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Toward Building a Strategy for Social Adaptation in Gulf Society in the Age of Artificial Intelligence: A study Using Grounded Theory

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Abstract

Objectives: The study aims to explore the social adaptation strategies adopted by Gulf society in response to the transformations brought about by the development of artificial intelligence.

Methods: The study employed a qualitative methodology using Grounded Theory, specifically the developed Strauss model, which is based on three key stages: open coding, axial coding, and selective coding. Data was collected from a variety of sources, including personal and group interviews conducted via trusted online platforms such as Zoom and Teams. The sample size consisted of 30 individuals—15 from the education sector and 15 from the local community and family sector—selected using purposive sampling.

Results: The study developed a model based on two main dimensions: the individual dimension and the institutional dimension. The results indicated that both public and private institutions in Gulf society quickly adopted digital systems. The Gulf community showed a high level of readiness to adapt through education and training. Furthermore, the use of AI and digital technologies contributed to accelerating changes across various sectors such as education and healthcare, enhancing the management of social and economic crises. The study also revealed a shift in individual priorities, with a greater focus on education and health.

Conclusion: This study sheds light on the social adaptation strategies within Gulf society in the era of artificial intelligence, relying on a qualitative methodology using Grounded Theory. The findings concluded that both individuals and institutions are adopting flexible strategies that combine technological and value-based adaptation.

Keywords: Social adaptation, artificial intelligence, Gulf society, training.

نحو بناء إستراتيجية للتكيف الاجتماعي في المجتمع الخليجي في عصر الذكاء الاصطناعي: دراسة باستخدام النظرية المجذرة

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ملخّص

الأهداف: تهدف الدراسة إلى استكشاف استراتيجيات التكيف الاجتماعي التي تبناها المجتمع الخليجي لمواكبة التحولات الناتجة عن تطور الذكاء الاصطناعي.

المنهج: تبنت الدراسة المنهج النوعي باستخدام النظرية المجذّرة (Grounded Theory) والتي ترتكز على نموذج شتراوس المطور الذي يعتمد على ثلاث مراحل أساسية، وهي الترميز المفتوح والترميز المحوري والترميز الانتقائي. تم جمع البيانات من مجموعة متنوعة من المصادر بما في ذلك المقابلات الشخصية والمقابلات الجماعية عبر المنصات الإلكترونية (زووم وتايمز وغيرها من المنصات الموثوقة، بلغ حجم العينة 30 فردا 15 منهم من قطاع التعليم، و15 من قطاع المجتمع المحلي والأسرة تم اختيارهم بالطريقة القصدية

النتائج: توصلت الدراسة إلى صياغة النموذج على بعدين رئيسيين :البعد الفردي والبعد المؤسسي، فقد أظهرت النتائج أن المؤسسات الحكومية والخاصة في المجتمع الخليجي تبنت بسرعة الأنظمة الرقمية، وأن المجتمع الخليجي أظهر استعدادًا كبيرًا للتكيف من خلال التعليم والتدريب، كما وبين النتائج أن استخدام الذكاء الاصطناعي والتقنيات الرقمية أسهم في تسريع التغيرات في قطاعات متعددة مثل التعليم والصحة، وأدى إلى تحسين إدارة الأزمات الاجتماعية والاقتصادية، وأن المجتمع الخليجي شهد تغيرًا في أولويات الأفراد، حيث كان هناك تركيز أكبر على التعليم والصحة.

الخلاصة: تسلط هذه الدراسة الضوء على إستراتيجيات التكيف الاجتماعي في المجتمع الخليجي في ظل الذكاء الاصطناعي، معتمدة على المنهجية النوعية باستخدام النظرية المجذرة. توصلت النتائج إلى أن الأفراد والمؤسسات يتبنون إستراتيجيات مرنة تجمع بين التكيف التقني والقيمي .

الكلمات الدالة : التكيف الاجتماعي، الذكاء الاصطناعي ، المجتمع الخليجي، التدريب .

1-Introduction

In the modern era, the world is witnessing huge technological transformations that affect all areas of life, and the revolution in artificial intelligence (AI) is one of the most prominent of these transformations. As Collins (2019) points out, AI has become pivotal in various industries and sectors such as health, education, industry, and government services, and profoundly influences the behavior of individuals and societies alike. While AI opens new doors for progress and innovation, it also poses significant challenges that require societies to continuously adapt to these developments (Carter, 2021).

