"Impact of electronic customer relationship management on competitive advantage: Mediating role of customer satisfaction in EgyptAir"

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IMPACT OF ELECTRONIC CUSTOMER RELATIONSHIP MANAGEMENT ON COMPETITIVE ADVANTAGE: MEDIATING ROLE OF CUSTOMER SATISFACTION IN EGYPTAIR

Abstract

In today's highly competitive business environment, organizations, particularly in the airline industry, are increasingly adopting electronic customer relationship management (E-CRM) to enhance customer engagement and achieve a competitive edge. This study aims to analyze the impact of E-CRM on the competitive advantage of EgyptAir, focusing on customer satisfaction as a mediating factor. Employing a descriptive and analytical methodology, the paper surveyed 355 EgyptAir customers, utilizing a structured questionnaire to gather data on E-CRM practices, customer satisfaction, and competitive advantage. The findings reveal a significant positive correlation between E-CRM and competitive advantage, with a correlation coefficient (R) of 0.56 and a determination coefficient (R^2) of 0.315, indicating that E-CRM accounts for 31.5% of the variance in competitive advantage. Furthermore, the results demonstrate that customer satisfaction significantly mediates this relationship, with E-CRM explaining 43.9% of the variance in customer satisfaction ($R^2 = 0.439$) and a direct positive impact of customer satisfaction on competitive advantage ($R = 0.38$, $R^2 = 0.247$). Path analysis using AMOS v.24 confirmed these findings, showing both direct and indirect effects of E-CRM on competitive advantage through customer satisfaction. The model fit indices (CFI = 0.894, RMSEA = 0.000) suggest a robust model. The study underscores the crucial role of E-CRM in fostering customer satisfaction and enhancing competitive advantage in the airline industry, providing valuable insights for airlines aiming to leverage E-CRM for sustainable success.

Keywords	electronic customer relationship management, competitive advantage, customer satisfaction, EgyptAir
JEL Classification	M10, M31

INTRODUCTION

In today's intensely competitive business environment, organizations constantly strive for differentiation and sustainable success (Heizer & Render, 2013). Traditional marketing approaches, often requiring significant financial investments, are increasingly ineffective in the face of growing competition and the rise of e-commerce (Hassoun & Ali, 2018). This shift has led to the widespread adoption of relationship-based strategies, emphasizing customer retention, acquisition, and the fulfillment of customer needs through a deep understanding of their requirements (Budiarti, 2024). Consequently, customer relationship management (CRM) has become a core marketing strategy (Al-Romeedy, 2024). However, the rapid expansion of the e-marketplace and the internet's global accessibility has introduced a new dimension to customer engagement, leading to the emergence of electronic customer relationship

management (E-CRM) (Kneafsey et al., 2016). E-CRM utilizes the internet to establish stronger connections with global audiences, facilitating personalized interactions, data analysis, and online communication (Gadiparthi, 2024).

The airline industry, a vital driver of global economic growth, is particularly impacted by this dynamic shift. While airlines have been early adopters of E-CRM, recognizing its importance in maintaining or increasing market share (Coltman et al., 2011), fierce competition and declining customer loyalty continue to pose significant challenges (Alqarni et al., 2023). Moreover, the aviation sector's reliance on customer loyalty programs and personalized services underscores the critical role of E-CRM in sustaining competitive advantage and fostering customer satisfaction (Brun et al., 2014). Understanding the intricate relationship between E-CRM and competitive advantage is essential for airlines that aim to leverage technological advancements for improved customer engagement and market differentiation (Garcia et al., 2012).

