of the risk of losing a customer. Mascarenhas et al. (2006) provide an even more detailed loyalty ladder model, taking into account overall customer experience and long-term customer loyalty. According to their view, the customer loyalty ladder is composed of three more specific perspectives. Mascarenhas et al. (2006) identified three perspectives: (1) differentiated value ladder (at the top of which is community branding); (2) interactive relationship ladder (at the top of which is a long-established relationship); and (3) total customer experience ladder (at the top of which is long-term customer loyalty). Thus, loyalty ladder approaches allow for a broader perspective on the issue of customer loyalty and can help to address it. While loyalty focuses on customer behavior, satisfaction can be viewed as an orthogonal perspective concerned with customer attitudes. As a result, the loyalty ladder concept evolved into a more complicated form known as the loyalty matrix (Madzık and Shahin, 2021).

This loyalty matrix is the third and most complicated form of customer loyalty, with the primary goal of categorizing customers. A loyalty matrix consists of two dimensions: loyalty and satisfaction (Tanford and Baloglu, 2013). The matrix is divided into four quadrants, one of which is labeled "not loyal" and includes customers with low levels of satisfaction and loyalty, while "true loyal" includes customers with high levels of both satisfaction and loyalty. The third category is "spurious loyal" customers, who have a high level of loyalty but a low level of satisfaction. Such customers are frequently found in monopoly marketplaces, which have no or extremely few alternatives to the dominating product or service. The fourth category is "latent loyal" customers, who are highly satisfied yet have a modest level of loyalty. The loyalty matrix allows for more precise customer categorization because it considers both attitudes and

behavior. In terms of method, creating a loyalty matrix entails determining both customers' level of satisfaction and loyalty. Both of these levels have a linked character and allow the customer to be categorized into one of the four categories listed above (Madzık and Shahin, 2021). Cluster analyses or structural equation modeling can improve categorization accuracy (Hosseini et al., 2010). Figure 9 illustrates a typical customer loyalty matrix. The figure represents a different technique for measuring satisfaction and loyalty. When assessing satisfaction, the degree of demand fulfillment is assessed on a scale of 1 (very dissatisfied) to 5 (very satisfied); this rating constitutes the y-axis of the loyalty matrix. Loyalty is measured on a scale of 0 to 10, although the levels reflect the customer's intended behavior. This rating corresponds to the x-axis of the loyalty matrix. The net promoter score (NPS) is an integrated measure of satisfaction and loyalty. Therefore, it is fundamentally related to both axes of the loyalty matrix. However, the reason that NPS is used to measure customer loyalty is because of how the results are analyzed. Both approaches lead to the same question, but NPS analyzes the results based on the segmented frequency of responses. As a result, NPS data on a 1-point scale can be used in place of customer satisfaction on a five-point Likert scale (Madzık and Shahin, 2021).

Figure 9: A typical customer loyalty matrix
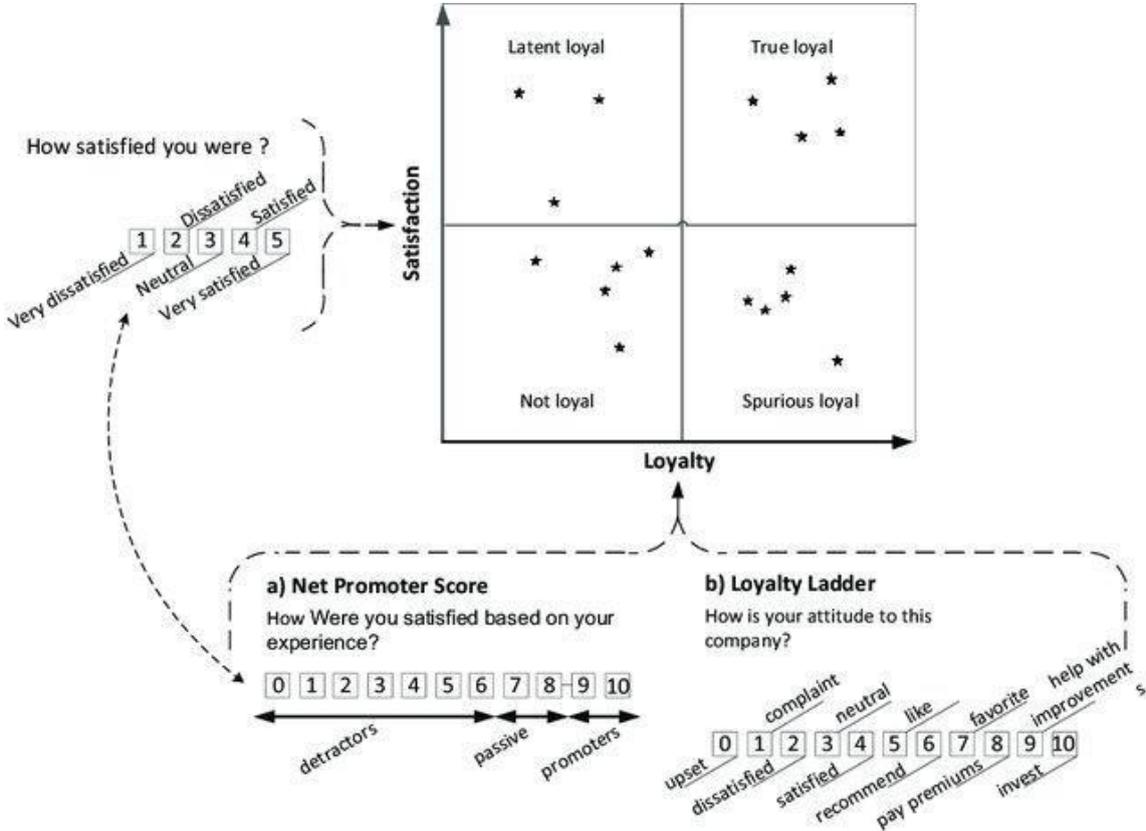
Source: Madzık and Shahin (2021)

6.5. The importance of customer loyalty

The importance of loyalty has been well recognized in the marketing literature (Oliver, 1999; Howard and Sheth, 1969). Customer loyalty is the tendency of customers to become repeat customers based on their previous experiences and future expectations. A successful customer loyalty management strategy attracts customers (Arslan, 2020). Hence, customer loyalty is one of the current and future success factors for organizations that can benefit from customer loyalty in the long-term economy by improving customer relationships and allowing them to acquire new customers at a cheaper cost. Customer loyalty is one of the most important goals that companies want to accomplish. Loyal customers can be an economic source of income for businesses as well as influence those around them through their recommendations and incentives, allowing the company to acquire new customers at a lower cost. Therefore, creating customer loyalty provides a considerable competitive advantage, preventing customer losses, protecting revenue streams, and making it easier to reach new customers.

Customers want to trust the company with whom they share value, to know that their staff care about them, and to avoid oppressive sales or hidden charges (Arslan, 2020). As customers grow more aware, they assess the sufficiency and benefits of the company, which increases their trust expectations. When customers become distrustful, they leave the business, regardless of its size or order. By converting customer satisfaction into loyalty, the company repurchase rate increases, allowing them to charge higher rates for their items. They also recommend the company to those around them (friends, family members, etc.). Thus, it draws new cost-effective customers to the company (Fecikova, 2004).

6.6. The effect of customer satisfaction in creating customer loyalty

The value supplied to customers is determined by various factors such as product/service quality and customer satisfaction. Therefore, customer satisfaction contributes to increase customer loyalty. Customer loyalty requires guaranteeing customer satisfaction and continuous improvement. Hence, customer orientation allows one to provide and increase customer satisfaction.

Customer loyalty can be ensured by satisfying all of the customers' needs before and after sales, preventing customer dissatisfaction by correcting defects in the product or service offered, and handling complaints correctly and effectively (Lee and Cunningham, 2001). As customer satisfaction with the firm grows, so do customer loyalty, the intention to repurchase products, and loyalty levels (Anderson et al. 1994). It is often difficult for a customer to change the firm

from which he purchases the product. Customers who are satisfied with the firm or product brand from which they acquired the product may seek to maintain their relationship in the future as a result of this satisfaction. Loyalty refers to a willingness to remain consistent over time. According to Phau and Sari (2004), loyal customers are the most cost-effective and profitable customer segment for the business. Businesses are attempting to improve their present customer retention strategies by turning these customers into loyal customers in order to sustain their place in the market and increase profits. Businesses rely heavily on loyal customers to generate profits. Businesses understand that recruiting new consumers is five to six times more expensive than retaining existing customers. For this reason, Armstrong and Kotler (2006) affirmed that companies should strive to provide flawless and high-quality products and services to turn their customers loyal (Arslan, 2020).

Customer loyalty is also influenced by a business's image and trustworthiness. The primary outcome of customer satisfaction is loyalty. Loyal customers are one of the most essential aspects in boosting business success. According to Wreden (2005), who studies the impact of "unhappy customers" or "dissatisfied customers," "unhappy customers who cannot be retained" is one of the most serious risks to a business. The "happy customer" shares their satisfaction with an average of 4-5 people, and the "dissatisfied" customer shares this issue with an average of 8-10 people. Bad news spreads twice as quickly as good news, particularly on the internet (Şener and Behdioğlu, 2013). Customer satisfaction can be based on quality, product delivery speed and reliability, flexibility, competitive capacities, product mix, and customer service. Customers who are very satisfied are more likely to remain loyal to the company. Customer satisfaction affects business profitability since it promotes brand loyalty and higher rates for the company (Fečiková, 2004). Additionally, satisfied customers might recommend the company and/or products to their surroundings. In the case of unhappiness or dissatisfaction, they can prevent new customers from visiting the company by conveying their criticism and complaints to those around them before switching to competitors. As a result, customer satisfaction influences non-customer attitudes and has the potential to boost the company's market share. Therefore, increased customer satisfaction leads to more sales, lower costs, and higher profits. Strong customer-business ties safeguard businesses from factors that could lead to customer dissatisfaction. Customers who are satisfied can compensate for any disruption and maintain their loyalty to the firm since they have trust and tolerance for it (Yeung and Ennew, 2000; Arslan, 2020). Customer satisfaction is an important driver of customer loyalty, and satisfied customers spend more, remain loyal (Chen, 2012) and positively recommend the company to

others (Babin et al., 2005; El-Adly, 2019). Therefore, higher customer satisfaction leads to greater loyalty and positive word of mouth to the company and makes customers less sensitive to competitive offers (Fornell, 1992).

7. Word of mouth (WOM) behavior

Word of mouth information is informal communication between customers about which goods or services they believe are the best or worst in the marketplace. A large proportion of customers rely on word of mouth rather than formal communication from the company's advertisements (Ahmad, 2012).

Customers mostly rely on pre-purchase recommendations before making a purchase decision. Pre-purchase word of mouth communication drives 20–50% of all purchases (Hess and Ring, 2016). Hence, word of mouth (WOM) is important since it influences customers' choices of products or services, particularly when the product is important and valuable (Ahmad, 2012). Recently, contemporary businesses have advertised little and have relied significantly on word of mouth for free promotion due to its impact on sales (Kim and Hanssens, 2017). Customers frequently rely on word of mouth communication to make purchasing decisions since it is a more trustworthy and reliable source of information about products and services than an organization's formal advertisements (Chu and Kim 2011). Saleem et al. (2018) state that word of mouth communication is considered credible and dependable because it is generated through customers' autonomous method of information distribution. WOM communication does not simply occur through actual face-to-face contact. In modern marketing approaches, WOM communication can also be performed electronically, which is known as electronic word of mouth (e-WOM) communication. E-WOM, as any statement, positively or negatively, made by a customer about a service provider's products or services, is circulated to a large number of individuals and establishments via the internet (Chu et al., 2019). This has become possible with the emergence of internet-based word of mouth (Chu and Kim, 2011). The emergence of various social media platforms has also altered how content is accessed, allowing customers to share information, experiences, and views about products and services through e-WOM (Chu et al., 2019; Ismagilova et al., 2017).

Customers today make decisions to purchase products or services by first searching for information and opinions that other customers have already shared through electronic media in order to feel more comfortable taking the initiative (Erkan and Evans, 2016). Today, numerous platforms, such as blogs, review websites, shopping websites, discussion forums, and social

media have been built on which customers can rely to make purchasing decisions through e-WOM (Erkan and Evans, 2016; Ismagilova et al., 2017). Social media websites and platforms are relatively new, and they allow e-WOM customers to communicate and share their experiences with friends and acquaintances to express the level of satisfaction derived from purchasing a particular product or a service (Chu and Kim, 2011; Erkan and Evans, 2016). Customers can invite friends and loved ones to their location through positive word of mouth via internet-based electronic devices such as social media recommendations (Vega-Vázquez et al., 2017). Thus, it is considered that positive e-WOM is a result of customers' behavioral intentions, and poor e-WOM, on the other hand, is the result of poor customer behavioral intentions (Kim et al., 2019).

7.1. Characteristics of Word of Mouth Word

Buttle (1998) characterized word of mouth in terms of valence, focus, timing, solicitation, and intervention.

- **Valence:** Word of mouth does not have to be positive to be effective, and this is not the same as "all public relations is good public relations" (Balter, 2008). As previously noted, word of mouth can have a positive or negative impact on customer behavior. While customers are more likely to pay attention to negative than to positive information (Mizerski, 1982) and nothing spreads faster than to negative word of mouth (Thorne, 2008), Heath (1996) found that people do not have a simple preference for bad news. Instead, they convey information that corresponds to the emotional valence of the conversation topic. Maru File et al. (1994) found that management policy can influence the valence and volume of post-purchase word of mouth. Richins (1983) stated that customers' tendency to be negative is triggered by their perception of how the company responds to a complaint. Furthermore, customers' willingness to spread unfavorable word of mouth is heavily influenced by their view of the complaint procedure (Balter, 2008), which means that negative word of mouth can be damaging, but if handled appropriately, it can also be a strong tool for spinning word of mouth in the right direction (Thorne, 2008) and regaining a customer who may then spread positive word of mouth to others (Richins, 1983).

- **Focus:** Most of the literature considers word of mouth to be limited to customers. However, word of mouth also entails developing and sustaining connections with a wide range of stakeholders, including customers (either end users or intermediaries), suppliers,

employees, influencers, recruitment, and referral markets (Christopher et al., 1991). For example, word of mouth is an essential source of information in the recruitment market (Buttle 1998). In the literature, however, word of mouth is typically used to describe a satisfied and positive customer experience. Customers who spread favorable word of mouth about a service or service provider are more likely to become repeat and loyal customers (Gremler and Brown, 1996). The assumption is that positive word of mouth moves customers up the loyalty ladder, converting a prospect into a customer (Christopher et al., 1991; Buttle, 1998). That is, by embracing word of mouth, marketers can expand their customer base and strengthen customer loyalty (O'Leary and Sheehan, 2008).

- **Timing:** Word of mouth can occur at several stages of decision-making. When word of mouth serves as pre-purchase information, it is referred to as input word of mouth, and when it occurs after purchase, it is referred to as output word of mouth (Buttle, 1998).

- **Solicitation:** The disseminator initiates 50% of word of mouth communications, while the recipient solicits the other 50%. Indeed, word of mouth may be offered with or without solicitation; it may or may not be requested; and in the case of authoritative information, the recipient may seek the advice of an opinion leader or influencer (Buttle, 1998).

- **Intervention:** Companies seek techniques to encourage high levels of positive word of mouth in their markets to grow quickly (Kirby and Marsden, 2006). As a result, companies target opinion leaders, who account for 10% of society and influence the bulk of purchase decisions (Kirby, 2007). Getting people to talk about a product frequently, favorably, and in the correct way is by far the most important thing marketers can do (Silverman, 2001).

7.2.   Scope and Significance of the Word of Mouth

Researchers consider word of mouth to be the most powerful force determining customer behavior (Whyte, 1954), and there is no doubt that its impact grows by the day. As shown in Figure 10, Lang (2006) highlighted eleven elements that contribute to the importance of word of mouth. He classified these variables broadly into two categories: pervasiveness and persuasiveness.

7.2.1.   Pervasiveness of Word of Mouth

First, while individualist and collectivist societies may participate in word of mouth to varying degrees (Watkins and Liu, 1996), several researchers regard word of mouth as a global phenomenon (Money, 2000; Takada and Jain, 1991; Watkins and Liu, 1996). The growing number of word of mouth agencies around the world, including BzzAgent (US, UK, and Canada), AML (Korea), Buzzador (Scandinavia), TRND (Germany), Have You Heard (South

Africa), FikriMühim (Turkey), Word of Mouth Company (Australia), and JaM (Japan), demonstrates that the power of the word of mouth market transcends geographic boundaries. Second, word of mouth works regardless of industry (Lang, 2006). According to the information available from the aforementioned companies, their word of mouth campaigns ranged from simple to complicated goods and yielded positive results regardless of the industry to which the products belonged. Third, Fitzgerald Bone (1992) stated that 80% of customers use word of mouth, which means that a large proportion of customers either spread the word or share their experience or knowledge about a product or service with others. Fourth, personal influence was seven times more successful than magazine or newspaper advertising in the purchase of household goods and food (Katz and Lazarsfeld, 1955). Interestingly, a recent study revealed that people appreciate word of mouth 50% more today than they did in the 1970s (Rusticus, 2007). Importantly, many customers now rely on word-of-mouth. Fifth, word of mouth represents an exponential diffuse impact; if one person recommends a product to two people, who in turn recommend it to two more people, a modest recommendation chain of 30 links might reach every single individual in populations (Rusticus, 2007). This confirms that word of mouth spreads quickly (Lang, 2006). Sixth, word of mouth is repeated (Bristor, 1990). The word of mouth actions enable the message to spread quickly because it is passed from one person to another and can also be transmitted from another person to others. Finally, transmission from one person to another, and then from another person to another, spreads the message throughout multiple generations via word of mouth. Then, the opinion leader may send the message to more than one person. Although several studies have been conducted to determine the average word-of-mouth relay rate, this number varies from campaign to campaign (Anderson, 1998).

7.2.2. Persuasiveness of Word of Mouth

Several studies have been undertaken to determine the persuasiveness of word of mouth. First, the majority of the research agrees that the credibility of word of mouth is what makes it convincing (Lang, 2006). While only 14% of individuals believe what they see, read, or hear in advertisements, 90% trust recommendations from friends and acquaintances (Rusticus, 2007). As a result, word of mouth is regarded as the most trustworthy, credible, and reliable type of marketing (Arndt, 1967) since it allows people to voice their ideas without the influence of messaging or manipulation (Thorne, 2008). Second, the word of mouth channel is immediately bidirectional and interactive, allowing for a 'tailored' flow of information to the information seeker (Gilley et al., 1998). Importantly, this increases the credibility of the source of

information and leads to the rapid spread of word of mouth messages across generations. Third, word of mouth allows the receiver to provide feedback (Arndt, 1967). Finally, research has shown that more accessible and diagnostic information has a stronger impact on customers (Feldman and Lynch, 1988).

All of the factors stated above contribute to the persuasiveness of word of mouth, making customer recommendations more credible and reliable than commercial sources of information (Day, 1971).

Figure 10: Factors that Contribute to the Significance of WOM
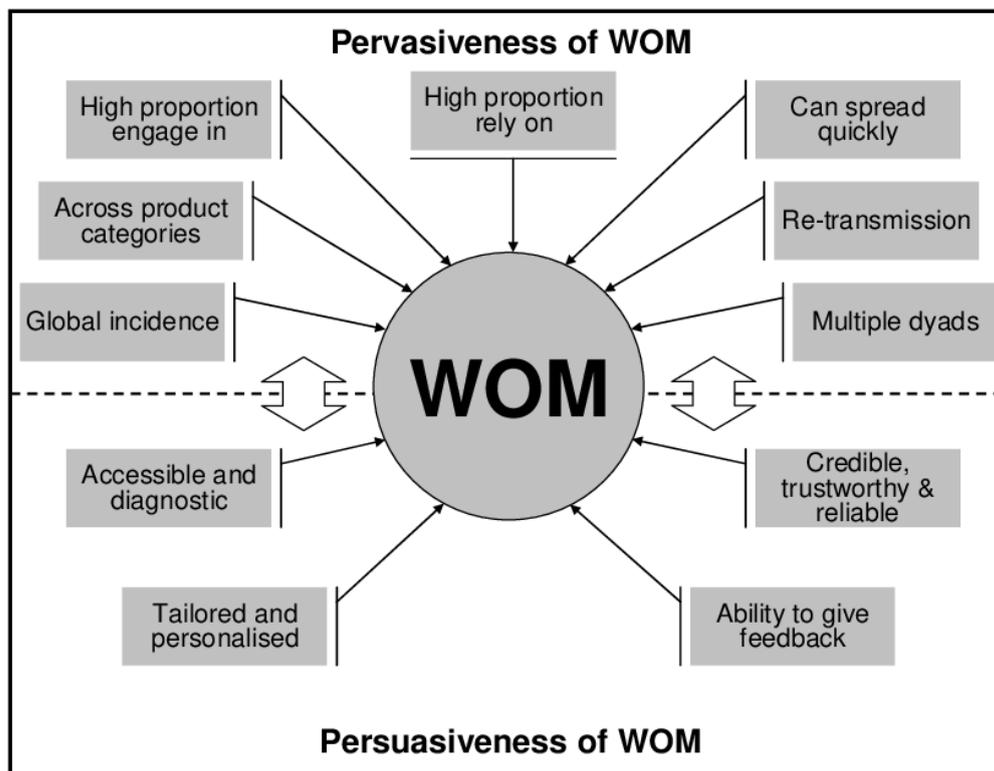
Source: Lang (2006)

8. Summary

This chapter presented a review of extant literature relating to this research issues. It outlined the relationship marketing theory underlying the formation of e-CRM, introducing CRM and its evolution into e-CRM. The study explored the benefits, types, and components of e-CRM, highlighting the significant differences between traditional CRM and e-CRM. The chapter also delved into the stages of e-CRM implementation, customer satisfaction, and loyalty, which provide the basis for the development of a conceptual framework for this research. The implementation of e-CRM strategies plays a vital role in enhancing customer satisfaction and creating loyalty, ultimately leading to increased sales for companies. By using e-CRM technologies and strategies, organizations can personalize customer experiences, address their

needs more effectively, and build stronger relationships. This personalized approach considerably improves customer satisfaction, as it provides a deep understanding of individual preferences and concerns. Furthermore, e-CRM enables companies to implement loyalty programs and incentives tailored to specific customer segments. These initiatives not only encourage repeat purchases but also create a sense of exclusivity and value, further solidifying customer loyalty. Customers who feel valued and engaged as a result of personalized interactions and loyalty rewards are more likely to remain loyal to the brand and recommend it to others, which contributes to positive word of mouth.

