# Leveraging Artificial Intelligence (AI) in E-CRM to Improve Customer Interactions and Brand Voice

# الاستفادة من الذكاء الاصطناعي (AI) في إدارة علاقات العملاء الإلكترونية لتحسين تفاعلات العملاء وصوت العلامة التجارية

**Yasmin Sakka** [1*]

[1]Faculty of Administrative and Financial Sciences- Management Information Systems Department, University of Petra, Amman, Jordan

ysakka@uop.edu.jo

## Abstract

Artificial intelligence based electronic customer relationship management (AI-ECRM) is considered a crucial tool to understand the customers of an organization more systematically by detecting, satisfying, and retaining the best customers. The study aims to explore the implication of leveraging AI-ECRM on customer interaction dynamics and an organization's brand voice. A survey-based study was conducted in UAE and customers and employers were targeted. A total of 500 responses were obtained from the customer and 250 responses were obtained from the employers. For statistical analysis, SPSS software 2023 was utilized for the result. Correlation, regression, and chi-square tests were run to find the association. The overall result revealed that there was a positive association between AI-ECRM with customer interaction and brand voice. A P-value of 0.000 was obtained, showing a strong association between the variables. The hypothesis tested throughout our research consistently demonstrated positive association underscoring the pivotal role played by AI-ECRM in shaping and enhancing customer experience. Firstly, our finding affirms that the integration of AI-ECRM systems significantly improves customer interaction, thereby laying the foundation for a positive customer experience. This positive interaction acts as a catalyst for fostering greater customer satisfaction and subsequently nurturing customer loyalty. Furthermore, our investigation extends beyond the customer-centric sphere to highlight the broader implications for organizations' brand voice. The positive influence of AI-ECRM on an organization's brand voice is a critical revelation as it not only ensures consistency across channels but also elevates brand perception metrics.

## الملخص

تعتبر إدارة علاقات العملاء الإلكترونية القائمة على الذكاء الاصطناعي ( AI-ECRM)أداة حاسمة لفهم عملاء المؤسسة بشكل أكثر منهجية من خلال اكتشاف أفضل العملاء وإرضائهم والاحتفاظ بهم. تهدف الدراسة إلى استكشاف الآثار المترتبة على الاستفادة من AI-ECRM على ديناميكيات تفاعل العملاء وصوت العلامة التجارية للمؤسسة. تم إجراء دراسة استقصائية في دولة الإمارات العربية المتحدة وتم استهداف العملاء وأصحاب العمل. تم الحصول على إجمالي 500 رد من العميل وتم الحصول على 250 رد من أصحاب العمل. للتحليل الإحصائي، تم استخدام برنامج SPSS 2023 للحصول على النتيجة. تم إجراء اختبارات الارتباط والانحدار ومربع كاي للعثور على الارتباط. كشفت النتيجة الإجمالية عن وجود ارتباط إيجابي بين AI-ECRM وتفاعل العملاء وصوت العلامة التجارية. تم الحصول على قيمة P بقيمة 0.000، مما يدل على وجود ارتباط قوي بين المتغيرات. أظهرت الفرضية التي تم اختبارها خلال بحثنا باستمرار ارتباطًا إيجابيًا يؤكد الدور المحوري الذي تلعبه AI-ECRM في تشكيل تجربة العملاء وتعزيزها. أولاً، تؤكد النتائج التي توصلنا إليها أن تكامل أنظمة AI-ECRM يحسن بشكل كبير تفاعل العملاء، وبالتالي يضع الأساس لتجربة إيجابية للعملاء. يعمل هذا التفاعل الإيجابي كمحفز لتعزيز رضا العملاء وبالتالي تعزيز ولاء العملاء. علاوة على ذلك، يمتد تحقيقنا إلى ما هو أبعد من المجال الذي يركز على العملاء لتسليط الضوء على الآثار الأوسع لصوت العلامة التجارية للمؤسسات. يعد التأثير الإيجابي لـ AI-ECRM على صوت العلامة التجارية للمؤسسة بمثابة اكتشاف بالغ الأهمية لأنه لا يضمن الاتساق عبر القنوات فحسب، بل يرفع أيضًا مقاييس إدراك العلامة التجارية.

**Keywords:** Artificial intelligence, Customer service, ECRM

## 1. Introduction

Customer relationship management (CRM) is considered a crucial tool to understand the customers of an organization more systematically by detecting the best customers and satisfying

and retaining them (Kennedy, 2006, P.58). The CRM is linked with the methods for enhancing the business through improving the satisfaction of customer and performance of the organization (Keramati et al., 2010; Nguyen & Dilip, 2012). CRM is fundamentally concerned with the strategy, process, and technology that allows businesses to arrange relationships with existing and potential suppliers, vendors, and customers just not solely for transaction purposes but also for various transactions in the future.