1. LITERATURE REVIEW

Electronic customer relationship management (E-CRM) is a strategic approach that leverages technology to enhance customer relationships and business profitability. It is essential in today's competitive airline industry, where over 65% of customers involved in online transactions or services would not return unless they received effective follow-up communication and felt engaged in long-term partnerships (Wadjdi & Djamin, 2021). This underscores the necessity for robust customer information databases, enabling organizations to attract and retain high-value customers while avoiding less profitable ones. Successful E-CRM implementation requires strategic planning, a competitive edge, data collection, and effective use of technology (Al-Dajani & Al-Dubai, 2017). However, challenges such as misalignment between company strategy and E-CRM initiatives, ineffective software deployment, user resistance, organizational scale, and lack of information security measures persist (Al-Haraizah, 2014).

E-CRM strategies encompass customer acquisition, classification, customization, and retention. Effective customer acquisition enhances marketing strategies and attracts potential clients (Ab Hamid et al., 2011). Customer classification involves identifying and targeting high-value customers using collected data (Chowdhury, 2011; Jayashree et al., 2010). Adding value for high-end customers through tailored marketing messages and solutions meets specific needs and preferences. Customer retention, the most significant challenge, requires analyzing customer data to provide optimal value, efficiently handling inquiries and complaints, and introducing new products and services that foster loyalty (Garcia et al., 2012).

The airline industry, a vital driver of global economic growth, actively employs yield management strategies and adapts business models in response to dynamic market conditions, particularly during the COVID-19 pandemic. Gabor et al. (2022) confirm that yield management is effectively utilized by the Romanian national full-service airline TAROM, which strategically controls resources to sell tickets at optimal prices to the right customers at the right time. This approach is critical in maintaining competitiveness and customer orientation, serving as a benchmark for other industries. Sahin and Can (2022) provide insights into how global airline companies define and modify their business models in light of the COVID-19 pandemic, revealing a convergence of business model components as airlines navigate the crisis. Both studies highlight the importance of agile and customer-centric business strategies for the success of airlines in the E-CRM landscape.

Recent literature reveals that relationship immersion in frequent flyer programs enhances brand attachment and loyalty (Hee et al., 2023), while effective customer segmentation can be achieved using the k-means algorithm, leading to improved service quality and customer satisfaction (Sahinbas, 2022). Relationship immersion significantly affects brand attachment and customers' intention to maintain relationships with airlines, a crucial aspect of E-CRM practices. Emotional and computational immersions were identified as sig-

nificant sub-factors influencing customers' relationship persistence with airlines. Sahinbas (2022) compared data mining methods for customer segmentation and found that the k-means algorithm outperformed DBSCAN, indicating its suitability for categorizing airline customers to improve service delivery and satisfaction.

Examining E-CRM practices in the airline industry reveals significant insights into customer satisfaction and segmentation but leaves room for further exploration (Ismail & Hussin, 2016; Sahinbas, 2022; Sahin & Can, 2022; Hee et al., 2023; Gabor et al., 2022; Dubihlela & Molise Khosa, 2014). Research needs to explore the impact of E-CRM on customer retention and loyalty post-pandemic as the airline industry evolves (Sahin & Can, 2022). The effectiveness of E-CRM tools across different airline business models and cultural contexts remains underexamined Dubihlela & Molise Khosa, 2014). Moreover, understanding the role of advanced technologies, such as artificial intelligence and machine learning, in enhancing E-CRM practices in the airline industry is crucial (Sahinbas, 2022). Further research should address these gaps to improve customer relationship management in the dynamically changing airline sector.

Customer satisfaction plays an intricate role as a mediating factor between various antecedents and outcomes, such as customer loyalty and purchase intentions. Bowen and Chen (2001) found a nonlinear relationship between customer satisfaction and loyalty in the hotel industry. Oliver's (1980) seminal work provides a foundational cognitive model showing that satisfaction is a consequence of expectancy disconfirmation, affecting subsequent attitudes and purchase intentions. Hayati et al. (2020) demonstrate that customer satisfaction mediates the relationship between micro-banking image, customer relationship, and customer loyalty, confirming its pivotal role as a mediator in the banking sector.