Increased customer satisfaction, loyalty, and positive word of mouth communication all contribute to improved sales performance. Satisfied and loyal customers are more likely to make repeat purchases, upgrade to higher value products or services, and act as brand advocates, resulting in organic growth and income for the company. Therefore, the strategic adoption of e-CRM not only builds great customer relationships but also directly affects sales outcomes, making it a critical driver of business success in today's digital economy.

CHAPTER TWO:

PREVIOUS STUDIES

1. Introduction

Previous studies are one of the most important parts of scientific research, and their existence is a prerequisite. These studies must be made available on variables related to the current study in order to build a research study of scientific value, as well as to identify the tools used in this type of study and their findings and compare them in order to increase the accuracy of the findings of the current study.

Many previous studies have highlighted the evolution of electronic customer relationship management (e-CRM) over the past decade, demonstrating how companies have extended their focus beyond interactions with current customers to engage in activities that attract potential customers and enhance customer satisfaction and loyalty. As a result, investigations of e-CRM use and adoption have become an area of growing interest. Numerous studies have been conducted to explore the effects of e-CRM strategies.

To provide a deep overview, this chapter presents various previous studies related to e-CRM and customer loyalty. The second section reviews previous studies on the effect of e-CRM on customer satisfaction and loyalty to identify scholarly perspectives that make this study relevant. Then, the previous studies will be classified according to the following criteria: journal and conference, year of publication, country, industry, research design, data collection method, data analysis method, and framework theory.

2. Previous studies

According to some scholars, e-CRM lessens the physical interaction between a company and its customers by lowering customer engagement (Kennedy, 2006). However, with the help of modern e-CRM technology, this criticism can be disproved. Numerous authors have examined the application and use of e-CRM in business operations, and they have discovered that these efforts increase customer satisfaction and loyalty. Previous studies on e-CRM and customer satisfaction and loyalty are discussed next.

In the first study, Lee-Kelley et al. (2003) tried to determine whether using information gleaned from online interactions with customers to deploy targeted, personalized relationship tools (E-CRM) will increase customer loyalty. For the purpose of this study, 11 e-retailers who sell CDs, DVDs, games, and books were chosen. Two questionnaires that were developed based on the research of Too et al. (2001) were distributed as part of a quantitative approach to the study's

conduct. The first questionnaire, which had 13 items, was created to gauge the effort 11 e-retailers put into their e-CRM programs. The second questionnaire, also with 13 items, was created to gauge how each of the 11 e-retailers' customers felt about their e-CRM programs based on how sensitive they were to price changes and how many of them were still devoted customers. The 1093 completed questionnaires were obtained via email, and SPSS was used as the data analysis tool. The study findings demonstrated a relationship between the perceived degree of e-CRM implementation effort and customer loyalty. Therefore, this study has demonstrated that e-CRM directly improves customer loyalty. Furthermore, the results showed that although there was an indirect relationship between e-CRM implementation and decreasing impacts on price sensitivity among customers, however this link was weak.

In the second study, Khalifa and Shen (2005) investigated the relationship between e-CRM and online customer satisfaction. They developed, operationalized and empirically tested a temporal model explaining the relationship between three features of e-CRM (pre-purchase, at-purchase, and post-purchase e-CRM) and online customer satisfaction at two phases of the customer lifecycle (attraction and retention). The findings of a longitudinal survey of online customers of hardware retailers in Hong Kong revealed the predominance of pre-purchase e-CRM in satisfaction formation at the attraction phase and the predominance of post-purchase e-CRM at the retention phase. These findings provided strong support for the model. Therefore, specific e-CRM features are identified as satisfaction drivers, providing insights for important paradigm shifts.

Furthermore, Sigala and Christou (2006) investigated the effect of e-CRM on hotels' website service quality as perceived by their guests. For this purpose, the concept of e-CRM was first examined, then, a customer-centric e-CRM model was proposed and utilized to identify the e-CRM practices of hotels. This model directly determines the impact of e-CRM on e-services. A total of 335 hotel guests who used e-CRM features provided data, which were then analyzed using multiple regression analysis. The results showed that seven of the twelve regression models are significant; design appeal, visual appeal, and flow-emotional appeal, together with intuitiveness and innovativeness, are the dimensions of website service quality that were unaffected by the application of e-CRM practices. On the other hand, visitors' impressions of the aspects of online service quality that have been impacted by e-CRM practices include interactivity, trust, responsiveness, information that is appropriate for the task, integrated communication, business process, and viable substitute.

In the telecommunications industry, Harb and Abu-Shanab (2009) sought to better grasp the concept of e-CRM and its benefits for both customers and the company itself. In order to demonstrate how to promote e-CRM implementation and provide features that address customers' needs to improve their loyalty and maintain better relationships with them, how it benefited from this technology, and how it looks to its future work related to e-CRM, the authors explored one case study from the Jordanian mobile telecommunications sector (Zain Company). According to the study findings, businesses that comprehend e-CRM and its significance will be able to run more efficiently, enhance customer relationships and satisfaction, and gain a larger market share. Companies can go from customer acquisition to customer retention and ultimately to customer extension with the use of e-CRM. Furthermore, the CRM and e-CRM projects help Zain understand, foresee and respond to the needs of its customers in Jordan, which ultimately will lead to improved customer performance. Zain now serves customers with a wide range of requirements and expectations through a variety of offerings, which has increased customer loyalty.

In the same sector of telecommunication, Alhaiou (2011) conducted a study on the websites of UK mobile phone operators to examine the relationship between e-CRM features and e-loyalty at various phases of the transaction cycle (pre-purchase, at-purchase, and post-purchase). Consequently, the study attempted to close the knowledge gap using empirical data obtained using a quantitative survey approach. Thus, a full-scale field survey of 360 customers was carried out. The study findings indicated that online customer satisfaction and loyalty are impacted by the use of e-CRM in customer relationship building. The level to which online services, such as search functions, security and privacy, payment options, and online customer assistance, are added to mobile businesses' websites depends on how well the e-CRM program works. Most importantly, it showed how e-CRM features can improve online customer loyalty at different stages of the purchase cycle, resulting in enduring relationships with customers.

Furthermore, Sivaraks et al. (2011) aimed to examine and measure the outcomes of e-CRM system implementation in the banking industry from customers' perspectives. Based on the commitment-trust theory of relationship marketing, a new construct called "customer-based service attributes" was developed to measure the outcomes of e-CRM through a literature review and interviews with experts. Sivaraks et al. (2011) developed a model for service attributes and combined relationship quality and outcome. They carried out a full-scale field survey of 684 customers of commercial banks in Thailand. The results of the analysis using structural equation modeling (SEM) showed that the implementation of e-CRM has a

statistically significant positive relationship with customer-based service attributes, as well as with the quality and outcome of customer-bank relationships (including satisfaction and loyalty) and an indirect effect on relationship quality and outcome through customer-based service attributes.

Khaligh et al. (2012) attempted to evaluate the effectiveness of e-CRM in creating loyalty and retention in the Iranian mobile telecommunications industry. In order to help Iranian mobile telecom operators successfully increase customer loyalty and retention, the objective of this study was to determine the relationships between effective e-CRM factors and loyalty and retention factors. Two hundred users of Iranian mobile telecom providers' services were asked to participate in this study as responders to the questionnaires via a quantitative approach. Multiple regression analysis is the most widely applied data analysis approach for assessing the linear relationships among study variables. The findings indicated that in the Iranian mobile telecom sector, e-CRM has a direct and beneficial impact on customer loyalty and retention.

Farhadi et al. (2012) conducted research in order to ascertain how e-CRM affects customer loyalty. The study was conducted using a quantitative approach based on a descriptive-measuring technique. Two methods were used to gather the data: the library method, which involved reading books, studies, journals, papers, and informational databases on the internet; and the field method, which was based on distributing questionnaires. The questionnaires were designed to assess e-CRM and four measures of customer loyalty: customer satisfaction, legal undertaking, reliability, and empathy. To analyze the data, correlation and regression methods were used through SPSS software, and the findings confirmed the relationship between e-CRM and the four measures of customer loyalty, which means that the implementation of e-CRM had a statistically significant and positive relationship with customer loyalty.

In another study, Abdulfattah (2012) aimed to examine the impact of various e-CRM features of the transaction cycle (pre-transaction, at-transaction, and post-transaction) on customer satisfaction on Saudi Arabian bank websites. A questionnaire was distributed in the western region of Saudi Arabia (Jeddah) to collect the data. The empirical analysis was performed using a structural equation model. The findings revealed that customer satisfaction is positively impacted by every e-CRM dimension (i.e. pre-purchase, at-purchase, and post-purchase), and service quality serves as a perfect intermediary in the relationship between e-CRM dimensions and customer satisfaction.

Padmavathy et al. (2012) developed a multi-item scale to measure customer relationship management effectiveness (CRME) in Indian banks and examined its relationship with key customer response variables. In this study, two different methodologies were used to develop and validate the CRME scale. First, the responses of 197 Indian retail banking customers were used to identify key aspects of the CRME. Second, the nomological validity of the CRME scale was assessed using a new sample of 261 actual bank customers. In addition, the relationships between CRME dimensions and customer behavioral outcomes such as customer satisfaction, customer loyalty, and cross-buying were investigated. The results of the factor analyses revealed five dimensions for CRME: organizational commitment, customer experience, process-driven approach, reliability and technology orientation. The findings showed that organizational commitment, the process-driven approach and reliability positively affected customer satisfaction. Furthermore, the results also showed that reliability has a direct association with customer loyalty and both customer satisfaction and loyalty-influenced cross-buying.

Ejaz et al.'s (2013) purpose was to determine how CRM affects customer behavior in industries where switching costs are very low, such as hotels and restaurants. A survey questionnaire was used to collect 400 responses from customers of two major fast food chains in two different cities. Structural equation modeling (SEM) was applied to analyze the data and test the hypotheses. The results showed that CRM has an indirect effect on customer loyalty and word of mouth. No relationship was found between CRM and customer loyalty or between CRM and word of mouth. Furthermore, CRM has a positive effect on customer satisfaction and experience, which in turn affects customer loyalty, and word of mouth is directly influenced by customer loyalty. Customer experience has also been shown to have a direct impact on customer satisfaction. Although CRM does not directly impact word of mouth (WOM), it is highly influential in persuading satisfied and loyal customers through guaranteed WOM.

Khan and Khawaja (2013) revealed the relationship among e-CRM, customer satisfaction, and customer loyalty, considering anxiety as a moderating variable. The purpose of the study was to assess the level of customer service delivered by the customer relationship officer and web portal in a mobile company using e-CRM. The study used a quantitative approach, with questionnaires given to the employees (who used mobile phone services) of six public and private organizations in Pakistan who were chosen at random. A total of 250 questionnaires were collected, and the empirical analysis was performed using regression analysis. The results showed that e-CRM had a positive impact on customer satisfaction, which helped improve

customer loyalty. Although the level of anxiety was low, the moderating impact of anxiety on the relationship between e-CRM and customer satisfaction was also shown.

In the research by Alim and Ozuem (2014), customers who remained loyal to the brand were considered. Vodafone served as a case study since it was one of the main service providers in the UK. The research aimed to determine how e-CRM affects customer loyalty in the UK mobile industry. The conclusions were reached after reviewing previous research and using Vodafone as a case study. The findings demonstrated that unsatisfied customers do not hesitate to switch to competitors. Furthermore, they deduced that there is a link between e-CRM, customer satisfaction, and loyalty.

Dubihlela and Molise-Khosa (2014) aimed to appraise the effect of e-CRM on customer profitability as mediated by customer loyalty and customer retention in the South African hotel industry, particularly for hoteliers near the Vaal Meander. In order to gather data, 341 middle- to senior-level managers from a variety of hotels were interviewed as respondents. By applying structural equation modeling (SEM) and confirmatory factor analysis (CFA), the findings showed that there was a greater beneficial impact on hotel customer profitability from both e-CRM implementation and customer loyalty. E-CRM implementation also has a favorable impact on customer loyalty and retention, which in turn influences customer profitability.

Bataineh (2015) conducted a study to investigate how the use of e-CRM tactics by Jordanian banks affects e-WOM on their social networking sites (SNSs), including Twitter, Facebook, and Instagram. A sample of 507 customers participated in an advanced survey to collect data. Accordingly, multiple regression was used to analyze the data. The results showed that electronic direct mail, perceived rewards and interpersonal communication affect the e-WOM of banks' SNSs. Furthermore, there was support for the mediating role of customer satisfaction.

The objective of Safari et al.'s study (2016) was to examine the impact of e-CRM on online shoppers' satisfaction and loyalty in Iran. A sample of 300 users was chosen randomly to collect data using a questionnaire. SPSS 18 and AMOS 20 were used for data analysis and hypothesis testing. The study findings demonstrated that e-CRM positively and significantly affects e-satisfaction and e-loyalty.

Pradana et al. (2017) aimed to interconnect the effect of e-CRM on the quality of services provided and the net benefits obtained by an airline company in Indonesia. Three hundred questionnaires for the survey were distributed to customers using the company's e-CRM services. The gathered data were analyzed using structural equation modeling (SEM). The

findings support the notion that e-CRM use increases a company's net benefits and improves the monitoring and delivery of its services and that customer satisfaction is significantly influenced by the quality of service provided and the friendliness of its staff.

Aldaihani and Ali (2018) examined how the level of electronic services provided by a Kuwaiti commercial bank was affected by e-CRM. To accomplish the study's purpose, a descriptive-analytical approach was used, and a questionnaire with a significant data collection tool developed by leading academics and authors in the field of study was used. The results of the analysis confirmed that e-CRM has significantly impacted the level of service quality offered by Kuwait's commercial banks.

In another study, Aldaihani and Ali's (2018) objective was to investigate how e-CRM affects Kuwaiti five-star hotel customer satisfaction. The study population consisted of all of the customers of five-star hotels in Kuwait. A total of 410 guests of various nationalities staying in five-star hotels in Kuwait were selected at random for convenience sampling. A questionnaire was utilized to gather the data, and SPSS, a statistical tool, was used to assess the hypotheses. The findings showed that all e-CRM dimensions, including website design, ability to search on website, privacy and security, and delivery time, significantly and favorably affect customer satisfaction.

Amazhanova and Huseynov (2018) sought to investigate the effect of e-CRM features on customer satisfaction and perceived usefulness as a mediator variable in the Turkish e-commerce sector. Since e-commerce companies operate in a continually changing market with changing trends, e-CRM features can be a useful tool for acquiring a competitive edge that improves customer satisfaction in addition to helping to preserve stable customer relationships. Consequently, a quantitative research method was applied, and 210 responses were collected through a self-administered online survey. Confirmatory factor analysis (CFA) was utilized in conjunction with structural equation modeling (SEM) to analyze the gathered data. The study conclusions showed that e-CRM features represented in the research (complaint management, communication, information content, security, and privacy) had both direct and indirect effects (through perceived usefulness) on customer satisfaction.

Mulyono and Situmorang (2018) attempted to identify the mediating role of customer experience and customer satisfaction between e-CRM and customer loyalty in online transportation. The empirical investigation was conducted using questionnaires from 190 respondents who used online transportation, and the data collected were analyzed using a partial

least square-structural equation model (PLS-SEM). The results showed that e-CRM positively impacts customer satisfaction, experience, and loyalty. Additionally, it was discovered that both customer satisfaction and experience served as mediators in the relationship between e-CRM and customer loyalty.

Mang'unyi et al. (2018) investigated how e-CRM affects customer satisfaction and loyalty at different phases (pre-purchase, at-purchase and post-purchase) of the banking sector in Kenya. The proposed model was derived from earlier models using survey to collect data from 78 customers. Path analysis and multiple regression analysis were applied to test the hypotheses. The findings showed that the pre-purchase, at-purchase, and post-purchase phases of e-CRM and customer satisfaction have a favorable impact on customer loyalty, while none of the different phases of e-CRM have a significant impact on customer satisfaction. However, the study findings revealed a lack of potentially significant mediating effects of customer satisfaction on the relationship between e-CRM and customer loyalty.

Dubey et al. (2020) investigated the role of the emerging technology landscape and collaborative platforms in CRM in revealing new opportunities for mutual co-creation in the Indian banking context. This study used a case study methodology to gather a variety of sources for "triangulation". Dubey et al. (2020) stated that technology development has greatly expanded channels for communication and access, brought relationship transparency, provided opportunities for co-creation, and increased CRM's reliance on technology.

Raza et al. (2020) aimed to investigate the role of customer loyalty as a mediating variable between CRM and word of mouth (WOM) in the Pakistani banking sector. In this study, the authors analyzed CRM from the customer's perspective. A survey questionnaire was used to collect 250 responses from customers belonging to the public and private banks of Pakistan. Structural equation modeling techniques were applied to analyze the data using Smart-PLS. The results clearly show that CRM has a direct and positive impact on customer loyalty and WOM. Furthermore, customer loyalty also mediated the relationship between CRM and WOM.

Toqeer et al. (2021) investigated the effect of various dimensions of mobile banking service quality on customer satisfaction through the mediating role of customer value co-creation intention in the Pakistani banking sector. The theoretical framework of this study relies on the technology acceptance model (TAM) and service dominant logic (S-D). A questionnaire was used to gather data from 383 respondents from 25 banks. Mediation and moderation analyses were conducted to examine the role of trust in creating customer satisfaction through value co-

creation. Consequently, service quality dimensions of mobile banking have a significant impact on customer satisfaction. Co-creation has also been shown to have a significant impact on customer satisfaction. A mediation analysis was conducted to determine whether co-creation mediates the relationship between m-banking service quality and customer satisfaction. It was found that there is partial mediation between all aspects of mobile banking service quality and customer satisfaction. Moderation analysis was also conducted to examine the role of trust. Consequently, the results show that trust only promotes communication related to the ease of use of m-banking. However, trust does not moderate the relationship with other dimensions of m-banking.

Kakeesh et al. (2021) aimed to provide practical insights into how to maintain customer loyalty using e-CRM from the viewpoint of small food businesses in Jordan. Eight executives were subjected to semi-structured and in-person interviews in order to collect data from the target interviewees at various Jordanian food companies. Based on executives' perspectives and using thematic analysis for interviews, this study provides customer loyalty concepts, benefits, tools, and measurements. According to the results of the thematic analysis, social media and telemarketing are the most popular e-CRM tools used by food companies. The most frequently used criteria for maintaining customer loyalty are sales frequency and sales records. Furthermore, the most crucial e-CRM strategies that food companies use to increase customer loyalty are complaint handling, post-sale services, customer follow-up, and relationship maintenance. According to Kakeesh et al. (2021), food companies do not have well-established customer loyalty policies, but implementing e-CRM procedures is crucial to maintaining customer loyalty.

Furthermore, Nandya and Permana (2021) aimed to investigate how e-CRM and brand trust affect customer satisfaction and loyalty to a Pixy cosmetic brand. Data from 96 customers were gathered for this study using a survey method. To test the hypotheses, path analysis and structural equation modeling (SEM) were used. The results demonstrated that e-CRM and brand trust had significant impacts on customer satisfaction. Furthermore, there was a positive and noteworthy correlation between customer satisfaction and customer loyalty.

The Riyadi study's (2021) objective was to examine how e-marketing and e-CRM affect the e-loyalty of manufacturers in Banten (Indonesia). Manufacturer managers were given questionnaires as part of the quantitative strategy utilized in this study to collect data. A simple random selection procedure was used to distribute the questionnaire electronically, and 100 respondents returned the completed form. According to the findings of data analysis using

partial least squares (PLS) via Smart-PLS, e-marketing and e-CRM significantly impact e-loyalty. The findings confirmed that any increase in e-marketing will be followed by an increase in e-loyalty, and any decrease in e-marketing will be followed by a decrease in e-loyalty.

Kumar and Mokha (2021) reviewed the extant literature on the relationship between four variables, i.e., e-CRM, customer experience, customer satisfaction and customer loyalty, in the context of the banking industry. The relationships between the four variables were reviewed using the literature published between 2002 and 2019. Overall, although there are significant and favorable relationships between these four variables, the connection between e-CRM and customer experience has not been thoroughly explored in the extant literature. The study suggested that academicians, researchers, and practitioners use this research as a foundational paper to gain a more comprehensive understanding of the majority of research areas and tools used in e-CRM analyses and its effects on customers' expectations.

Additionally, Mokha and Kumar (2022) investigated the effect of e-CRM on customer loyalty in the context of the banking industry through the mediating effects of customer experience and customer satisfaction. Customer experience and satisfaction are seen as prerequisites for enhancing and extending long-term relationships with customers. The stimulus–organism–response (S-O-R) model was used in this study as a theoretical framework to examine the relationships. The data were gathered from 836 Indian bank customers in order to accomplish the purpose of the study. The data were then subjected to structural equation modeling (SEM) through AMOS. The findings showed that all of the relationships were significant and positive and that customer satisfaction and experience acted as mediators between e-CRM and customer loyalty.

Kariman et al. (2022) sought to determine how e-CRM affects customer loyalty through customer satisfaction in the BNI Direct Bank in Indonesia. One hundred customers composed the study sample, and PLS-SEM was used to analyze the collected data. The findings indicated that customer loyalty is directly impacted by both e-CRM and customer satisfaction. In addition, e-CRM had a direct and favorable impact on customer satisfaction, and the relationship between e-CRM and customer loyalty was mediated by customer satisfaction.

The objective of the Alshurideh study (2022) was to identify how electronic customer relationship management impacts service quality at Jordanian private hospitals. Website design, website search, privacy, security, and timely service delivery are e-CRM dimensions, whereas reliability, responsiveness, assurance, and empathy are service quality dimensions. The data

were primarily collected using self-reported Google Forms questionnaires that were emailed to a targeted sample of inpatients. In order to test the study hypotheses, the statistical program AMOS24 was used. The results showed that electronic customer relationship management positively influences and improves service quality.