AI-based Electronic Customer Relationship Management (AI-ECRM) is the term used to describe the incorporation of artificial intelligence technologies into CRM systems to improve their capacity for customer interaction, personalization, and data processing. AI-ECRM helps businesses better analyze customer data, forecast behavior, and customize interactions by utilizing technologies like machine learning, natural language processing, and predictive analytics. This integration helps with decision-making by automating repetitive tasks and delivering real-time, actionable insights. AI-ECRM ensures a more proactive approach to relationship management by dynamically adapting to changing customer needs, in contrast to traditional CRM systems that mainly concentrate on data storage and manual tracking of customer interactions. All organizations are required to analyze and store data of customer to understand their requirements. As examining a large amount of data is a challenge for the organization, AI-based ECRM is employed to understand the requirements of customers such as likes and dislikes (Awasthi & Sangle, 2012; Chatterjee et al., 2020). This system can be used to enhance the rate of growth, innovation, and performance (Ferreira & Franco, 2019; Schultz et al., 2012). The AI is utilized in several organizations to improve their actual CRM system. Recently Google has applied AI to accurately predict what is being searched by the individuals. Moreover, to attract customers, products of Amazon adopt the assistance of AI algorithms. Considering the processing capabilities, AI is suggested as a significant technology to enhance Customer Relationship Management (CRM) activities (San Martina et al., 2016).

To grow and survive in the competitive environment of business. Organizations are required to endlessly fortify their services, processes, practices, and products (Loukis et al., 2020 Abu Ghazaleh & Zabadi, 2020 Chatterjee et al., 2021). The ECRM not only enhanced the efficiency of customer management but also enhanced customer services preserved the privacy of customers and helped organizations in classifying the requirements of consumers (Adlin et al., 2019). AI-based virtual assistants make individuals' lives easier to do automatically communicating with customers, forecasting preferences for shoppers, and improving retention of customers. It was found by International Data Corporation (IDC) that in 2021 AI-based CRM increased the revenues of businesses by $ 1.1 trillion globally (Alam and Azeem, 2022).

AI-based technology can give recommendations for products and services by looking at recent customers' preferences and purchases. This technology implies various variety of different sectors, like beauty brands, to significantly get recommendations and personalized styles based on their preferences (Maras, 2020). The expected advantages are a reduction of cost, increased flexibility and automation, and streamlined interactions with customers.

Platforms such as social media make it easy for consumers to get to know about information and requirements. Aside from consumers, it also makes it easy for organizations to maintain good relationships with customers and a positive brand voice. With the help of AI-based ECRM brand voice and trust will positively impact customer perception towards the brand and as a result, the decisions of purchasing will increase (Nandya & Permana, 2021). The main aim of a marketing campaign is to promote business profitability and produce and manage good relationships with customers (Kotler & Keller, 2016). Several studies examine the influence of E-CRM on multiple factors like the satisfaction of the customer, the loyalty of customers retention of customers, and many more. The AI-ECRM system is essential to improve customer loyalty and increase profit and competitive benefits of the company. This modern system will help to examine the data of

customers considerably to ensure the making of accurate decisions. The AI-based ECRM is just not a technical revolution, but a requirement that assists in investigating customer data to enhance business to gain success (Kotler & Keller, 2016).

In the dynamic realm of contemporary business, the integration of AI into ECRM systems has emerged as a transformative force. The study aims to explore the implication of leveraging AI-ECRM on customer interaction dynamics and an organization's brand voice. The aim of this research has two folds: firstly, to comprehensively assess the impact of AI ECRM on customer interaction, and secondly to investigate the role of AI ECRM in shaping and amplifying an organization's brand voice across diverse channels. Through these aims, the study seeks to provide practice insights for businesses navigating the interaction of AI, customer relationship management, and brand development. By understanding how AI ECRM influences both customer and employer, organizations can make informed decisions, strategically leveraging technology to foster enduring customer relationships and cultivate a resonant and distinctive brand identity in the competitive marketplace.

The research question of the study is:

Q1. How does the strategic integration of AI into the ECRM system contribute to the enhancement of customer interaction?

Q2. In what way does the implementation of AI-ECRM impact the development and brand voice across multiple channels?

## 2. Literature Review and Hypothesis Development

### *2.1 Customer Interaction*

AI has assisted in a novel period in CRM. Organizations that utilize AI in their ECRM can generate a competitive system by offering extremely efficient and personalized interactions with customers. From predictive analysis to personalization and chatbots, AI-based technologies bring several tools to improve the experience of customers (Shreesagarwani, 2023). The deployment of AI-based technology into ECRM systems presents a promising path for seeking businesses to improve their customer interactions. (Dwivedi & Wang, 2022).

Thus, we hypothesize that:

H1: AI-ECRM improves customer interaction.

### *2.2 Customer Experience*

It has become crucial for organizations to allow customers to live all the relationship moments with a firm in an exceptional manner (Klaus & Maklan, 2013). The main objective of the marketing sector in an organization is to stimulate business profitability and to generate and manage enduring and excellent relationships with customers (Kotler & Keller, 2016). Ding et al. (2011) stated that customer experience is evident to be a significant factor in gaining competitive benefits in financial services online. The advances in AI can enhance the experience of customers by increasing the organization's knowledge about the patterns and preferences of customers (Evans & Ghafourifar, 2019).

Thus, we hypothesize:H1a: Customer interaction positively impacts on customer experience.