Studies confirm the critical role of customer satisfaction as a mediating factor in complex models linking company strategies to customer loyalty. Khan et al. (2020) found that CRM and company reputation positively and significantly affect customer loyalty, with customer satisfaction serving as a partial mediator. Kamath et al. (2020) dis-

covered that the path from customer experience to loyalty is serially mediated by brand equity and customer satisfaction in retail banking. Age, gender, and education were identified as moderating factors, indicating that the strength of these mediating relationships may vary across different demographic groups.

A systematic review reveals significant cognitive and affective precursors to consumer satisfaction, with cognitive factors gaining prominence in traditional purchasing behaviors (Palací et al., 2019). Palací et al. (2019) examined the evolution of research on consumer satisfaction, identifying cognitive and affective antecedents through a comprehensive analysis of empirical studies. Cognitive aspects are more strongly associated with traditional purchasing, while both cognitive and affective factors significantly influence satisfaction in service consumption. This suggests the role of customer satisfaction as a mediating factor varies depending on the purchasing context and the nature of the product or service.

Despite the substantial body of literature on customer satisfaction and its role as a mediating factor in customer loyalty (Bowen & Chen, 2001; Khan et al., 2020; Palací et al., 2019; Oliver, 1980; Hayati et al., 2020; Kamath et al., 2020), certain gaps persist that warrant further investigation. The nonlinear relationship between customer satisfaction and loyalty (Bowen & Chen, 2001) suggests the existence of threshold effects or moderating variables that have not been fully explored. Research on the impact of customer satisfaction in different cultural and economic contexts, particularly in turbulent markets, is limited (Khan et al., 2020), pointing to a need for more geographically diverse studies. While the cognitive and affective antecedents of satisfaction have been identified (Palací et al., 2019), their relative importance and interaction in shaping customer satisfaction in the digital era remain under-researched.

This literature review and case study analysis have demonstrated the substantial impact of E-CRM on customer satisfaction and competitive advantage in the airline industry. Customer satisfaction can emerge as a critical mediator, with E-CRM efforts translating into higher levels of satisfaction, which, in turn, contribute to competitive ad-
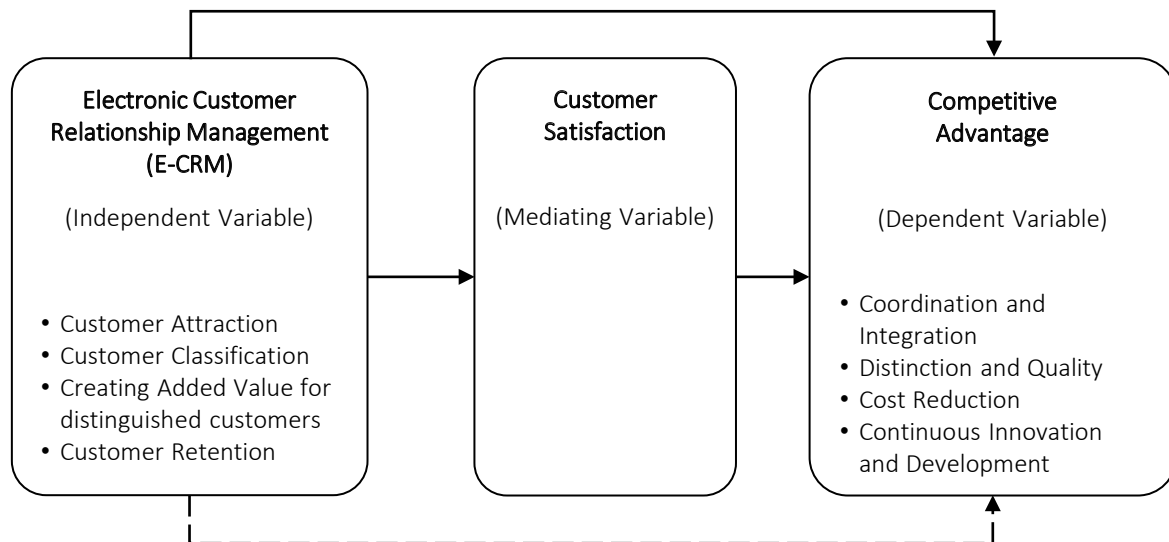
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┌─────────────────────────┐     ┌─────────────────┐     ┌─────────────────────────┐
│ Electronic Customer     │     │ Customer        │     │ Competitive             │
│ Relationship Management │     │ Satisfaction    │     │ Advantage               │
│ (E-CRM)                 │     │                 │     │                         │
│                         │  →  │ (Mediating      │  →  │ (Dependent Variable)    │
│ (Independent Variable)  │     │  Variable)      │     │                         │
│                         │     │                 │     │ • Coordination and      │
│ • Customer Attraction   │     │                 │     │   Integration           │
│ • Customer Classification│    │                 │     │ • Distinction and Quality│
│ • Creating Added Value  │     │                 │     │ • Cost Reduction        │
│   for distinguished     │     │                 │     │ • Continuous Innovation │
│   customers             │     │                 │     │   and Development        │
│ • Customer Retention    │     │                 │     │                         │
└─────────────────────────┘     └─────────────────┘     └─────────────────────────┘
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Figure 1. Theoretical framework

