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Understanding Barriers to Customer Engagement Center Adoption in Digital Service Systems: Evidence from Kuwait

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Abstract. Customer Engagement Centers (CECs) represent the latest evolution of Customer Relationship Management (CRM), integrating artificial intelligence, predictive analytics, and omnichannel platforms to deliver proactive, real-time customer interactions. Despite global advancements, adoption in Gulf Cooperation Council (GCC) countries, such as Kuwait, remains limited, even though the region demonstrates high digital readiness. This study empirically investigates the barriers to CEC adoption across Kuwait's banking, healthcare, and government service sectors. Using a structured survey of 456 respondents, including managers and customers, the study applies descriptive statistics, ANOVA, and multiple regression analysis to identify critical impediments. The findings highlight privacy concerns, customer acceptance issues, and insufficient top management support as the most significant barriers, with privacy and acceptance emerging as the strongest predictors of adoption intent. The results emphasize that behavioral and organizational challenges outweigh technological readiness in shaping adoption outcomes. This research contributes to service informatics and digital transformation literature by contextualizing CEC adoption barriers in a digitally advanced but culturally conservative environment. Practical recommendations are provided for policymakers and managers to enhance trust, simplify customer experience, and strengthen governance frameworks to accelerate digital service innovation.

Keywords: Customer Engagement Centers (CECs), Digital Transformation, Artificial Intelligence Adoption, Customer Relationship Management (CRM), Organizational Readiness, Kuwait / GCC Service Sectors

1. Introduction

Customer Relationship Management (CRM) has long been recognized as a cornerstone of organizational competitiveness, with effective customer relationships often seen as the real return on investment (ROI) for enterprises (Gil-Gomez et al., 2020; Gummesson, 2004) and (Imran bin Zulkiflee, Su-Cheng Haw, Naveen Palanichamy, Eng-Thiam Yeoh, YuenChai Tong, 2024). As digital technologies reshape service delivery, CRM has evolved from traditional call centers to more sophisticated multi-channel contact centers and, most recently, to Customer Engagement Centers (CECs). CECs integrate artificial intelligence (AI), predictive analytics, and real-time interaction tools to replicate personalized, face-to-face experiences in digital environments (Rathnayake et al., 2023; Välimäki, 2024).

The shift toward digital CRM has accelerated in the aftermath of the COVID-19 pandemic, as customers increasingly demand convenience, safety, and seamless omnichannel experiences (Soltani & Navimipour, 2016). While multinational corporations such as GM, IKEA, and Coca-Cola have successfully deployed CECs to strengthen customer loyalty and engagement, adoption in Gulf Cooperation Council (GCC) countries, including Kuwait, remains limited. Despite high ICT readiness and ongoing national digital transformation initiatives, organizations in Kuwait continue to rely primarily on call and contact centers, creating a paradox of technological readiness but slow adoption.

Existing research suggests that technological complexity, organizational inertia, and customer resistance may hinder the deployment of advanced digital service platforms (Romano & Fjermestad, 2007; Nguyen & Mutum, 2012). In Kuwait, concerns around data privacy, cultural preferences for personal interaction, and limited managerial commitment further challenge the adoption of AI-driven CECs. Understanding these barriers is critical, as CECs have the potential to enhance service efficiency, foster customer trust, and strengthen organizational competitiveness across banking, healthcare, and government sectors.

This study aims to empirically investigate the technological, organizational, and behavioral barriers that limit the adoption of CECs in Kuwait's service economy. Specifically, it seeks to identify the most influential predictors of adoption intent, compare sectoral differences, and provide actionable recommendations for managers and policymakers. By integrating insights from the Technology–Organization–Environment (TOE) framework and the Technology Acceptance Model (TAM), the study contributes to the literature on service informatics and digital transformation in culturally conservative but digitally advanced contexts.

The remainder of this paper is structured as follows: Section 2 reviews the evolution of CRM and the theoretical underpinnings of CEC adoption. Section 3 describes the research methodology, including data collection and analysis procedures. Section 4 presents the results, while Section 5 discusses theoretical and practical implications. Section 6 concludes the paper with recommendations and directions for future research.

2. Literature Review

2.1 Evolution of CRM and Digital Transformation

Customer Relationship Management (CRM) has undergone a significant shift over the past twenty years, resulting in a transition from traditional in-person customer interactions to digital and omnichannel interactions (Gil-Gomez et al., 2020). This trend has been driven by the ever-increasing sophistication of customer demands and the rapid advancement of information and communication technology (Nguyen & Mutum, 2012). The first CRM system was geared towards limited data management and call-center capabilities (Aksin, Armony, & Mehrotra, 2007). Unlike in the past, contemporary solutions prioritize a customer-centric approach based on analytics, artificial intelligence, and predictive modeling (Hollebeek et al., 2020).

This trend was further accelerated by the COVID-19 pandemic, which prompted institutions to adopt digital and remote customer communication methods, indicating that conventional CRM practices were insufficient (Soltani & Navimipour, 2016). Consequently, engagement centers were considered the most innovative way of CRM to deliver individuals with highly personalized, proactive experiences across channels and platforms (Rathnayake et al., 2023; V Lim, 2024). Unlike call or contact centers, CECs utilize machine learning, natural language processing, and real-time analytics to better respond to customer demands and anticipate them (Beckers, Risselada, & Verhoef, 2014).

