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Article

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The impact of E-CRM on customer loyalty in the airline industry: the mediating role of customer experience

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ABSTRACT

In today's highly competitive airline industry, understanding the factors that influence customer loyalty is paramount for airline companies seeking to maintain a competitive edge. This study investigates the impact of Electronic Customer Relationship Management (E-CRM) on customer loyalty within the context of the airline industry, with a specific focus on the mediating role of customer experience. By examining how E-CRM strategies influence customer loyalty and the underlying mechanisms through which customer experience mediates this relationship, this research aims to provide valuable insights for airline companies striving to enhance customer satisfaction and retention. Using a quantitative research approach, the study targeted Royal Jordanian travelers as the primary research participants. A sample of 386 individuals who have flown with Royal Jordanian Airlines was selected using a convenience sampling method. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) Version 26. This study reveals that E-CRM dimensions have a statistically significant impact on customer loyalty and experience. Furthermore, the findings show that customer experience mediates the relationship between E-CRM dimensions and customer loyalty. In light of these findings, this study recommends focusing on improving the effectiveness and reliability of the Royal Jordanian Airlines website. This includes initiatives aimed at improving a website's efficiency, strengthening security measures, and ensuring a high level of dependability to increase customer loyalty.

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1. Introduction

In an era in which competition defines the landscape of the airline industry, both locally and internationally, companies face the imperative of securing their survival and enduring presence in this dynamic sector. The open nature of industry intensifies this need, compelling airlines to strive for excellence and resilience. One pivotal aspect of this pursuit is the strategic effort to retain customers who serve as the bedrock for sustained growth and future expansion.

In the ever-changing airline industry landscape, understanding the factors that influence customer loyalty is critical for companies looking to maintain a competitive advantage. The Elaboration Likelihood Model (ELM) is a theoretical framework that sheds light on the process of persuasion and attitude change, thereby influencing customer loyalty.

According to the Elaboration Likelihood Model, people process persuasive messages in two ways: centrally and peripherally. Individuals take the central route, critically analyzing and scrutinizing the message content, which leads to deep cognitive processing and long-term attitude changes. In contrast, the peripheral route requires less cognitive effort, with individuals relying on peripheral cues such as the attractiveness or credibility of the source.

As passengers seamlessly connect with cities worldwide, their expectations become a benchmark for the services provided by airlines. The aviation sector grapples with the formidable challenges of

globalization, fierce competition, and the ever-rising expectations of customers (Al-Dmour et al., 2019). This triad of factors propels airlines into a perpetual struggle not only to thrive, but also to retain their customer base.

Royal Jordanian Airlines, the official carrier of the Hashemite Kingdom of Jordan, exemplifies a compelling example of this battle for excellence. Established on December 15, 1963, by a royal decree issued by the late Majesty King Hussein, the airline has undergone a transformative journey, continually embracing a youthful spirit. King Hussein envisioned the airline as a global ambassador of goodwill, fostering cultural exchange, civilization, trade, technology, and friendship worldwide. The legacy continues under the guidance of His Majesty King Abdullah II, with Royal Jordanian consistently improving through the adoption of new technologies, an expanded route network, fleet modernization, and comprehensive staff training (Royal Jordanian website, 2019).

In the contemporary business landscape, the survival of companies is intricately tied to the implementation of modern programs such as Electronic Customer Relationship Management (E-CRM) (Khanh et al., 2022). As a dynamic facet of goal-oriented activities, marketing has evolved into a complex realm of innovation where everything seems achievable. E-CRM has emerged as a key player, aiming to address customers' requirements and foster enduring relationships within the airline industry (Chen et al., 2021).

In a world characterized by globalization and heightened competition, companies seek competitive advantages, and the adoption of E-CRM has become a strategic differentiator. By incorporating various dimensions, such as customer knowledge, traditional CRM practices, and a commitment to service quality, companies can tailor their approach to stand out in the crowded market (Azhar, 2015; Dehghanpouri et al., 2020; Rane et al., 2023).

E-CRM encompasses the use of internet-based tools, including websites, communication channels, and emails, to achieve Customer Relationship Management goals. This well-structured and coordinated process has ushered in a significant transformation in the airline industry, empowering businesses to deliver targeted messages, boost revenue, and establish meaningful two-way connections with customers. We define E-CRM experience as the cumulative interactions and engagements that respondents have had with the airline's digital platforms, including its website, mobile app, social media channels, email communications, and any other digital touchpoints. These interactions encompass activities such as browsing for flight options, making reservations, receiving notifications, seeking assistance through online chat or customer support, and providing feedback or reviews (Adlin et al., 2019; Barsy, 2017).

E-CRM plays a pivotal role in reshaping the marketing sector with the primary goal of enhancing a company's effectiveness in creating and managing client relationships. By evaluating marketing performance based on business results and making informed decisions to refine marketing strategies, E-CRM contributes to a dynamic and responsive marketing landscape (Ali, 2023).

Recognizing diversity among customers from different generations is paramount. Life events shape behaviors, beliefs, and preferences, leading marketers to acknowledge the necessity of segmenting consumers by age to effectively and efficiently (Dehghanpouri et al., 2020).

The rapid advancement of information and communication technologies has resulted in the development of Electronic Customer Relationship Management (E-CRM). Unlike traditional CRM, E-CRM uses the internet to manage all aspects of client relationships. The primary goal of E-CRM is to increase a company's efficiency in creating and managing client relationships while initiating transformative changes in the marketing sector (Kumar & Mokha, 2021). Understanding the implications of E-CRM in the airline industry is critical for adapting to the changing landscape and ensuring long-term success. Thus, this study investigates the intersection of intense competition, customer retention strategies, and the transformative impact of E-CRM in the dynamic realm of the airline industry.

This study empirically demonstrates the significant impact of E-CRM dimensions (security, problem solving, customer orientation, and technology) on customer loyalty in the airline industry, with a particular emphasis on Royal Jordanian Airlines. Furthermore, it demonstrates the mediating role of customer experience in shaping the relationship between e-CRM and customer loyalty. The findings offer practical insights into improving the effectiveness of E-CRM strategies and customer relationships in the aviation industry. The paramount significance of this research lies in its exploration of E-CRM as a client-centric management approach dedicated to cultivating customer devotion. In the dynamic landscape shaped by the surge in information technology, business practices have swiftly transitioned from traditional CRM to

E-CRM. This transformation is pivotal considering that CRM now operates as a responsive component within firms, adapting to swift changes in the business environment (Mohamed et al., 2022).

This study's focal point on the aviation sector not only adds specificity but also underscores the relevance of its findings to a critical industry. Moreover, this research promises to deepen our understanding of E-CRM dimensions, including technology, problem solving, security, and customer orientation. An innovative aspect involves investigating the mediating variable of the customer experience and its profound impact on customer loyalty. By specifically examining Royal Jordanian Airlines, this study offers marketing decision-makers a lucid perspective on the intricacies of the E-CRM system and its direct influence on customer loyalty. Beyond theoretical insights, this study has practical implications, providing a roadmap for the airline industry to expand its market share and elevate service standards. In essence, this study serves as a beacon, guiding the aviation sector toward a nuanced understanding of E-CRM's transformative role in shaping customer loyalty.

This study aims to examine the impact of E-CRM dimensions (security, problem solving, customer orientation, and technology) on customers' experience and loyalty in the airline industry in Jordan.

The remainder of this paper is organized as follows. [Section 1](#) presents an introduction. [Section 2](#) reviews the relevant literature. [Section 3](#) methodology. [Section 4](#) presents the results of the study. Finally, the conclusions and recommendations are presented in [Section 5](#).