vantage. Integrating E-CRM into business strategies is crucial for fostering customer loyalty and maintaining a competitive edge. Therefore, this study aims to explore the impact of E-CRM on EgyptAir's competitive advantage, focusing on customer satisfaction as a mediating factor.

Using an analysis of existing literature and pertinent references, a research model was developed to visually represent the correlation between the research variables, as shown in Figure 1.

Based on the study model, the research hypotheses can be expressed as follows:

H1: *There are significant differences in the perception of E-CRM and its relationship with customer satisfaction at EgyptAir.*

H2: *E-CRM has a significant positive impact on customer satisfaction at EgyptAir.*

H3: *E-CRM has a significant positive impact on the competitive advantage of EgyptAir.*

H4: *Customer satisfaction has a significant positive impact on the competitive advantage of EgyptAir.*

H5: *E-CRM impacts competitive advantage through customer satisfaction at EgyptAir as a mediating variable.*

2. METHOD

The study employed a descriptive methodology to accurately interpret and describe the phenomenon being studied. It aimed to represent the phenomenon both qualitatively and quantitatively, focusing on its characteristics such as E-CRM, customer satisfaction, and competitive advantage. In addition, the analytical approach entails the examination and interpretation of the relationships between the variables being studied. The target population is EgyptAir customers, primarily passengers who travel on the airline's local and international flights. A random sample of 384 individuals participated and approached directly while visiting EgyptAir offices and agents in Cairo. In addition, an electronic version of the questionnaire was sent online to persons who regularly visit tourism and travel websites and use social media platforms. The data-gathering process lasted for a period of three months, starting on October 10, 2022, and ending on January 13, 2023. Upon evaluating the gathered questionnaires, a total of 355 were considered suitable for analysis, indicating a response rate of 93.2%.

A questionnaire was developed to collect primary data to address the research problem and hypotheses. It consisted of four sections: demographics, E-CRM, customer satisfaction, and competitive advantage. A 3-point Likert scale (agree, neutral, disagree) was utilized to measure respondents' agreement with statements. Table 1 shows the specific scale used.

Table 1. The scales and number of questionnaire items for the research variables

Variable	Type	Dimensions	Number of Items
Electronic Customer Relationship Management (E-CRM)	Independent	Customer Attraction	4
		Customer Classification	5
		Creating Added Value for Distinguished Customers	3
		Customer Retention	3
Customer Satisfaction	Mediating		10
Competitive Advantage	Dependent	Coordination and Integration	3
		Distinction and Quality	3
		Cost Reduction	4
		Continuous Innovation and Development	4

In Table 2, the Cronbach's alpha coefficient for all study variables (independent, mediating, and dependent) was calculated to be 0.739, indicating a strong level of reliability for the study sample. The questionnaire also exhibited a high level of dependability. Alpha values greater than 0.6 suggest that the scales possess internal consistency and accurately quantify the studied phenomenon. This is further demonstrated by the internal validity coefficient, which is represented by the square root of reliability and has a value of 0.856.