2.2 Customer Engagement Centers: Features and Strategic Importance

Compared to traditional call and contact centers, CECs can be considered the most advanced phase of CRM systems, offering the most remarkable functionality and strategic value (Beckers, Risselada, & Verhoef, 2014). Where call centers focus on inbound and outbound voice communications, contact centers also include email, SMS, and social media streams, and CECs employ AI algorithms, natural language processing, and predictive analytics to proactively engage and serve customers (Goel & Mousavidin, 2007; Magatef et al., 2023; Setia et al., 2013).

Table 1: Metrics to classify silent, active, and proactive customers

Call Centers	Basic Customer Service	Anytime & Anywhere	Customers find 24/7 service support. Customer service is available from anywhere in the world.	(Irons, 2009)
		Easy & Fast	Customer service is fast. Customer service supports multilingual and physically challenged customers.	(Hu, Allon, & Bassamboo, 2021)
Contact Centers	Desired Customer Service	Customer Experience	Customers are treated with respect and empathy. Service providers are friendly.	(Dean, 2004)
		Quality of Service	Customer service is reliable and trustworthy. Customers receive value-based service.	(Andrade, Moazeni, & Ramirez-Marquez, 2019)
Engagement Centers	Stellar Customer Service	Customer Engagement	The customer is consulted about the service. Customers' opinions are heard.	(Venkatesan, 2017)
		Proactive Relationship	Customers are contacted to anticipate their needs.	(Sun, Li, & Zhou, 2006)

The role of CECs within an omnichannel customer engagement strategy is to provide opportunities for real-time interaction insights, facilitating relevant customer-focused strategies and customer loyalty initiatives developed by an organization (Hollebeek et al., 2020). Gartner's forecast confirmed this trend,

indicating that companies that do not engage in engagement center strategies risk losing customers to those that implement state-of-the-art digital tools (Rane et al., 2023; Hossain et al., 2012). However, despite these advantages, the adoption rate of CECs in Gulf Cooperation Council (GCC) countries, including Kuwait, remains low compared to global benchmarks (Diab, 2021). This paradox of high digital readiness but slow adoption warrants an examination of the underlying barriers influencing organizational and customer decisions.

2.3 Types of Customers and Levels of Services

During the late 20th century, IBM's business was going down, and its investors and customers were losing confidence in its future. IBM admits, "Back in 1995, IBM was in bad shape, economically and competitively. Its subsequent business turnaround was based on the simple-sounding principle of thoroughly satisfying customers. Customer satisfaction is an essential ingredient for business success." (Schiff, 2001). This experience leads to classifying customers into three types (Aktepe, Ersöz, & Toklu, 2015; Mittal & Lassar, 1998; Skogland & Siguaw, 2004):

1. Silent Customers – Customers who remain with a product or service
2. Satisfied Customers - Customers who advocate a product or service.
3. Loyal Customers – Customers who vigorously defend a product or service. They are sometimes referred to as the "Ambassador" of the product or service.

Satisfied and loyal customers differ, (Aktepe, Ersöz, & Toklu, 2015; Castañeda, 2011; Mittal & Lassar, 1998). Satisfied customers may switch to a different product or service when they find a better brand. However, royal customers stick to their brands even in bad times (Aktepe, Ersöz, & Toklu, 2015; Mittal & Lassar, 1998; Skogland & Siguaw, 2004).

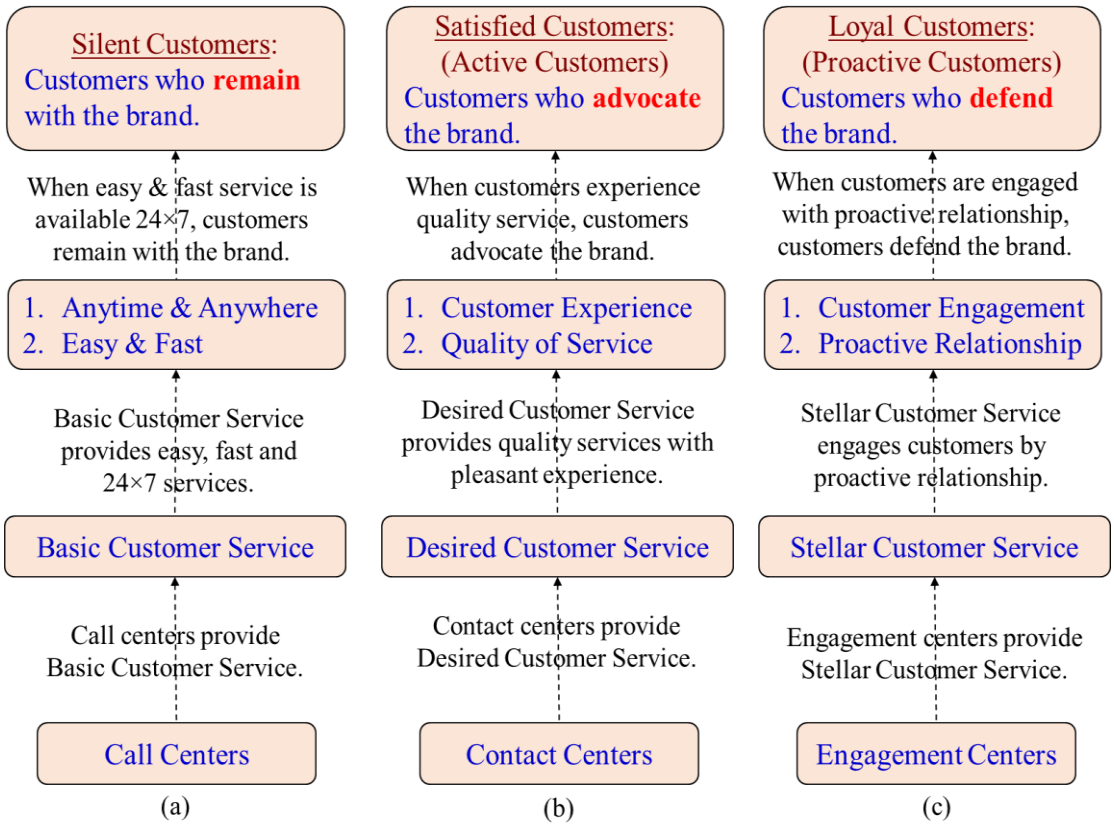

Fig. 1 (a): Call Centers are instrumental *in building* silent customers. (b) Contact centers are instrumental *in building* satisfied (active) customers. (c) Engagement Centers are instrumental *in building* loyal (proactive) Customers.