### *2.3 Customer Satisfaction*

Customers mostly examine and gather information about products from friends or social media, and make their perceptions and opinions, before making any decisions regarding buying (Klaus & Maklan, 2013). Chahal and Dutta (2014) also stated that good experiences customer improves the rate of satisfaction of the customers. Chandok and Gupta (2014) investigated the relationship

between the experience of customer satisfaction of the customer in the banking industry and found that those customers who had positive experiences resulted in more satisfied customers. Employing AI-based technologies at various customer key points might therefore bring significant advantages to organizations there is a possibility of an increased rate of customer satisfaction. Thus, we hypothesize that:

H1b: Customer interaction positively impacts customer satisfaction.

*2.4 Customer Loyalty*

Satisfaction of customers has been reviewed as one of the significant elements that leads to loyalty of customers (Hosseini & Shahmoradi, 2016). Several researchers have endorsed the idea that the satisfaction of customers is the way to the loyalty of customers (Kamath et al., 2019). Moreover, behavioural theories like learning theories or cognitive dissonance theory have outlined that the loyalty of the customer is one of the significant outcomes of satisfaction of the customer. Tahir (2020) discovered that there is a strong association between satisfaction and loyalty and stated that the customer loyalty level inclines when they are happy with their firms' services/products.

Previous research also suggested that experience mediates the relationship between service quality and loyalty (Chou, 2014). The more consumers know about a company's services, the more they will show loyalty to it (Eisingerich & Bell, 2008). Therefore, customer loyalty is expected to be more positive if customers are satisfied with the process of the AI-based services. Thus, we hypothesize:

H1c: Customer interaction positively impacts customer loyalty.

*2.5 Brand Voice*

The utilization of ECRM is a popular method globally for improving the system. Applying an ECRM system in a company is not easy because it requires a huge amount of money and effort. When any firm adopts the ECRM system, the main objective is to reduce the system's cost of providing customer services. It assists organizations in gaining competitive benefits by providing online services. The satisfaction level of customers is based on development and research practices; the few factors that contribute to the satisfaction level of customers are initializing modernized service approaches (Jutla et al., 2001). Hence, brand voice is expected to be improved if AI-ECRM in the company. Thus, we hypothesize that:

H2: AI-ECRM improve the organization's brand voice.

*2.6 Consistency Across Channels*

A study states that the organization learns many things from the behaviour and attitude of the customer so that they can meet the requirements of the customer and market competition. An organization should examine the behaviour of customers towards the products to give excellent service quality (Wahab et al., 2010). Benitez-Amado et al. (2010) have researched the influence of IT on enhancing the organization's competencies and customer satisfaction. The outcome shows that technological innovation improves organizational skills and capabilities. AI-ECRM can increase the number of users across the various channels. Therefore, we hypothesize that:

H2a: The organization's brand voice positively impacts consistency across channels.

*2.7 Brand Perception Metrics*

ECRM is concentrated on effective interaction and communication with the targeted customers which is related directly to the trust of customers online. A company must detect the elements that build trust among those individuals. A higher rate of perceived trust, and a higher degree of other customer involvement, leads to economic benefits for the company (Alavi et al. 2011)

Therefore, by introducing an AI system in a company there will be an increased level of best

services provided by the company and hence positive perception among customers will be developed. Thus, we hypothesize:

H2b: The organization's brand voice positively impacts brand perception metrics.

*2.8 Perceived Brand Personality*

The rate of an organization's success depends on the utilization of technology (Wahab et al., 2010). The technology utilization should be easy for controlling the relationships with customers that will be an authentic source of information for consumers. A study implements E-CRM in banks and found that it is a valuable tool for increasing the quality and outcomes of their services which causes satisfaction, trust relationship, loyalty, and commitment of customers. The result further shows that if the ECRM system is implemented, the customer will take extra services and it will eventually improve the profit of organizations (Hanif et al., 2020). AI-based ECRM will further increase the annual sales of the company and thus we hypothesize that:

H2c: The organization's brand voice positively impacts perceived brand personality.