Additionally, the dependability coefficients for the E-CRM dimensions, used as the independent variable, showed high values ranging from 0.821 to 0.849. Similarly, the reliability coefficients for the customer satisfaction variable, used as the mediating variable, demonstrated a high level of consistency, with a value of 0.788. The dependability coefficients for the dimensions of competitive advantage, used as the de-

pendent variable, exhibited high values ranging from 0.705 to 0.768. These results indicate the reliability of the assessment scales and validate the generalization of the study's findings to the broader population.

3. RESULTS

The sample comprised 136 females, representing 38.3% of the total, and 219 males, constituting 61.6%. The age group "35 to less than 45 years old" was the largest, accounting for 34.6%, followed by the age group "25 to less than 35 years old," which represented 21.4%. The age group "55 years old and above" was the least represented, comprising only 8.9% of the study participants.

Regarding the monthly income of the sample, the largest proportion (36%) fell within the income range of "5001 to 10000 EGP," while the second largest group (32%) earned "10001 to 20000 EGP."

Table 2. Reliability and internal consistency coefficients

Study Dimensions	Number of Statements	Reliability Coefficient	Validity Coefficient
Independent Variable Dimensions (Electronic Customer Relationship Management)			
Customer Attraction	4	0.680	0.824
Customer Classification	5	0.675	0.821
Creating Added Value for Distinguished Customers	3	0.722	0.849
Customer Retention	3	0.708	0.841
Total E-CRM Dimensions		0.696	0.834
Mediating Variable (Customer Satisfaction)			
Customer Satisfaction	10	0.788	0.887
Dependent Variable Dimensions (Competitive Advantage)			
Coordination and Integration	3	0.705	0.839
Distinction and Quality	3	0.768	0.876
Cost Reduction	4	0.745	0.863
Continuous Innovation and Development	4	0.718	0.847
Total Competitive Advantage Dimensions		0.734	0.856
(Total Dimensions of Independent, Mediating, and Dependent Variables)		**0.739**	**0.859**

Table 3. Demographics

Variable	Frequency	Percentage (%)
Gender		
Female	136	38.3
Male	219	61.6
Age		
Less than 25 years old	52	14.6
25 to less than 35 years old	76	21.4
35 to less than 45 years old	123	34.6
45 to less than 55 years old	73	20.5
55 years old and above	31	8.9
Monthly Income		
2000 to 5000 EGP	39	11
5001 to 10000 EGP	128	36
10001 to 20000 EGP	113	32
More than 20000 EGP	75	21
Total	355	100

To test H1, a t-test was conducted to evaluate the understanding of E-CRM and its relationship with customer satisfaction between males and females, with the aim of determining if there were any significant variations based on demographic parameters. Additionally, a one-way ANOVA analysis was performed to assess variations in age and monthly income.

Table 4 reveals that the observed significance level (Sig) is 0.000, which is below the theoretical sig-

nificance level of 0.05. This indicates a statistically significant difference between males and females in their perceptions of E-CRM and its impact on customer satisfaction, with males demonstrating a more favorable view.

Table 5 demonstrates a highly significant F-statistic (0.00), indicating substantial variations in the average scores of survey participants across different age groups regarding their perceptions of E-CRM and its impact on customer satisfaction.

Table 6 demonstrates a statistically significant F-statistic (0.00), indicating substantial variations in the average scores of survey participants based on their income levels in connection to their opinions of E-CRM and its impact on customer satisfaction.