Itani et al. (2022) investigated the effects of salespeople's social media and customer relationship management (CRM) technology on value co-creation through knowledge and the subsequent impact on sales performance. Based on task-technology fit and self-determination theories, the results revealed that social media, CRM technology, and their interactions support salespeople in their value co-creation efforts through the mediating role of knowledge enhanced by these tools. The findings showed that salesperson job autonomy and sales quota ease have a significant moderating effect on the relationship between knowledge and value co-creation.

Syah and Olivia's (2022) purpose was to identify the role of value co-creation, brand image, and e-service quality on patronage intentions in the online Muslim fashion industry with a moderating effect of religiosity and mediated by customer perceived value and customer satisfaction. As a sample for this study, 301 online respondents from several Muslim fashion brands in Indonesia were used. The data collected were analyzed using the partial least squares (PLS) analysis method with Smart-PLS 3.0. The findings showed that value co-creation, brand image, and e-service quality have an indirect effect on patronage intentions through customer perceived value and customer satisfaction. In contrast, the moderating effect of religiosity has no significant effect on patronage intentions.

Albuquerque and Ferreira (2022) attempted to verify co-creation behavior and understand the relationships among perceptions of service quality, loyalty and co-creation from Starbucks customers' perspective. The data were collected through a survey using a structured questionnaire, and 385 valid respondents were analyzed using structural equation modeling (SEM). The results showed that service quality has a positive impact on customer loyalty and co-creation behavior in all its aspects, and loyalty can be considered an important attribute in the intention of co-creation by customers.

In the context of e-commerce, Fuad and Abdullah (2023) undertook a literature study on the relationship between e-CRM, customer experience, and customer loyalty. To ascertain how these variables are related, the literature published between 2012 and 2021 was analyzed. Fuad and Abdullah (2023) claimed that although there is a substantial relationship between the three

factors, the link between e-CRM, customer experience, and customer loyalty has not been adequately explored in the current literature.

Mohamed et al. (2023) aimed to understand the impact of e-CRM on customer satisfaction, loyalty, and trust in the banking sector. The data were gathered from bank customers in Egypt who used e-CRM services. A total of 205 useful structured questionnaires were completed; the data were then analyzed using partial least squares structural equation modeling (PLS-SEM) through Smart-PLS. The findings revealed that e-CRM had a strong effect on service quality, customer satisfaction, and trust but a very weak effect on customer loyalty. However, when service quality and trust act as mediators, the results showed that e-CRM systems positively affect customer satisfaction and loyalty.

Karim et al. (2023) examined the impact of e-CRM on customer loyalty through e-service quality and e-satisfaction. This study also investigated how customer e-loyalty influences their willingness to recommend a bank's services. A total of 372 private bank customers were selected through convenience sampling in Chattogram, the second largest port city in Bangladesh, and the collected data were analyzed using structural equation modeling. The results show that e-CRM has a positive impact on e-service quality, e-customer satisfaction and e-customer loyalty. In addition, the relationship between e-CRM and customer e-loyalty is sequentially mediated by e-service quality and e-satisfaction, and e-loyalty appears to have a significant effect on bank willingness.

Based on relationship marketing theory, Malki et al. (2023) aimed to test the effect of social customer relationship management (part of e-CRM) on customer satisfaction and loyalty. In order to analyze the data collected to address the study purpose, structural equation modeling was performed on the data of 314 automotive customers surveyed online. The findings showed that social CRM dimensions (traditional CRM and social media technology use) have a direct and positive effect on customer satisfaction. On the other hand, only traditional CRM has a direct and significant influence, while the effect of social media technology use seems to be indirect rather than direct. Indeed, the findings have provided empirical support for the contention that customer satisfaction plays a mediating role between social CRM dimensions and customer loyalty.

Magatef et al. (2023) investigated the impact of e-CRM strategies (functional and personal dimensions) on customer loyalty in the Jordanian telecommunications sector. The authors tested the mediating role of perceived customer relationship quality (cognitive and emotional

dimensions). The data were collected through an online survey of 301 Jordanian online shoppers and analyzed using structural equation modeling with AMOS software. The results showed that functional dimensions had a significant and positive impact on customer loyalty, while personal dimensions had a negative impact on customer loyalty. However, perceived customer relationship (CR) quality is positively affected by the functional and personal dimensions, as it positively affects customer loyalty. Therefore, CR quality indirectly affects the relationship between functional dimensions and customer loyalty. In other words, CR quality mediated the relationship between personal dimensions and customer loyalty.

Mary et al. (2023) aimed to investigate the antecedents of customer loyalty in Cameroonian mobile phone companies. The study included 200 respondents and employed a cross-sectional, quantitative methodology based on relationship marketing theory. The data were obtained from users of the MTN and Orange mobile cellular networks in Cameroon. SPSS was used for the data analysis. The findings indicated that the tangibility, reliability, and assurance dimensions of staff service quality showed a positive relationship with customer loyalty. The results also showed how customer loyalty is impacted by service quality dimensions in the mobile telecom companies of the country.

Finally, the objective of Johnny and Ali's study (2024) was to investigate the relationships among service quality, customer satisfaction and customer loyalty in Malaysia. The SERVQUAL framework served as the model for this study context framework, which was then implemented in the telecom services sector. A questionnaire was used to gather study data from respondents aged 17 years and younger than 40 years. After all the data were collected, regression was performed using the SPSS and Smart-PLS software packages. A total of 159 out of the 200 people who answered the survey completed the survey. The results showed that customer satisfaction, which is highly correlated with customer loyalty, is significantly impacted by service quality. Additionally, the findings provide empirical support for the claim that the relationship between customer loyalty and service quality is mediated by customer satisfaction.

3. Common qualities of the previous studies

This review involved 42 studies (Table 2). The studies are further investigated by journals and conferences (or even PhD dissertations), year of publication, country, industry, methodology, data collection method, data analysis method, and framework theory.

3.1. Distribution of studies by journals and conferences

Table 3 shows the distribution of the 42 previous studies published, the time period, and the number of studies published during the period under investigation. Most of the studies (36) were published in journals, 4 were published at conferences, and only two were PhD dissertations.

3.2. Distribution of studies by year of publication

The distribution of studies according to their year of publication, from 2003 to 2024, is shown in Figure 11. We found that only four studies on e-CRM and customer loyalty were published between 2003 and 2009. Thereafter, the interest of researchers in this field increased considerably, which is reflected by a significant increase in the number of papers published on this topic after 2011. The greatest number of studies focusing on this topic were published in 2022 and 2023 (6 studies each year).

Figure 11: Distribution of previous studies by year
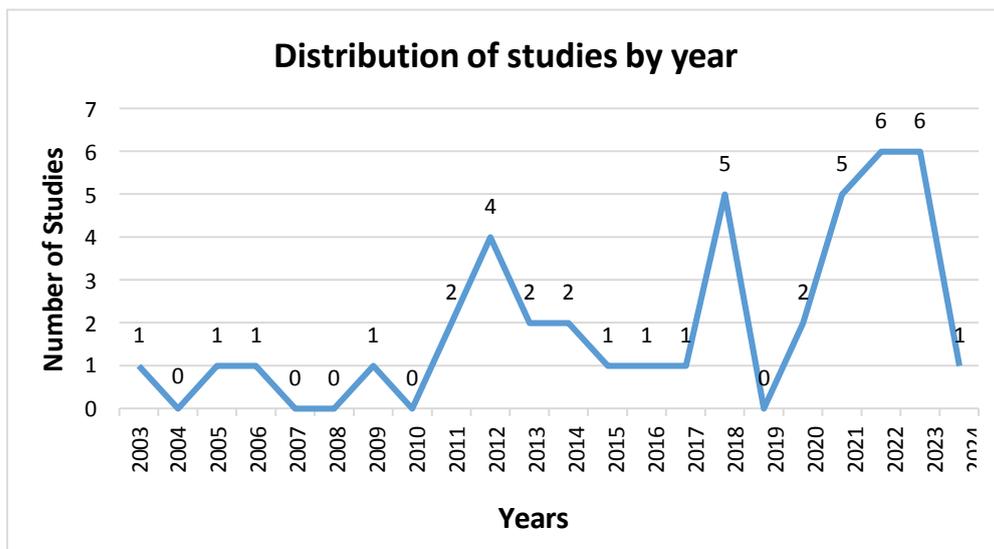
Source: Student's own work

3.3. Distribution of studies by country

As shown in Figure 12, the frequency of literature on e-CRM in the world reviewed in this study fairly indicates that most of the research is concentrated in Indonesia (6 studies), Jordan (5 studies), and Pakistan (4 studies). Furthermore, 3 studies were conducted in other countries, such as the UK, Iran, and India. Only one study was concentrated in Algeria.

Figure 12: Distribution of studies by country

Distribution of studies by country
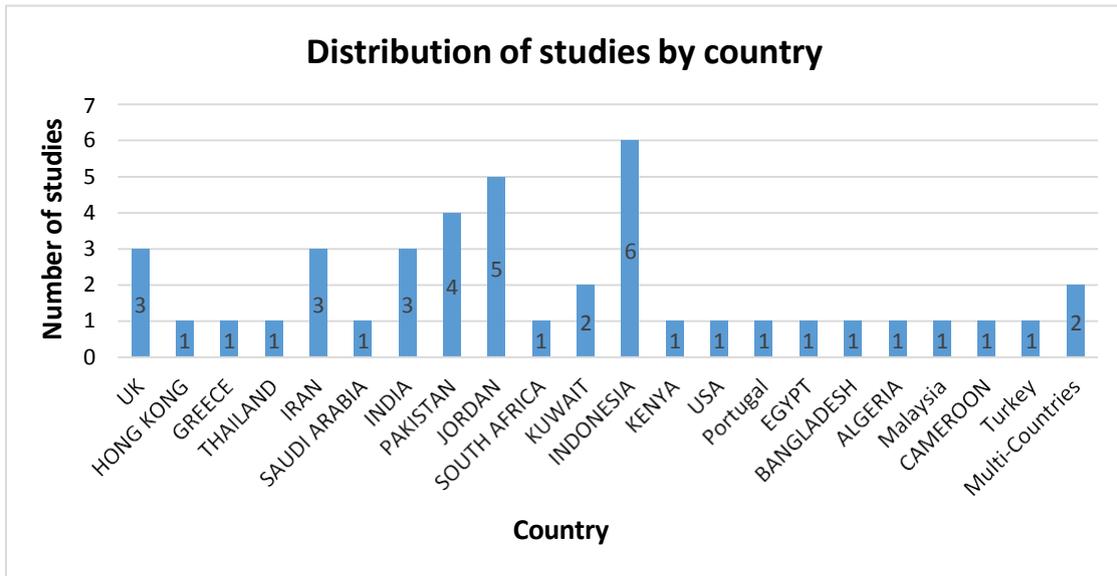
Source: Student's own work

3.4. Distribution of studies by industry

E-CRM research is widespread in service industries. However, in service industries, banking and mobile telecommunication were highly dominant. This indicates that the hotel industry is also experiencing e-CRM benefits. There is also scope for conducting studies on industries such as the e-retail industry, automotive industry, and healthcare industry. This classification is shown in Figure 13.

Figure 13: Distribution of studies by industry

Distribution of studies by industry
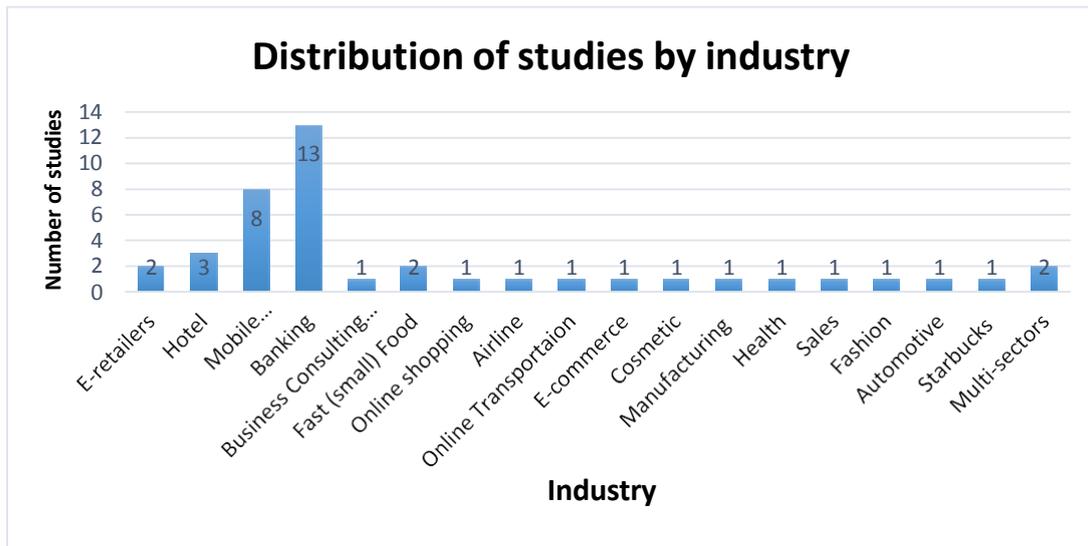
Source: Student's own work

3.5. Distribution of studies by research design and data collection method

As shown in Table 2, most of the studies (36 studies) used a quantitative research design and questionnaire as their data collection instrument, while the other studies (6 studies) used a qualitative research design with different data collection instruments (case studies, semi-structured interviews, or literature reviews).

3.6. Distribution of studies by data analysis method

The empirical research papers are also analyzed in terms of the methods used in the data analysis.

3.6.1. Quantitative research design

The majority of the quantitative studies (18 studies) used structural equation modeling to analyze the data. Ten studies used multiple linear regression analysis, and six used partial least squares structural equation modeling. Additionally, only one study used partial least squares path modeling, and the last study used ANOVA (see Figure 14).

Figure 14: Distribution of studies by Quantitative Data Analysis Method
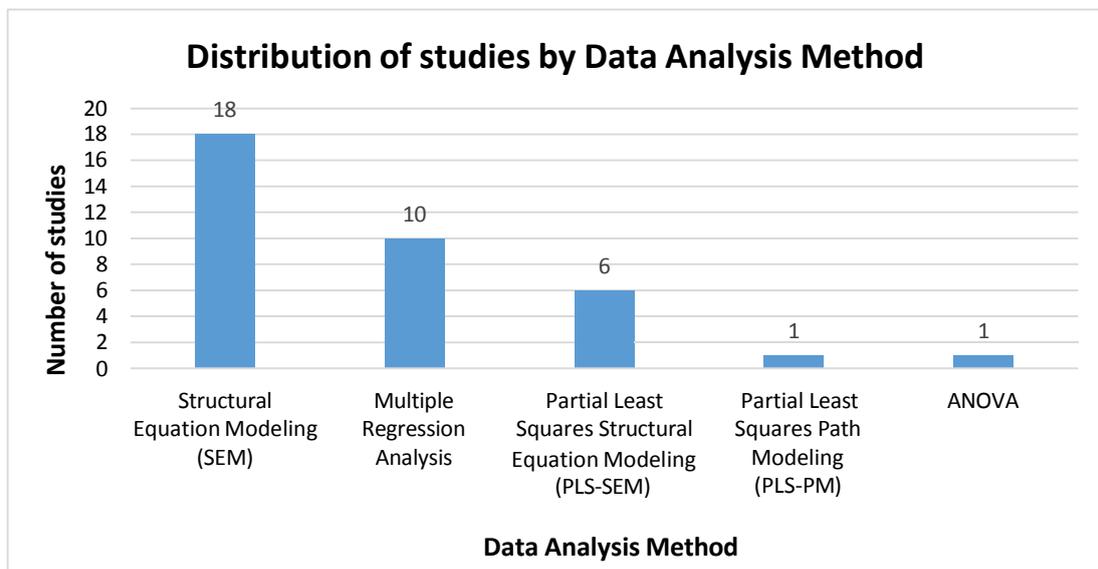
Source: Student's own work

3.6.2. Qualitative research design

Only 6 studies used a qualitative approach in the empirical part. As shown in Figure 15, three out of five studies used literature analysis, while only one study used thematic analysis, another used meta-analysis, and the last used the triangulation method to analyze the data.

Figure 15: Distribution of studies by Qualitative Data Analysis Method
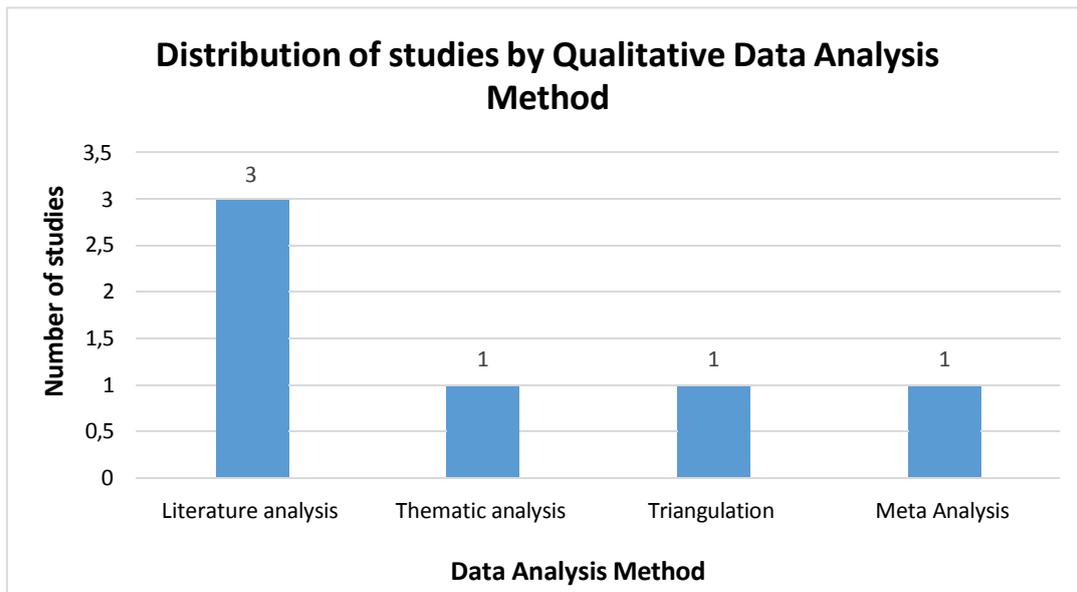
Source: Student's own work

3.7. Distribution of studies by framework theory

As shown in Figure 16, most of the studies (35 studies) have not used any framework theory as a theoretical framework. Only a few studies (7 studies) have used framework theories. Each study used a different theory. As mentioned below, some studies have used more than one theory or model as the theoretical framework.

The following framework theories are used:

- Adaptation-level (AL) theory and the temporal model (TM);
- Commitment-Trust (CT) theory;
- Technology acceptance model (TAM) and service dominant logic (SDL);
- Stimulus–organism–response (SOR) model;
- Task-technology fit (TTF), self-determination (SD) and service-dominant logic (SDL) theories.
- Relationship marketing (RM) theory;
- SERVQUAL Framework.

Figure 16: Distribution of studies by framework theory

Distribution of studies by framework/theory

1 1 1 1 1 1 1

35

- None
- AL and TM
- CT
- TAM and SDL
- SOR
- TTF and SD and SDL
- RM
- SERVQUAL
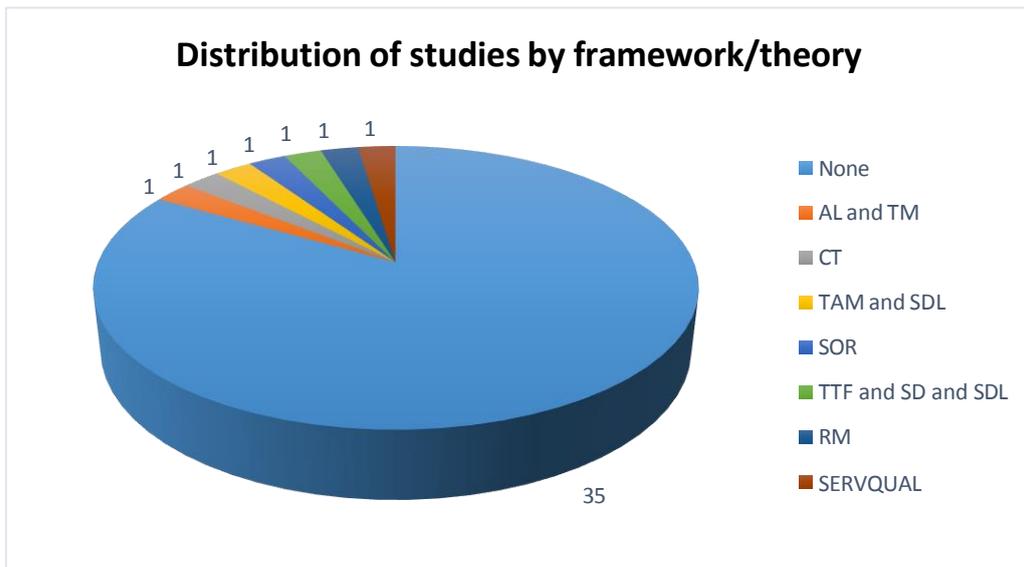
Source: Student's own work

Table 2: Summary of previous studies

Study	Country	Industry	Methodology	Data collection	Data analysis	Framework/Theory	Findings		
Lee-Kelley et al. (2003)	UK	E-retailers.	Quantitative	Questionnaire	ANOVA	None	Re-CRME	(+)	→ CPe-CRM
							CPe-CRM	(+)	→ CL
							CPe-CRM	(+)	→ PS
							CL	(+)	→ PS
Khalifa and Shen (2005)	Hong Kong	Internet retailers	Quantitative	Questionnaire	Partial Least Square (PLS)	Adaptation-level theory and Temporal model	e-CRM	(+)	→ CS
Sigala and Christou (2006)	Greece	Hotel industry	Quantitative	Questionnaire	Multiple regression Analysis	None	e-CRM	(.)	→ DE
							e-CRM	(.)	→ VI
							e-CRM	(.)	→ FE
							e-CRM	(.)	→ INU
							e-CRM	(.)	→ INO
							e-CRM	(+)	→ INT
							e-CRM	(+)	→ TR
							e-CRM	(+)	→ RES

							e-CRM	(+)	→ INF
							e-CRM	(+)	→ INCOM
							e-CRM	(+)	→ BP
							e-CRM	(+)	→ VS
Harb and Abu-Shanab (2009)	Jordan	Mobile Telecommunications	Qualitative	Case study	Metadata Analysis	None	e-CRM	(#)	→ CS
							e-CRM	(#)	→ MS
							e-CRM	(#)	→ CP
							e-CRM	(#)	→ CL
Alhaiou (2011)	UK	Mobile Telecommunications	Quantitative	Questionnaire	Multiple regression Analysis	None	e-CRM	(+)	→ CS
							e-CRM	(+)	→ CL
Sivaraks et al. (2011)	Thailand	Banking	Quantitative	Questionnaire	Structural equation modeling (SEM)	Commitment-Trust Theory	e-CRM	(+)	→ CBSA
							e-CRM	(+)	→ RQO
							CBSA	(+)	→ RQO
Khaligh et al. (2012)	Iran	Mobile Telecommunications	Quantitative	Questionnaire	Multiple regression Analysis	None	e-CRM	(+)	→ CL
							e-CRM	(+)	→ CR
Farhadi et al. (2012)	Iran	Business Consulting and Services	Quantitative	Questionnaire	Multiple regression	None	e-CRM	(+)	→ CS