Contemporary societies live in an accelerating era of technological transformations dominated by advanced technologies such as AI, creating new social, cultural, and economic challenges. Ford (2020) points out that these technologies, which have the potential to bring about radical changes in various areas of life, are one of the main drivers of development trends in the near future. For Gulf societies, which are characterized by rapidly changing cultural and economic diversity, adapting to AI is a strategic priority to ensure their continued social stability and national economy in light of these changes (Al-Tamimi, 2022).

Social adaptation to AI is not just an adoption of modern technology, but a comprehensive process that extends to reshaping social values and preparing individuals and organizations to employ these technologies in line with the specificities of the Gulf environment (Hassan, 2023). Social adaptation encompasses the effects on individual behaviors and societal relationships due to technological developments, which can be positive or negative, and may lead to profound changes in social structure and economic relations (Jones, 2018). In this context, it becomes necessary to identify effective strategies that enable Gulf society to interact positively with these technologies and employ them in achieving sustainable development (Al-Zaidi, 2021).

Therefore, we can emphasize that social adaptation is one of the important social processes in the context of social life, through which individuals can achieve an appropriate degree of integration into their society and establish successful relationships and reduce the likelihood of conflict between them, as adaptation plays an important role in achieving the continuity, regularity and stability of social life, thus reducing the manifestations of imbalance and deviation except at the level of building society or its functions (Majdi, 2003).

This study is based on the epistemological methodology of Grounded Theory, which is one of the most appropriate approaches for understanding complex social phenomena by analyzing data in detail and monitoring behavioral patterns and interaction between individuals and institutions in the face of technological changes. This approach is based on collecting and analyzing qualitative data dynamically to create new categories and concepts that contribute to building applicable knowledge frameworks in the context of social adaptation to AI (Corbin & Strauss, 2017).

Through this study, it will be possible to provide applicable scientific insights that contribute to the utilization of AI in a way that keeps pace with social transformations and contributes to building an adaptive Gulf society that is able to take advantage of the opportunities offered by these modern technologies.

1-1: **Problem of the study**

GCC societies are facing increasing challenges related to the application of AI in various aspects of social and economic life. While these societies have made remarkable progress in adopting modern technologies, social adaptation to these technological shifts is a complex issue that requires deliberate strategies to ensure their integration with prevailing social and economic values. The issue of the study is that despite the rapid technological progress in the region, social interaction with AI may not be at the required level of adaptation, which may lead to social, economic, and cultural conflicts between individuals and organizations.

First, some social groups suffer from a lack of awareness of AI concepts, and this knowledge gap threatens the ability to realize the potential benefits of these technologies in improving the quality of life. Second, some government and private organizations face challenges in employing AI in a way that suits their organizational needs, which hinders their ability to effectively respond to the requirements of the digital age. Third, there is concern that rapid changes may lead to the emergence of social inequalities, as some groups or individuals may lose their jobs as a result of automation or AI technologies, increasing pressure on socio-economic dimensions.

In addition, there are still no comprehensive studies that explore how to build effective strategies for social adaptation to AI in the context of GCC society, highlighting the urgent need for a deeper understanding of this issue. Public policies sometimes lack clear and specific guidelines to guide society towards utilizing AI without negatively impacting the social fabric, especially with growing concerns related to job losses and transformations that may affect family structures and society in general.

Based on these challenges, the issue of the study emerges in the need to build an integrated strategy for social adaptation to AI in Gulf society, ensuring that these technologies are employed in a way that enhances social stability and supports sustainable development without negatively affecting the prevailing cultural and social values. This strategy should include various axes such as training and development, modernizing systems and procedures, promoting community awareness, as well as stimulating scientific research and development in AI-related fields.

The main question in this study is to explore how to build this strategy by using Grounded Theory to understand individual and organizational interactions, in order to build a conceptual framework that helps in facing these challenges and achieving the required social adaptation in the age of AI.