2. Literature review

2.1. Conceptual framework

The term 'Electronic Customer Relationship Management,' or 'E-CRM,' first appeared in the late 20th century in reaction to the expanding impact of digital technology and the Internet on corporate operations. This creative method used digital channels like email, social media, and online portals to transform the management and optimization of consumer interactions. E-CRM builds on the fundamental ideas of traditional CRM by utilizing technology to improve customer engagement, streamline communication, and make it easier to gather important customer data for well-informed marketing and service plans (Ahmed, 2020; Daud & Aziz, 2019).

Aria and Dafoulas (2023) Identify E-CRM as the process by which all firms manage customer interactions. E-CRM attempts to create and preserve enduring connections with both present and potential clients. Organizations gather, archive, access, and evaluate customer data.

The main objective of e-CRM is to improve customer interactions on digital platforms. This is accomplished by effectively using technology to collect, process, and apply consumer data for individualized communications, personalized interactions, and customized marketing plans (Abu-Shanab & Anagreh, 2015; Ali et al., 2015; Cambra-Fierro et al., 2017; Farhan et al., 2018; Navimipour & Soltani, 2016).

According to Quaye et al. (2018), the quality of a company's relationships with its customer base is an effective success factor given that acquiring new customers is more expensive than retaining existing ones. According to Chi (2018), businesses may improve customer experiences, boost sales, and succeed in the online market in the long run with the aid of E-CRM.

E-CRMs may have an impact on businesses and organizations' ability to succeed in the digital age via effective technology, such as email, chat, social media, and other online channels. Companies can interact with customers in real time, allowing for faster issue resolution and support. E-CRM transcends physical boundaries, allowing businesses to engage with clients worldwide and broaden their customer base (Fu & Mishra, 2020; Haseeb et al., 2019).

Furthermore, a simplified sales process combined with e-CRM makes it easier for sales teams to manage opportunities, track leads, and close deals, resulting in increased overall sales success. Organizations that successfully implement E-CRM strategies can set themselves apart by providing exceptional customer service and personalized experiences (Sujitha & Johnson, 2017). Furthermore, E-CRM boosts customer satisfaction and loyalty by facilitating simple and personalized interactions across various digital platforms (Ismail & Hussin, 2016; Syapsan, 2019).

Additionally, E-CRM improves problem-solving skills and customer retention by automating and streamlining processes, freeing staff members to work on higher-value tasks. In contrast, properly

deployed E-CRM systems enhance data security by centralizing client data and implementing strong security measures (Al-Bashayreh et al., 2022; Alshourah et al., 2018).

E-CRM helps businesses improve customer interaction, streamline processes, make informed decisions, and adapt to a rapidly changing digital landscape. These capabilities are critical to long-term development and financial success. Data-driven marketing is an important aspect of E-CRM that involves making marketing decisions and optimizing activities using both quantitative and qualitative data. Marketers collect and analyze large amounts of data on their target customers' preferences and needs, allowing for a more targeted and personalized approach (Ali, 2023).

In an era of increased competition for services, emphasis has shifted toward developing innovative strategies to retain existing customers rather than relentlessly pursuing new ones. This increased competition, particularly among airlines, which are regarded as critical modes of transportation worldwide, fosters an environment that not only sustains, but also improves customer loyalty (Mang'unyi et al., 2018).

Shaikh (2020), Kampani and Jhamb (2020), and Yaseen et al. (2022) emphasize the use of E-CRM to build strong relationships with clients. This strategic approach enables businesses to gain valuable insights into their customers' needs, routines, and preferences, fostering a deeper understanding that can inform targeted and effective marketing strategies.

To bolster E-CRM solutions, companies are advised to focus on strengthening their financial positions. Promoting the advantages of E-CRM technology, particularly in comparison with alternative technologies, has become imperative (Bezovski & Hussain, 2016). Government support is recognized as a crucial factor in creating an environment that is conducive to innovation. Targeting businesses that actively promote E-CRM makes sense as they are more likely to possess financial acumen to navigate government support structures (Chatterjee et al., 2021a; Upadhyaya, 2020).

Providing clients with high-quality services through the E-CRM program is vital for maintaining their current position and competing in the future. This would keep and follow current customers while luring new ones (Ahani et al., 2017; Kumar & Mokha, 2021).

Based on the literature review the following research conceptual model is proposed as illustrated in Figure 1.

2.2. Dimensions of E-CRM

In the ever-evolving landscape of the airline industry, Electronic Customer Relationship Management (E-CRM) is a pivotal force driving customer-centric strategies, operational efficiency, and technological innovation (Kaur & Narula, 2020). Within the realm of E-CRM, four dimensions emerge as critical pillars,

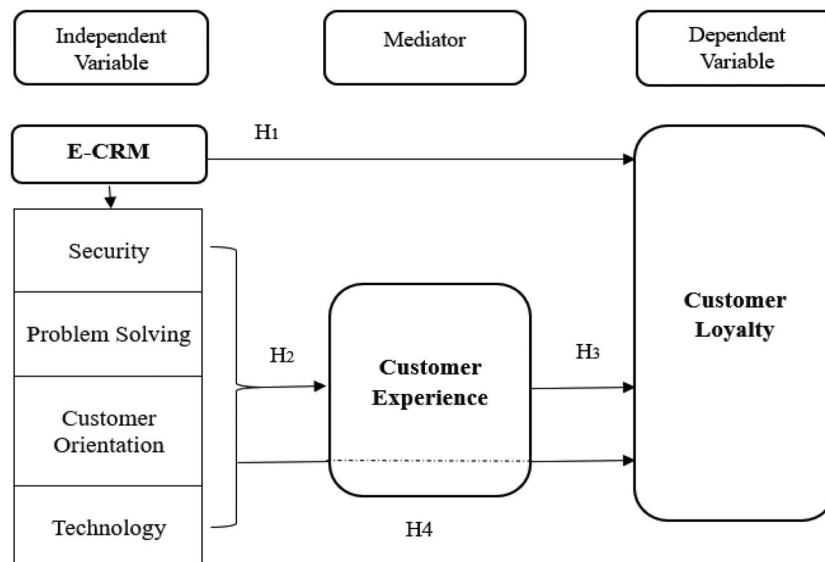


Figure 1. Research model.

each playing a distinct yet interconnected role in shaping airlines' success: security, problem solving, customer orientation, and technology.

2.2.1. Security

Security is a paramount concern in the highly digitized and interconnected world of E-CRM. Ensuring the confidentiality, integrity, and availability of customer data is essential for building trust and loyalty (Mosa, 2022; Qashou & Saleh, 2018).

Robust security measures not only protect sensitive customer information but also safeguard the reputation of the airline industry in the face of increasing cyber threats (Steinhoff et al., 2019; Yao et al., 2021).

As airlines handle vast amounts of personal and financial data, the implementation of advanced security protocols is crucial for mitigating risks and upholding customer privacy expectations of customers (Anaam et al., 2020; Paul & Muthumani, 2018; Rajaobelina, 2017; Soltani et al., 2018).

2.2.2. Problem-solving

E-CRM facilitates efficient problem solving by providing a platform for the quick identification and resolution of customer issues. Real-time access to customer data allows airlines to promptly address concerns and enhance customer satisfaction (Paliouras & Siakas, 2017).

The ability to analyze and interpret data enables airlines to identify patterns in customer complaints or feedback, leading to proactive problem-solving strategies and continuous improvement (Dolly & Pruthi, 2014).

According to Sofi et al. (2020) and Rashwan et al. (2019), problem solving within the E-CRM framework aligns with the goal of retaining existing customers by delivering responsive and effective solutions, contributing to overall customer loyalty.