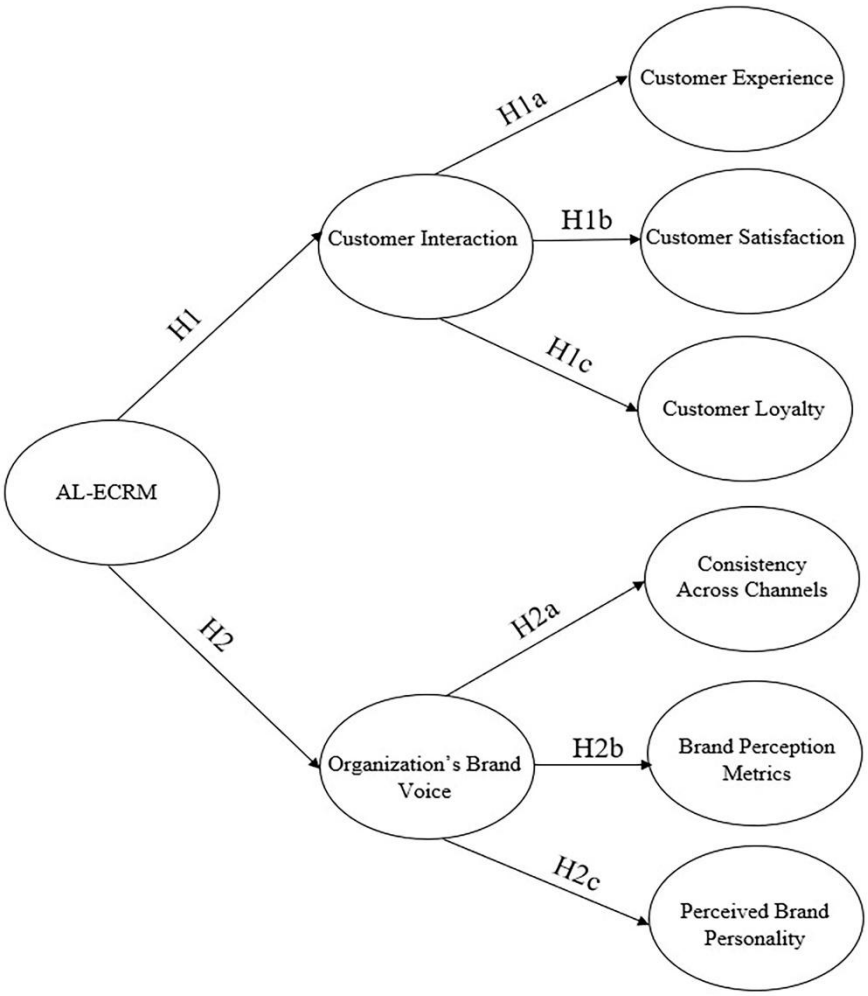


**Figure 1.** Conceptual Model

## 3. Method

*3.1 Study Design*

This study utilized a survey-based research methodology to investigate the impact of integrating artificial intelligence (AI) into Electronic Customer Relationship Management (E-CRM) systems on customer interactions and brand voice performed in UAE. Participants were selected from the

pool of customers and employers actively engaged with the E-CRM system. An email-based survey was administered to gather their perspectives on the effectiveness and satisfaction levels following the introduction of AI within the E-CRM framework. For customer interaction, the surveys were sent to different customers through online platforms and a total of 500 responses were obtained. To find the impact on brand voice, emails were sent to managers of the organization who utilize AI. A total of 250 responses were obtained.

### *3.2 Study Tools*

The questionnaire was prepared based on the previously published literature. For instance, the questionnaire for investigating customer interactions was based on the scale development procedure by Carpenter (2018), customer experience by Kumar et al. (2022), and customer satisfaction and loyalty by Kumar et al. (2022). Whereas, for investigating the organizations' brand voice questionnaire was developed for employers based on the study by Chatterjee et al. (2021), Consistency Across Channels and perceived brand personality by Kımıloğlu and Zaralı (2009), and brand perception metrics by Nandya and Permana, (2021). The questionnaire was based on a 5-point Likert scale, ranging from Strongly Disagree to Strongly Agree.

### *3.3 Data Collection*

The survey questionnaire was distributed via email, providing respondents with a structured format for their responses. Measures were taken to ensure the completeness and accuracy of the data. Incomplete or improperly answered surveys were excluded from the analysis to maintain data integrity.

### *3.4 Statistical Analysis*

The collected data underwent comprehensive statistical analysis using the Statistical Package for Social Sciences 2023 (SPSS). This included reliability tests employing Cronbach's alpha to assess the internal consistency of the questionnaire. Demographic information encompassing participant gender, age distribution, and usage patterns of online platforms such as social media and online shopping was tabulated to provide insights into the characteristics of the sample population. Correlation, regression, and chi-square tests were run to explore relationships between variables.

## 4. Results

### *4.1 Reliability Test*

Table 1 shows the outcomes of the reliability test exhibit a commendable level of internal consistency with a calculated Cronbach Alpha of 0.781 and 0.819 for questionnaires of customers and employers, respectively. This high alpha value indicates robust reliability among the survey items, suggesting that they effectively measure the same underlying construct. In practical terms, respondents consistently provided coherent and reliable responses across the entire set of questions.

**Table 1.** Reliability test for customer questionnaire

| Cronbach's Alpha | N of Items |
|---|---|
| Questionnaire for the customers | |
| 0.781 | 27 |
| Questionnaire for employers | |
| 0.819 | 22 |

### *4.2 Customers*

Table 2 shows the demographics of the customers. Overall, there were 43% male and 56.7% female. The majority of the respondent age was between 36-40 years (34.7%) and 73.7% were undergraduates.

**Table 2.** Demographics of customers

| | Frequency | Per cent |
|---|---|---|
| Gender | | |
| Male | 216 | 43.3 |
| Female | 283 | 56.7 |
| Age | | |
| <35 yrs | 166 | 33.3 |
| 36-40 yrs | 173 | 34.7 |
| 41-45 | 101 | 20.2 |
| 46+ | 59 | 11.8 |
| Education | | |
| Undergraduate | 368 | 73.7 |
| Graduate | 105 | 21.0 |
| Post-Graduate | 26 | 5.2 |
| Experience | | |
| <5 yrs | 223 | 44.7 |
| 5-10 yrs | 135 | 27.1 |
| >10 yrs | 141 | 28.3 |

Table 3 depicts the response of customers on the improvement of customer interaction after applying AI-ECRM. The majority of the respondents agreed that they were comfortable using the AI-ECRM system (222), that it addresses all our requirements (208), satisfactory, that they get more accurate information (257), and that it was cost-effective (173). However, many responses were neutral as well as they were not sure about the results. Several respondents strongly agreed that it is better than the traditional CRM system and was also cost-effective (142).