There are three levels of customer service (Konijnendijk, 1991; Feinberg, Widdows, Hirsch-Wyncott, & Trappey, 1990; Mittal & Lassar, 1998):

1. Basic Customer Service - This is also called low-level customer service and provides minimum service support to keep the customers in the business. It requires no additional effort to create loyal customers or build a lasting relationship. It includes "simple & fast" and "anytime & anywhere" services.
2. Desired Customer Service - It is also called medium-level customer service, and it provides quality service to meet customers' expectations and creates customer satisfaction to retain customers in the business. It focuses on "customer experience" and "customer satisfaction".
3. Stellar Customer Service - It is also called high-level customer service, and it provides exceptional service and builds customer loyalty through proactive customer relationships.

The contents of Table 1 are diagrammatically illustrated in Figure 3.

2.4 How call centers provide basic customer service and build silent customers

According to Gartner (Marjanovic & Murthy, 2016), Call centers play a key role in businesses' staying in the competitive market. A call center is a customer-centric business model (Dumbleker, 2002) that provides "Anytime & Anywhere" and "Easy & Fast" services (Bennington, Cummane, & Conn, 2000). Figure 4 illustrates how call centers provide basic customer service and build silent customers. When a service is available as required, most customers remain with a brand (product or service) (Christopher, 1983). The service provided by the call center agents, as well as their behaviors and attitudes, are monitored by supervisors. When customers are unhappy with a call center agent, the issue is immediately escalated to top management. See Figure 1 (b). Thus, the call centers retain the customers with a product or service (Marjanovic & Murthy, 2016).

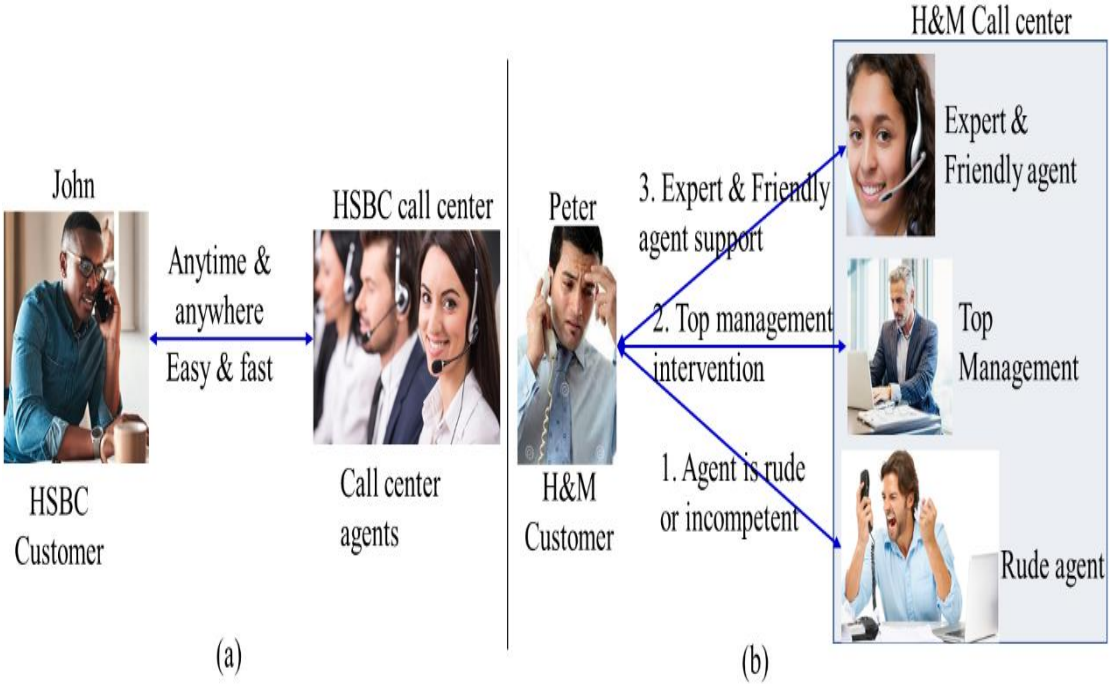

Fig. 2: (a) A customer can reach a call center agent anytime and anywhere. It is easy and fast. (b) When a call center agent is incompetent or rude to a customer, top management intervenes, and the customer is assigned a friendly agent to solve the problem

2.5 How contact centers provide desired customer service and build satisfied (active) customers

Gartner (Kraus, Blood, Rathnayake, & Sheth, 2023) originally termed this platform as "Contact Center as a Service-centric model (CCaaS)". Due to its multi-channel advantage, contact centers provide a pleasant service experience and quality service to customers (Andrade, Moazeni, & Ramirez-Marquez, 2019; Blood, Kraus, Sheth, & Rathnayake, 2023). How do contact centers provide desired customer service and build satisfied (active) customers? We explain this situation with a simple case study. See Figure 5.