A simple linear regression analysis was conducted to ascertain the characteristics and intensity of the correlation between E-CRM and customer satisfaction at EgyptAir (H2). Table 7 demonstrates the nature and extent of this relationship. Analysis revealed a positive statistically significant relationship ($p = 0.000$) between E-CRM and customer satisfaction, with a correlation coefficient (R) of approximately 0.66, indicating a strong relation-

Table 4. t-test analysis

Dimensions	Number (n)	Mean	Standard Deviation	Degrees of Freedom (df)	Observed Significance Level	Calculated t-value	Significance
Gender							
Male	219	2.633	0.881	354	0.000	2.682	*
Female	136	1.322	0.365				

Note: ** Significant at $p < 0.01$. *Significant at $p < 0.05$.

Table 5. One-way ANOVA test: Differences based on age

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	Calculated F-statistic	P-value
Between Groups	18.346	4	4.586	7.1433	0.000
Within Groups	225.010	350	0.642		
Total	243.356	354			

Note: ** Significant at $p < 0.01$. *Significant at $p < 0.05$.

Table 6. One-way ANOVA test: Differences between E-CRM and its relationship with customer satisfaction based on income

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	Calculated F-statistic	P-value
Between Groups	21.255	4	5.3137	7.9785	0.000
Within Groups	233.118	350	0.666		
Total	254.435	354			

Note: ** Significant at $p < 0.01$. *Significant at $p < 0.05$.

Table 7. Outputs of simple linear regression analysis: H2

Correlation Coefficient (R)	Coefficient of Determination (R²)	T-statistic	Significance Level (Sig.)
0.663	0.439	19.08	0.001

Table 8. Outputs of simple linear regression analysis: H3

Correlation Coefficient (R)	Coefficient of Determination (R²)	T-statistic	Significance Level (Sig.)
0.562	0.315	27.12	0.001

Table 9. Outputs of simple linear regression analysis: H4

Correlation Coefficient (R)	Coefficient of Determination (R²)	T-statistic	Significance Level (Sig.)
0.381	0.247	42.077	0.000

ship. Additionally, the coefficient of determination (R^2) of 0.439 suggests that E-CRM explains 43.9% of the variance in customer satisfaction. These findings confirm the second hypothesis that E-CRM has a significant positive impact on customer satisfaction at EgyptAir.

To investigate the relationship between E-CRM and competitive advantage at EgyptAir (H3), a simple linear regression analysis was conducted (Table 8). Analysis revealed a positive statistically significant relationship ($p = 0.000$) between E-CRM and competitive advantage, with a correlation coefficient (R) of approximately 0.56, indicating a strong relationship. Additionally, the coefficient of determination (R^2) of 0.315 suggests that E-CRM explains 31.5% of the variance in competitive advantage. These findings confirm the third hypothesis that E-CRM has a significant positive impact on EgyptAir's competitive advantage.

To investigate the relationship and extent of impact between customer satisfaction and competitive advantage at EgyptAir (H4), a simple lin-

ear regression analysis was conducted (Table 9). Analysis revealed a positive, statistically significant relationship ($p = 0.000$) between customer satisfaction and competitive advantage, with a correlation coefficient (R) of approximately 0.38, indicating a robust relationship. Additionally, the coefficient of determination (R^2) of 0.247 suggests that customer satisfaction explains 24.7% of the variance in competitive advantage. These findings confirm the fourth hypothesis that customer satisfaction has a significant positive impact on EgyptAir's competitive advantage.

To test H5, which proposes a mediating effect of customer satisfaction on the relationship between E-CRM and competitive advantage, a path analysis was conducted using AMOS v.24. The results, including direct and indirect effects, are visualized in Figure 2.