**Table 3.** Customer Interaction

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I am comfortable using the new AI-ECRM system | 26 | 79 | 137 | 222 | 35 |
| AI-ECRM system can address all our requirements. | 22 | 89 | 150 | 208 | 30 |
| The transition from the legacy CRM system to the AI-ECRM system was satisfactory. | 22 | 59 | 103 | 173 | 142 |
| The new AI-ECRM system is more trustworthy than the legacy CRM system. | 31 | 81 | 67 | 286 | 34 |
| The new AI-ECRM system provides more insights than the legacy CRM | 30 | 69 | 157 | 187 | 56 |

| | | | | | |
|---|---|---|---|---|---|
| system. | | | | | |
| I got more accurate information after utilizing the new AI-ECRM system. | 19 | 98 | 70 | 257 | 55 |
| I got the necessary information promptly utilizing the AI-ECRM system. | 17 | 85 | 123 | 228 | 46 |
| The new AI-ECRM system is cost-effective. | 22 | 59 | 103 | 173 | 142 |

Table 4 represents the experience of the customers after utilizing the AI-ECRM system. A total of 166 customers agreed that they stayed in this system because of their past dealings (166), whereas 118 believed that the dealings were flexible and looked after their requirements. Overall, everyone agreed it was easy, and fulfilled the requirements of customers.

**Table 4.** Customer Experience

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| The whole process with AI-ECRM was easy | 25 | 26 | 125 | 256 | 67 |
| I stay with AI-ECRM because of my past dealings. | 12 | 20 | 50 | 300 | 118 |
| AI-ECRM was flexible in dealing with me and looked out for my needs. | 9 | 19 | 169 | 136 | 166 |
| Staying with this system makes the process much easier. | 38 | 38 | 74 | 264 | 85 |
| It gives me what I need swiftly. | 23 | 84 | 127 | 187 | 78 |

Table 5 presents the satisfaction level of customers. The majority of the participants were satisfied with the services provided by the AI system in ECRM as it provides precise information (256), meets requirements (185), sufficient information (265), the system was accurate (187), information is useful and it was user-friendly (257).

**Table 5.** Customer Satisfaction

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Do you think that the AI-ECRM system provides the precise information you need? | 11 | 19 | 70 | 254 | 146 |
| Do you think that the information content of AI-ECRM meets your needs? | 16 | 25 | 78 | 185 | 196 |
| Do you think that AI-ECRM provides sufficient information? | 38 | 38 | 73 | 265 | 85 |
| Do you think that you are satisfied with the accuracy of the AI-ECRM system? | 22 | 84 | 127 | 187 | 79 |
| Do you think the output of AI-ECRM is | 31 | 81 | 67 | 286 | 34 |

| | | | | | |
|---|---|---|---|---|---|
| presented in a useful format? | | | | | |
| Do you think that the report information extracted from AI-ECRM is clear? | 30 | 69 | 157 | 187 | 56 |
| Do you think that AI-ECRM is user-friendly? | 19 | 98 | 70 | 257 | 55 |
| Do you think that you are satisfied with the security of AI-ECRM? | 17 | 85 | 123 | 228 | 46 |

Table 6 shows several customers have plans to utilise AI-based systems in the future if ever needed (214) and they will not utilize traditional CRM systems as AI-based systems are easier (174). They will prefer this system to others and they will recommend to friends and other people to utilise this system (232).

**Table 6.** Customer Loyalty

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I will probably use this system again. | 20 | 100 | 74 | 284 | 21 |
| I intend to utilize services from this AI-ECRM again in the future. | 38 | 39 | 101 | 214 | 107 |
| I will not switch to a traditional CRM system. | 69 | 91 | 119 | 179 | 41 |
| I prefer AI-ECRM to the other systems. | 17 | 44 | 95 | 232 | 111 |
| I would rank AI-ECRM as #1 among the other options | 31 | 63 | 128 | 199 | 78 |
| AI-ECRM provides the best service among the alternatives I listed earlier. | 12 | 45 | 119 | 213 | 110 |
| I say positive things about this system to other people. | 6 | 44 | 80 | 249 | 120 |
| I recommend AI-ECRM to someone who asks for my advice. | 14 | 77 | 82 | 212 | 114 |
| I encourage friends and relatives to use AI-ECRM. | 17 | 44 | 95 | 232 | 111 |

Table 7 reveals the regression model and it validates that positive customer interaction is associated with experience, satisfaction, and loyalty of customers. Moreover, Table 8 shows that the association between them was highly significant showing a value of p=0.000.

**Table 7.** Regression Model

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .895a | .801 | .793 | .175631 |

**Table 8:** Model of significance

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Regression | 59.425 | 18 | 3.301 | 107.027 | .000b |

Table 9 shows the P value< 0.05 less than the significance level, thus, the null hypothesis is rejected and it is concluded that there is a statistically significant association between AI-based customer interaction with customer experience, satisfaction, and loyalty.