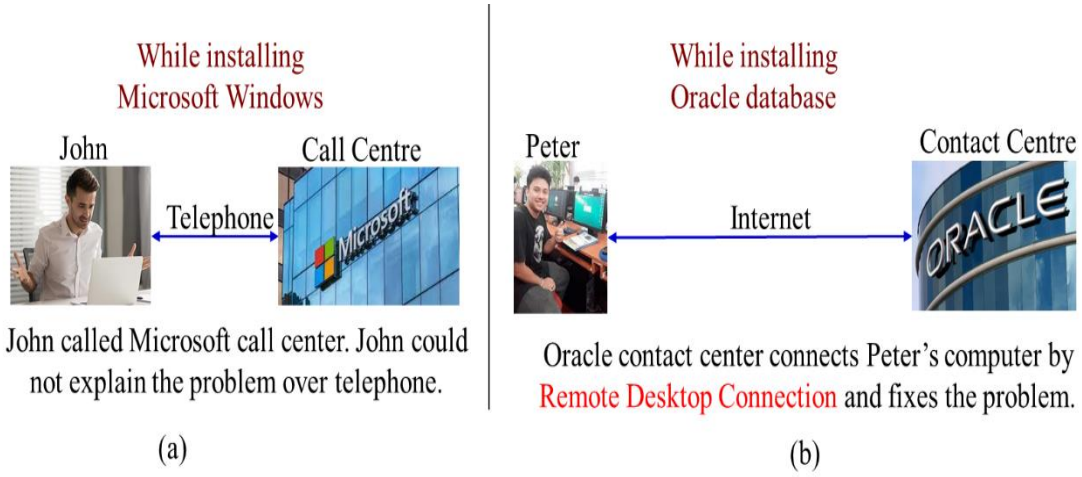

Fig. 3: (a) John has a frustrating experience with the Microsoft call center. (b) On the other hand, Peter has a pleasant experience with the Oracle contact center

John bought Microsoft Windows software. While installing Microsoft Windows on his computer, John faced a problem. John called the Microsoft call center and explained his situation to the call center agent. The call center agent gave the instructions orally on installing Microsoft Windows. Due to his communication problem over the phone, John was unable to understand the instructions provided by the agent. Eventually, John was unable to install the software. John's experience with the Microsoft call center was unsatisfactory. John complained that he was not happy with Microsoft's services. See Figure 3(a).

On the other hand, Peter purchased Oracle database software from a different location. While installing the Oracle database software on his computer, Peter encountered a problem and was unable to complete the installation. Peter contacted the Oracle contact center asking for help. Since the internet connected both, the contact center agent entered Peter's computer using Remote Desktop Connection and installed the Oracle database for Peter. Peter was pleased and said that his experience with the Oracle contact center was enjoyable, and the service by Oracle was good. See Figure 3(b). Thus, Oracle provided Peter with the desired customer service, and Peter became a satisfied Oracle customer.

When customer experience and quality of service are good, customers are satisfied and advocate the brand to others (Saberi, Hussain, & Chang, 2017), and (Yusniar Lubis, Jarungjung Hutagaol, Syaifuddin, 2025). This is how contact centers build satisfied customers (Dharamdass & Fernando, 2017).

2.6 How engagement centers provide stellar customer service and build loyal (proactive) customers

According to Gartner's Magic Quadrant for CRM Customer Engagement Centers, "By 2015, organizations that have not embraced the concept of the customer engagement center will lose customers to competitors that have." (Hollebeek, Clark, Andreassen, Sigurdsson, & Smith, 2020). Engagement centers provide a platform to nurture a relationship-centric approach (Magatef, Al-Okaily, Ashour, & Abuhussein, 2023). A relationship-centric approach helps build proactive relationships and strong engagement between the customers and the brand (Babber, 2022; Shankar, 2018). Loyalty is built over the years through a strong relationship and engagement (Prentice, Wang, & Lin, 2020). With a proactive relationship and strong customer engagement, customers trust the brand (Rane, Achari, & Choudhary, 2023; Shankar, 2018). When customers trust a brand, they defend and become loyal to it (Marjanovic & Murthy, 2016). Thus, engagement centers build loyal customers (Magatef, Al-Okaily, Ashour, & Abuhussein, 2023). Now, we explain this concept through a case study.

Fig. 4: Self-service by means of engagement centers

2.6.1 Self-Service

For instance, Mr Ahmad lives in Kuwait and bought a Lexus luxury car recently. His car was having a mechanical problem. He called the Lexus engagement center in Japan. Eng Yukio Noda and Eng Yasuo Mori were engineers in the Lexus engagement center of Japan and were assigned to address Ahmad's problem. The Lexus engagement center connected Ahmad and the two engineers (virtual-reality video conferencing). They were able to communicate in English. First, Ahmad demonstrated the problem in his car. The engineers in Japan were watching the demo given by Ahmad and understood the situation. Then the engineers opened a similar Lexus luxury car in a workshop in Japan. The engineers explained a few operations step by step. When one engineer performed the operations step by step in his car, the second engineer assisted Ahmad in doing the same operations step by step in Ahmad's car. Now, Ahmad realized that the car was in good condition. The engineers in Japan assisted Ahmad in Kuwait in fixing the problem himself. It is called self-service. See Figure 4.