Table 10 illustrates a significant positive direct impact of electronic customer relationship management (E-CRM) on customer satisfaction, with a path coefficient of 0.633 ($p < 0.01$), indicating that
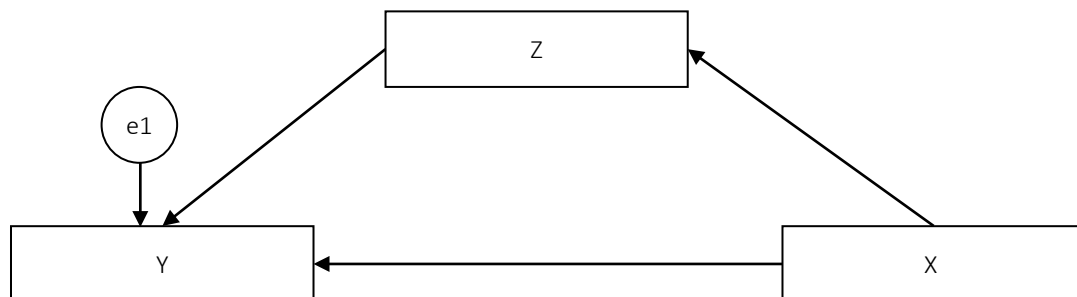
Note: X represents E-CRM, Z represents customer satisfaction, Y represents competitive advantage, and e represents the residuals.

Figure 2. Path analysis model showing the impact of electronic customer relationship management on competitive advantage through customer satisfaction as a mediator

Table 10. Path analysis results

Variables/Paths	Path Coefficient (β)	Standard Error	Significance (P-value)	Estimated Model Quality Indices
Direct Effect				GFI
X → Z	0.633	0.033	0.000	
Z → Y	0.572	0.034	0.001	
X → Y	0.455	0.044	0.000	0.691
Indirect Effect				
X → Y	0.472			

Note: *** Significant at p < 0.000. *X* represents E-CRM, *Z* represents customer satisfaction, and *Y* represents competitive advantage.

a one-unit increase in E-CRM results in a 63% increase in customer satisfaction. The analysis also reveals a significant positive direct impact of customer satisfaction on competitive advantage, with a coefficient of 0.572 ($p < 0.01$), suggesting that a one-unit increase in customer satisfaction leads to a 57% increase in competitive advantage. Additionally, there is a significant direct impact of E-CRM on competitive advantage, with a coefficient of 0.455 ($p < 0.01$), implying a 45% increase in competitive advantage with a one-unit increase in E-CRM. This indicates a partial mediation effect of customer satisfaction.

Moreover, the analysis demonstrates a significant indirect impact of E-CRM on competitive advantage through customer satisfaction, with a magnitude of 0.472, indicating a 47% increase in competitive advantage due to the mediating effect. The model fit indices (Table 10) suggest an excellent model fit: CFI = 0.894 and RMSEA = 0.000, with a Chi-square value of zero. These results confirm the fifth hypothesis that E-CRM affects competitive advantage through customer satisfaction at EgyptAir as a mediating variable.

4. DISCUSSION

This study examined the impact of electronic customer relationship management (E-CRM) on EgyptAir's competitive advantage, emphasizing customer satisfaction as a mediating factor. The results revealed a strong and positive relationship between E-CRM components – customer attraction, classification, added value creation, and retention – and various dimensions of competitive advantage, including coordination and integration, differentiation and quality, cost reduction, and continuous innovation. The analysis also demonstrated that

customer satisfaction significantly mediates this relationship, indicating that E-CRM's effectiveness is partly channeled through its ability to enhance customer satisfaction.

These findings are consistent with existing literature that highlights the significant positive impact of E-CRM on customer satisfaction and loyalty. Kumar et al. (2022) and Yazdanifard and Long (2010) support the view that E-CRM enables organizations to deeply understand and effectively address customer needs through personalized online interactions. It results in heightened customer satisfaction, which in turn contributes to a competitive advantage by fostering customer loyalty, a cost-effective strategy compared to acquiring new customers (Alqarni et al., 2023; Ab Hamid et al., 2011).