2.2.3. Customer orientation

E-CRM's customer-oriented approach emphasizes understanding and fulfilling the unique needs and preferences of individual customers. This personalized approach is critical for enhancing overall customer experience the gap in understanding the role of customer experience as a mediator lies in the need to explore the mechanisms through which E-CRM dimensions influence customer loyalty in the airline industry. While previous research has established the significance of E-CRM in shaping customer perceptions and behaviors, the specific pathways through which these dimensions impact loyalty remain less clear. By introducing customer experience as a potential mediator, our study seeks to bridge this gap by examining how the quality of interactions between customers and the airline's digital platforms influences their overall loyalty. Customer experience encapsulates various touchpoints and interactions throughout the customer journey, encompassing factors such as usability, responsiveness, personalization, and satisfaction. By elucidating the mediating role of customer experience, our study aims to provide insights into the underlying processes that link E-CRM practices to customer loyalty, thereby contributing to a more comprehensive understanding of relationship management strategies in the airline industry (Ata & Toker, 2012; Eltahir et al., 2021; Soltani et al., 2018; Zaim et al., 2020).

By leveraging customer data, airlines can tailor their services, communication, and marketing efforts to align with the diverse expectations of their customer bases (Alshourah et al., 2018; Owusu Kwateng et al., 2019).

The customer-oriented dimension of E-CRM contributes to building strong relationships with clients, aligning with the recommendation of Kampani and Jhamb (2020) to learn insightful details about customer needs, routines, and preferences.

2.2.4. Technology

The technological dimension of E-CRM involves the use of advanced tools and platforms to streamline customer relationship management processes. This includes Internet-based tools, communication channels, and data analytics capabilities (Kakar et al., 2019; Salihu et al., 2019; Xiao et al., 2016).

E-CRM technology not only enhances operational efficiency but also enables airlines to remain competitive in the rapidly evolving digital landscape. Modernizing fleets, implementing cutting-edge technologies, and adopting innovative solutions are integral aspects of technological advancements in the airline industry (González-Benito et al., 2017; Milan et al., 2018; Parajuli et al., 2020).

Emphasizing the benefits of E-CRM technology, as suggested by Chatterjee et al. (2021b), is crucial for promoting its adoption and differentiating it from other technologies.

In summary, these dimensions collectively contribute to the effective implementation of E-CRM in the airline industry by fostering a secure, customer-centric, and technologically advanced approach to customer relationship management. Each dimension plays a unique role in addressing the challenges and opportunities discussed in your research, ultimately contributing to airlines' growth and success in the competitive global market.

2.3. Customer experience

Establishing robust E-CRM and customer experience programs allows companies to focus on the needs of their customers, placing them at the center of operations and decision-making. This leads to increased client satisfaction, loyalty, and advocacy (Khan et al., 2020).

Mulyono and Situmorang (2018) explored the complex interrelationship between loyalty and Electronic Customer Relationship Management (E-CRM), focusing on the ways in which online travel experiences serve as a medium for the application of customer experience and E-CRM. This study clarifies the dynamic interaction between variables that influence consumer loyalty in the digital sphere.

Simplicity is essential in the pursuit of customer retention. Customers should be able to easily identify their needs, navigate signup processes, receive personalized services, and access assistance through all channels. Zhang et al. (2014) and Hashem et al. (2023) emphasize that in today's market, customer experience is just as important as the actual product or service offering. Businesses are increasingly recognizing the importance of providing exceptional customer experiences to differentiate themselves in a crowded market.

Providing exceptional customer service is a common way to differentiate oneself from its competitors. According to Verhoef et al. (2016), customer experiences are complex because modern consumer paths are becoming increasingly complex. This intricacy highlights how crucial it is becoming to concentrate on all aspects of the customer experience in order to carve out a unique niche for you in the market.

According to Kotler and Keller (2016) and Al-Gasawneh et al. (2021), promoting corporate profitability and creating long-lasting customer relationships are the two main objectives of marketing strategies. This viewpoint emphasizes the mutually beneficial relationship between a business's ability to make money and the quality of its relationships with clients.

These divergent opinions indicate the importance of customer service standards. According to Raina et al. (2019), pre-acceptance is the main goal, which makes customer service standards, seem meaningless. Perceived performance is significantly impacted by the post-purchase experience, which is in turn influenced by the quality of the customer experience. This demonstrates how pre-acceptance, customer service, and the customer journey are intricately related.

In essence, the changing landscape of loyalty, E-CRM, and customer experience in online travel is a multifaceted dynamic, in which simplicity, excellent service, and strategic marketing efforts all contribute to the trajectory of customer relationships and organizational success.

2.4. Customer loyalty

Within the context of Electronic Customer Relationship Management (E-CRM), customer loyalty is more than just a transaction; it represents the level of a customer's attachment, faith, and commitment to a particular online brand or company. The customer's propensity to regularly engage with the brand's digital channels, make purchases, conduct transactions, and have various interactions over time is indicative of this loyalty. According to Larsson and Viitaoja (2017), Tariq et al. (2019), and Guerola-Navarro et al. (2022), successful E-CRM strategies aim to foster customer loyalty by providing individualized

experiences, pertinent content, excellent customer support, and custom offers. These coordinated actions help to create a strong and long-lasting relationship between the company and its online customers.

Previous research has demonstrated the importance of customer loyalty, with the service industry acknowledging it to be a crucial element (Ahmed, 2020; Khan et al., 2020). Customer loyalty is fundamentally an emotional bond between companies and their customers, expressing a desire for ongoing business over competitors fostered by contentment and confidence in the services rendered (Ullah et al., 2020).

In today's fiercely competitive and uncertain markets, particularly the airline industry, increasing customer loyalty has emerged as a strategic imperative for long-term success. However, So et al. (2016) discovered that an informed clientele is less likely to be loyal, emphasizing the importance of ongoing efforts to meet changing customer expectations.

Enterprise resource management improves customer loyalty through personalized interactions, timely communication, targeted marketing, and data-driven insights (Oumar et al., 2017). Businesses can build strong, long-lasting relationships with online customers by offering meaningful online experiences (Al-Omouh et al., 2021; Law, 2017; Yang & Babapour, 2023).

Oliver's (1999) definition captures the essence of customer loyalty as a genuine commitment to continue purchasing the same brand's goods or services, despite external circumstances, and promotional initiatives that might otherwise cause brand switching.

Given that e-CRM is a key component of e-loyalty, it is clear how important it is to build loyalty. Numerous management implications necessitate a thorough comprehension of different E-CRM aspects throughout the transaction cycle and their effects on e-loyalty and customer satisfaction, particularly in emerging markets (Haudi et al., 2022; Mang'unyi et al., 2018). Equipped with this understanding, companies can establish distinct advantages and devise effective promotional strategies to reinforce patronage in a sector where earnings are consistently scrutinized (Yamuna, 2020).

Oliver (1999) provides a thorough framework for elucidating the subtleties of customer loyalty. The framework is divided into stages, each of which captures unique aspects of customer attitudes. This framework, which corresponds to the various structures of attitude development, divides loyalty into four categories.

2.4.1. Cognitive loyalty

Consumers choose one brand over alternatives in the early stages of cognitive loyalty based on information about a brand's attributes. This preference may change in response to current information obtained from firsthand experiences as well as from past knowledge or indirect experiences.

2.4.2. Affective loyalty

In the second stage, affective loyalty takes off as a result of a string of positive interactions, leading to the development of admiration and positive attitudes toward the brand. This phase represents the satisfaction that the user feels after reaching their goal. Known as affective loyalty, this level is flexible and changeable, similar to cognitive loyalty.

2.4.3. Conative loyalty

The next stage is when behavioral intention starts to take the center stage. Positive brand experience has a profound effect on consumers' repurchase intentions. This phase is distinguished by concrete dedication that reflects compatibility and readiness to participate in specific activities.