**Table 9.** Chi-Square test

| | Value | Asymptotic Significance (2-sided) |
|---|---|---|
| Customer Experience | | |
| The whole process with AI-ECRM was easy | 11.193a | .000 |
| I stay with AI-ECRM because of my past dealings. | 557.376a | .000 |
| AI-ECRM was flexible in dealing with me and looked out for my needs. | 398.723a | .000 |
| Staying with this system makes the process much easier. | 576.083a | .343 |
| It gives me what I need swiftly. | 457.251a | .343 |
| Customer Satisfaction | | |
| Do you think that the AI-ECRM system provides the precise information you need? | 311.141a | .000 |
| Do you think that the information content of AI-ECRM meets your needs? | 396.815a | .000 |
| Do you think that AI-ECRM provides sufficient information? | 579.004a | .000 |
| Do you think that you are satisfied with the accuracy of the AI-ECRM system? | 645.703a | 0.00 |
| Do you think the output of AI-ECRM is presented in a useful format? | 576.986a | .000 |
| Do you think that the report information extracted from AI-ECRM is clear? | 516.297a | .000 |
| Do you think that AI-ECRM is user-friendly? | 765.699a | .000 |
| Do you think that you are satisfied with the security of AI-ECRM? | 501.224a | .000 |
| Customer Loyalty | | |
| I will probably use this system again. | 371.078a | 0.000 |
| I intend to utilize services from this AI-ECRM again in the future. | 457.356a | 0.00 |
| I will not switch to a traditional CRM system. | 418.202a | 0.00 |
| I prefer AI-ECRM to the other systems. | 457.251a | 0.00 |
| I would rank AI-ECRM as #1 among the other options | 504.860a | 0.00 |
| AI-ECRM provides the best service among the alternatives I listed earlier. | 551.702a | 0.00 |
| I say positive things about this system to other people. | 705.294a | 0.00 |
| I recommend AI-ECRM to someone who asks for my advice. | 418.202a | 0.00 |
| I encourage friends and relatives to use AI-ECRM. | 371.078a | 0.00 |

### *4.3 Employers*

Table 10 shows the demographics of employers working in an organization. A total of 174 participants were male and 75 were females out of 250. Whereas the majority of participants age were between 36 to 45 years old, 136 were graduates and 167 had experience between 5 to 10

years.

**Table 10.** Demographics of employers

| | Frequency | Percent |
|---|---|---|
| Gender | | |
| Male | 174 | 69.9 |
| Female | 75 | 30.1 |
| Age | | |
| <35 yrs | 49 | 19.7 |
| 36-40 yrs | 87 | 34.9 |
| 41-45 | 88 | 35.3 |
| 46+ | 25 | 10.0 |
| Education | | |
| Undergraduate | 44 | 17.7 |
| Graduate | 136 | 54.6 |
| Post-Graduate | 69 | 27.7 |
| Experience | | |
| <5 yrs | 47 | 18.9 |
| 5-10 yrs | 167 | 67.1 |
| >10 yrs | 35 | 14.1 |

Table 11 presents the responses of employers of an organization and the majority of participants agreed that it creates a positive image of the company (125), helps in achieving the business goals (120), increases employer satisfaction (70) and customer loyalty toward the company has been increased (122).

**Table 11.** Organization's Brand Voice

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| AI-ECRM has created a positive image of the company among customers. | 15 | 28 | 48 | 125 | 33 |
| The new AI-ECRM system helped to achieve business goals effectively. | 15 | 17 | 68 | 120 | 29 |
| The new AI-ECRM has increased employees' satisfaction levels. | 17 | 32 | 62 | 70 | 68 |
| There is an increased level of customer loyalty towards the organization. | 15 | 19 | 54 | 122 | 39 |

Table 12 shows that employers agreed that the rate of presales (122), support provided to customers (88), number of users (84), usage of technology (83), and effectiveness and reliability of the business (141) have been increased.

**Table 12.** Consistency Across Channels

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Pre-sales services provided to customers have been strengthened | 14 | 7 | 49 | 122 | 57 |
| Support provided to customers during the purchasing process has increased. | 18 | 17 | 94 | 88 | 32 |
| Support provided to customers after the purchasing process has increased. | 21 | 25 | 65 | 101 | 37 |
| Total number of users has increased across the various channels. | 11 | 19 | 77 | 84 | 58 |
| The number of newly acquired customers has increased. | 36 | 25 | 29 | 126 | 33 |
| The process of delivering and completing our service is shortened. | 24 | 13 | 35 | 105 | 72 |
| Usage rates of help and support services on the site have increased. | 10 | 8 | 88 | 110 | 33 |
| Usage of technology in our company has increased/improved. | 18 | 24 | 47 | 83 | 77 |
| Business processes employed in the company have become faster and more effective | 23 | 16 | 45 | 135 | 30 |
| The reliability of the business processes used in the company has increased. | 30 | 27 | 16 | 141 | 35 |

Table 13 represents the impact on the perception matric of the organization after utilizing AI-ECRM among customers. It was found that the majority of employers agreed that the perception among the customers of the company's brand voice (138), favorability (95), relationship (90), and trust (105) has increased.