					Analysis		e-CRM	(+)	→ LU
							e-CRM	(+)	→ RE
							e-CRM	(+)	→ EM
Abdulfattah (2012)	Saudi Arabia	Web banking	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ CS
							SQ	(+)	→ CS
							e-CRM	(+)	→ SQ
Padmavathy et al. (2012)	India	Banking	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	OC	(+)	→ CS
							OC	(.)	→ CL
							CE	(.)	→ CS
							CE	(.)	→ CL
							BD	(+)	→ CS
							BD	(.)	→ CL
							RE	(+)	→ CS
							RE	(+)	→ CL
							TO	(.)	→ CS
							TO	(.)	→ CL
							CS	(+)	→ CL

							CS	(+)	→ CB
							CL	(+)	→ CB
Ejaz et al. (2013)	Pakistan	Fast food restaurant	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	CRM	(+)	→ CS
							CRM	(+)	→ CE
							CE	(+)	→ CS
							CE	(+)	→ CL
							CS	(+)	→ CL
							CL	(+)	→ WOM
Khan and Khawaja (2013)	Pakistan	Mobile Telecommunications	Quantitative	Questionnaire	Multiple regression analysis	None	e-CRM	(+)	→ CS
							e-CRM	(+)	→ CL
							CS	(+)	→ CL
Alim and Ozuem (2014)	UK	Mobile Telecommunications	Qualitative	Case study	Literature analysis	None	e-CRM	(+)	→ CS
							e-CRM	(+)	→ CL
							CS	(+)	→ CL
Dubihlela and Molise-Khosa (2014)	South Africa	Hotel industry	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ CP
							e-CRM	(+)	→ CL

							e-CRM	(+)	→ CR
							CL	(+)	→ CP
							CR	(+)	→ CP
Bataineh (2015)	Jordan	Banking	Quantitative	Questionnaire	Multiple regression analysis	None	e-CRM	(+)	→ CS
							CS	(+)	→ WOM
Safari et al. (2016)	Iran	Online shopping	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ e-CS
							e-CRM	(+)	→ e-CL
Pradana et al. (2017)	Indonesia	Airline	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ SQ
							e-CRM	(+)	→ NB
							SQ	(+)	→ NB
							SQ	(+)	→ US
Aldaihani and Ali (2018)	Kuwait	Banking	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ e-SQ
Aldaihani and Ali (2018)	Kuwait	Hotel Industry	Quantitative	Questionnaire	Multiple regression analysis	None	e-CRM	(+)	→ CS

Amazhanova and Huseynov (2018)	Turkey	E-commerce	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ CS
Mulyono and Situmorang (2018)	Indonesia	Online transportation	Quantitative	Questionnaire	Partial Least Square (PLS)	None	e-CRM	(+)	→ CE
							e-CRM	(+)	→ CS
							e-CRM	(+)	→ CL
							CE	(+)	→ CS
							CE	(+)	→ CL
							CS	(+)	→ CL
Mang'unyi et al. (2018)	Kenya	Banking	Quantitative	Questionnaire	Multiple regression analysis	None	e-CRM	(.)	→ CS
							e-CRM	(+)	→ CL
							CS	(+)	→ CL
Dubey et al. (2020)	India	Banking	Qualitative	Case-study	Triangulation	None	TD	(#)	→ CO
							CRM	(#)	→ CO
Raza et al. (2020)	Pakistan	Banking	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	CRM	(+)	→ CL
							CRM	(+)	→ WOM

Toqeer et al. (2021)	Pakistan	Banking	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	Technology Acceptance Model and service dominant logic	SQ	(+)	→ CO
							CO	(+)	→ CS
							SQ	(+)	→ CS
Kakeesh et al. (2021)	Jordan	Small food	Qualitative	Semi structured interviews	Thematic analysis	None	e-CRM	(#)	→ CL
Nandya and Permana (2021)	Indonesia	Cosmetic	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ CS
							TRB	(+)	→ CS
							CS	(+)	→ CL
Riyadi (2021)	Indonesia	Manufacturing	Quantitative	Questionnaire	The partial least squares (PLS)	None	e-Mark	(+)	→ e-CL
							e-CRM	(+)	→ e-CL
Kumar and Mokha (2021)	Multi countries	Multi sectors	Qualitative	Literature review	Literature analysis	None	e-CRM	(+)	→ CE
							e-CRM	(+)	→ CS
							e-CRM	(+)	→ CL
							CE	(+)	→ CS
							CE	(+)	→ CS
							CS	(+)	→ CL

Mokha and Kumar (2022)	India	Banking	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	Stimulus organism response (S-O-R) model	e-CRM	(+)	→ CE
							e-CRM	(+)	→ CS
							e-CRM	(+)	→ CL
							CE	(+)	→ CS
							CE	(+)	→ CL
							CS	(+)	→ CL
Kariman et al. (2022)	Indonesia	Banking	Quantitative	Questionnaire	Partial Least Squares Structural Equation Modeling	None	e-CRM	(+)	→ CS
							e-CRM	(+)	→ CL
							CS	(+)	→ CL
Alshurideh (2022)	Jordan	Health (Private hospitals)	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ SQ
Itani et al. (2022)	USA	B2B sales	Quantitative	Questionnaire	partial least squares path modeling (PLS-PM)	task-technology fit and self-determination and service-dominant (S-D) logic theories	CRMT	(+)	→ CO
							SM	(+)	→ CO
Syah and Olivia (2022)	Indonesia	Fashion	Quantitative	Questionnaire	The partial least squares (PLS)	None	CO	(+)	→ CPV
							CO	(+)	→ CS

							BI	(+)	→ CPV
							BI	(+)	→ CS
							e-SQ	(+)	→ CPV
							e-SQ	(+)	→ CS
							CPV	(+)	→ CS
							CPV	(+)	→ PI
							CS	(+)	→ PI
Albuquerque and Ferreira (2022)	Portugal	Starbucks	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	SQ	(+)	→ CO
							SQ	(+)	→ CL
Fuad and Abdullah (2023)	Multi countries	Multisector	Qualitative	Literature review	Literature analysis	None	e-CRM	(+)	→ CE
							e-CRM	(+)	→ CL
							CE	(+)	→ CL
Mohamed et al. (2023)	Egypt	Banking	Quantitative	Questionnaire	Partial Least Squares Structural Equation Modeling	None	e-CRM	(+)	→ SQ
							e-CRM	(+)	→ CS
							e-CRM	(+)	→ TR
							e-CRM	(+)	→ CL

Karim et al. (2023)	Bangladesh	Banking	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	e-CRM	(+)	→ e-SQ
							e-CRM	(+)	→ e-CS
							e-CRM	(+)	→ e-CL
Malki et al. (2023)	Algeria	Automotive	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	TCRM	(+)	→ CS
							SM	(+)	→ CS
							TCRM	(+)	→ CL
							SM	(.)	→ CL
							CS	(+)	→ CL
Magatef et al. (2023)	Jordan	Mobile Telecommunications	Quantitative	Questionnaire	Structural Equation Modeling (SEM)	None	FD	(+)	→ CL
							PD	(.)	→ CL
							FD	(+)	→ CRQ
							PD	(+)	→ CRQ
							CRQ	(+)	→ CL
Mary et al. (2023)	Cameroon	Mobile Telecommunications	Quantitative	Questionnaire	Multiple regression analysis	Relationship Marketing Theory	SQ	(+)	→ CL

| Johnny and Ali (2024) | Malaysia | Telecommunications services | Quantitative | Questionnaire | Multiple regression analysis | SERVQUAL Framework | SQ | (+) | → CS |
| | | | | | | | CS | (+) | → CL |

Notes: (+) Significant relationship, (.) Insignificant relationship, (#) there is a link.

Source: Student's own work

APe-CRM: At-Purchase e-CRM BI: Brand Image BP: Business Process BTR: Brand Trust CB: Cross buying CBSA: Customer-based service attributes CE: Customer Experience CL: Customer Loyalty CO: Co-creation CP: Customer Performance CPe-CRM: Customer Preceived e-CRM CPV: Customer Perceived Value CR: Customer Retention CRMT: CRM technology CRQ: Customer relationship quality CS: Customer satisfaction DE: Design appeal e-CL: Electronic Customer Loyalty	e-CRM: Electronic customer relationship management e-CS: Electronic Customer satisfaction EM: Empathy e-Mar: Electronic Marketing e-SQ: Electronic Service Quality FD: Functional dimensions of e-CRM FE: Flow-Emotional appeal INCOM: Integrated Communication INF: Information INO: Innovativeness INT: Interactivity INU: Intuitiveness LU: Legal undertaking MS: Market Share NB: Net Benefit OC: organizational commitment, PD: Personal dimensions of e-CRM	PD: process-driven Pe-CRM: Pre-Purchase e-CRM PI: Patronage Intention PPe-CRM: Post-Purchase e-CRM PS: Price Sensitivity RE: Reliability Re-CRME: e-Retailer e-CRM Effort RES: Responsiveness RQO: Relationship quality and outcome SM: Social media TD: Technology development TO: Technology-orientation TR: Trust US: User satisfaction VI: Visual appeal VS: Viable Substitute. WOM: Word of mouth

Table 3: Distribution of studies by journal and year

Publisher	2003	2005	2006	2009	2011	2012	2013	2014	2015	2016	2017	2018	2020	2021	2022	2023	2024	Total
University of huddersfield						1												1
Brunel University					1													1
International Journal of Innovation Science															1			1
International Journal of Academic Research in Accounting, Finance and Management Sciences												1						1
Journal of Applied Business and Finance Researches								1										1
Uncertain Supply Chain Management															1			1
International Business Research									1									1
Journal of Indian Business Research													1					1

International Journal of Business and Management Invention							1											1
Advanced Research in Economic and Management Sciences (AREMS)						1												1
Finance, Accounting and Law in the Digital Age: The Impact of Technology and Innovation in the Financial Services Sector															1			1
Information and Management														1				1
Studies of Applied Economics													1					1
Global Knowledge, Memory and Communication.															1			1
Annual Hawaii international conference on system sciences	1																	1
Middle-East Journal of Scientific Research							1											1

Journal																			Total
Research Review: International Journal of Multidisciplinary																1			1
Marketing Intelligence and Planning	1																		1
Spanish Journal of Marketing-ESIC																		1	1
African Journal of Economic and Management Studies												1							1
International Journal of Intelligent Systems and Applications in Engineering																		1	1
Journal of Electronic Commerce in Organizations (JECO)																1			1
Academic journal of Economic studies												1							1
International Journal of Bank Marketing					1														1

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International Conference on Informatics and Computing (ICIC)									1						1
Paradigms										1					1
Journal of Internet Banking and Commerce								1							1
The Journal of High Technology Management Research			1												1
Cogent Business and Management												1			1
Journal of Marketing											1				1
Journal of Open Innovation: Technology, Market, and Complexity													1		1
International Conference on Information Technology ICIT		1													1
International Journal of Business and Management				1											1

Intelligent Systems, Business, and Innovation Research																1		1
YÖNETİM, EKONOMİ VE PAZARLAMA ARAŞTIRMALARI DERGİSİ											1							1
Mediterranean Journal of Social Sciences							1											1
Dinasti International Journal of Management Science												1						1
Turkish Journal of Physiotherapy and Rehabilitation														1				1
International Research Journal of Management, IT and Social Sciences														1				1
Information Development															1			1
Global Journal of Management And Business Research											1							1

			1															1
European Conference on Information Systems																		
Total	1	1	1	1	2	4	2	2	1	1	1	5	2	5	6	6	1	42

Source: Student's own work

The concept of e-CRM has attracted the interest of many academics and researchers, and studies in this field have been growing recently. A total of 42 studies were carefully selected and analyzed for the review to determine the link between e-CRM and customer loyalty. The context of these studies included different sectors, but they focused more on banking and the mobile telecommunication industry, which are important sectors of each country's economy. The majority of the studies have not used framework theories, and most of them used a quantitative research design and questionnaire as their data collection instrument and structural equation modeling as a method to analyze the data collected. However, only a few studies have used qualitative research designs.

Although these studies provided a further understanding of the main relationship between e-CRM and customer loyalty, there are still other important aspects that must be explained. Managers adapt e-CRM to their businesses to create and increase customer loyalty and to increase profitability (Nikou et al., 2016). According to the review of previous studies, the results of studies conducted by previous scholars support that e-CRM has a positive and significant effect on customer satisfaction and customer loyalty, and the findings of previous studies are consistent and synchronized. However, numerous previous studies have shown that e-CRM has an indirect effect on customer loyalty through a mediating variable (Abdulfattah, 2012; Malki et al., 2023), but no empirical studies have examined the indirect relationship between e-CRM and customer loyalty through multiple mediators. Nevertheless, some recent research has investigated the indirect effect of multiple mediators of other variables on customer loyalty.

4. Summary

This chapter provides an overall review of academic literature related to the study topic or at least a variable of the study and its assessment. Despite the different economies of the countries to which these studies were applied and the size of the sample in addition to the study period, which has a significant impact on the results as well as the methodology followed, most of the results were consistent between the different variables mentioned.

A review of prior research on e-CRM has shown that most of these studies were conducted in Asian countries such as Indonesia and Jordan, while scant attention has been given to the impact and use of e-CRM research in Algeria. There are a limited number of studies about e-CRM in the context of Algeria. Most previous studies have used a quantitative approach to study the relationship between different variables, while a few have followed a qualitative approach.

Thus, it is important to understand the effect of e-CRM on Algerian customers to increase their satisfaction and loyalty through the use of both qualitative and quantitative approaches to deeply explore the topic of research on the mobile telecommunication sector, which is one of the largest dynamic sectors of the Algerian economy. The results of these studies will contribute to the overall understanding of the impact of e-CRM on customer loyalty in Algeria.

CHAPTER THREE

EMPIRICAL STUDY

1. Introduction

In the previous chapters, the fundamental theoretical framework of this study was developed. This chapter focuses on the empirical part of the research that was conducted on a sample of Algerian mobile telecommunication customers to investigate the impact of e-CRM on customer loyalty.

This chapter starts by discussing the conceptual framework and formulating research hypotheses based on previous studies. This is followed by the methodology that will be undertaken in relation to the justification of the research, which is a mixed methodology (qualitative and quantitative approaches) to confirm the study variables and develop the questionnaire. The development of the research instrument will be described, as well as the planned analysis strategy to test the hypotheses of this study. Finally, the data analysis is presented, and the findings of the research are discussed.

2. Why does the Telecommunications sector?

Agbaje (2014) described e-CRM as a component of the traditional CRM system that is provided using internet technology. E-CRM has numerous benefits for online services, including the ability to develop positive relationships with customers and increase customer satisfaction and loyalty, as evidenced by significant literature research. E-CRM is crucial for maintaining internal and external information, and it is available at any time and from anywhere. E-CRM plays a vital role in integrating technology and organizational processes. Regardless of the e-CRM, the system is mostly dependent on the business approach. Many firms compete fiercely in worldwide marketing (Chang et al., 2005). In this context, telecommunications firms compete by delivering high-quality services to the marketplace (Ishmael, 2015).

The telecommunications industry has evolved in many ways based on the political, economic, and cultural circumstances of each country. Indeed, the telecommunications industry faces numerous problems and major technical developments, particularly with the rise of the internet and mobile communication (Harb and Abu-Shanab, 2009). Telecommunications firms contribute significantly to the economy by creating opportunities for economic growth and playing an important role in the changing environment (Johanson and Brooks, 2010). According to earlier studies, telecommunications companies store more than one million customer's information (Gu et al., 2015; Tam and Oliveira, 2016). Several studies have shown that these companies face numerous challenges in achieving e-CRM success.

A vast number of studies have investigated how to successfully use e-CRM (Kokthi et al., 2022). Despite numerous research, the number of unsuccessful e-CRM adoptions remains high. Many researchers have discovered that 60% of e-CRM adoption in developing countries is deemed unsuccessful, with only 40% regarded as successful (Hwang, 2009; Darajeh and Tahajod, 2010). According to a review of previous studies on e-CRM success criteria, developing countries' IT infrastructure is relatively weak (Love et al., 2009). Thus, telecommunications firms must restructure to compete with global firms in their own markets (Almajali et al., 2022). To fulfill this demand and to fulfill customer needs, an e-CRM system provides the ability to address these requirements through digital media.

Customer relationship management (CRM) with its existing technological implementation, often known in the globe includes local organizations in developing countries such as Algeria as electronic CRM, is widely regarded as certain in modern business (González-Benito et al., 2017; Jaber and Simkin, 2017). In comparison to CRM and its outcomes in many companies, e-CRM practices and adoption in Arab countries are relatively recent, particularly for telecommunications companies, which are critical enhancers of productivity throughout economies and societies. Telecommunications companies contribute significantly to the economies of developing countries because they provide more business development opportunities and have played a significant role in the rapid development environment, particularly in developing countries, over the last decade. The number of contributors is rapidly expanding, thanks in part to these organizations' good management. As a result, studies are required to evaluate the use and successful implementation of e-CRM (Al-Mamary et al., 2015). Al-Weshah et al. (2019) reported that there has been poorly published academic research on e-CRM efficiency, especially in the telecommunications industry. Thus, more empirical research is needed to address this gap (Anaam et al., 2018). This study will introduce electronic customer relationship management (e-CRM) by investigating its impact on customer satisfaction and loyalty in the telecommunications sector.

The Algerian telecommunications sector has undergone significant changes since 2000. Telephone operators must invest in customer relations (Khaouani and Baghdad, 2019). To compete, it is necessary to deploy CRM in order to improve customer satisfaction and loyalty. The proportion of mobile telephony (GSM, 3G and 4G) in Algeria increased by 5.11%, from 49.019 million subscribers in the 4th quarter of 2022 to 51.522 million subscribers in the 4th quarter of 2023, and the number of mobile phone subscribers (GSM, 3G, 4G) registered an

evolution of 1.88%, increasing from 50.573 million subscribers in the 3rd quarter of 2023 to the 4th quarter of 2023 (PECRA, 2023).

Indeed, this sector has a significant impact on several economic fields and areas, such as military defense, the industrial and agricultural sectors, the educational sector, and others, since many economic sectors have benefited from the availability of the telecommunications sector. Furthermore, the data mentioned above show that Algeria's experience in this sector, after many years of living in the central economic model, has shown and demonstrated that it was time to liberalize and open this sector, not only to national operators but also to foreign operators, taking, undoubtedly, examples of other countries that have taken the same initiative and achieved good scores in many sectors (Khaouani and Baghdad, 2019).

3. Conceptual Model

This section provides an outline of the conceptual model used. A proposed research model was constructed from the literature related to e-CRM and customer loyalty stated in the previous chapter; then, the development of the hypotheses was outlined and described.

3.1. Proposed conceptual model

The choice of the study variables in this research is anchored on the Marketing relationship theory, which focuses on customer-oriented initiatives and relationship management using technology-based interfaces. Firstly, the option of e-CRM is selected due to its feature of individual focus on customers and optimization of service provision, which complies with the concept of CRM (Parvatiyar and Sheth, 2001; Ranaweera and Prabhu, 2003). Customer experience is added because it is one of the critical components of the relationship that can be improved through satisfaction gained during interacts with personnel (Berry et al., 2002). The co-creation concept is incorporated to portray the creation of value by customers in an organization where the customer is actively involved when the provision of solutions is made due to its creativity in satisfying the customer's needs (Prahalad and Ramaswamy, 2004). Service quality is chosen because it directly contributes to satisfying the customers' needs and increasing the level of satisfaction – critical elements of customer relationships (Parasuraman et al., 1988). Furthermore, the role of customer satisfaction is singled out due to its critical influence on loyalty including through word of mouth and purchase repetition patterns (Fornell et al., 1996). Word of Mouth (WOM) communication is included since it embodies the customer advocacy and crucially affects the facets of brand perceptions, which are vital in relationship-seeking endeavours (Reichheld and Sasser, 1990). Last the variable of customer

loyalty is selected as the dependent variable which may be defined as the long-term, mutually beneficial relationship between the customer and the organization as a result of overall satisfaction, trust and perceived value (Reichheld, 2003). All these variable together offer a coherent model grounded in Marketing relationship theory which outlines a clear structure of analysis when it comes to studying the relationship between customers and organizations with the purpose of achieving success.

Thus, in order to answer the research question and after a literature review on e-CRM and customer loyalty, based on Marketing relationship theory and the different opinions of previous literature, considering that the elements influence customer satisfaction and loyalty in the mobile telecommunication sector and that these elements may be ignored by large-scale firms, we develop this conceptual framework (Figure 17). As our research purpose mentioned, our aim is to investigate how e-CRM can improve customer loyalty. According to this framework, we propose relevant hypotheses on this topic.