2.4.4. Action loyalty

At the highest end of the loyalty spectrum, action loyalty is demonstrated by the conversion of motivational intentions developed in earlier stages into tangible actions, such as making a purchase. The customer's loyalty journey culminates at this point, when dedication is translated into real support through recurring purchases (Figure 2).

Oliver's framework offers a sophisticated interpretation of loyalty, recognizing its complexity and the dynamic changes that occur at every turn. Businesses can gain insights into various facets of customer commitment by identifying the cognitive, affective, conative, and action dimensions. This enables them to develop customized strategies that are effective at various stages of the loyalty continuum.

Based on the literature review, this study generates the following hypotheses:

H1: E-CRM dimensions have a statistically significant impact of (E-CRM) dimensions on customer loyalty to Royal Jordanian Airlines.

The following sub-hypotheses are derived from the main hypothesis:

H1.1: Security has a statistically significant impact on customer loyalty to Royal Jordanian Airlines.

H1.2: Problem solving has a statistically significant impact on customer loyalty in Royal Jordanian Airlines.

H1.3: Customer orientation has a statistically significant impact on customer loyalty in Royal Jordanian Airlines.

H1.4: Technology has a statistically significant impact on customer loyalty in Royal Jordanian Airlines.

H2: E-CRM dimensions have a statistically significant impact of (E-CRM) dimensions on customers' experience in Royal Jordanian Airlines.

H3: Customer experience has a statistically significant impact on customer loyalty to Royal Jordanian Airlines.

H4: Customer experience mediates the impact between (E-CRM) dimensions and customer loyalty.

3. Methods

The current study aims to provide insights into the impact of (E-CRM) dimensions, such as security, problem-solving, customer orientation, and technology, on experience and loyalty in the Jordanian airline industry. To achieve this goal, researchers used a quantitative methodology to collect and analyze primary data, which were then interpreted to provide insights into the phenomenon under investigation. According to Cortina (2020), one method of measurement in scientific research is the quantitative approach, which entails applying theories to generate a specific hypothesis or scientific claim.

3.1. Study population and sample

The target population of this study was Royal Jordanian travelers. The selection of a study population and sample is an important factor in quantitative research because it allows researchers to collect relevant information about the phenomenon under investigation and improves the accuracy of the study in meeting its predetermined objectives the study sample consisted of 386 Royal Jordanian airline passengers. Convenience sampling was used in this study.

In this section, we outline the methodology employed in Study One, focusing on the study population and sampling method. The selection of a study population and sample is a critical aspect of quantitative research as it enables researchers to gather relevant data about the phenomenon under investigation and ensures the accuracy of the study in achieving its predetermined objectives (Fowler & Lapp, 2019).

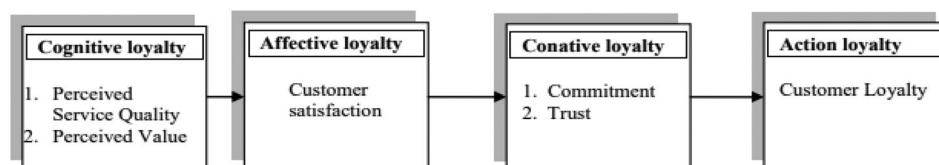


Figure 2. Four-stage loyalty model.

3.2. Study population and sampling

The target population of this study comprised Royal Jordanian travelers, representing individuals who have engaged with Royal Jordanian Airlines. Given the focus on customer loyalty within the airline industry, selecting Royal Jordanian travelers as the study population allows for a direct examination of the factors influencing customer loyalty within this specific context.

3.3. Sampling method

Convenience sampling was employed to select participants for this study. Convenience sampling is a non-probability sampling method that involves selecting individuals who are readily available and accessible to the researcher. In the context of this study, convenience sampling was chosen due to its practicality and efficiency in reaching Royal Jordanian travelers.

By employing convenience sampling, we aimed to gather data from a diverse range of Royal Jordanian travelers, capturing various perspectives and experiences related to customer loyalty and the effectiveness of E-CRM strategies employed by Royal Jordanian Airlines.

3.4. Location and industry selection

We chose to conduct our study in the airline industry in Jordan due to several reasons. Firstly, the airline industry is a crucial sector in Jordan's economy, playing a significant role in transportation and tourism. Secondly, Royal Jordanian Airlines, as the national carrier, holds a prominent position in the country's aviation sector. By focusing on this specific industry and location, we aimed to gain insights into the unique dynamics of customer loyalty and E-CRM practices within this context.

Sampling Size and Type: Our sampling size of 386 participants was determined based on considerations of statistical power and the need for adequate representation of the target population. We opted for a convenience sampling approach, which allowed us to efficiently gather data from Royal Jordanian travelers. Convenience sampling was chosen for its practicality and feasibility in accessing the target population within the constraints of time and resources.

3.5. Procedures of data collection

Data collection was conducted using a structured questionnaire distributed online via Google Forms. The questionnaire consisted of two main sections: demographic information and survey items related to E-CRM dimensions, customer experience, and loyalty. Participants were recruited from various channels, including social media platforms, email invitations, and direct outreach to Royal Jordanian customers (Sekaran & Bougie, 2016). The anonymity and confidentiality of participants' responses were ensured to encourage honest and accurate feedback.

The questionnaire was designed to capture respondents' perceptions and experiences regarding E-CRM practices and their impact on customer loyalty in the airline industry. It included validated scales and items adapted from existing literature, ensuring the reliability and validity of the measurement instruments. Additionally, the survey instrument was pilot-tested to identify and address any potential issues with clarity, comprehension, and relevance.

Overall, our methodology was designed to provide a rigorous and systematic approach to data collection, enabling us to effectively address our research objectives and contribute meaningful insights to the existing body of knowledge in the field of E-CRM and customer loyalty in the airline industry.

3.5.1. Ethical approval statement

This study received ethical approval from the Faculty of Business Ethics Committee (Approval Reference: 09/03/2023–2024). The approval was obtained following review of the research proposal and questionnaire items by the committee.

3.5.2. Human participants a statement

Prior to participation in this study, all human participants provided informed consent. The nature and purpose of the study, as well as the rights and responsibilities of participants, were explained in detail. Informed consent was obtained in written form from each participant before any data collection procedures were initiated. Participants were assured of confidentiality and anonymity, and they were informed that they had the right to withdraw from the study at any time without consequence.

4. Results

4.1. Validity and reliability

The table below demonstrates the assessment of the scale's content validity through component analysis and the KMO test as well as the examination of its reliability using both Composite Reliability (CR) and Cronbach's alpha. The following analyses were conducted:

The validity of the scales employed in the research for various variables was confirmed by factor analysis. During this examination, researchers utilized both PCA extraction and varimax rotation methods to gather the most accurate data possible (Sekaran & Bougie, 2016).

The researchers assessed the validity of the questionnaire by conducting a convergent validity test, which is often referred to as a factor-loading test. The test results are presented in Table 1, as clearly shown. After careful consideration, it was concluded that all artifacts with loadings greater than 50% were classified as authentic. Additional inquiry was undertaken to evaluate the dependability of the scale using Composite Reliability (CR) and Cronbach's alpha. The reliability of the tool was evaluated using Cronbach's alpha, resulting in a value of greater than 0.70. This validates the instrument's dependability and appropriateness for research. The results of the composite reliability (CR) test indicate that the achieved value surpasses the threshold of 0.70 (Hair et al., 2017).

Table 1. Validity and reliability.