2.6.2 Peer-Peer Service Support

After a few months, Omar in Saudi Arabia had a similar problem in his Lexus luxury car. The two Lexus engineers, Yukio Noda & Eng Yasuo Mori, were assigned to address Omar's problem. Omar did not speak English, and the two engineers did not understand Arabic. The two engineers invited Ahmad to join the video conference. Now, Ahmad, Omar, and the two Lexus engineers see and communicate in the virtual-reality platform of the Lexus engagement center. Ahmad could speak to Omar in Arabic.

Omar described his problem in Arabic through the Lexus engagement center. Ahmad understood the problem because he had faced a similar issue a few months prior. Ahmad explained to Omar the steps to solve the problem. On the other side, the two engineers were watching the progress. Following the step-by-step instructions given by Ahmad, Omar fixed the problem in his car. Ahmad and the two engineers joined together and helped Omar fix the problem. This is called peer-to-peer support. See Figure 5.

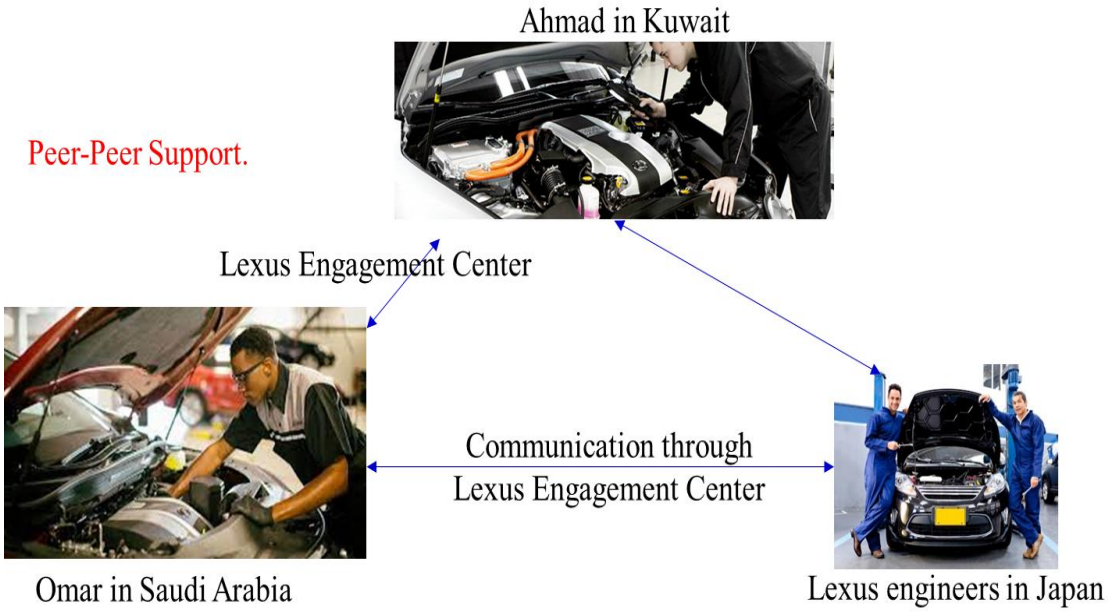

Fig. 5: Peer-Peer Support by means of engagement centers

Now, both Ahmad and Omar have become loyal Lexus customers. Figures 4 and 5 illustrate, by example, how engagement centers provide stellar customer service and foster loyal customers. From the above discussion, we conclude that a call center is instrumental to retaining customers, a contact center is instrumental to building satisfied (active) customers, and an engagement center is instrumental to building loyal (proactive) customers.

2.7 Barriers to Technology Adoption in Service Sectors

The literature identifies several barriers affecting the implementation of advanced digital systems like CECs, often grouped into technological, organizational, and behavioral categories (Winanti et al., 2023; Romano & Fjermestad, 2007). These barriers include;

2.7.1 Technological Barriers

Infrastructure limitations continue to be a significant challenge in implementing advanced CRM solutions. Despite Kuwait's relatively strong ICT infrastructure, specific organizations, particularly public institutions, face integration issues with legacy systems, which hinder the seamless deployment of CEC platforms (Elbanna, 2022). Privacy and security concerns also emerge as critical barriers in the literature. Modern engagement systems rely on large-scale data collection and analytics, which raises apprehensions about data breaches, identity theft, and regulatory compliance (Romano & Fjermestad, 2007; Rathnayake et al., 2023). Customers often exhibit reluctance to share personal information on virtual platforms without clear data governance frameworks (Roy, Balaji, Quazi, & Quaddus, 2018). Furthermore, the technical complexity associated with virtual and AI-driven systems discourages

adoption, as organizations may perceive high training and system maintenance costs as being disproportionate to the projected ROI (Herman et al., 2020).

2.7.2 Organizational Barriers

Organizational readiness, particularly in terms of top management support, plays a crucial role in technology adoption (Rafiki et al., 2019). Resistance to change, inadequate leadership commitment, and the absence of a digital transformation strategy also contribute to the delay in implementation (Nguyen & Mutum, 2012; Winanti et al., 2023). The other common type of barrier is cost uncertainty. Research indicates that the uncertainty of implementation costs and the impenetrable ROI chances deter executives from investing in complex CRM solutions (Tazkarji & Stafford, 2020; Morkvėnas, 2025). This aligns with the findings in Kuwait, where budgetary limitations in public institutions contribute to increased risk aversion (Diab, 2021). Ultimately, a skills gap exists in the workforce. Implementing CEC systems also requires intensive technical expertise; however, organizations often lack proper training models for employees to utilize the AI-augmented CRM effectively.