Figure 17: Conceptual Model
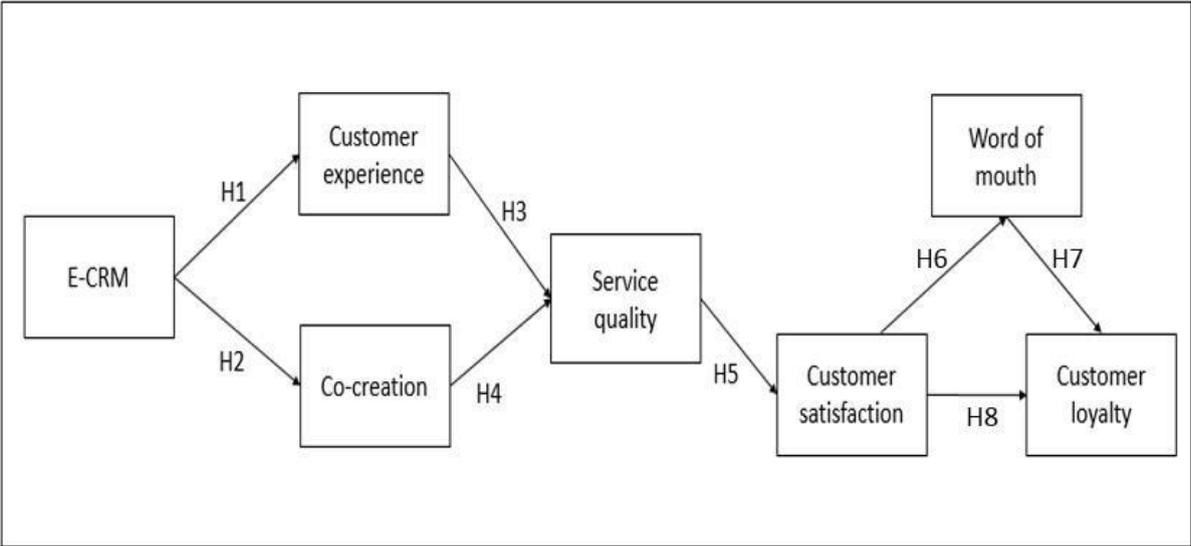
Source: Student's own work based on previous studies

3.2. Hypotheses development

As shown in Figure 17, based on previous studies, the elements that may influence customer satisfaction in the theoretical framework above are customer experience, co creation as well as service quality. In order to answer the research question, to verify that e-CRM improves customer loyalty, eight hypotheses were suggested to respond to the previously stated study objectives.

3.2.1. E-CRM

E-CRM is considered an important tool for any organization that wants to attract new customers and retain existing ones (Abu-Shanab and Anagreh, 2015). This helps to increase and improve long-term customer loyalty (Herman et al., 2020). Pennington (2016) noted that customer experience continues to deteriorate due to failed investments in CRM. Many organizational leaders understand how important it is to adopt the latest technological frameworks and technologies for CRM to ensure a good experience for the customer. However, the traditional ideas and customs on the ground are still the same and do not change. Therefore, in the face of fierce competition, the existence of e-CRM is no longer a luxury but rather a prerequisite for managing customer experience in the context of services (Grewal and Roggeveen, 2020; Andajani, 2015). E-CRM provides companies with web technologies that capture a 360-degree view of their customers and provide them with an instant and positive experience (Mulyono and Situmorang, 2018). With the advent of Web 2.0, e-CRM offers customers the experience of being co-creators of the products they purchase or the services they use. Through the e-CRM strategy, companies can provide access to interactive digital channels with engaging, educational and entertaining content as a forum for customers to share in an online community. Continuous interactions between or among customers and companies ensure that customers participate in the value co-creation of existing products and services or products and services that will be created by companies. E-CRM encourages and establishes customer expectations regarding products and services in accordance with their needs and desires (Sigala, 2011). The e-CRM strategy aims to create a co-creative environment for the further development of relationships between customers and companies to improve service quality (Law et al., 2003). Empirical evidence from previous studies conducted in different contexts and countries has indicated that e-CRM has a significant effect on both customer experience and value co-creation. This is the case for Mokha and Kumar (2022), who found that e-CRM significantly affects customer experience, and Itani et al. (2022), who proved that CRM technology is significantly related to value co-creation. On these theoretical grounds, we propose the following hypotheses:

H1: E-CRM has a positive impact on customer experience.

H2: E-CRM has a positive impact on customer co-creation.

3.2.2. Customer experience

Schmitt (1999) defined customer experience as "a result of undergoing or living through things that cater to sensory, cognitive, emotional, relational and behavioral values". For customers to strengthen their unique relationship with a company, it is essential that they have an excellent and beneficial experience for every moment of communication they share with the company (Klaus and Maklan, 2013). Recent literature by Kranzbuhler et al. (2018) on customer experience show that the scope of customer experience has expanded from short-term customer experiences in a single service cycle to long-term customer experiences over multiple service cycles. Customers can measure their experience by service quality. They can then form an idea or knowledge about the quality of the company's services. In particular, a positive association experience can lead to timely and beneficial customer support (Salehi et al., 2013). Whenever a customer has a positive experience with the company, it leads to a long-term customer relationship. As a result, memorable and enjoyable experiences with service quality lead to higher customer satisfaction (Raina et al., 2019). Previous studies, such as those of Sorooshian et al. (2013) and Urban (2010), have established a relationship between customer experience and service quality. Hence, the following hypothesis is formulated:

H3: Customer experience has a positive impact on service quality.

3.2.3. Value co-creation

Value co-creation can be described as the way in which organizations can involve customers from the beginning to create new products and make all important decisions to achieve evidence-based innovations (Alavi et al., 2012). Indeed, customer participation in the value co-creation process can have consequences in terms of service quality and satisfaction ratings. Customers not only purchase and use new services but also engage in service delivery, known as customer co-creation (Chathoth et al., 2016), which has important implications for customer satisfaction and subsequent customer behavior. Thus, if we consider the customer to be an active participant in the value co-creation process (Vargo and Lusch, 2008), his greater satisfaction with the service quality must be a consequence of this (Grönroos, 2008). When the customer engages in the service development process, their perception of belonging to the company reflect their satisfaction and loyalty with the service quality (Grissemann and Stokburger-Sauer, 2012). In general, the quality of outcomes that change when encountering a new service is an important factor in determining how customers evaluate the service, and co-creation is not always advantageous due to customers' lack of knowledge and skills about the

new service (Chathoth et al., 2013; Lengnick-Hall, 1996). Therefore, the limited research on the interactive effects of co-creation and service quality represents a major gap in the service innovation literature (Xu et al., 2018). On these theoretical grounds, we propose the following hypothesis:

H4: Customer co-creation has a positive effect on service quality.

3.2.4. Service quality

Service quality is described as the comprehensive assessment of the level of service performance (Mohtasham et al., 2017). A recent study by Kasiri et al. (2017) showed that service quality can improve customer satisfaction. Providing excellent service quality is critical to the long-term success of the service industry (Shahin and Dabestani, 2010). Service quality refers to customer assessment of the excellence and superiority of the services they experience (Zeithaml and Bitner, 2003). Customers who experience positive feelings and attitudes toward the service in the process of consuming the service more often have a positive impression of the service provider, thereby increasing customer loyalty (Ishaq, 2012). This finding is consistent with previous research showing that customers who are satisfied with service quality are more likely to become loyal customers (Cheng and Rashid, 2013; Cheng et al., 2014). This statement is supported by Jiewanto et al. (2012), Abdulfattah (2012), Toqeer et al. (2021), and Johnny and Ali (2024), who emphasize that service quality has a positive and significant impact on customer satisfaction. Hence, the following hypothesis is formulated:

H5: Service quality has a positive impact on customer satisfaction.

3.2.5. Customer Satisfaction, WOM, and Customer Loyalty

According to Mulyono and Situmorang (2018), when customers are satisfied with the products or services offered by their service providers, they tend to recommend them to their friends/relatives. This statement was proven by Bataineh (2015), who found that there is a relationship between customer satisfaction and word of mouth. The higher the customer satisfaction is, the higher the level of word of mouth behavior becomes (Brown et al., 2005). In addition, customer satisfaction is considered one of the antecedents of customer loyalty (Kamath et al., 2020). Previous studies have shown positive relationships between customer satisfaction, word of mouth, and customer loyalty; however, Heskett et al. (1997) and Hosseini and Ahmadi Nejad (2009) explicitly stated that customer satisfaction does not necessarily lead

to customer loyalty. Thus, there is a need to study the relationship between customer satisfaction and customer loyalty. Hence, the current study formulates the following hypotheses:

H6: Customer satisfaction has a positive impact on WOM.

H7: Word of mouth has a positive impact on customer loyalty.

H8: Customer satisfaction has a positive impact on customer loyalty.

4. Methodology

In the previous section, the fundamental theoretical framework of this study was developed. This section describes the methodology that will be used.

4.1. Research approach

The mixed methodological approach is a process of using qualitative and quantitative research methods to analyze a specific problem. It can also be used in the natural and social sciences (Creswell, 2014; Creswell and Clark, 2007). This process is useful since it allows researchers to draw and focus on the strengths of both qualitative and quantitative research methods. Currently, mixed research methods are very popular in business-focused research, where problems are complex and business information needs to be categorized and interpreted in different ways (Sekaran and Bougie, 2016). Therefore, to apply mixed methods in this study, it is important to select an appropriate research design. Creswell and Clark (2007) identified four models for mixed methods procedures (see Figure 18).

Figure 18: Design of the four major mixed methods

(a) Triangulation Design

Quantitative	Mixing	Interpretation
Data Collection Data Analysis Results	Results are merged to compare, interrelate, or validate results	Generally equal emphasis on both data forms

Qualitative
Data Collection Data Analysis Results

(b) Explanatory Design

Quantitative	Mixing	Qualitative	Interpretation
Data Collection Data Analysis Results	Quantitative results lead to need for further clarification or participant selection	Data Collection Data Analysis Results	Generally emphasis on quantitative; qualitative results explain & elaborate

(c) Exploratory Design

Qualitative	Mixing	Quantitative	Interpretation
Data Collection Data Analysis Results	Develop instrument or theory based on qualitative results to test quantitatively	Data Collection Data Analysis Results	Generally emphasis on qualitative; quantitative results generalize & test

(d) Embedded Design°

Quantitative Data Collection Data Analysis Results / Qualitative Data Collection Data Analysis Results	Mixing	Interpretation
	Qualitative data enhance quantitative results	Primary emphasis on quantitative

Source: Creswell and Clark (2007)

Creswell and Clark's mixed methods designs are useful for testing hypotheses and answering research questions. Triangulation design is applicable since the study requires the combination of two independent data collection processes. Moreover, the explanatory and exploratory design implies that there is a subsequent relationship between the data types. These designs use one type of data to justify another. This is the case in qualitatively directed pilot studies that collect findings that are tested quantitatively (and vice versa). The fourth design is an embedded design, where one data set is combined with another data set so that the second data set can support the previous results (Creswell and Clark, 2007). Therefore, using a mixed methodological approach

maximizes the reliability and strength of the study, which cannot be achieved with a single approach (Creswell, 2014).

4.2. Research design and instrument

This study employed a mixed method design, combining qualitative and quantitative approaches to data collection and analysis (Creswell and Tashakkori, 2007). This study most appropriately employed an exploratory design, which involves first qualitative data collection followed by quantitative data collection. This method was used to obtain a clearer and deeper picture of the qualitative data and then to use the qualitative data to better understand and explore the study. The exploratory mixed method approach combines qualitative and quantitative data collection and analysis in a sequence of phases (Creswell and Plano Clark, 2018). In the first phase, the researcher collects qualitative data and then analyses the data, and the results are fed into the next quantitative phase (survey or other forms of quantitative data collection). In other words, qualitative analysis provides valuable fodder for developing specific research questions for the quantitative phase, which involves a survey, questionnaires, or other forms of quantitative data (Tashakkori and Teddlie, 2019).

Figure 19: Exploratory mixed method phases
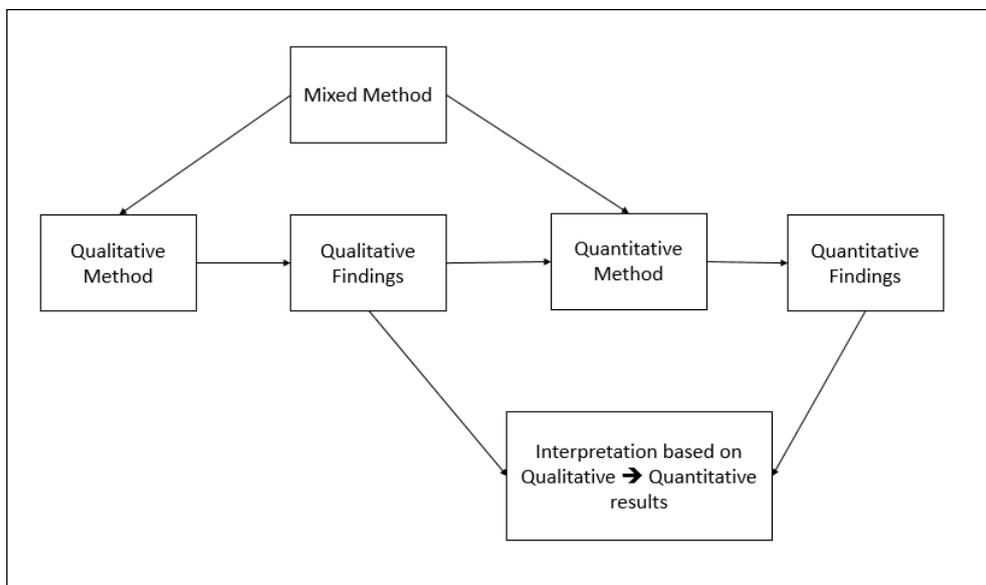
Source: Creswell and Plano Clark (2018)

5. Qualitative approach

Qualitative methodology generally seeks to understand people's attitudes and feelings. It is suited to detailing how and why things happen (Carter and Little, 2007; Gray, 2014). Creswell and Poth (2018) state that qualitative research gathers particularly detailed information because the researcher is able to connect with participants in their context. Qualitative research can

provide unique, rich and valuable information since the researcher focuses on participants' diverse views and understanding of the research question. In addition, qualitative researchers can talk directly to participants and encourage them to tell their stories and share their experiences without judgment (Creswell and Poth, 2018). The direct connection between the researcher and the participants leads to a deeper understanding of an issue than quantitative research can provide.

5.1. Research design

This part of the study consists of collecting the perceptions of customers and exploring the market of telecommunications (mobile phone operators), in order to obtain their point of view on the issues and questions drawn from the literature presented in the first part. It has also made it possible to identify variables and possible areas for future research.

Our model represents a primary model, so the objective of this study is to:

- Help us to better choose variables and exclude outliers or include new important variables and to retain the most important variables for the customer and thus set a final model for our research.
- Collect verbal data via an interpretative approach.
- List the customer experience in the telecommunications sector.
- Through this exploratory approach, we sought to determine the relationship between e-CRM and customer loyalty.

5.1.1. Data collection procedures

This section presents and discusses the methods used to collect the data. Semi-structured interviews were the most suitable for addressing the research objectives and questions. As Wellington (2015) noted, "it should always be a case of questions first, methods later".

5.1.1.1. Semi structured Interviews

The interview method is valuable since it allows researchers to collect information such as the thoughts, feelings, and values of participants that cannot be collected through other methods, e.g., surveys or content analysis (Wellington, 2015). Robson (2011) suggested that using interviews is the way to determine what people think, feel and believe. According to Gray (2014), interviews allow researchers to explore people's views on a particular topic and collect data about their attitudes, values, experiences and preferences. The interviews were conducted

with each customer individually to obtain a broader understanding of their experiences and perspectives.

Semi-structured interviews allow respondents to expand on their opinions and give the researcher the flexibility to add questions during the interview (Gray, 2014). In this study, a semi-structured interview format allowed participants to openly describe their experiences and perspectives on using their mobile phone operator. In fact, exploratory interviews allow us to complete the line of work suggested by the literature while maintaining the respondents' freedom of expression (Blanchet, 2007). Semi-structured interviews allow respondents to expand on their views and opinions and give researchers the flexibility to add questions during the interviews (Gray, 2014). In this study, a semi-structured interview format allowed participants to openly describe their experiences and perspectives on using their mobile operators and how this influences their satisfaction and loyalty.

The choice to conduct semi-structured interviews requires writing an interview guide. We wrote an interview guide (Appendix 1) starting with a presentation of the subject of the study and then identified the different topics to be addressed; the interview guide included 26 questions, 6 questions were devoted to the characteristics of the respondents, and 20 open-ended questions or respondents had the opportunity to talk about their experience and openly express their thoughts. Each variable was mentioned in the questions.

- **The respondent's profile:** We started the interviews with the demographic characteristics of the respondents.

Thus, respondents were invited to comment on the following variables:

- **E-CRM:** The respondents are expected to comment on the presence of their mobile operator on digital channels, where the questions focus on the role of the internet as a tool to build relationships with companies and solve problems, the importance of digital channels, and the benefits of relationship management through the internet.
- **Customer Experience:** We asked respondents to describe their personal experiences, expressing their feeling about the choice of their mobile operator, and the customer handling in the mobile operator agency.
- **Value co-creation:** We discussed customer participation in creating value to develop quality or a new concept of service for the telecommunication company, asking the customer if they are ready and supports to be co-creator.

- **Service quality:** We also discussed the service quality of the mobile operator, asking the customer if the quality of service offered met his expectations.
- **Customer satisfaction:** We asked respondents about their level of satisfaction with their mobile operator, and the degree of success of the mobile operator in meeting customer expectations.
- **Word of Mouth:** We asked respondents whether they had been influenced by word of mouth and whether they had recommended before or not their relative and friend to use the same mobile operator they used.
- **Customer loyalty:** Customer loyalty is the main variable that depends on our research, so we wanted to talk about all the reasons that make customers loyal.

5.1.1.1.1. Sample and interviews

Semi-structured interviews held on mobile phone were conducted with 15 customers of different telecommunications companies in Algeria. The participants were contacted via direct Facebook messages to arrange convenient dates, times, and methods for the interviews. The interviews were conducted between August and September 2022. The shortest interview lasted for 14 minutes, the longest lasted for 50 minutes, and the average length of all the interviews was 25 minutes. The interviews were conducted in the Arabic language because, as the participants' mother tongue, it was more comfortable for them.

The anonymity of all the participants who were interviewed via mobile phone may have encouraged them to speak more freely and frankly (Creswell, 2013). In addition, the mobile phone interviews gave the research the ability to interview participants who would otherwise not have been able to attend the face-to-face interviews. During the interviews, both notes and audio recordings were taken (using the mobile phone's recorder) to improve the accuracy of the data and to obtain large amounts of data (Wellington, 2015).

After discussing the methodology of our research, the data analysis and results are presented in the following section.

5.2. Data analysis and results

In the following section, we will analyze and interpret the results of our study, in order to better explain them. The results that emerge from the thematic analysis of the respondents' answers, based on the counting of occurrence frequencies associated with our variables, are presented in the following paragraphs.

5.2.1. The study sample

We conducted interviews with 15 customers of different mobile operators in Algeria (Djezzy, Mobilis, Ooredoo). The choice of this sample was random. We interviewed 8 men and 7 women who live in different cities in Algeria. Their ages ranged from 19 to 51 years, which means that almost all age groups participated in this study. However, most of them were within the age range 23-34, which corresponds to the characteristics of the young Algerian population who grew up in the age of ICT, internet connectivity and social media (Boukhelkhal, 2022; Agrawal, 2022), and they are more likely to interact with brands and share their consumption-related experiences across digital platforms (Khan, 2022). Table 4 shows the profile of the sample interviewed.

Table 4: Sample profile

N°	Gender	Age	Profession	Study Level	Living city	Mobile Operator
1	Male	25	unemployed	University	Algiers	Mobilis / Djezzy / Ooredoo
2	Female	27	Student	Postgraduate	Tlemcen	Mobilis / Djezzy
3	Female	25	unemployed	University	Ain Temouchent	Mobilis / Ooredoo
4	Female	24	Student	Postgraduate	Oran	Djezzy
5	Male	23	Self-employment	University	Blida	Oredoo
6	Male	34	Self-employment	University	Tlemcen	Djezzy
7	Male	41	Employee	University	Setif	Ooredoo
8	Female	19	Student	University	Batna	Mobilis
9	Female	36	Employee	Postgraduate	Ain temouchent	Ooredoo
10	Male	45	Employee	Postgraduate	Laghouat	Mobilis
11	Male	29	Employee	University	Sidi Belabbes	Mobilis
12	Female	42	Employee	Postgraduate	Ain defla	Mobilis
13	Male	36	Employee	Postgraduate	Tlemcen	Ooredoo

14	Male	51	Employee	University	Blida	Mobilis
15	Female	40	Employee	University	Batna	Mobilis

Source: Student's own work

5.2.2. Analysis and Coding

The method of analyzing the collected data is content analysis. This method is widely used in the marketing field. This qualitative study prioritized thematic analysis, which appears to be the most appropriate for highlighting the richness of the discourse collected. The theme is then the unit of cutting, coding and analysis.

Thematic analysis (Boyatzis, 1998) allows the identification of themes that emerged from the interview data. Following Epp and Price (2010), the analysis began with a holistic review of all records, followed by open, axial, and selective coding (Corbin and Strauss, 2008; Homburg et al., 2017). Open coding, which analyzes words and sentences in the text line by line, uncovered zero-order concepts in the interviews (Miles and Huberman, 1994, Homburg et al., 2017). During axial coding, zero-order categories were contextualized with the supplementary literature, connections were found between them, and the categories were organized into first-order themes. Finally, selective coding allowed further integration of first-order categories into second-order categories and the development of themes (Corbin and Strauss, 2008).

In this research, software (such as ALCESTE®3, NVivo®, etc.) does not provide an advantage over what can be done manually; it can be advised for purely qualitative research in regard to working on the roots of words or managing the relationships that exist between variables from qualitative interviews.