Security	Factor loading	KMO test	Composite reliability (CR)	Cronbach alpha (a)
V1	.822	0.812	0.908	0.863
V2	.876			
V3	.843			
V4	.831			
Technology	Factor loading	KMO test	Composite reliability (CR)	Cronbach Alpha (a)
V5	.863	0.823	0.923	0.888
V6	.906			
V7	.834			
V8	.862			
Problem-solving	Factor loading	KMO test	Composite reliability (CR)	Cronbach Alpha (a)
V9	.863	0.801	0.91	0.868
V10	.870			
V11	.882			
V12	.769			
Customer orientation	Factor loading	KMO test	Composite reliability (CR)	Cronbach alpha (a)
V13	.885	0.831	0.93	0.90
V14	.865			
V15	.893			
V16	.866			
Customer experience	Factor loading	KMO test	Composite reliability (CR)	Cronbach Alpha (a)
V17	.809	0.812	0.905	0.86
V18	.817			
V19	.874			
V20	.854			
Customer loyalty	Factor loading	KMO test	Composite reliability (CR)	Cronbach alpha (a)
V21	.872	0.774	0.935	0.906
V22	.888			
V23	.892			
V24	.886			

4.2. Demographic variables

The demographic characteristics of the participants are presented in Table 2. The demographic features of the respondents are as follows:

After a thorough examination of the demographic makeup of the study sample, interesting trends surfaced that provided insight into the wide range of traits exhibited by the individuals. The main demographic factors are listed as follows:

4.2.1 Gender distribution:

Of study sample, 79.3% of participants were male, making up the majority of that group. The higher percentage of respondents may be explained by the widespread practice of men taking on the duty to buy tickets for their families, which is the cause of this skew.

4.2.2. Age dynamics

When looking at the age distribution of the respondents, it was found that a significant 30.6% of them were between the ages of 26 and 33, and another 23.3% were between the ages of 34 and 41. According to this distribution, younger people appear to have a strong interest in traveling, which is consistent with the idea that younger individuals exhibit a higher propensity for travel adventures than their older counterparts.

4.2.3. Educational attainment

A thorough review of the participants' educational backgrounds revealed that 59.8% of them had a bachelor's degree. This tendency may be explained by the belief that people with more education have the requisite abilities and are more accustomed to using online resources, which makes them better at navigating websites.

Table 2. Demographic characteristics.

Variable	Category	Frequency	Percent
Did you purchase a travel ticket or perform any travel-related service through the Royal Jordanian website?	Yes	386	100.0
	No	–	–
	Total	386	100.0
Gender	Female	80	20.7
	Male	306	79.3
	Total	386	100.0
Age	18–25	61	15.8
	26–33	118	30.6
	34–41	90	23.3
	42–49	57	14.8
	50 and above	60	15.5
	Total	386	100.0
Marital status	Single	112	29.0
	Married	259	67.1
	Others	15	3.9
	Total	386	100.0
Level of educational	High school or below	40	10.4
	Diploma	34	8.8
	Bachelor degree	231	59.8
	High studies	81	21.0
	Total	386	100.0
Income	Less than 500	111	28.8
	500–1000	118	30.6
	1001–1500	58	15.0
	1501–2000	33	8.5
	Above 2000	66	17.1
	Total	386	100.0
Job	Employee	183	47.4
	Manager	66	17.1
	Free business	58	15.0
	Other	79	20.5
	Total	386	100.0

4.2.4. Status of marriage

A sizable 67.1% of the sample said they were married. This tendency toward marriage is consistent with the general trend of younger people choosing to marry at a relatively young age.

4.2.5. Distribution of income

Of sample, 30.6% said they made between 500 and 1000 JD a month. This income range may indicate the ability to pay travel-related costs, such as ticket purchases.

4.2.6. Occupational insights

According to an analysis of occupations, 47.4% of the respondents identified as employees. This figure supports the theory that workers are more likely to be able to afford tickets because of their stable financial situations.

4.2.7. Online ticketing behavior

An interesting finding is that every sample respondent bought tickets or used the Royal Jordanian website to obtain other travel-related services. This unanimous decision highlights the popularity and preference of the Royal Jordanian website among research participants.

4.3. Descriptive statistics for the study variables

Table 3 presents descriptive statistics of the study variables.

The descriptive statistics derived from the study variables present an exceptionally favorable and praiseworthy image of the Royal Jordanian Airlines website and its offerings. The outcomes are summarized as follows:

- *Effectiveness and reputation:* The effectiveness and high level of credibility of the Royal Jordanian Airlines website are highly praised. This implies that users think the website is dependable and efficient in fulfilling their needs. The favorable comments regarding effectiveness attest to the smooth navigation and feature utilization of the website.
- *Provision of comprehensive data:* Royal Jordanian Airlines' information systems are renowned for offering comprehensive data that meets all customer demands. This suggests that the website is supported by a strong infrastructure that guarantees that users can obtain pertinent and thorough information. Comprehensive data are readily available, which enhances customer satisfaction and facilitates informed decision making.
- *Customer assistance and content relevance:* In avoid reservation-related issues, Royal Jordanian Airlines' website is praised to offer relevant content that instructs users on how to navigate the platform and make reservations. In addition to improving user experience, this proactive approach to customer assistance shows a dedication to meeting customer needs.
- *Easy and flexible booking process:* Creating reservations and getting tickets via the Royal Jordanian website is an easy and flexible process. The user-friendly design and functionality of the website, which facilitates a hassle-free booking process, are highlighted in this feedback. A seamless and adaptable reservation procedure is essential to guarantee a satisfactory clientele experience in general.
- *Impact of the frequent flyer program:* The reference to the Fflyer program encouraging consumers to make additional reservations at Royal Jordanian Airlines emphasizes the potency of loyalty schemes. This implies that the program's incentives and benefits are sufficiently strong to entice customers to return, demonstrating a methodical approach to client retention and loyalty development.

4.4. Hypotheses testing

To test the study's hypotheses, multiple statistical tests were employed to verify the effect of service quality and its dimensions on customer satisfaction at royal Jordanian Airlines.

Table 3. Descriptive statistic.

No	Item	Mean	Standard Deviation	Rank	Importance level
Security items					
1	I feel safe when I give my credit card information on the Royal Jordanian website	3.78	1.004	3	High
2	I have confidence in the Royal Jordanian Airlines website	3.89	.915	1	High
3	The Royal Jordanian Airlines website provides high confidentiality of customers' personal information	3.81	.879	2	High
4	The Royal Jordanian Airlines website is distinguished by its efficiency and high credibility	3.73	.939	4	High
Technology items					
5	The information systems at Royal Jordanian Airlines provide comprehensive data that meets all customer needs.	3.68	.907	1	High
6	Royal Jordanian Airlines has the appropriate customer service program.	3.55	1.019	2	Medium
7	Royal Jordanian Airlines has a strong presence on digital platforms.	3.31	1.033	4	Medium
8	Royal Jordanian Airlines has the appropriate technical personnel to provide technical support to customers	3.52	1.012	3	Medium
Problem-solving items					
9	The Royal Jordanian Airlines website has the ability to solve the problems faced by customers	3.36	1.020	3	Medium
10	Royal Jordanian Airlines responds to inquiries and complaints faced by customers through its online platforms	3.31	1.018	4	Medium
11	Providing online complaint forms for Royal Jordanian Airlines when customers encounter any problem.	3.39	.945	2	Medium
12	The Royal Jordanian Airlines website provides appropriate content to provide customers with how to book through the website to avoid problems with reservations.	3.69	.935	1	High
Customer orientation items					
13	Royal Jordanian Airlines cares about customer opinions.	3.25	1.073	3	Medium
14	Royal Jordanian Airlines is distinguished in terms of service and the development of its website	3.40	1.010	1	Medium
15	Royal Jordanian Airlines is interested in increasing value for customers	3.34	1.038	2	Medium
16	Communicate with customers via the Internet to solve their problems and give utmost importance to their needs.	3.21	1.034	4	Medium
Customer experience items					
17	The process of booking on the Royal Jordanian website and obtaining tickets is smooth and flexible	3.77	.925	1	High
18	Royal Jordanian website services are suitable for people with special needs	3.46	.920	4	Medium
19	The Royal Jordanian Airlines website is characterized by high credibility in terms of the information it provides to customers.	3.69	.937	2	high
20	My experience through booking on the website makes me recommend dealing with Royal Jordanian Airlines	3.61	.966	3	Medium
Customer loyalty items					
21	The frequent flyer program attracts customers to re-book at Royal Jordanian Airlines	3.50	1.015	1	Medium
22	The benefits offered by Royal Jordanian Airlines, which customers receive from recurring membership, lead to loyalty	3.45	1.006	3	Medium
23	I prefer to book my travel tickets exclusively with Royal Jordanian Airlines	3.25	1.189	4	Medium
24	I recommend friends and relatives to travel through Royal Jordanian Airlines.	3.51	1.133	2	Medium