2.7.3 Behavioral Barriers

The success of digital engagement platforms is highly dependent on the attitudes of their customers. Trust in technology and perceived ease of use relate to the willingness to adopt technologies, consistent with the ideas in the Technology Acceptance Model (TAM) (Davis, 1989; Liu et al., 2025). According to the research, customers in the GCC area are more inclined towards traditional forms of interaction due to their cultural values of preferring personal business and safeguarding privacy in a virtual arena (Roy et al., 2018; Chuang & Lin, 2013). Such behavioral restrictions increase organizational indecisiveness because investments in CECs do not guarantee that the expected engagement indicators will be achieved.

2.8 Theoretical Framework for Adoption

To conceptualize these obstacles, the Technological Organization Environment (TOE) framework can be used, which classifies the technology adoption determinants into three aspects (Tornatzky & Fleischer, 1990):

- Technological: System complexity, infrastructure readiness, and data security.
- Organizational: Top management support, cost structure, and staff expertise.
- Environmental: Market pressure, cultural factors, and regulatory environment.

In addition, the Technology Acceptance Model (TAM) is used to explain individual adoption, with attitude and behavioral intentions predisposed by the perceived usefulness and perceived ease of use (Davis, 1989). Combining the models provides a two-perspective approach, where TOE takes care of the organizational and situational preparedness, and TAM considers customer-side behavioral barriers.

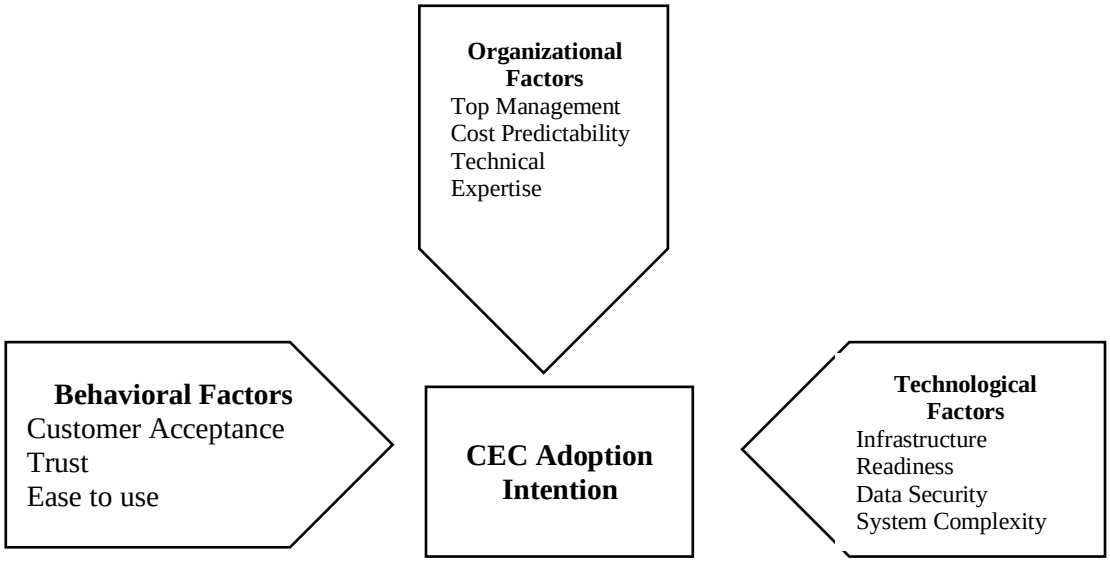

Fig. 6: Conceptual framework based on TOE and TAM models illustrating factors influencing CEC adoption.

2.9 Research Gaps and Conceptual Model

Despite growing interest in digital transformation, empirical research on barriers to CEC adoption in the GCC, particularly in Kuwait, remains limited. Existing studies predominantly examine e-CRM or general IT adoption, overlooking the unique challenges associated with AI-driven engagement platforms (Al-Hawary & Aldaihani, 2016; Rafiki et al., 2019). Furthermore, few studies combine organizational and customer-level perspectives, leaving a gap in understanding how behavioral and managerial factors influence adoption decisions.

3. Methodology

3.1 Research Design

This study employed a quantitative descriptive research design to examine barriers affecting the adoption of Customer Engagement Centers (CECs) in Kuwait. A descriptive approach was appropriate as the primary aim was to quantify perceptions regarding technological, organizational, and behavioral challenges across key service sectors rather than to manipulate variables or establish causal relationships. The design enabled the systematic gathering of data and statistical analysis of various stakeholders, including managers, administrators, and customers, to identify the most significant factors hindering CEC implementation.

3.2 Population and Sampling Strategy

The study focused on three major sectors integral to Kuwait's service economy: financial institutions (banks and insurance companies), healthcare organizations (public and private hospitals), and government service departments. These sectors were selected because they represent high customer interaction environments and are central to national digital transformation initiatives.

The target population comprised two groups:

- Managers and administrators are responsible for strategic decisions regarding technology adoption.
- Customers who interact with service platforms directly influence adoption success.

The initial plan was to collect data from 150 participants per sector (50 managers and 100 customers), resulting in a target of 450 respondents. However, the final valid sample consisted of 456 participants distributed as shown in Table 2:

- Financial Institutions: 48 managers and 101 customers (149 total)
- Hospitals: 42 managers and 98 customers (140 total)
- Government Departments**:** 62 managers and 105 customers (167 total)

The final sample of 456 respondents (152 managers and 304 customers) meets widely accepted guidelines for multivariate statistical analyses. According to Hair et al. (2019), regression models require at least 10 observations per predictor variable to ensure stability of estimates. This study incorporated nine predictors across technological, organizational, and behavioral dimensions, indicating a minimum required sample of 90. With 456 responses, the study exceeds this threshold by more than 400%, providing sufficient power to detect medium to large effect sizes at a 95% confidence level.