Furthermore, this paper underscores the importance of E-CRM in enhancing internal coordination and integration within organizations. This aligns with the findings of Brun et al. (2014), who emphasize the critical role of E-CRM in improving customer understanding and facilitating positive interactions. However, this current study adds a specific focus on the airline industry, particularly through the lens of EgyptAir, providing a sector-specific insight into E-CRM's applications and benefits.

The high correlation coefficients and strong model fit indices (CFI = 0.894, RMSEA = 0.000) indicate the robustness of these findings. Notably, the data suggest that E-CRM strategies are not only effective in isolation but also in creating synergistic effects that amplify overall competitive advantage when combined with other customer-centric initiatives. This multi-faceted approach highlights the potential for E-CRM to be a cornerstone in broader strategic frameworks aimed at sustaining competitive edges.

Nevertheless, the study's limitation lies in its focus on a single airline within a specific context. Future research could extend this scope to include multiple airlines within the Star Alliance network and explore the impacts of specific E-CRM strategies on different customer demographics. Additionally, integrating qualitative methods, such as customer interviews, with quantitative data could provide a more comprehensive understanding of E-CRM's impact. This approach could uncover deeper insights into customer experiences and preferences, leading to more tailored and effective E-CRM strategies.

This study confirms that E-CRM significantly enhances EgyptAir's competitive advantage through improved customer satisfaction. These findings suggest that E-CRM is a valuable strategic tool for airlines aiming to achieve sustainable success in the highly competitive global airline industry. Future research should further explore the broader applications of E-CRM across various airlines and customer segments to validate and extend these insights. Emphasizing continuous innovation and responsiveness to customer feedback will be critical for leveraging E-CRM to its fullest potential in enhancing competitive advantage.

CONCLUSION

The purpose of this study was to analyze the impact of electronic customer relationship management (E-CRM) on the competitive advantage of EgyptAir, with a focus on customer satisfaction as a mediating factor. The results demonstrate that E-CRM significantly contributes to competitive advantage by enhancing customer satisfaction. Specifically, E-CRM components such as customer attraction, classification, added value creation, and retention showed a strong positive relationship with dimensions of competitive advantage, including coordination and integration, differentiation and quality, cost reduction, and continuous innovation.

The findings reveal that E-CRM accounts for 31.5% of the variance in competitive advantage, with customer satisfaction mediating 43.9% of the relationship between E-CRM and competitive advantage. This indicates that the implementation of E-CRM strategies not only directly affects competitive advantage but also indirectly strengthens it through improved customer satisfaction. The robust model fit indices further validate the reliability of these findings, suggesting a comprehensive and effective E-CRM framework.

The study highlights the critical role of E-CRM in fostering a competitive edge for airlines like EgyptAir. The significant mediation effect of customer satisfaction underscores the importance of focusing on customer-centric strategies to achieve sustainable success. These insights suggest that airlines should continue to invest in and refine their E-CRM practices to enhance customer satisfaction and, consequently, their competitive advantage. Future research should explore the broader applications of E-CRM across different airlines and customer segments to validate and extend these findings further. Additionally, incorporating qualitative insights from customer feedback can provide a more nuanced understanding of E-CRM's impact, guiding more tailored and effective strategy implementations.

AUTHOR CONTRIBUTIONS

Conceptualization: Abdelrehim Awad.
Data curation: Muhanad Mahmoud.
Formal analysis: Abdelrehim Awad.
Funding acquisition: Muhanad Mahmoud.
Investigation: Abdelrehim Awad.
Methodology: Abdelrehim Awad.
Project administration: Abdelrehim Awad.

Resources: Abdelrehim Awad.
Software: Muhanad Mahmoud.
Supervision: Abdelrehim Awad.
Validation: Muhanad Mahmoud.
Visualization: Muhanad Mahmoud.
Writing – original draft: Abdelrehim Awad.
Writing – review & editing: Abdelrehim Awad, Muhanad Mahmoud.

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