4.4.1. Normality test

To assess the normality of our data distribution, we computed skewness and kurtosis coefficients for each variable in our dataset. Skewness measures the symmetry of the distribution, indicating whether the data are symmetrically distributed around the mean. A skewness coefficient close to zero suggests that the data are approximately symmetrically distributed. In our analysis, we found that the skewness coefficient values for all variables ranged from -3 to 3, indicating that the distributions were relatively symmetric.

Kurtosis, on the other hand, measures the degree of peakedness or flatness of a distribution compared to a normal distribution. A kurtosis coefficient value of 3 indicates that the distribution has the same degree of peakedness as a normal distribution. Values less than 3 suggest that the distribution is less peaked (platykurtic), while values greater than 3 indicate a more peaked (leptokurtic) distribution. In our study, we observed that the kurtosis coefficient values for all variables were less than three, suggesting that the distributions were within the acceptable range of normality (<https://www.scad.gov.ae>).

The results are summarized in Table 4.

4.4.2. Multicollinearity test

Based on the data presented in Table 5, the multicollinearity test results indicate that both the Tolerance and VIF values meet the standard criteria, suggesting the absence of multicollinearity issues among the variables included in the model.

The Tolerance values for all predictor variables exceed the recommended threshold of 0.10, with values ranging from 0.256 to 0.595. This indicates that each predictor variable explains a unique proportion of the variance in the dependent variable, without significant redundancy or overlap with other variables.

Similarly, the VIF values for each predictor variable are below the commonly accepted threshold of 10, ranging from 1.682 to 3.908. The VIF values quantify the degree of multicollinearity between predictor variables, with lower values indicating less multicollinearity. In our analysis, the VIF values are well below 10, further supporting the conclusion that multicollinearity is not a concern in the model (Hair et al., 2017).

4.4.3. Hypotheses outcomes

H1 (E-CRM dimensions have a statistically significant impact of (E-CRM) dimensions on customer loyalty to Royal Jordanian Airlines) was tested using multiple regression, and the results revealed a significant positive relationship between the (E-CRM) dimensions and customer loyalty. Given that $R=0.806$, a strong correlation can be determined. Furthermore, the independent variables (the dimensions of E-CRM) accounted for 65% of the variance in the variable being explained, namely customer loyalty. Furthermore, the first hypothesis was accepted, indicating that 'There is a statistically significant impact of (E-CRM) dimensions on customers' loyalty to Royal Jordanian Airlines, and the F value was significant at a level of 0.05. Table 6 illustrates the outcomes of H1.

The H1:1 (Security has a statistically significant impact on customer loyalty to Royal Jordanian Airlines) result shows a significant positive relationship between security and customer loyalty. Given that $R=0.529$, it can be concluded that there is a moderate correlation. Furthermore, the independent variable accounted for 28% of the variance in the variable they were attempting to explain, which was customer loyalty. H1:1 hypothesis was accepted, indicating that 'There is a statistically significant impact of security

Table 4. Normality test.

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Security	-.686	.124	1.141	.248
Technology	-.485	.124	.097	.248
problem-solving	-.482	.124	.337	.248
customer orientation	-.181	.124	-.365	.248
Customer Experience	-.556	.124	.614	.248
Customer Loyalty	-.406	.124	-.271	.248
Valid N (listwise)				

Table 5. Multicollinearity test.

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Security	.595	1.682
	Technology	.283	3.531
	Problem-solving	.256	3.908
	Customer orientation	.291	3.439

Table 6. H1 Testing.

Model		Unstandardized Coefficients		Standardized Coefficients		T	Sig	F	Sig	R	R2
		B	Std. Error	Beta							
1	(Constant)	.129	.152			.848	.397	117.003	.000	0.806	0.65
	Security	.113	.048	.093		2.360	.019				
	Technology	.186	.064	.167		2.926	.004				
	Problem-solving	.101	.069	.087		1.451	.147				
	Customer orientation	.565	.059	.536		9.543	.000				

on customers' loyalty in Royal Jordanian Airlines' and that the F value was significant at a level of 0.05. Table 7 illustrates the outcomes of H1:1.

The H1:2 (Problem solving has a statistically significant impact on customer loyalty in Royal Jordanian Airlines) result showed a significant positive relationship between problem solving and customer loyalty. Given that $R=0.712$, we can conclude that there is a high correlation. Furthermore, it was discovered that the independent variable, customer loyalty, accounted for 50.7% of the variance in the variable they were attempting to explain. In addition, the above hypothesis was accepted, indicating that 'There is a statistically significant impact of problem-solving on customers' loyalty in Royal Jordanian Airlines' and that the F value was significant at a level of 0.05. Table 8 illustrates the outcomes of H1:2.

H1:3 (Customer orientation has a statistically significant impact on customer loyalty in Royal Jordanian Airlines) showed a significant positive relationship between customer orientation and customer loyalty. Given that $R=0.785$, it can be concluded that there was a high correlation. Furthermore, it was discovered that the independent variable, customer loyalty, accounted for 61.6% of the variance in the variable they were attempting to explain. In addition, the above hypothesis was accepted, indicating that 'There is a statistically significant impact of customer orientation on customers' loyalty in Royal Jordanian Airlines' and that the F value was significant at the 0.05 level. Table 9 illustrates the outcomes of H1:3.

The H1:4 (Technology has a statistically significant impact on customer loyalty in Royal Jordanian Airlines) result showed a significant and positive relationship between customer orientation and loyalty. Given $R=0.709$, it can be concluded that there is a high correlation. Furthermore, it was discovered that the independent variable, customer loyalty, accounted for 50.3% of the variance in the variable they were attempting to explain. In addition, the above hypothesis was accepted, indicating that 'There is a statistically significant impact of technology on customers' loyalty in Royal Jordanian Airlines' and that the F value was significant at a level of 0.05. Table 10 illustrates the outcomes of H1:4.

H2 (E-CRM dimensions have a statistically significant impact of (E-CRM) dimensions on customers' experience in Royal Jordanian Airlines) showed a significant positive relationship between the (E-CRM)

Table 7. H1:1 Testing.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig	F	Sig	R	R2
		B	Std. Error	Beta						
1	(Constant)	.971	.205		4.726	.000	149.041	.000	.529	.28
	Security	.646	.053	.529	12.208	.000				

Table 8. H1:2 Testing.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig	F	Sig	R	R2
		B	Std. Error	Beta						
1	(Constant)	.591	.147		4.028	.000	395.565	.000	.712	.507
	Problem-solving	.825	.041	.712	19.889	.000				

Table 9. H1:3 Testing.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig	F	Sig	R	R2
		B	Std. Error	Beta						
1	(Constant)	.694	.114		6.081	.000	617.056	.000	.785	.616
	Customer orientation	.828	.033	.785	24.841	.000				

Table 10. H1:4 Testing.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig	F	Sig	R	R2
		B	Std. Error	Beta						
1	(Constant)	.642	.145		4.414	.000	388.279	.000	.709	.503
	Technology	.793	.040	.709	19.705	.000				

dimensions and customer experience. Given that $R=0.779$, it can be concluded that there was a high correlation. Furthermore, the independent variables (the dimensions of E-CRM) accounted for 60.6% of the variance in the variables they were attempting to explain, which was the customers' experience. In addition, the second hypothesis was accepted, indicating that 'There is a statistically significant impact of (E-CRM) dimensions on customers' experience in Royal Jordanian Airlines' and that the F value was significant at the level of 0.05. Table 11 shows the results of H2.