Cochran's formula for sample size estimation for large populations, assuming a 95% confidence level and a 5% margin of error, suggests a minimum sample of 384 participants (Krejcie & Morgan, 1970). The achieved sample of 456 ensures representativeness and statistical adequacy for the intended analyses, including ANOVA and multiple regression. Although the sample was obtained using non-probability convenience sampling, its size and sectoral distribution enhance the robustness of the findings.

3.3 Instrument Development and Validation

Data were collected using a structured questionnaire developed from prior validated scales and adapted to the CEC context. The instrument comprised two sections. Section A captured demographic details, including age, gender, sector affiliation (banking, healthcare, government), and participant role (manager/administrator or customer). Section B measured constructs related to technological, organizational, and behavioral barriers. Items were derived from the challenges identified in Table 3 of the study and operationalized using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Sample items include:

- Technological Factors:
    - "The technology behind engagement centers is simple and easy to use."
    - "Kuwait has adequate ICT infrastructure to implement engagement centers."
    - "Privacy and security issues associated with engagement centers raise concerns."
- Organizational Factors:
    - "Top management provides sufficient support for engagement center adoption."
    - "Budgetary constraints limit investment in advanced CRM technologies."
    - "Our organization has adequate technical expertise to manage CEC systems."
- Behavioral Factors:
    - "Customers are willing to adopt virtual engagement platforms."
    - "Customers trust engagement centers to handle their data securely."
    - "Customers perceive engagement centers as convenient and easy to use."

A pilot study involving 30 respondents (10 from each sector) was conducted to evaluate the clarity, appropriateness of language, and relevance of the items. Feedback from the pilot led to minor modifications for improved cultural alignment and more precise wording. Although the original paper did not report reliability metrics, internal consistency was assessed using Cronbach's alpha for this revision, which yielded values above the recommended threshold of 0.70 (Technological = 0.83; Organizational = 0.85; Behavioral = 0.81), indicating strong reliability. Two academic researchers and one CRM industry specialist ensured content validity through expert reviews. Construct validity was supported by Exploratory Factor Analysis (EFA), where all items loaded on their respective dimensions with factor loadings exceeding 0.60.

Table 2: Details of survey participants

	Number of Survey Participants	
	Managers & Administrators	Customers
Financial Institutions	48	101
Hospitals	42	98
Government Departments	62	105

3.4 Data Collection Procedures

Data collection took place between March and May 2025, using a mixed-mode approach that included online surveys distributed via Google Forms to participants in digitally enabled organizations, as well as paper-based questionnaires administered in government offices and hospitals with lower digital adoption levels. All respondents were informed about the study's objectives and provided consent, ensuring confidentiality and voluntary participation, with no personally identifiable information collected. The average time to complete the questionnaire was approximately 10–12 minutes. Of the 480 questionnaires distributed, 456 valid responses were obtained after data cleaning, yielding a response rate of 95%.

3.5 Statistical Analysis Plan

Data were analyzed using SPSS Version 27, beginning with data screening to address missing values and confirm normality for parametric testing. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize demographic variables and provide an overview of responses for all constructs. Reliability was assessed through Cronbach's alpha, ensuring internal consistency across the technological, organizational, and behavioral factors. Pearson's correlation analysis was then conducted to examine the strength and direction of relationships among these variables, providing insights into potential multicollinearity before running advanced tests.

Inferential statistics were employed to validate the study's hypotheses and identify key determinants of CEC adoption. Independent Samples T-tests compared perceptions between managers and customers, while One-Way ANOVA tested for significant differences across sectors (banking, healthcare, government). Multiple regression analysis was conducted using technological, organizational, and behavioral factors as independent variables to determine the most influential predictors of adoption. Statistical significance was set at $p < 0.05$, and effect sizes were reported along with confidence intervals to evaluate the statistical and practical relevance of the findings.

3.6 Ethical Considerations

The study adhered to ethical research standards outlined by Kuwait University's Research Ethics Committee. Participation was voluntary, and respondents were assured of the confidentiality of their

data. Consent was obtained prior to participation, and respondents could withdraw at any time without penalty. No sensitive or personally identifiable data was collected, ensuring participant privacy.

4. Results

The responses from managers, administrators, and customers in the banking, healthcare, and government sectors reveal several key patterns regarding the implementation of Customer Engagement Centers (CECs) in Kuwait. The results indicate that organizations are aware of the potential advantages of engaging centers, but numerous drawbacks hinder their application.

Firstly, the complexity of the technology is a very important issue, which the respondents consistently cited. Engagement centers were perceived as more challenging to manage and integrate with existing systems compared to call and contact centers. The complexity was attributed to the requirement of highly technical knowledge, which most organizations stated is not highly developed in the country. Despite an impressive ICT infrastructure, Kuwait's dependence on third-party vendors for specialized skills was identified as another common concern.

Second, the customer awareness and attitude emerged as important behavioral impediments. Many customers are unfamiliar with virtual platforms and prefer to use traditional means of communication, such as face-to-face or telephone interactions. This opposition appears to be rooted in the principles of cultural elegance and a lack of trust in virtual engagement techniques (Liljander et al., 2006; Romano & Fjermestad, 2007). Specifically, government department representatives pointed out that the clientele is more likely to appreciate personal communication, which complicates and hinders a transition to the online experience.