**Table 13.** Brand Perception Metrics

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Perceptions about our company’s brand voice as a business using high/advanced technology have been enriched. | 15 | 21 | 35 | 138 | 40 |
| Customer favorability towards the company has increased. | 15 | 17 | 58 | 95 | 64 |
| The customer thinks that the company always provides good relationships with customers. | 12 | 26 | 65 | 90 | 56 |
| The customer thinks that the company has a strong brand so the customers trust them. | 24 | 25 | 54 | 105 | 41 |

Table 14 depicts the perceived brand personality obtained after utilizing AI-ECRM. 147 agreed and 32 strongly agreed that the organization's annual sales have increased. 73 strongly agreed and

61 agreed that after AI initialization majority of customers are now willing to give additional information requested by the company. A total of 167 agreed that customers started spending more time on the company's websites, 180 believed that the level of customer satisfaction has increased, 179 agreed that transaction frequency has increased, 177 agreed that those customers who had stopped using their website have been back after suing AI in the company.

**Table 14.** Perceived Brand Personality

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| Annual sales earned from loyal customers have increased | 18 | 13 | 39 | 147 | 32 |
| Customers' willingness to provide additional information requested from them by the company (i.e., survey questions about the site) has increased. | 15 | 31 | 69 | 61 | 73 |
| Customers have begun to spend more time on the site. | 10 | 18 | 56 | 148 | 17 |
| Customer satisfaction has increased. | 22 | 8 | 39 | 132 | 48 |
| Customer transaction frequency has increased. | 10 | 13 | 47 | 146 | 33 |
| Rates of re-purchasing and/or re-using the services provided on the site have increased. | 13 | 59 | 7 | 141 | 29 |
| The rate of winning back customers who have stopped using the site has increased. | 16 | 13 | 43 | 132 | 45 |

Table 15 shows the regression model and it validates that consistency across channels, brand perception metrics, and perceived brand personality are associated with the improved brand voice of an organization after initializing an AI-based ECRM system. Moreover, Table 16 shows the association between them which was highly significant showing a value of p=0.000.

**Table 15.** Regression Model

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .799a | .638 | .604 | .35341 |

**Table 16:** Model of Significance

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 49.896 | 21 | 2.376 | 19.024 | .000b |

Table 17 shows the P value< 0.05 less than the significance level. Thus, the null hypothesis is rejected and it is concluded that there is a statistically significant association between the AI-based organization brand voice and consistency across channels, brand perception metrics, and perceived brand personality.

**Table 17.** Pearson Chi-square test

| | Value | Asymptotic Significance (2-sided) |
|---|---|---|
| Consistency Across Channels | | |
| Pre-sales services provided to customers have been strengthened | 221.141a | .000 |
| Support provided to customers during the purchasing process has increased. | 177.028a | .000 |
| Support provided to customers after the purchasing process has increased. | 191.546a | .000 |
| Total number of users has increased across the various channels. | 189.412a | .000 |
| The number of newly acquired customers has increased. | 220.260a | .000 |
| The process of delivering and completing our service is shortened. | 151.654a | .000 |
| Usage rates of help and support services on the site have increased. | 134.749a | .000 |
| Usage of technology in our company has increased/improved. | 179.757a | .000 |
| Business processes employed in the company have become faster and more effective | 220.688a | .000 |
| The reliability of the business processes used in the company has increased. | 159.304a | .000 |
| Brand Perception Metrics | | |
| Perceptions about our company's brand voice as a business using high/advanced technology have been enriched. | 196.796a | .000 |
| Customer favorability towards the company has increased. | 117.010a | .000 |
| The customer thinks that the company always provides good relationships with customers. | 149.060a | .000 |
| The customer thinks that the company has a strong brand so the customers trust them. | 179.892a | .000 |

| | | |
|---|---|---|
| Perceived Brand Personality | | |
| Annual sales earned from loyal customers have increased | 225.536a | .000 |
| Customers' willingness to provide additional information requested from them by the company (i.e., survey questions about the site) has increased. | 199.425a | .000 |
| Customers have begun to spend more time on the site. | 190.027a | .000 |
| Customer satisfaction has increased. | 137.051a | .000 |
| Customer transaction frequency has increased. | 175.662a | .000 |
| Rates of re-purchasing and/or re-using the services provided on the site have increased. | 186.845a | .000 |
| The rate of winning back customers who have stopped using the site has increased. | 133.292a | .000 |

## 5. Discussion

The findings of our study show that AI-based ECRM significantly customer interaction and an organization's brand voice. The first hypothesis (H1) of our study postulates that AI-ECRM improves customer interaction. Correspondingly, recently a study stated that enhancing the E-CRM system will ultimately allow organizations to enhance their customer interactions, these types of interactions create a positive experience for customers which leads to customer satisfaction. It was recommended that all organizations enhance their relationship with customers for long-term benefits (Kampani & Jhamb, 2020; Hendriyani & Raharja, 2018).

The H1a of our study was customer interaction positively impacts customer experience. Similar findings were found in a few of the previous studies and it was evident that the association between the service providers and customers gets strong when the customer's experience is good and they are satisfied with the services provided by the company (Adnan et al., 2021; Dehghanpouri et al., 2020; Upadhyaya, 2020; Zaim et al., 2020; Al-Dmour et al., 2019; Rastgar et al., 2019; Mulyono & Situmorang, 2018).