Table 5: Thematic analysis coding

Zero-order categories	First-order categories	Second-order categories	Theme	n
1. Social media 2. Website 3. Mobile application	• Digital channels		E-CRM	13/15
4. Using internet 5. Customer IT culture	• Advanced Technology	• Online relationship		
6. Online customer support 7. Online community 8. Conversation	• Online interactivity			
9. Promotion 10. Publicity	• Advertising	• Advertising		
11. Customer space 12. Customer contact	• Customization	• Customization		
13. Disappointment 14. Pleasure 15. Empathy 16. Emphasis	• Feelings	• Emotions		
17. Customer needs optimization 18. Limited offers	• Expectation		Customer experience	15/15
19. Touch point 20. Sales 21. Hospitality	• Customer Handling	• Personalization		
22. Good communication	• Customer care			

23. Customer treatment 24. Time and effort				
25. Service personalization 26. Customer opinion 27. proposed Solutions 28. New services	• Customer propositions • Customer participation	Customer collaboration	Co-creation	9/15
29. Problem solving 30. Friendly employees 31. Answering customers in a timely manner 32. Availability 33. Communication with customer 34. Internet Streaming 35. Offers benefits 36. Phone Network Coverage 37. Services cost	• Customer support • Competent personnel • Services rating • Services Cost	• Responsiveness • Customer Value	Service quality	15/15

38. Security 39. Credibility 40. Integrity	• Reliability	• Reliability		
41. Good monthly fee 42. Suitable price with the income 43. Acceptable price 44. Expensive monthly fee 45. Recharging depends on the budget	• Reasonable price • Expensive price	Price fairness	Price fairness	7/15
46. Expectation level 47. Meeting customer expectation 48. Appreciation 49. Happy customer 50. Satisfied customer	• Customer assessment • Fulfillment	Customer satisfaction	Customer satisfaction	15/15
51. Advise this operator 52. Sharing experience with others.	• Recommendation	WOM	WOM	14/15

53. Comment on social media 54. Customer Reviews 55. Online opinion	• Feedback			
56. Continuance using services 57. The best choice 58. Keeping the same number 59. Using this mobile operator since a long time	• Repurchase • Devotion	Customer loyalty	Customer loyalty	15/15

Source: Student's own work

5.3. Qualitative Results

The content analysis that emerges from the different discourses studied converges toward the findings expected in this research. The results confirm the existence of the proposed constructs, and other unexpected results marked this qualitative exploratory phase. The answers obtained allowed verbatim analysis in order to be able to thematize them textually and obtain results on the description and the quality of representation of the items in relation to the research model. By reading the different answers and through our analysis, several observations can be made.

In the following, we analyze the verbatim responses corresponding to each variable of our study.

- **E-CRM:**

The results indicate that 13/15 of the respondents find that digital channels such as social media and websites are very important for communicating with companies, **"… I find communication through websites or social media very important …"**, for sharing an issue or solving a problem in a short time, which means that online support is valuable for them: **"... online space is more appropriate to solve any problem you have in a short time..."**. Using online platforms such as social media or the website makes them able to be informed of any new offers launched by the company of their mobile operator **"… digital channels facilities**

the vision of new offers and services …", this type of advertising via social media pushes the customer to take a look about all the available offers and services **"…sometimes I look on the posts published on social media by the company of my operator mobile…"**. Furthermore, most of the respondents affirmed that paying the bill or charging their credit through an online space made them more comfortable and allowed to gain more time than moving to the touch point, **"… I use a credit card to pay my bill …" ,"… I prefer e-payment to charge my phone credit better than moving outside…"**. On the other hand, some respondents see that online transactions and communication are a new event in Algeria, and it should be developing more for customers and providing them with guidance to deal with digital platforms that belong to the company of their mobile operator: **"…it will be useful if the company provides instructions explain how to use their mobile application step by step …",** which confirms that the customization is much appreciated.

- **Customer experience:**

All responses indicate that customers remember their experiences, but the experience is not always positive, **"… many times when I check my balance, I find it stolen…" "… even I trust my operator phone mobile company but still has some negative points…"**, which indicates that customers express feelings that depend on their experience **"… I am so disappointed from the internet streaming of 4G …", "… I feel good when I am using my operator mobile phone services…",** and **"…well, I am happy with my choice …"**. Some respondents relied on their experience with customer care for hospitality at the agency of their mobile operator device and the personalization of the customer needs or the desire to solve a problem in a short time or to ask about a service to reach a good experience with the company, **"… to be honest, the reception at the agency is very welcome…", "… the personnel are not competent to communicate friendly with the customer…", "…the day that the company attends all my needs, then, I'll be having a good experience …"**.

- **Co-creation:**

A total of 9/15 respondents supported the idea of customer collaboration with the company and their participation in the co-creation of the service, proposed solutions for some problems, such as **"… with the low streaming of the 4G, introducing the 5G will be considered a solution …",** suggested some services that personalize each customer needs, **"…I will be the first person who uses the service of subscription for 6 months or a year if the company applies it… "…they should take in consideration each customer wants, and develop new services**

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depend on the need of each customer who wants more internet or only wants free calls or only for using SMS…", and some respondents even proposed new services inspired by foreign countries that may be successful in the Algerian telecommunications sector, **"… I think if they offer net boxes such as France does, the access to the internet will be more practical and useful at anytime and anywhere…"**.

- **Service quality:**

The answers obtained indicated that all the respondents agreed that service quality is the most important factor leading to their satisfaction. The majority of respondents are satisfied with the quality of services; in fact, 10/15 of the respondents stated, **"… The only thing that makes me choose this operator mobile is the service quality of their offers such as the internet streaming and the network coverage…"**, **"… Generally, yes the quality fits me perfectly…"**, **"… I appreciate the service quality of the customer support and how the employees treat the customer kindly …"**. The rest of the responses showed dissatisfaction with the quality of service offered by their operator mobile, **"… The quality of this operator mobile does not meet my expectations …"**, **"… I think the quality of some services is very bad, for example, the personnel here is not competent to solve a problem in a short time…"**.

- **Price fairness:**

Almost half of the interviewees declared that price is an important factor for them to choose one of the proposed offers, but they are not always satisfied with the price imposed. Only 2/15 of the answers state, **"…the price is in line with my budget …"**, **"… The price is reasonable for me …"**, while the rest of the responses indicated that the price is unfair compared with the service quality obtained, **"… The price is very expensive …"**, **"… Every time they limit the offers and increase the price …"**, **"… They do not respect the customer's purchasing power …"**, this confirms that the price fairness is very appreciated.

- **Customer satisfaction:**

All the interviewees agreed that customer satisfaction is an important factor that leads to customer loyalty: **"…if I feel satisfied, of course I will be a loyal customer …"**, and **"… it is all about the satisfaction with the service quality that makes me repeat my purchase …"**. Even so, 5/15 are not satisfied with their mobile operators: **"… I am so disappointed, and this affects my satisfaction…"**, **"… I am not satisfied, and I rate it 3 out of 10 …"**, while the

rest of them express their satisfaction with the mobile phone operator: they have chosen **"… I meet my expectation and I am totally satisfied …"**, **"… I like to use this mobile operator services …"**.

- **Word of Mouth (WOM):**

A total of 14/15 of the interviewees confirmed that they had heard before about different telecommunications companies, **"… you always find people telling you about the internet quality of that mobile operator …"**, **"… I chose this mobile operator based on people's recommendation…"**, or even shared their experience using the services of their mobile phone operator, **"… yes, I have commented on social media and shared my opinion about the service quality …"**. Most of the interviewees have recommended their mobile operator to others: **"… I recommend this operator mobile to my friend …"**, **"…I advise my father to use the same mobile operator that I use …",** and it seems that there is only one person who is not satisfied with their operator's mobile phone, which pushes her to provide negative feedback: **"… I advise not buying it precisely because of the poor quality of the service…".**

- **Customer loyalty:**

All the respondents mentioned that the only thing that makes them loyal is satisfaction if they meet their expectations: **"… I am satisfied with the service quality, and of course, I am loyal to this operator mobile…"**, and **"… I will not change this operator mobile…"**. Most of the answers (11/15) stated that they are not ready to change their operator mobile for many reasons, and they are loyal: **"… honestly, I cannot change my phone number easily, so yes, I am loyal …", and "…I have used the services of this operator mobile since 2012, and I will not change it …"**. Some of them even repeat their purchase from the same operator mobile, **"… I buy another SIM card from the same operator mobile phone for my father…".** The rest of the respondents (4/15) expressed that they are ready to change their actual mobile operator with another competitor because of their dissatisfaction, **"… I just did not find the time to buy another SIM card from another agency and change this operator mobile …"**, **"…I am thinking to change it, the price is expensive and I am not satisfied with service quality, I could not be loyal …"**. This indicates that even price and service quality may be related to customer loyalty.

5.4. Discussion of the Qualitative Results

The results of the qualitative study indicated that all the variables of the framework are related and should be retained. All variables were retained since they were valuable for the interviewees; however, the results also allowed us to introduce another variable, "price fairness", which is also considered an important construct for developing the quantitative phase of our work and validating the final research model (Figure 20).

Figure 20: Final research model
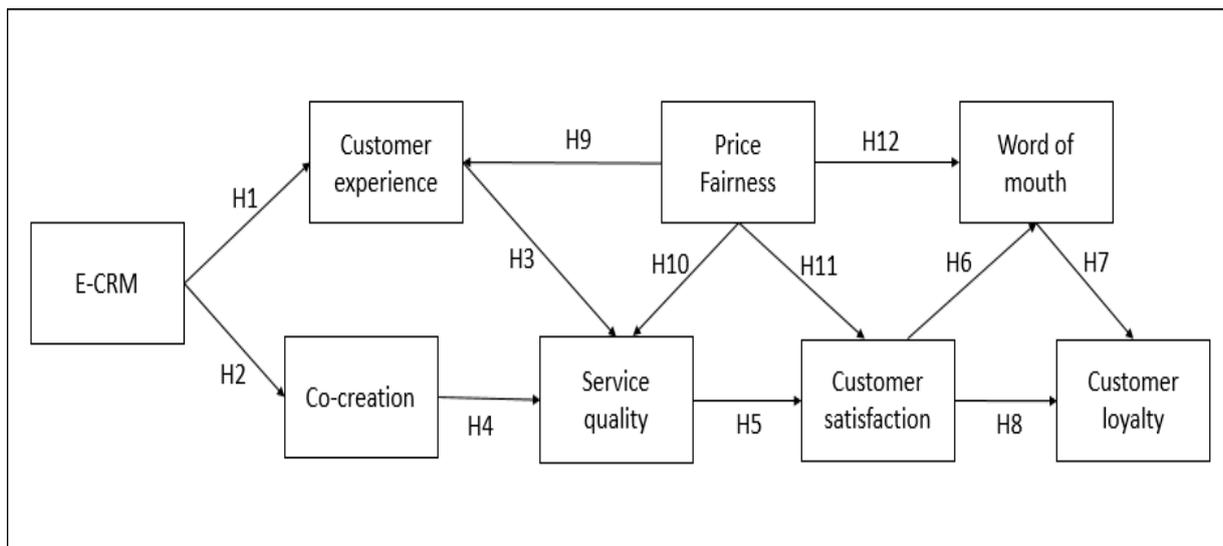
According to the respondents' answers, their satisfaction and loyalty depend on several factors; however, the main factors are customer experience and service quality, followed by price fairness and customer co-creation. When customer satisfaction is achieved automatically, it will lead to customer loyalty and positive word of mouth. The results allow us to propose other hypotheses related to the introduced variable (price fairness):

- **Price fairness**

Price is widely recognized as an important marketing factor influencing customer behavior. While brands often do their best to exploit their commercial profits based on the price of a product or service, customers tend to look for the best priced products or services that give them the maximum value (Hanaysha, 2016). As defined by Xia et al. (2004), price fairness refers to customers' overall assessment of whether the price of the product or service offered by the seller is indeed fair, acceptable or reasonable. Specifically, customers may rely on different reference sources to make better judgments about the reasonableness of prices for comparison purposes,

such as selling costs, previous prices, and competitor prices (Bolton et al., 2003). Price fairness research presents several types of emotions resulting from fair or unfair price perceptions: happiness and satisfaction or even disappointment and sadness. With higher perceived fairness, customers experience satisfaction, and vice versa (Xia et al., 2004).

Voss et al. (1998) argued that satisfaction is a function of price and suggested that price fairness may be an important determinant of satisfaction. Price also informs customers whether they receive positive or negative value from a service based on their expectations, which in turn influences their perception of service quality and satisfaction level (Brucal et al., 2022). When customers think about perceived quality, they use the perceived monetary price. Since that price is not an objective phenomenon, the same customer can make two psychological price measures—service quality and corporate image (Zeithaml, 1988). According to Anderson et al. (1994), the price of a product or service affects the customer satisfaction level because customers tend to consider the price when evaluating the value of the purchased product or service. In addition, it is important for customers to compare the price with the quality of the service provided, which affects their satisfaction and loyalty (Brečić et al., 2017). Rothenberger (2015) found that customer perceptions of unfair pricing can lead to negative outcomes such as higher levels of dissatisfaction, lower repurchase behavior, negative word of mouth, and increased customer complaints. Greater support was reported by certain researchers (Herrmann et al., 2007; Wijaya, 2016; Jin et al., 2019), who found that price fairness has a significant positive effect on customer satisfaction and word of mouth. Therefore, based on the above discussion, the following hypothesis is presented:

H9: Price fairness has a positive effect on customer experience.

H10: Price fairness has a positive effect on service quality.

H11: Price fairness has a positive effect on customer satisfaction.

H12: Price fairness has a positive effect on customer word of mouth.

Through this study, we were able to explore the context of telecommunications sector from customer perspectives and have a first impression about e-CRM use, as well as the factors that may affect them as customers to attend to their satisfaction and loyalty, in order to better study it quantitatively.

6. Quantitative approach

The quantitative approach encompasses a variety of methods that involve the systematic study of social phenomena using statistical or numerical data. Quantitative research therefore involves measurement and assumes that the phenomenon being studied can be measured. It is primarily deductive: measurements are made, analysis is performed, and conclusions are drawn (Watson, 2015). The use of quantitative methods for data collection and analysis reinforces the qualitative findings and assessments, enabling the validation of the conceptual framework.

6.1. Research design

In quantitative methodology, researchers are able to use a variety of methods to collect data depending on the research questions and objectives. They can choose among experiments, longitudinal studies, cross-sectional studies, surveys, or case studies (Hussey and Hussey, 1997). A self-administered questionnaire was used for the data collection element of the research design. A survey questionnaire can collect quantitative data from respondents to support hypotheses testing (Frankfort-Nachmias and Leon-Guerrero, 2009). A survey questionnaire is also appropriate when the purpose of data collection is to obtain information about the attitudes or perspectives of participants (Oppenheim, 2005). Another advantage of the survey design is that it allows data to be collected from a large number of respondents in a short period of time and at a low cost compared to other data collection methods (Wright and Marsden, 2010). This study used a survey to collect data from the perspectives of customers about their mobile operator concerning the use of e-CRM and its impact on their satisfaction and loyalty.

6.1.1. The Survey Questionnaire

The questionnaire development followed Punch's (2003) recommendations for the literature regarding relating the questions to the literature review and the theoretical model. The literature review established that the variables relevant to our study for examining the impact of e-CRM on customer loyalty are tabulated in Table 6.

Table 6: Measurement scales

Construct	Number of items	Reference
E-CRM	7	Kumar and Mokha (2022)
Customer experience	4	Lacej and Kalaj (2015)
Co-creation	4	Chen and Chen (2017)

Service quality	6	Akroush et al. (2011)
Price fairness	4	Srikanjanarak et al. (2009)
Customer satisfaction	4	Akroush et al. (2011)
Word of mouth	4	San-Martín et al. (2015)
Customer loyalty	4	Akroush et al. (2011)

Source: Student's own work based on previous studies

The questions in the questionnaire consisted of three parts:

- The first part, as shown in appendix 2, contains a participation letter that introduces the survey to inform respondents about the purpose of the study and how the collected data will be used.
- The second part of the survey addresses customers' demographic characteristics, including gender, age, education level and city of residence, as well as the mobile operator they use.
- The third part of the questionnaire consists of 37 questions related to the study variables (dependent and independent variables of the study). This section follows a research model to better understand the impact of e-CRM on customer loyalty. For the scale questions in this section, a 5-point Likert scale was used because increasing the scale does not improve the reliability of the ratings and may cause confusion among respondents (Oppenheim, 1986). Researchers also point out that the five-point scale is as good as any other scale (Malhotra, 1999; Parasuraman, 1991; Sekaran, 2000). Therefore, this study used a 5-point Likert scale.

The questionnaire was developed in English (source language) and then translated into Arabic (target language) by the researcher. Three lecturers with doctoral degrees in management information systems revised and reviewed the questionnaire. The aim was to ensure that the questions were open and free of ambiguity and error and that the questions elicited the desired responses before the general survey was launched (Burns and Bush, 2002). The questionnaire versions and discovered differences were discussed in committee meetings between the researcher and academics. The final revised questionnaire was retested. The researcher was able to see the questionnaire clearly after retesting the Arabic version using random-probe questioning. The final Arabic version was used for data collection. In this pilot study, the researcher found that respondents preferred to complete the questionnaire in Arabic; since it is their mother tongue, it is easier for them to understand and answer the questionnaire.

6.2. Statistical Procedures and Data Analysis

The final step is to select an appropriate statistical analysis method. For this purpose, research elements such as research problems, objectives, data characteristics and basic properties of statistical methods are considered (Malhotra, 1999). To achieve the purpose of this study, the following statistical methods were used.

6.2.1. Descriptive statistics

Descriptive statistics refer to the transformation of raw data into an information format to describe a set of factors in a context that facilitates understanding and interpretation (Kassim, 2001; Zikmund, 2000). Descriptive analysis is a univariate analysis consisting of frequency tables, charts, measures of central tendency, and measures of dispersion (Bryman and Bell, 2003). In this study, a descriptive method was used to describe and summarize the data using the Statistical Package for the Social Sciences (SPSS) to gain a general understanding of the various characteristics of the sample structure and distribution.

6.2.2. Structural equation modeling (SEM)

Structural equations modeling is a research methodology used to estimate, analyze and test models that determine the relationships between the variables that the researcher relies on in his study (Bollen, 1989), and several researchers, such as Baron and Kenny (1988) and Joreskog and Sorbom (1993), mentioned that SEM should be the preferred method for academics and even acknowledged that SEM would be greatly helpful for next-generation researchers.

Structural equations modeling is a construct consisting of different types of variables that describes and calculates relationships between variables. A distinction is made between latent variables that are not measured and measured variables that can estimate the latent variable. SEM consists of two parts: a structural model and at least two measurement models (Figure 21). A measurement model consists of a set of measurement variables, which together characterize a latent variable. The structural model represents relationships between latent variables (ξ, η), which are characterized by arrows connecting each other (path coefficients, γ).

There are two types of latent variables: latent cause variables and latent effect variables. In SEM, a set of causal variables influences one or more effect variables. The latter are within the scope of this study. In addition, causal variables must be divided into endogenous (dependent) and exogenous (independent) causal variables. This means that endogenous causal variables are influenced by other latent variables, while exogenous variables are not influenced by other

latent variables. Therefore, the coefficient of determination (R^2) is calculated for endogenous variables and not for exogenous variables.

Figure 21: Scheme of a simplified structural equation model
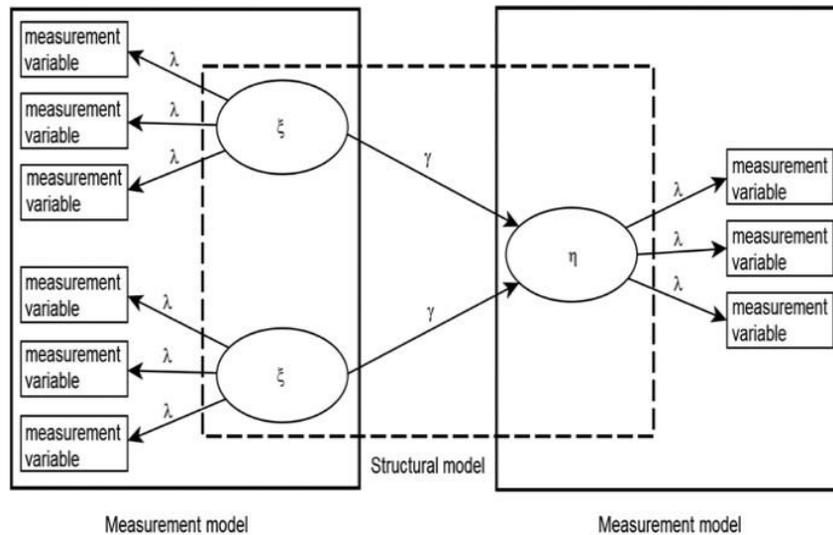
Note: Circles represent the latent variables (ξ, η), and rectangles represent the measurement variables. Arrows between circles represent relationships between latent variables (path coefficients, γ). Arrows between circles and rectangles represent indicator reliabilities (of the respective measurement variables, λ).

Two SEM methods are available for researchers: covariance-based SEM (CB-SEM) (Jöreskog, 1978) and variance-based partial least squares (PLS-SEM) (Lohmöller, 1989). Understanding the differences between these two methods is necessary when deciding which of the two approaches should be used in research. CB-SEM is primarily used for the confirmation of established theory (i.e., explanation). In contrast, PLS is a prediction-oriented approach to SEM that is primarily used for exploratory research but is also appropriate for confirmatory research (Sarstedt et al., 2014). Specifically, PLS-SEM overcomes the seeming dichotomy between confirmatory and predictive research since researchers using this method expect their model to have high predictive accuracy while also being grounded in well-developed causal explanations (Sarstedt et al., 2018). Gregor (2006) refers to this interplay as explanation and prediction theory, noting that this approach "implies both understanding of underlying reasons and prediction, as well as the description of theoretical constructs and the relationships among them". This perspective aligns well with most types of business research, which typically aims at testing a theory (i.e., explanation) while offering recommendations for management application (i.e., prediction) (Hair et al., 2016).

The statistical objectives of the two SEM methods differ substantially. The statistical objective of CB-SEM is to estimate model parameters that minimize the differences between the observed sample covariance matrix (calculated before the analysis) and the covariance matrix estimated after the revised theoretical model is confirmed (Hair et al., 2012 b). In contrast, the statistical objective of PLS-SEM is to maximize the variance explained in the dependent variable(s) (Hair et al., 2012a). Therefore, the data were analyzed using structural equation modeling (SEM) with the PLS component-based method. Partial least squares were chosen (with SmartPLS4 software), as it is more appropriate when the goal is to explain variance (Gefen et al., 2011) and when the data set is relatively small (Hair et al., 2019). To assess the measurement model, confirmatory factor analysis, which relies on several statistical tests, was applied to test the hypothesis that a relationship exists between the observed variables and their underlying latent constructs (Fox, 2010). We used the following tests:

6.2.2.1. Normal Distribution Test

When conducting structural equation modeling (SEM) or confirmatory factor analysis (CFA), it is often recommended to test for multivariate normality. The normality assessment was performed by evaluating skewness and kurtosis. According to Hair et al. (2010), to follow a normal distribution, the skewness must be limited to between -2 and 2, and the kurtosis must be limited to between -7 and 7.