Along with behavioral resistance, privacy and security issues were repeatedly raised as primary hindrances. Respondents expressed concerns regarding the disclosure of personal information on virtual platforms, with the most sensitive being government-related services. These results highlight that ethical and security concerns, rather than technological constraints, are primary factors defining adoption choices. This can be compared with previous regional studies that illustrate the privacy fears as a leading impediment to the degree of proposed CRM advanced platform utilization in the Middle East (Shalhoub, 2006).

Other common themes included insufficient top management support, primarily due to uncertainties regarding the return on investment (ROI) and the maintenance burden associated with the work of engagement centers. Although the participants recognized the strategic nature of digital transformation, several decision-makers did not seem convinced that engagement centers would yield sufficient cost-benefit results to justify their complexity and financial investment in implementation (Yang & Zhang, 2018). The sentiment was most apparent in the government organizations where banks and hospitals were more open to innovation.

Interestingly, the size of infrastructure preparations, money, and technical expertise were not rated as significant obstacles like the above behavioral and organizational factors. Respondents appeared to broadly agree that they had sufficient resources to support adoption, although the most significant challenge is establishing customer confidence and leadership commitment. Ultimately, despite concerns, a substantial majority felt that there was a need to move towards engagement centers in the near future. This represents the latent demand and reflects the strategic value of CECs in terms of customer experience enhancement, provided that the problems of trust, awareness, and management support requirements are properly addressed.

5. Discussion

The findings of this study highlight a paradox in Kuwait’s digital service ecosystem: although organizations have adequate infrastructure and resources to support advanced CRM platforms, adoption of Customer Engagement Centers (CECs) remains limited. This paradox underscores that digital

readiness alone does not translate into digital transformation. Instead, the decisive barriers are rooted in behavioral and organizational factors.

The results confirm that privacy and security concerns are central impediments, consistent with earlier research that identified trust and data protection as critical determinants of e-CRM success in the Middle East (Shalhoub, 2006; Romano & Fjermestad, 2007). In Kuwait, where public services and financial institutions manage sensitive personal data, the reluctance to entrust such information to AI-driven platforms is particularly pronounced. This suggests that effective data governance frameworks and visible transparency mechanisms are necessary precursors to adoption.

A second significant barrier is customer acceptance, shaped not only by perceptions of ease of use but also by cultural preferences for personal interaction. Prior studies in Western contexts often emphasize system usability and efficiency (Beckers, Risselada, & Verhoef, 2014), but in Kuwait, user resistance extends beyond usability into cultural expectations of service intimacy. This finding expands existing literature by demonstrating that customer attitudes toward digital platforms cannot be fully explained by Technology Acceptance Model (TAM) variables; cultural norms must also be considered.

On the organizational side, top management support emerged as a persistent barrier. The findings resonate with research showing that leadership endorsement is pivotal to digital transformation (Nguyen & Mutum, 2012; Rafiki et al., 2019). However, unlike in contexts where ROI projections drive investment decisions, in Kuwait, leadership reluctance is compounded by uncertainty about customer willingness to engage with virtual platforms. This interdependence between managerial hesitation and customer resistance reveals a dual-layered adoption challenge that has been underexplored in prior work.

From a comparative perspective, the study demonstrates that behavioral barriers outweigh technological ones, a finding that contrasts with adoption studies in less digitally mature environments, where infrastructure gaps often dominate (Winanti et al., 2023). In Kuwait, technical readiness is not the bottleneck; rather, cultural alignment and trust-building mechanisms determine adoption success. This shift in emphasis broadens the applicability of service informatics research by showing that different adoption stages—emerging, developing, and digitally mature economies—face different dominant constraints.

For practitioners, these findings suggest that successful CEC implementation must be framed as a service transformation strategy rather than an IT upgrade. While infrastructure investments are important, greater returns will come from initiatives that reshape customer perceptions and strengthen leadership commitment. Awareness campaigns, experiential demonstrations of engagement centers, and structured change management programs for executives are more likely to shift adoption intent than further technical enhancements.

6. Conclusion

This study investigated the barriers to adopting Customer Engagement Centers (CECs) in Kuwait's banking, healthcare, and government service sectors. Although Kuwait demonstrates high levels of ICT readiness, the results revealed that behavioral and organizational barriers—particularly privacy concerns, customer acceptance, and limited top management support—pose more significant challenges than technological constraints. Regression analysis confirmed that privacy and customer acceptance are the strongest predictors of adoption intent, highlighting the critical role of trust and user attitudes in driving digital transformation.

Theoretically, this research contributes to service informatics and digital CRM literature by demonstrating that adoption barriers in digitally advanced but culturally conservative contexts are shaped more by behavioral resistance and managerial hesitation than by infrastructure readiness. Practically, the findings provide guidance for managers and policymakers: strengthening data

governance frameworks, simplifying user experience through intuitive system design, and securing executive sponsorship are essential to accelerating CEC adoption.

Despite these contributions, the study has limitations. The use of a cross-sectional design and non-probability sampling restricts generalizability, while the focus on Kuwait limits regional applicability. Future studies should adopt longitudinal or cross-country comparative approaches across GCC nations to explore how cultural and regulatory variations shape adoption. Qualitative methods such as interviews could also enrich understanding of customer trust and acceptance dynamics.

In conclusion, the adoption of AI-enabled CECs is not merely a technological upgrade but a strategic transformation in service delivery. By addressing privacy, customer acceptance, and managerial commitment, organizations in Kuwait and similar economies can unlock the full potential of CECs to enhance service quality, customer loyalty, and organizational competitiveness. For both practitioners and researchers, this study underscores the importance of integrating technological innovation with cultural sensitivity and organizational readiness to advance digital service systems.

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