H3 (Customer experience has a statistically significant impact on customer loyalty to Royal Jordanian Airlines) also showed a significant positive relationship between customer experience and customer loyalty. Given that $R=0.779$, it can be concluded that there was a high correlation. Furthermore, it was discovered that the independent variable, customer loyalty, accounted for 60.7% of the variance in the variable they were attempting to explain. In addition, the above hypothesis was accepted, indicating that 'There is a statistically significant impact of customers' experience on customers' loyalty to Royal Jordanian Airlines' and that the F value was significant at a level of 0.05. Table 12 illustrates the outcomes of H3.

H4 (Customer experience mediates the impact between (E-CRM) dimensions and customer loyalty) The proposed research model must be validated prior to conducting structural analysis. This was accomplished by determining whether the model could be applied to the current investigation using a set of indicators. Based on the data presented in Table 13, all the previously described indicators met both the minimum and maximum levels specified in the relevant references, and it is possible to test H4.

H4 shows that the mediating variable, customer experience, has a significant impact on the relationship between E-CRM dimensions and customer loyalty. To illustrate this, we multiply the indirect effect value of E-CRM on customer experience (0.639) by the product of customer experience and loyalty values (0.165). The resulting indirect effect value of 0.105 demonstrates the significant role of customer experience as a mediator linking E-CRM dimensions to customer loyalty. Table 14 illustrates these results.

Table 11. H2 Testing.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig	F	Sig	R	R ²
		B	Std. Error	Beta						
1	(Constant)	.768	.132		5.816	.000	146.626	.000	0.779	0.606
	Security	.203	.042	.203	4.862	.000				
	Technology	.197	.055	.215	3.563	.000				
	Problem-solving	.149	.060	.157	2.478	.014				
	Customer orientation	.269	.051	.312	5.238	.000				

Table 12. H3 Testing.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig	F	Sig	R	R ²
		B	Std. Error	Beta						
1	(Constant)	-.031	.145		-.211	.833	591.86	.000	.779	.607
	Customer experience	.952	.039	.779	24.328	.000				

Table 13. Model validation.

Indicator	AGFI	$\frac{X^2}{df}$	GFI	RMSEA	CFI	NFI
Value recommended	> 0.8	< 5	> 0.90	≤ 0.10	> 0.9	> 0.9
References	(Shevlin & Miles & 1998).	(Tabachnick & Fidell, 2007)	(Shevlin & Miles & 1998)	(MacCallum et al, 1996)	(Hu & Bentler, 1999).	(Hu & Bentler, 1999).
Value of model	0.943	3.158	0.978	0.075	0.983	0.976

Table 14. H4 Testing.

			Standardized direct effects	Indirect effects	Standardized total effects	S.E	C.R	P	Decision
E-CRM	→	experience	0.64	—	.639	.050	13.15	***	Accept
Experience	→	loyalty	0.16	—	.165	.064	3.148	.002	Accept
E-CRM	→	loyalty	0.59	0.105	.695	.074	9.998	***	Accept

The above results are shown in Figure 3.

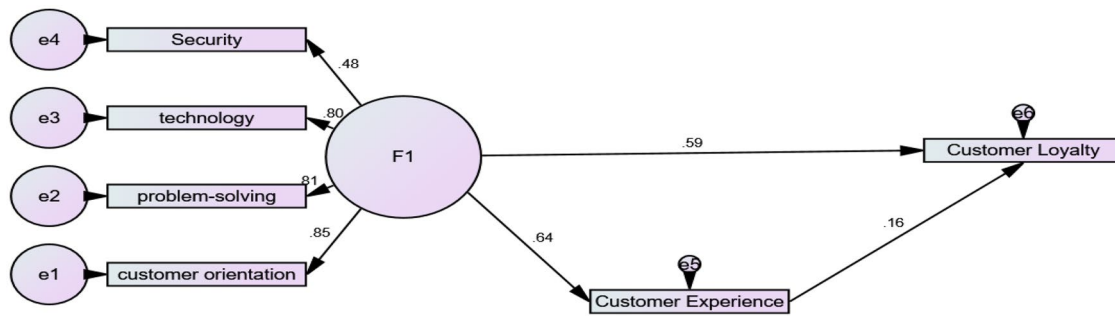


Figure 3. Path analysis results.

The path analysis results (Figure 3) support the above results and provide valuable insights into the relationships between E-CRM, customer experience, and customer loyalty. The direct effect of E-CRM on customer experience is substantial (0.64), indicating that E-CRM has a significant positive impact on shaping the customer's overall experience with the airline. Similarly, the direct effect of customer experience on loyalty is also significant (0.16), suggesting that a positive customer experience contributes to increased customer loyalty.

There are no indirect effects reported in the table. It appears that the indirect effects were not measured or included in the analysis. The stand total effect of E-CRM on loyalty is considerable (0.695), reflecting the combined impact of both the direct effect of E-CRM on loyalty and its indirect effect through customer experience. The standard error (S.E.) values are provided to indicate the precision of the estimated coefficients. The critical ratio (C.R.) values indicate the significance of the estimated coefficients. A higher C.R. value suggests greater significance. The *p*-values indicate the level of statistical significance of the coefficients. A *p*-value less than the significance level (e.g. 0.05) indicates that the coefficient is statistically significant.

Overall, the results suggest that E-CRM has a significant positive impact on both customer experience and customer loyalty in the airline industry. Furthermore, customer experience also plays a crucial role in driving customer loyalty. These findings underscore the importance of effective E-CRM strategies in enhancing the overall customer experience and fostering long-term loyalty among airline customers.

5. Conclusions and recommendations

5.1. Conclusions

- The results of this research offer a conceptual framework that may be utilized to gain a deeper understanding of the influence of E-CRM aspects (security, problem-solving, customer orientation, and technology) on customer experience and loyalty. This is due to the fact that it demonstrates a number of advantages of electronic customer relationship management (ECRM), which will be reflected in the loyalty of the customer. Furthermore, the findings of this study indicate that customer experience is of utmost significance because it enhances the influence of electronic customer relationship management on customer loyalty.
- This study aimed to investigate the impact of E-CRM dimensions, including security, problem-solving, customer orientation, and technology, on customer loyalty in the airline industry. Additionally, we explored the mediating role of customer experience in shaping the relationship between E-CRM and loyalty. By addressing these objectives, we contribute to a better understanding of the factors influencing customer loyalty in the digital era.
- Security has emerged as the most important E-CRM dimension for the Jordanian airline industry. This demonstrates the importance of ensuring the security and privacy of customer information, particularly in the aviation sector.
- Customer orientation was the least significant of the E-CRM dimensions, indicating potential areas for improvement in developing customer-focused strategies.