The H1b hypothesis of our research states that customer interaction positively impacts customer satisfaction. A study concluded that AI-based ECRM assists in improving the customer relationship and establishing of virtual environment that leads to satisfaction of the customer. Likely, few studies stated that satisfaction of customers is a significant factor in developing customer loyalty (Hayati et al., 2020; Tahir, 2020; Kamath et al., 2019; Nobar & Rostamzadeh, 2018).

The H1c hypothesis of our study states customer interaction positively impacts customer loyalty. When there is a positive level of satisfaction among customers it creates a feeling of fulfillment and a positive attitude among the customers that causes loyalty of the customer. A similar study was conducted by targeting the bank and the outcomes of the study showed that when a customer is satisfied with services the loyalty level towards them increases (Hayati et al., 2020). Moreover,

another study found that the level of customer satisfaction is highly associated with the loyalty of customers ($p<0.000$) (Kumar & Mokha, 2022).

The second hypothesis (H2) of our study states that AI-ECRM improves the brand voice of an organization. The integration of AI with CRM systems will assist organizations to boost their mechanism of management of customers with an impact on the positive perception of an organization among customers. The H2a hypothesis of our study states that the organization's brand voice positively impacts consistency across channels. Similarly, according to the study, AI applications in marketing and sales enhance overall organizations' performance. The outcomes of our study showed that the majority of the employers believed that due to AI their company outperformed other organizations and their rate of service also increased. Wang et al. (2018) believed that AI has many benefits like low cost and high efficacy as compared to traditional CRM systems, however, there is still a weakness in the AI model which needs to be considered.

The H2b hypothesis states that the organization's brand voice positively impacts brand perception metrics and the H2c hypothesis states that the organization's brand voice positively impacts perceived brand personality. A study found a competitive business environment keeps customers happy and manages a long-term relationship with an organization which causes a good perception of customers towards organization services and they are ready to recommend others which ultimately leads to more profits and annual growth of the company (Cheung et al., 2014).

Findings of current studies revealed that AI-based has a positive association with customer interaction and brand voice which leads to excellent customer experience, increased level of satisfaction and loyalty. Further, as loyalty increases the positive perception of the organization spreads among customers and there is more consistency and an increased number of users.

While this study provides valuable insights into the integration of AI-ECRM systems, it is not without limitations. First, the study's regional focus on the UAE may limit the generalizability of findings to other regions with different cultural, technological, or economic contexts. Second, the sample size, while substantial, may not fully capture the diversity of perspectives within these populations.

The positive association found in our study suggests that organizations should consider strategically implementing AI-ECRM systems to enhance customer interaction, satisfaction, and loyalty. The finding provides empirical support for the idea that AI technologies can be leveraged as valuable tools in shaping positive customer experience. Organizations can draw from the study's implications to reinforce the consistency of their brand voice across various channels. The positive impact of AI-ECRM on an organization's brand voice suggests that a cohesive and resonant communication strategy, facilitated by AI technologies can contribute to a more positive brand perception among customers.

Implementing AI-ECRM in line with the study's implication can confer a competitive advantage. Businesses that effectively leverage AI to improve customer interaction and brand voice may stand out in the market, attracting and retaining customers in a landscape, where customer experience plays a pivotal role in brand loyalty. The study provides a foundation for future research endeavors in the field of AI-ECRM and customer relationship management. It identified areas where further exploration and refinement of strategies may be beneficial, contributing to the ongoing developments of best practices in utilizing AI for customer-centric initiatives.

By extending the geographic scope to encompass a variety of regions, future research could overcome the limitations noted in this study and enable comparative analyses across various cultural and economic contexts. The findings' robustness could be further improved by larger and more varied sample sizes. A deeper understanding of employer and customer experiences with AI-ECRM systems would be possible by incorporating qualitative techniques like focus groups and in-depth interviews. Furthermore, longitudinal studies could monitor technological

advancements and their adoption over time, as well as look at the long-term effects of AI-ECRM on brand voice and customer loyalty.

## 6. Recommendation

In conclusion, our study delved into the intricate dynamics of AL-ECRM and its profound impact on various dimensions of customer interactions and organization brand voices. The hypothesis tested throughout our research consistently demonstrated positive association underscoring the pivotal role played by AI-ECRM in shaping and enhancing customer experience. Firstly, our finding affirms that the integration of AI-ECRM systems significantly improves customer interaction, thereby laying the foundation for a positive customer experience. This positive interaction acts as a catalyst for fostering greater customer satisfaction and subsequently nurturing customer loyalty.

Furthermore, our investigation extends beyond the customer-centric sphere to highlight the broader implications for organizations' brand voice. The positive influence of AI-ECRM on an organization's brand voice is a critical revelation as it not only ensures consistency across channels but also elevates brand perception metrics. Our study underscores the integral role played by a cohesive brand voice in shaping the perceived brand personality, thereby establishing a strong connection between the organization and its customer base.

In essence, the positive association observed in our study paints a compelling picture of the transformative potential of AI-ECRM in fostering stronger customer relationships, bolstering brand integrity, and cultivating lasting customer loyalty. Our research advocates for the strategies adoption of AI-ECRM as a powerful tool for organizations seeking to not only meet but exceed customer expectations and ultimately contribute to sustained success in a competitive market.

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## Declaration

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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