6.2.2.2. Reliability and validity tests

Reliability refers to the consistency of scale tools. The measurement indicators include individual item reliability and internal consistency (Hair et al., 2010). The reliability of individual items is tested by factor loadings, and the internal consistency is tested by latent variable composition reliability (CR) and Cronbach's alpha. The recommended value should be greater than 0.7.

Validity refers to the precision of a scale instrument, and the measurement indicators include convergent and discriminant validity. Convergent validity is primarily designed to measure correlations between items of the same dimension and to determine the average variance extracted (AVE). The recommended value should be greater than 0.5 (Bagozz and Yi, 1988). Discriminant validity is a measure of the correlation between items with different facets, using the square root value of the AVE for testing. If the square root of the diagonal AVE is greater than the horizontal or vertical column correlation coefficient, discriminant validity is indicated

(Fornell and Larcker, 1981). New criteria for discriminant validity were proposed by Henseler et al. (2015) is the heterotrait-monotrait ratio of correlations (HTMT), which is the average of heterotrait-heteromethod correlations (i.e., indicators' correlations between constructs measuring different phenomena), relative to the average of the monotrait-heteromethod correlations (i.e., the indicators' correlations within the same construct). HTMT values significantly less than 0.90 provide sufficient evidence for the discriminant validity of a pair of constructs (Henseler et al., 2015).

6.2.2.3. Collinearity Test

When estimating structural equation models, it is important to ensure that collinearity problems are eliminated. A variance inflation factor (VIF) greater than 5 indicates that there may be collinearity issues between measurements (Hair et al., 2011).

6.2.2.4. Model verification

The model verification was analyzed and explained by R-squared (R^2) and path analysis. The R^2 value is used to assess the explanatory power of the model. The value of R^2 is between 0 and 1. The higher the value is, the greater the explanatory power. An R^2 value close to 0.50 indicates that the model has moderate explanatory power. The closer the R^2 value is to 0.75, the greater the explanatory power of the model.

To determine significance, a structural model is used that determines the strength and direction of path coefficient values based on R^2, beta coefficients, and their corresponding t-statistics (Hair et al., 2016). T-statistic analysis was used to determine the significance of relationships.

6.2.3. Sample characteristics

To test the hypotheses, an electronic questionnaire was administered through Google Forms and published on different social media platforms. This allowed us to receive responses to the questionnaire from the customers of all the mobile operators in Algeria. A total of 252 questionnaires were collected, and all of them were usable for data analysis.

Table 7 shows that the respondents consisted of 135 females (53.6%) and 117 males (46.4%), which indicates that the gender composition is almost equal. The vast majority of respondents were within the age ranges of 25–34 (48.8%) and 35–44 (28%) years, which corresponds to the characteristics of the young Algerian population (70% are under 30 years old) (Boukhelkhal, 2022). In addition, millennials (born from 1982 to the mid-1990s) and Generation Z (born from

the mid-1990s onward) who grew up in the age of ICT, internet connectivity and social media (Agrawal, 2022) are more likely to interact with brands through e-CRM tools and share their consumption-related experiences across digital platforms (Khan, 2022). Education level, as shown in Table 7, varied from high school to postgraduate, with 52.4% reporting having a university-level education, followed by 42%. One percent had a postgraduate education, while 5.6% had a high school education.

The distribution of Algerian telecommunications customers according to geographical location of residence is also quite diverse in several specific areas. With respondent number 252, the sample covers a wide geographical area that offers an adequate representation in describing the customers. Tlemcen appears as the most prominent region, and in total there represent 27.4%, followed by Algiers (9.1%) and Ain Temouchent (7.2%). Slightly lower but substantial percentages are demonstrated in Oran with 6. 0%, Setif with 3. 9% and Sidi Bel Abbes with 3. 9%. Minor regions such as Chlef, Tiaret, and Relizane each contribute between 2.8% and 3.6% to the overall distribution. The remaining 33.3% of customers are classify under "Others," indicating a dispersed customer presence across additional regions such as Annaba, Batna, M'Sila, Tamanrasset, Ghardaïa, …etc with percentages ranging from 0.4% to 2%.

Concerning the telecommunication company (mobile operator), the results (Table 7) show that the respondents consisted of customers of different mobile operators in Algeria. There were 119 customers from the National Mobile Operator in Algeria, Mobilis (47.2%), 91 from Djezzy (36.1%), and 42 from Ooredoo (16.7%). This is very much in line with the characteristics of the Algerian telecommunications system. Public mobile operators control the largest share of telecommunication activity in Algeria (PECRA, 2023).

Table 7: Demographic analysis

Variable	Responses choice	Frequency	Percentage (%)
Gender	Female	135	46.4
	Male	117	53.6
Age	Less than 25 years old	53	21
	25 – 34 years old	123	48.8
	35 – 44 years old	68	27
	45 – 54 years old	7	2.8
	More than 55 years old	1	0.4
Education Level	High school	14	5.6

	University	132	52.4
	Postgraduate	106	42.1
Geography Residence	Tlemcen	69	27.4
	Algiers	23	9.1
	Ain Temouchent	18	7.2
	Oran	15	6
	Setif	10	3.9
	Sidi Bel Abbes	10	3.9
	Chlef	9	3.6
	Tiaret	7	2. 8
	Relizane	7	2. 8
	Others	84	33.3
Mobile Operator	Djezzy	91	36.1
	Mobilis	119	47.2
	Ooredoo	42	16.7

Source: Student's own work based on SPSS output

6.3. Data analysis and findings

6.3.1. Normality Test

Data normality is ensured when the absolute value of skewness is less than 2 and kurtosis is less than 7 (Hair et al., 2021). As shown in Table 8, all the data fit the acceptable range of the skewness and kurtosis values, indicating that the data were normally distributed.

6.3.2. Convergent Validity and Reliability

To measure the convergent validity and reliability of the constructs, standardized loading, Cronbach's alpha, composite reliability (CR) and the average variance extracted (AVE) were calculated for each construct. Regarding standardized loading, the recommended rule of thumb is above 0.70; hence, all item loadings in the model should be 0.70 or higher (Hair et al., 2021). Furthermore, the Cronbach's alpha and CR values should exceed 0.70 (Hair et al., 2021), and the AVE should exceed 0.50 (Kline, 2011). As shown in Table 8, all the factor loading, CR, Cronbach's alpha and AVE values exceeded the recommended thresholds. Thus, the reliability and convergent validity of the model were established.

Table 8: Convergent Validity and Reliability of the Measurement Model

Variable	Items	Standardized loading	(α) Cronbach	CR	AVE	Kurtosis	Skewness
E-CRM (ECRM)	ECRM 1	0,731	0,883	0,908	0,585	-0,866	-0,350
	ECRM 2	0,802				-0,679	0,094
	ECRM 3	0,782				-0,878	0,250
	ECRM 4	0,706				-0,559	-0,308
	ECRM 5	0,778				-0,601	-0,275
	ECRM 6	0,786				-0,724	-0,056
	ECRM 7	0,767				-0,627	-0,227
Customer Experience (CE)	CE 1	0,878	0,913	0,939	0,793	-0,725	-0,131
	CE 2	0,929				-0,782	-0,248
	CE 3	0,869				-0,455	-0,668
	CE 4	0,885				-0,703	-0,330
Co-Creation (CO)	CO 1	0,833	0,853	0,898	0,688	-0,605	0,017
	CO 2	0,793				-0,546	0,308
	CO 3	0,824				-0,604	0,228
	CO 4	0,868				-0,665	0,243
Price Fairness (PF)	PF 1	0,874	0,868	0,910	0,716	-0,940	-0,371
	PF 2	0,784				1,598	-1,279
	PF 3	0,893				-0,115	-0,751
	PF 3	0,831				-0,142	-0,681
Service Quality (SQ)	SQ 1	0,786	0,880	0,909	0,626	0,130	-0,421
	SQ 2	0,808				0,050	-0,446
	SQ 3	0,834				-0,131	-0,480
	SQ 4	0,736				0,283	-0,571
	SQ 5	0,736				0,030	-0,401
	SQ 6	0,840				-0,513	-0,257
Customer satisfaction (CS)	CS 1	0,877	0,874	0,914	0,726	-0,691	-0,435
	CS 2	0,911				-0,635	-0,573
	CS 3	0,821				-0,651	-0,528
	CS 4	0,795				-0,982	-0,270

Word of Mouth (WOM)	WOM 1	0,894	0,926	0,948	0,819	0,085	-0,642
	WOM 2	0,930				0,180	-0,739
	WOM 3	0,935				0,192	-0,680
	WOM 4	0,860				0,008	-0,574
Customer loyalty (CL)	CL 1	0,835	0,858	0,903	0,701	0,682	-0,873
	CL 2	0,874				-0,189	-0,639
	CL 3	0,880				0,284	-0,693
	CL 4	0,754				-0,958	-0,292

Source: Student's own work based on SmartPLS4 outputs

6.3.3. Discriminant validity

To evaluate discriminant validity, the Fornell–Larcker criterion (square roots of the AVEs) was used. The recommended standard of the Fornell and Larcker techniques is that they should not obtain the same variance as any other variable, which is more than the AVE (Fornell and Larcker, 1981). The values in Table 9 ensure that the observed variables in the model in each construct show the given latent variable, confirming the discriminant validity of the model. We added a final control detected by heterotrait–monotrait analysis. Table 10 shows that all values are less than 0.9, indicating good discriminant validity.

Table 9: Discriminant Validity (Fornell–Larcker criterion)

	ECRM	CE	CO	PF	SQ	CS	WOM	CL
ECRM	0,765							
CE	0,623	0,891						
CO	0,301	0,268	0,830					
PF	0,362	0,400	0,005	0,846				
SQ	0,551	0,634	0,241	0,525	0,791			
CS	0,464	0,559	0,140	0,635	0,770	0,852		
WOM	0,391	0,582	0,192	0,558	0,661	0,690	0,905	
CL	0,430	0,531	0,179	0,468	0,666	0,745	0,744	0,837

Source: Student's own work based on SmartPLS4 outputs

Table 10: Heterotrait–monotrait ratio (HTMT)

	ECRM	CE	CO	PF	SQ	CS	WOM	CL
ECRM								
CE	0,668							
CO	0,325	0,288						
PF	0,410	0,441	0,109					
SQ	0,614	0,699	0,262	0,595				
CS	0,510	0,619	0,154	0,725	0,865			
WOM	0,416	0,632	0,201	0,615	0,726	0,762		
CL	0,471	0,590	0,199	0,519	0,744	0,842	0,817	

Source: Student's own work based on SmartPLS4 outputs

6.3.4. Common Method Bias (CMB)

For PLS-SEM, common method bias (CMB) is observed with a full collinearity assessment approach (Kock, 2015). As shown in Table 11, the VIFs of the structural equation modeling in this study are less than 5, which is between 1 and 1.906, indicating no collinearity among the study constructs, and the model is free of common method bias (Kock, 2015).

Table 11: Variance inflation factor (VIF) values

	ECRM	CE	CO	PF	SQ	CS	WOM
ECRM							
CE	1,151						
CO	1,000						
PF		1,151					
SQ		1,299	1,092	1,206			
CS				1,381	1,381		
WOM				1,675		1,675	
CL						1,906	1,906

Source: Student's own work based on SmartPLS4 outputs

6.3.5. The explanatory power of the model

Table 12 shows that the explanatory power of all dependent variables is between 42.3% and 66.6%, which explains the latent variables very well, and they have a good degree of explanatory power, except for the explanatory power value of co-creation, which represents 9.1%, which is considered a low value of explication.

Table 12: Coefficient of determination (R²)

Construct	R-square
CE	0,423
CO	0,091
SQ	0,502
CS	0,666
WOM	0,500
CL	0,656

Source: Student's own work based on SmartPLS4 outputs

Effect size is the effect of exogenous variables on endogenous variables using the explanatory effect value F-squared to detect. When $0.02 < F^2 \leq 0.15$, there is a small effect. When $0.15 < F^2 \leq 0.35$, there is a medium effect. Additionally, when $F^2 > 0.35$, there is a large effect (Huang, 2021). Table 13 shows that the explanatory effect value of F^2 indicates that exogenous variables are very capable of explaining endogenous variables, with a high degree of explanatory effect. This indicates that the model is accurate and that the constructs are important for the general adjustment of the model.

Table 13: Effect size

	ECRM	CE	CO	PF	SQ	CS	WOM	CL
ECRM		0,457	0,100					
CE					0,339			
CO					0,024			
PF		0,060			0,190	0,220	0,048	
SQ								
CS					0,787			
WOM						0,376		
CL						0,298	0,294	

Source: Student's own work based on SmartPLS4 outputs

6.3.6. Hypotheses Test

In the context of Partial Least Squares Structural Equation Modeling (PLS-SEM), the 'ten times rule' is one of the traditional and most often used techniques for determining the minimum sample size, which should be ten times the highest number of links with any of the latent variables (Hair et al., 2011; Peng and Lai, 2012). However, this approach is likely to provide imprecise estimates. An alternative proposed by Hair et al. (2014) is the 'minimum R-squared

method,' which provides a more nuanced estimation by incorporating additional elements: the arrows pointing more than one other latent variable, the chosen significance level and minimum R^2 of the model. Based on these factors this method indicates a sample size by utilizing Cohen's (1988; 1992) power tables. In our case, the maximum number of arrows is 6 and the minimum R^2 is equal to 0.091 while the closest value obtainable from Hair et al.'s table is 157. The advantage of using this method to estimate sample size for a particular study is that it takes into consideration more parameters than the '10-times rule,' which just involves a mere counting of the number of links in the model. This estimate indicates that our study sample size of 252 is adequate in providing enough power to test the hypotheses and uphold the reliability of research findings. Besides satisfying the refined estimation method, this sample size also increases the validity and credibility of the results obtained.

The final step for the model verification illustrates the path coefficient and the path diagram for the structural model. In the path analysis, the value of "T" and the significance level are used to determine whether the hypothesis is supported. As shown in Table 14 and Figure 22. The results confirm the positive effect of e-CRM on customer experience and co-creation value (β=0.551, p<0.001; β=0.301, p<0.001). Therefore, H1 and H2 are supported. In addition, customer experience had a positive effect on service quality at a significant level (β=0.468, p<0.001), and co-creation had a significant and positive effect on service quality (β=0.114, p=0.048). Hence, H3 and H4 are also supported. Furthermore, service quality has a positive and significant impact on customer satisfaction (β=0,603, p<0.001), which means that H5 is supported. On the other hand, customer satisfaction has a positive impact on word of mouth (β=0,562, p<0.001), which positively affects customer loyalty (β=0.439, p<0.001), which is also affected by customer satisfaction (β=0.442, p<0.001). Therefore, H6, H7 and H8 are also supported. Finally, H9, H10, H11, and H12 were confirmed; accordingly, customer experience (β=0.200, p<0.001), service quality (β=0.338, p=0.001), customer satisfaction (β=0.318, p<0.001), and word of mouth (β=0.201, p=0.014) were positively and significantly affected by price fairness.

Table 14: Hypotheses Test Results

Hypothesis		Beta	T Statistics	Result
H1	ECRM → CE	0,551***	10.604	Supported
H2	ECRM → CO	0,301***	5.198	Supported
H3	CE → SQ	0,468***	7.449	Supported
H4	CO → SQ	0,114*	1.976	Supported

H5	SQ → CS	0,603***	15.244	Supported
H6	CS → WOM	0,562***	8.319	Supported
H7	WOM → CL	0,439***	5.552	Supported
H8	CS → CL	0,442***	6.672	Supported
H9	PR → CE	0,200**	3.275	Supported
H10	PR → SQ	0,338***	5.776	Supported
H11	PR → CS	0,318***	6.477	Supported
H12	PR → WOM	0. 0,201*	2.461	Supported
R² = 65.6%				
*p < 0.05 **p < 0.01 ***p < 0.001				

Source: Student's own work based on SmartPLS4 outputs

Figure 22: Structural Model
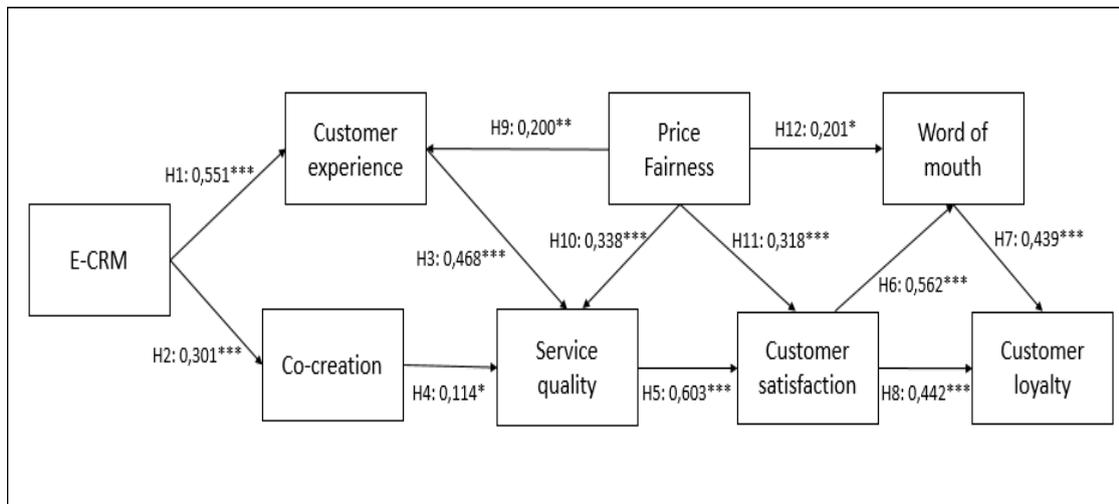
Source: Student's own work based on SmartPLS4 outputs

6.3.7. Indirect Effects

Several previous studies, which were mentioned in the previous chapter, proved that there is an indirect relationship between e-CRM and customer loyalty through a mediating variable. Both customer experience and customer satisfaction serve as mediators in the relationship between e-CRM and customer loyalty (Mulyono and Situmorang, 2018; Mang'unyi et al., 2018; Kariman et al., 2022; Johnny and Ali, 2024). Kumar and Mokha (2021) have also proven that there are mediating effects of customer experience and customer satisfaction, but the connection between e-CRM and customer experience has not been thoroughly explored in the extant literature. The findings of other studies have provided empirical support that other variables act as mediators, such as service quality (Abdulfattah, 2012; Mohamed et al., 2023; Karim et al., 2023), value co-creation (Kamboj et al., 2016; Toqeer et al., 2021), and word of mouth (Ejaz et al., 2013;

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Bataineh, 2015). All of these studies examined the mediating effect through only one variable, but no empirical study has examined the mediating effect through multiple mediators to examine the indirect relationship between e-CRM and customer loyalty. Thus, our study tries to examine the mediating effect through multiple mediators (all the variables mentioned above), which are as follows: customer experience, co-creation, service quality, word of mouth, and customer satisfaction.

When using PLS-SEM, bootstrapping has been suggested as a method for testing mediation effects (Preacher and Hayes, 2008; Hair et al., 2016). In this context, this bootstrapping process is typically available in software applications such as SmartPLS (Ringle et al., 2005). Thus, using Smart-PLS and following the principles and recommendations of several previous authors (Preacher and Hayes, 2008; Zhao et al., 2010; Henseler et al., 2015), the mediating effects were examined. As shown in Table 15, the estimate of the indirect effect between e-CRM and customer loyalty (CL) through the path of customer experience (CE), service quality (SQ), and customer satisfaction (CS) is significant and positive (β=0.069, p<0.001). The results also indicated that the same path with the addition of word of mouth also mediates the relationship between e-CRM and customer loyalty (β=0. 038, p=0.004). On the other hand, the mediating relationship between e-CRM and customer loyalty (CL) through the path of co-creation is not significant, which means that there is no indirect effect between e-CRM and CL through the path of co-creation with the other variables.

Table 15: Mediation Test

	Beta	T Statistics	Result
ECRM → CE → SQ → CS → CL	0,069***	3.950	Supported
ECRM → CE → SQ → CS → WOM → CL	0,038**	2.876	Supported
ECRM → CO → SQ → CS → CL	0,009	1.537	Rejected
ECRM → CO → SQ → CS → WOM → CL	0,005	1.409	Rejected
*p < 0.05 **p < 0.01 ***p < 0.001			

Source: Student's own work based on SmartPLS4 outputs

6.4. Discussion of Quantitative Results

One of the main challenges of e-CRM is to maintain long-term relationships with customers and achieve customer loyalty (Sterne, 2000). Hence, to investigate the impact of e-CRM on customer loyalty in the context of the telecommunications industry in Algeria, we proposed a theoretical model based on previous studies and qualitative approach. As discussed in the previous chapter, most studies have adopted most of the variables that we have chosen to adopt:

e-CRM, customer experience, co-creation value, service quality, customer satisfaction, word of mouth, and customer loyalty. In addition, we introduced "price fairness" as an important variable inferred from the qualitative interviews.