- Security, problem solving, customer orientation, and technology were found to have a statistically significant effect on customer loyalty. This finding demonstrates the multifaceted nature of E-CRM, with each dimension playing a unique role in influencing customer loyalty.
- The crucial role of security in influencing loyalty emphasizes the need for strong security measures to protect customers' privacy and information.
- Problem-solving, customer orientation, and technology were also identified as critical contributors to customer loyalty, emphasizing the importance of addressing customer issues, prioritizing customer needs, and capitalizing on technological advancement.
- This study found a statistically significant impact of E-CRM dimensions on customer experience at Royal Jordanian Airlines. This implies that effective E-CRM practices improve the overall customer experience by shaping how customers perceive their interactions with airlines.
- The study found a statistically significant impact of E-CRM dimensions on customer loyalty to Royal Jordanian Airlines. This is consistent with the findings of Yang and Bababour (2023), Kumar and Mokha (2021), and Chi (2018), who emphasize the overall role of E-CRM in fostering customer loyalty.
- Customer experience has a statistically significant impact on loyalty to Royal Jordanian Airlines. This emphasizes the pivotal role of positive customer experiences in fostering long-term loyalty, as affirmed by previous research conducted by Yang and Bababour (2023).
- Customer experience was identified as a key mediator between the E-CRM dimensions and customer loyalty. This suggests that positive customer experience enhances the impact of e-CRM on loyalty. Kumar and Mokha (2021) support this finding.

5.2. Recommendations

- Prioritize initiatives to improve the efficiency and trustworthiness of the Royal Jordanian Airlines website. Regular updates, user-friendly interfaces, and robust security measures may be required to provide customers with a seamless and reliable online experience.
- Implementing comprehensive measures to improve customer security, such as the introduction of new security protocols and programs. Maintaining the highest levels of customer information security and privacy are critical for establishing and maintaining customer loyalty.
- To meet these cutting-edge requirements, the digital platforms of Royal Jordanian Airlines should be strategically revamped. This could include implementing cutting-edge technologies, fine-tuning user interfaces, and maintaining a consistent and engaging online presence across multiple platforms.
- Improve the responsiveness of Royal Jordanian Airlines to consumer complaints and inquiries on its website. Dedicated and efficient customer service platforms can significantly increase customer satisfaction and loyalty. Real-time communication channels and robust complaint-resolution mechanisms are critical.
- Prioritize client requirements by actively seeking and implementing solutions to challenges via improved online communication channels. Understanding and promptly addressing customer needs improves overall customer experience, fostering loyalty and satisfaction.
- Prioritize inclusivity by incorporating accessibility features for people with disabilities on the Royal Jordanian website. This may include incorporating assistive technologies, adhering to accessibility standards, and performing regular audits to improve a website's usability for all users.
- The scope of future research should be expanded to include a wider range of service sectors, such as communications. This approach provides a more comprehensive understanding of the effects of E-CRM dimensions on customer loyalty across industries, enhancing the generalizability of the findings and contributing to broader knowledge.

Authors' contributions

Conceptualization, M.A. and N.A.; methodology, M.A. and N. A.; software, M.A.; validation, M.A. and N.A.; formal analysis, M.A. and N.A.; investigation, N.A.; resources, M.A. and N.A.; data curation, N.A.; writing—original draft preparation, O. S.; writing—review and editing, O.S. and N.A.; visualization, M.A. and N.A.; supervision, M.A. and N. A.; project administration, M.A. and N.A.

Contribution of the study

This study empirically demonstrates the significant impact of E-CRM dimensions (security, problem solving, customer orientation, and technology) on customer loyalty in the airline industry, with a particular emphasis on Royal Jordanian Airlines. Furthermore, it demonstrates the mediating role of customer experience in shaping the relationship between e-CRM and customer loyalty. The findings offer practical insights into improving the effectiveness of E-CRM strategies and customer relationships in the aviation industry.

Disclosure statement

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Data availability statement

Data is applicable upon request. All authors agree to be accountable for all aspects of the work.

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Appendix

Appendix I: Questionnaire

Al-Zaytoonah University of Jo`rdan

Faculty of Business

Dear colleagues and clients:

First, I would like to thank you for your cooperation and I would like to express my gratitude for taking part of your time to respond to this questionnaire, as part of the letter entitled ' **The Impact of E-CRM on Customer Loyalty in the Airline Industry: The Mediating Role of Customer Experience**' which will be presented to meet the requirements of the marketing master of the University of Zaytouna of Jordan.

Yours sincerely...

Supervisor

Dr: Nafez Ali

Student

Maha Talal Alfayez

mahaalfayez82@gmail.com

Please read the following statement accurately and choose the appropriate answer:

1. Gender:

Male ☐ Female ☐

2. Age:

From 18 to 23 ☐ From 24 to 33 ☐ From 34 to 41 ☐

From 42 to 49 ☐ 50 and older ☐

3. Social status:

Single ☐ Married ☐ Other ☐

4. Academic Qualification:

High School and Below ☐ Bachelor ☐ Graduate Studies ☐

5. Monthly income:

Less than 500 ☐ From 501 to 1000 ☐ From 1001 to 1500 ☐

From 1501 to 2000 ☐ 2000 and more ☐

6. Job:

Employee ☐ Manager ☐ freelance work ☐ Other ☐

1) Did you purchase a travel ticket or perform any travel-related service through the Royal Jordanian website?

() Yes

() No

***If the answer is no, then thank you very much. The questionnaire has ended**

First: Electronic Customer Relations Management

		Security				
Section		Strongly disagreed	Disagreed	neutral	Agree	Strongly agreed
1	I feel safe giving my credit card information on the Royal Jordan website					
2	I have confidence in the website of the Royal Jordan					
3	The Royal Jordan website provides high confidentiality of customers' personal information					
4	The Royal Jordan website is highly efficient and credible					

Technology						
Section	Strongly disagreed	Disagreed	neutral	Agree	Strongly agreed	
5	Royal Jordan information systems provide comprehensive data that meets all customer needs.					
6	Royal Jordan has the right program for customer service.					
7	Royal Jordan has a strong presence on digital platforms.					
8	Royal Jordan has the right technical staff to provide technical support to customers.					
Problem-Solving						
Section	Strongly disagreed	Disagreed	neutral	Agree	Strongly agreed	
9	The Royal Jordan website has the ability to solve problems faced by customers					
10	Royal Jordan responds to inquiries and complaints faced by customers through their online platforms.					
11	Royal Jordan provides online complains form when customers face any problem					
12	the website of royal Jordan provides appropriate content to customers with how to book through the website to avoid booking problems.					
Customer Orientation						
Section	Strongly disagreed	Disagreed	neutral	Agree	Strongly agreed	
13	Royal Jordan is interested in customers' opinions.					
14	Royal Jordan is distinguished in terms of service and the development of its website.					
15	Royal Jordan is interested in increasing value for customers.					
16	Contacting with customers online to solve their problems and give the utmost importance to their needs.					
Second: Customer Experience						
Customer Experience						
Section	Strongly disagreed	Disagreed	neutral	Agree	Strongly agreed	
17	Booking on Royal Jordanian website and obtaining tickets smoothly and flexible.					
18	Royal Jordanian Airlines website services suitable for persons with special needs.					
19	The Royal Jordanian website is highly credible in terms of the information it provides to customers.					
20	My experience through booking on the website makes me advise on dealing with Royal Jordan.					
Third: Customer loyalty						
Customer loyalty						
Section	Strongly disagreed	Disagreed	neutral	Agree	Strongly agreed	
21	Permanent Travel Program attracts customers to re-book at Royal Jordan.					
22	Benefits offered by Royal Jordan which customers receive from repeated membership led to loyalty.					
23	I prefer to book my tickets exclusively with Royal Jordanian Lines.					
24	I recommend friends and relatives travel through Royal Jordanian Lines.					
Any remarks you wish to present to the researcher:						

Thank you for your cooperation