First, the results of this study strongly support our model; the R square of 65.6% exceeded the recommended value of 50% (Ozili, 2023). This means that the explanatory power of the model is significant, and the model has a high predictive value. Second, the findings provide empirical support for the contention that e-CRM has a direct and positive impact on both customer experience and value co-creation in the Algerian telecommunications sector. Thus, as long as customers perceive that the use of e-CRM services is free of effort and facilitates their activity, their experience is positively affected, and their participation in value co-creation with their mobile operator becomes more effective. These results are consistent with the findings of previous studies conducted in other sectors and countries, such as Mulyono and Situmorang (2018), Mokha and Kumar (2022), and Itani et al. (2022). Furthermore, both customer experience and customer co-creation of value have positive and direct impacts on service quality, which in turn affects customer satisfaction. Thus, memorable and enjoyable experiences with service quality lead to higher customer satisfaction, and as customers are active participants in the value co-creation process, their greater satisfaction with service quality is a consequence of this participation. These results are consistent with the results of Urban (2010), Grissemann and Stokburger-Sauer (2012), Abdulfattah (2012), and Toqeer et al. (2021). Third, the study results revealed that customer satisfaction directly affects both word of mouth and customer loyalty, which is in turn affected by word of mouth. These results support the results of previous studies, such as Bataineh (2015), Wijaya and Yulita (2020), and Malki et al. (2023). The positive relationships among customer satisfaction, word of mouth, and customer loyalty demonstrate that the higher the customer satisfaction is, the higher the level of word of mouth behavior becomes, and customer loyalty is easily achieved. Furthermore, price fairness has a direct and positive effect on each of the following variables: customer experience, service quality, customer satisfaction, and word of mouth. Price informs customers whether they receive positive or negative value from a service based on their expectations, which may influence their experience with the service quality and satisfaction level. If customers find the price fair and are satisfied with the price compared to the service quality received, they will be happy to share that price and recommend it to others. These results are consistent with those of Wulandari et al. (2021), Brucal et al. (2022), and Jin et al. (2019). Thus, all the hypotheses proposed in this study have been confirmed. Finally, concerning the impact of e-CRM on

customer loyalty, the results show that there is an indirect relationship between them through a mediating effect. The results indicate that e-CRM has a significant and indirect effect on customer loyalty through multiple mediators through the following path: customer experience, service quality, customer satisfaction, and word of mouth. However, on the other hand, the results indicate that the relationship between e-CRM and customer loyalty (CL) through multiple mediators with the path of co-creation of value with the other variables (service quality, customer satisfaction, and word of mouth) is not significant. These results confirm our proposition that e-CRM may affect customer loyalty through more than one mediator at the same time. In contrast, previous studies have shown that there is an indirect relationship between e-CRM and customer loyalty through only one mediator, such as customer experience (Mulyono and Situmorang, 2018), customer satisfaction (Johnny and Ali, 2024), or even service quality (Abdulfattah, 2012). Even though the research failed to detect any indirect effect of e-CRM on customer loyalty through the multiple mediating path of value co-creation with other variables, the multiple mediating path of customer experience with other variables was confirmed. This can be explained by the explanatory power (R squared) of value co-creation, which represents 9.1%, which is considered a low value of explication by e-CRM. This is confirmed by Chathoth et al. (2013), who highlighted that co-creation is not always advantageous due to customers' lack of knowledge and skills about the new service. In contrast, the explanatory power of customer experience, which may influence the other mediators, is 42.3%, which is considered a good value of explication by e-CRM.

Therefore, it is worth noting that our findings provide more evidence supporting the results in the e-CRM and customer loyalty literature, the developing country context (Malki et al., 2023) and the mobile telecommunication sector (Mary et al., 2023). Thus, telecommunications companies should develop strong and sustainable relationships with their customers by implementing e-CRM best practices to improve customer satisfaction and customer loyalty and consequently enhance their competitiveness and market share (Malki et al., 2023).

7. Summary

Chapter three provides the empirical study of the research, where the conceptual model was built based on previous studies. Twelve hypotheses were tested in order to examine the relationship between e-CRM and customer loyalty.

This chapter also covered the methodology adopted by this study, which was mixed methods (qualitative and quantitative), along with procedures to execute the research design's data

collection and data analysis and the results of the data analysis. In order to confirm the relevance of the variables of the conceptual model derived from previous studies, a qualitative approach with semi-interviews was used with the customers of the mobile operators in Algeria, and all their answers were analyzed using the thematic analysis to extract the most frequent and most important keywords. The results showed that all the variables proposed in the interviews, namely, e-CRM, customer experience, value co-creation, service quality, customer satisfaction, word of mouth, and customer loyalty, were maintained and were all highly significant. The interviews also revealed the presence of an unexpected variable, price fairness, which many customers find to be an important factor in determining whether the service is worth the price paid. The quantitative approach was then initiated, and the data were gathered through a survey method. The survey data were entered into the SPSS statistical package for descriptive statistics on the respondents' demographic information. Then, partial least squares structural equation modeling (PLS-SEM) was used to analyze the data and test the hypotheses. To assess the measurement model, we evaluated its convergence validity, reliability, and discriminant validity.

The results showed that convergent validity, reliability, and discriminant validity were established. After that, to test the hypotheses, we examine the structural model using the strength and level of significance of the path coefficient, the proportion of explained variance, and the F^2 value. The results provide support for all the hypotheses. Finally, the results indicated that e-CRM has an indirect effect on customer loyalty through a mediating effect of multiple mediators, and the explanatory power of the model is significant (65.6%), which confirms that the conceptual model has high predictive value.

CONCLUSION

1. Introduction:

The conclusion aims to evaluate the study's conclusions, including the main findings and their significance for the research questions and objectives. This chapter begins with a summary of the findings, followed by the theoretical and managerial contributions of this study to the best of our knowledge. Finally, the study's limitations and future research objectives are discussed.

2. Summary of Results

This study aimed to investigate the relationship between e-CRM and the customer loyalty in telecommunications sector in Algeria.

First, a conceptual model that addressed eight hypotheses and identified seven main variables was developed based on previous studies. Several studies have investigated the relationships among e-CRM, customer experience, value co-creation, service quality, customer satisfaction, customer loyalty, and word of mouth, but few of them have combined all these elements. For that reason, this study could be considered quite important, and its results will have academic and managerial value. Second, mixed methods were applied to collect, analyze, and mix both quantitative and qualitative data in this study. In the qualitative phase, semi-structured interviews held on mobile phone were conducted with 15 customers of different mobile operators in Algeria. In the following, the data collected were analyzed using thematic analysis. The results that emerge from the thematic analysis of the respondents' answers, based on the counting of occurrence frequencies associated with our variables, confirm the existence of the proposed constructs and another unexpected factor, "price fairness", which marked this qualitative exploratory phase, and four other hypotheses have been proposed. Next, we proceeded to the quantitative section. To test the hypotheses, partial least squares structural equation modeling was applied to analyze the data collected from the field survey questionnaires administered to 252 Algerian mobile telecommunications customers. The results of the hypotheses testing indicated that all the hypotheses were accepted and that the model has a high predictive value.

Finally, to achieve the main research objective and discover the relationship between e-CRM and customer loyalty, the bootstrapping method has been applied to test this relationship. The results indicate that e-CRM has a significant and indirect effect on customer loyalty through multiple mediators (customer experience, service quality, customer satisfaction, and word of mouth).

3. Study Contributions
3.1. Theoretical Contributions

This study makes significant theoretical contributions to the relationship marketing literature by refining theoretical frameworks and conceptual models that elucidate the mechanisms through which e-CRM strategies influence customer perceptions and behaviors and by offering a nuanced perspective on how e-CRM impacts customer loyalty. Although several studies conducted in different sectors have shown that there is an indirect relationship between e-CRM and customer loyalty through only one mediator, such as customer experience (Mulyono and Situmorang, 2018), customer satisfaction (Johnny and Ali, 2024), or even service quality (Abdulfattah, 2012), no empirical studies have proven the mediating effect through multiple mediators to examine the indirect relationship between e-CRM and customer loyalty. The findings of this study have important implications for the literature, as they provide further support for studies that examine the relationship between e-CRM and customer loyalty. By combining qualitative and quantitative methods, this study provided a more in-depth understanding of customer behavior in the context of e-CRM, as well as insights into how customers perceive and interact with digital platforms, their preferences for personalized services, and the factors that drive loyalty in the telecommunications sector.

Another contribution is that it contributes to academic research into the study variables (e-CRM, customer experience, value co-creation, service quality, price fairness, word of mouth, customer satisfaction, and loyalty) in the telecommunications sector, as well as helping to improve the Arabic and Algerian literature on these topics. This study combines these variables to determine their interrelationships. As a result, this study might be deemed a valuable academic addition.

3.2. Managerial Contributions

Practically, our findings have important implications for practitioners and organizations activated in developing economies, notably those in the telecommunications sector.

The findings of this study have important implications for Algerian telecommunications companies. Marketing managers must implement e-CRM techniques to provide personalized customer experiences across digital platforms. This approach can be applied by using customer data insights to personalize services, communications, and interactions based on individual preferences, behavior patterns, and requirements. This can enhance customer satisfaction, loyalty, and retention in the competitive telecommunications market.

It is critical to promote and encourage communication with current and potential customers in order to increase product purchase and repurchase rates and improve customer co-creation of value. Marketing managers should devise techniques that enable customers to share their experiences and ideas, allowing the organization to explain and understand demands. This study adds value by highlighting e-CRM strategies that provide customer co-creation opportunities. Customers can participate in the co-design of products, services, and experiences using interactive tools, feedback systems, and collaborative platforms. Companies should encourage co-creation projects that reflect customer choices, requirements, and expectations, promoting a sense of ownership and loyalty. Companies should also build strong and long-term relationships with their customers to improve customer satisfaction and loyalty and, as a result, increase their competitiveness and market share. Customers who are dissatisfied can quickly switch to another competitor; thus, they must be at least satisfied with the service before deciding to return. Subsequently, greater service quality and trust will impact customer decision to return and/or remain loyal. This goal can be achieved by applying e-CRM best practices. Furthermore, monitoring customer perceptions of price fairness using e-CRM feedback channels and feeling analysis is critical. To maintain trust and overall satisfaction, managers should analyze customer satisfaction with pricing, the perceived value of money, and comparisons with competitors' pricing tactics on a regular basis, as well as address any discrepancies or issues related to price fairness.

Companies that integrate these management implications into their e-CRM initiatives, particularly in the telecommunications sector, can develop service quality, promote price fairness and transparency, and enhance customer experience. This not only increases customer trust and loyalty but also helps sustainable revenue growth and competitive and market differentiation.

4. Limitations and Future Research

This study aimed to develop an understanding of how e-CRM affects customer loyalty in the context of Algerian telecommunications sector. Although this initiative was worthwhile it was not without limitations. However, the limitations of the study create opportunities for further research.

First, our results have limited generalizability because the data were acquired through a self-report survey, and the sample size is modest in comparison to the overall number of mobile telecommunications customers in the area. The limited sample size used in this study may have

negatively affected the generalizability of the results to the general population. Second, the sample for this study was drawn from customers in a business-to-customer context. The findings are limited to customer perspectives and may not be applicable to business-to-business relationships. As the growth of internet transactions in the business-to-business sector increases, investigations examining the relationship between e-CRM and customer loyalty in a business-to-business context may be valuable. Third, this study is limited to telecommunications customers in Algeria, which may introduce bias. The scope of the study is limited to Algerian customers. At this point, it is uncertain whether the same pattern would occur in other cultures' telecommunications markets or whether the results obtained from this sample apply to other populations due to cultural differences. Future research could include a cross-cultural study on the topic to determine whether these findings are country-specific or can be extended to other countries. Furthermore, this study is limited by the specificity of the sector studied, which may limit the generalizability of the findings to other sectors. Different sectors may have distinct customer behaviors, technological infrastructures, and competitive landscapes, which could affect the effectiveness of e-CRM strategies and their impact on customer outcomes differently. Future research could explore diverse sectors, such as banking and hotels, by conducting comparative analyses and employing broader sampling strategies to enhance the applicability of findings across various sectors.

These limitations do not diminish the value and importance of the findings in this study. The above points can direct future studies by identifying and supporting further improvements in this area.

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APPENDICES

APPENDIX 1: Interview guide

"The impact of e-CRM on Customer Loyalty"

Research presentation

In order to obtain a PhD degree in Economics, majoring in Economics and Business Management, at Belhadj Bouchaïb University, Ain Temouchent, we are conducting a scientific research on "The impact of e-CRM on customer loyalty." The aim of this research is to help organizations satisfy their customers, strengthen their relationships with them, and target the largest possible segment of loyal and potential customers.

Organizations aim to satisfy their customers, consolidate relationships with them, and target the largest possible segment of loyal and potential customers through strategies that make the customer the center of attention of the organization to meet his or her needs according to his or her expectations and desires. One of the strategies for this purpose is e-CRM. These are the technologies adopted by organizations that are based on the internet or electronic communication (website, social media, etc.) in order to better manage customer relationships, improve interactions with customers, and customize products and services that meet the individual needs of customers.

Therefore, we are honored to ask for your contribution by participating in this interview and answering some questions in order to know your opinions on the subject. This approach will be used for scientific purposes. We also request your permission to take an audio recording of the interview. Your participation is very important, as it will contribute to building scientific knowledge about the research topic and to the development of Algerian organizations and their competitiveness. Finally, we assure you of our commitment to ensure complete confidentiality and anonymity of the participants in these interviews. We thank you in advance for your valuable assistance in accomplishing this study.

General information about the interviewee

1. Gender   ☐ Male ☐ Female
2. Where do you live? ....
3. How old are you? ....
4. What is your profession? ....
5. What is your level of education? ....
6. What is your cell phone SIM card? ....

Questions about using e-CRM

7. How important is it for you, as a customer, to use the internet to manage and build a relationship with your mobile operator about the services they provide or to resolve issues with your SIM card or service?
8. Do you consider electronic channels (website, apps, social media, etc.) to be essential in communicating with your operator? Why?
9. Do you find this kind of electronic relationship useful for everyday life? What are its advantages and benefits?

Questions about Customer Experience

10. Since using this mobile operator until today, how would you describe your experience?
11. How do you feel about choosing this mobile operator?
12. What can you say about being treated as a customer at your mobile operator agency?
13. Based on your personal experience, what do you think about the relationship through online channels in creating a good customer experience?

Questions about Value Co-Creation

14. Do you think your mobile operator can offer more features or create new services to suit your needs?
15. What are your suggestions that you can share with your mobile operator to create valuable new services?

Questions about Service Quality

16. Which of your mobile operator's services do you use?
17. How would you describe the service quality of your mobile operator?
18. What are the main benefits you derive from your mobile operator's services?

Questions about Customer Satisfaction

19. How well has the organization met your expectations?
20. Are you satisfied with the services provided by your mobile operator?
21. Based on your most recent experience, how likely is it that you would recommend your mobile operator services to a colleague or friend?

Questions about Word of Mouth

22. Did word of mouth influence you to adopt or not to adopt your mobile operator services?
23. Can you tell us about a situation where you recommended to someone around you (friends, colleagues, family members) to use (or not to use) the same mobile operator you use?

Questions about Customer Loyalty

24. Are the services provided by your mobile operator suitable for your future renewal needs?
25. Would you say that you are loyal to this mobile operator?
26. What makes you loyal (or not) to this mobile operator?

Is there anything else you would like to talk about or discuss as part of this interview?

University of AIN TEMOUCHENT

Institute of Economic and Commercial Sciences and Management Sciences

A Research Project for the Award of Doctors of Economic Sciences

Entitled:

« The impact of e-CRM on Customer Loyalty »

Dear Madam/Sir,

As part of the preparation of a doctoral thesis in economic sciences, majoring in economics and management of enterprises, at Belhadj Bouchaïb University, Ain Tamouchant, on the topic "The impact of electronic customer relationship management (e-CRM) on customer brand loyalty", we are honored to ask you to give us a few minutes of your time to answer this questionnaire. We assure you that the information you provide will be kept confidential and will only be used for scientific purposes. Finally, it is important to note that there is no typical or perfect answer to the questions in this questionnaire and that the best answers are spontaneous answers that reflect your perception and perception of reality. We thank you in advance for your valuable cooperation in conducting this study.

Sincerely,

Djihane MALKI, PhD student, University of Ain Temouchent
E-mail: malki.djihane@yahoo.com

Supervisor, Prof. Djamel Zeddoun, Lecturer Professor at University of Ain Temouchent
E-mail: zeddoun.djamel@gmail.com

1. **Gender:** ☐ Male ☐ Female

2. **Age:** ☐ Less than 25 years old ☐ 25 – 34 years old
   ☐ 35 – 44 years old ☐ 45 – 54 years old
   ☐ more than 55 years old

3. **Education Level** ☐ Middle school ☐ High school
   ☐ University ☐ Postgraduate

4. What is your city of living? ……………..
5. What is your mobile operator? ……………..

The following questions relate to your mobile operator (if you use more than one mobile operator, the questions relate to the one you use the most) (place an X in the appropriate box to rate the following statements according to your experience).

	Strongly disagree	disagree	Neutral	Agree	Strongly agree
E-CRM					
6. My mobile operator quickly resolves the issues I face with any online transaction.					
7. Whenever I face any issue, I use the online complaint to contact my mobile operator.					
8. The online feedback feature is available on the mobile operator website.					
9. I always use online comments to leave my impression and opinion about my mobile operator.					
10. The Frequently Asked Questions (FAQs) on the mobile operator's online channels help me when using mobile operator services.					
11. I always use the FAQs while browsing the mobile operator website.					
12. I found the FAQs helpful.					
Customer Experience					
13. My mobile operator takes care of customer complaints immediately.					
14. My mobile operator takes a genuine interest in customer issues.					
15. My mobile operator communicates with its customers effectively (i.e., it takes care of its customers, informs them of new					

offers, responds to their inquiries, etc., etc.)					
16. My mobile operator collaborates with its customers in order to fulfill their wishes					
Value Co-Creation					
17. I spent a lot of time sharing information about my needs and opinions with my mobile operator.					
18. I have put a lot of effort into expressing my personal needs to the mobile operator about the services provided.					
19. I always make suggestions to the mobile operator to improve the outcome of the services provided.					
20. I am deeply involved with the mobile operator in determining how services are provided.					
Service Quality					
	Very lousy	**Poor**	**Average**	**Good**	**Excellent**
21. How can you evaluate the quality of your mobile operator's coverage?					
22. How can you evaluate the quality of your mobile operator's customer service?					
23. How can you evaluate the quality of internet and wireless service available on your mobile operator?					
24. How would you rate the quality of service provided by vendors at your mobile operator's point of sale?					
25. How do you rate the quality of your mobile operator's marketing campaigns?					
26. When you compare ads to services, how do you evaluate the services you receive as a customer compared to the ads you see or hear?					
Price Fairness					
27. My mobile operator offers the best possible price for offers to meet my needs.					
28. They offer a variety of prices for different offers.					
29. My mobile operator's pricing is reasonable.					

30. In general, my mobile operator offers more pricing options than other mobile operators.					
Customer Satisfaction					
31. My mobile operator fully meets my expectations more than any other mobile operators.					
32. I am satisfied with the quality of my mobile operator service.					
33. I am satisfied with the price of my mobile operator.					
34. I am satisfied with the coverage of my mobile operator.					
Word of Mouth					
35. I like to say positive things about my mobile operator to others.					
36. I would recommend using the same mobile operator I use to anyone who asks for my advice.					
37. I would encourage friends and relatives to use the same mobile operator I use.					
38. I would point out the positive aspects of my mobile operator to anyone who criticizes it.					
Customer Loyalty					
39. I will continue to use this mobile operator.					
40. If I buy another new mobile operator, I prefer this (current) mobile operator.					
41. I recommend people to use the mobile operator that I personally use.					
42. Even if services offered by other mobile operators are cheaper, I will still use my regular mobile operator.					

Abstract

This study aims to examine the impact of electronic Customer Relationship Management (e-CRM) on customer loyalty through multiple mediators such as co-creation value, customer experience, service quality, customer satisfaction, and word of mouth, as well as the direct effect among the study variables. To achieve this, a mixed-methods approach was employed, incorporating both qualitative and quantitative. Qualitative data was gathered through Semi-structured interviews with 15 customers to gain deep insights into customer perspectives. Additionally, quantitative data was collected via an online survey from 252 customers from various mobile operators in Algeria and analyzed using partial least square-structural equation modeling (PLS-SEM). The results indicated that e-CRM has a significant indirect effect on customer loyalty through mediators such as customer experience, service quality, customer satisfaction, and word of mouth. However, no significant effect was found for the mediation through co-creation value, service quality, customer satisfaction, and word of mouth.

Key words: E-CRM, Customer Experience, Value Co-Creation, Service Quality, Customer satisfaction, Word of Mouth, Customer loyalty.

Résumé

Cette étude vise à examiner l'impact de la gestion de la relation client électronique (e-CRM) sur la fidélité des clients à travers plusieurs médiateurs, notamment la co-création de valeur, l'expérience client, la qualité de service, la satisfaction client et le bouche-à-oreille, ainsi que l'effet direct entre les variables de l'étude. Pour ce faire, une approche mixte a été employée, intégrant à la fois des données qualitatives et quantitatives. Les données qualitatives ont été recueillies par des entretiens semi-directifs avec 15 clients pour obtenir des perspectives approfondies des clients. De plus, les données quantitatives ont été collectées via un questionnaire en ligne auprès de 252 clients de différents opérateurs mobiles en Algérie et analysées à l'aide du modèle d'équation structurelle par les moindres carrés partiels (PLS-SEM). Les résultats ont indiqué que l'e-CRM a un effet indirect significatif sur la fidélité des clients à travers des médiateurs tels que l'expérience client, la qualité de service, la satisfaction client et le bouche-à-oreille. Cependant, aucun effet significatif a été trouvé pour la médiation par la co-création de valeur, la qualité de service, la satisfaction client et le bouche-à-oreille.

Mots clés : E-CRM, Expérience Client, Co-création de Valeur, Qualité du Service, Satisfaction du client, Bouche à oreille, Fidélité du Client.

ملخص

تهدف هذه الدراسة إلى تحديد تأثير إدارة علاقة الزبون الإلكترونية (e-CRM) على ولاء الزبون من خلال عدة وسطاء، بما في ذلك خلق القيمة المشتركة مع الزبون، تجربة الزبون، جودة الخدمة، رضا الزبون، والمشافهة، وكذلك دراسة التأثير المباشر بين متغيرات الدراسة. لتحقيق هذا الهدف، تم استخدام النهج المختلط، يجمع بين البيانات النوعية والكمية. تم جمع البيانات النوعية من خلال المقابلات شبه التوجيهية مع 15 زبونا للحصول على رؤى عميقة لوجهات نظر الزبائن. بالإضافة إلى ذلك، تم جمع البيانات الكمية من خلال استبيان عبر الإنترنت شمل 252 زبونا من مختلف مشغلي الهاتف المحمول في الجزائر وتم تحليلها باستخدام النمذجة بالمعادلات الهيكلية بواسطة المربعات الصغرى الجزئية. أشارت النتائج إلى أن إدارة علاقة الزبون الإلكترونية لها تأثير غير مباشر معنوي على ولاء الزبون من خلال وسطاء مثل تجربة الزبون، جودة الخدمة، رضا الزبون، والمشافهة. ومع ذلك، لم يتم العثور على أي تأثير للوساطة من خلال خلق القيمة المشتركة، جودة الخدمة، رضا الزبائن، والمشافهة.

الكلمات المفتاحية: إدارة العلاقات مع الزبون الإلكترونية، تجربة الزبون، خلق القيمة المشتركة، جودة الخدمة، رضا الزبون، المشافهة، ولاء الزبون.