1-2: Importance and objectives of the study

The importance of the study stems from the vital role that AI technologies play in reshaping societies in the modern era, especially in Gulf societies that are witnessing rapid developments in the field of technology. This study constitutes a significant contribution to understanding how these technologies affect social interaction and their future effects on the structure of Gulf society. It also contributes to providing a conceptual framework that helps decision-makers guide social change positively and effectively in line with technological developments, while preserving the prevailing social and cultural values. The importance of the study increases in light of the rapid growth of artificial intelligence technology, which can lead to radical changes in multiple fields such as education, labor, and the economy, imposing the need to develop flexible strategies to adapt to it.

The study aims to explore how to build a strategy for social adaptation in Gulf society in the era of AI, using Grounded Theory to analyze the individual and institutional interactions that contribute to this adaptation. The study also aims to identify the different dimensions of the employment of AI and its effects on individuals and institutions within the Gulf society. The study also seeks to identify the socio-economic factors that may contribute to or hinder the process of social adaptation, and provide recommendations based on the findings that contribute to improving society's response to these changes. In the end, the study aims to develop a conceptual framework that helps in formulating more integrated policies and strategies to guide social changes in GCC society towards compatibility with the challenges and opportunities presented by AI.

2:**Theoretical framework**

The study of social adaptation under AI is a vital issue that requires exploring the factors influencing the integration of individuals with rapid digital developments. Technological changes are not limited to technical aspects only, but extend to the social structure and human relationships, necessitating effective strategies for adaptation and positive interaction. In this context, Grounded Theory plays an important role in analyzing social phenomena from an interactive perspective that takes into account the life experiences of individuals and groups. By studying these phenomena, a deeper understanding of how Gulf society is reshaping its identity in the age of AI can be achieved.

2-1:**The concept of social adaptation**

Social adaptation is the process by which individuals and groups interact with the environmental, economic, and cultural changes surrounding them, with the aim of maintaining social equilibrium and ensuring the continuity of relationships between the components of society (Smith, 2020). Social adaptation includes the ability of individuals and institutions to modify their behaviors and roles in response to emerging circumstances, in order to maintain the stability of society and achieve sustainable development (Brown & Green, 2021). Social adaptation includes many dimensions such as psychological, social, and organizational adaptation, where individuals contribute to supporting the social system through their positive interaction with the values, norms, and legislation that govern their daily lives (Johnson, 2019). In contemporary societies, social adaptation has become a greater challenge due to rapid shifts in technology, the economy,

and the social environment, requiring innovative strategies to facilitate this process and maintain community cohesion (White & Black, 2022).

2-2:**The concept of artificial intelligence**

Artificial intelligence (AI) is a branch of computer science that is concerned with the development of systems and software that have the ability to simulate and replicate intelligent human behavior (Miller, 2018). AI includes applications such as machine learning, natural language processing, computer vision, and big data analysis (Davis, 2021). The goal of AI is to create systems that are able to think, learn, and make decisions in a manner similar to humans, and sometimes even surpass humans in some aspects (Taylor, 2020). AI technologies are used in many fields such as healthcare, education, commerce, and economics, where they contribute to improving performance and minimizing human error by automating processes (Walker, 2021). In the modern era, AI has become a pivotal force in changing ways of life and work, reflecting a profound impact on all aspects of society, both at the level of individuals and organizations (Thompson & Lee, 2022). AI poses a challenge in how individuals and societies adapt to these rapidly evolving technologies, and how to employ them in line with societal values and sustainable development goals (Robinson, 2023).

Combining social adaptation and AI is a necessity to keep pace with technological changes in GCC society and the world in general, through strategies that aim to facilitate the process of adapting to these modern technologies and ensure that society benefits from them without affecting its social and cultural fabric.

Philosophically, social adaptation can be seen as a philosophical and cultural process that reflects the ability of humans to interact with the challenges that arise in their ecosystem. In light of globalization and the widespread spread of technology, social adaptation emerges as a necessary mechanism to ensure the continuity of social stability and positive interaction with rapid changes. This adaptation is not only limited to the individual level, but also includes institutions that must adapt to technological shifts and modify their policies and practices to keep pace with the digital revolution that the world is witnessing today (Al-Sayed, 2016).

On the social level, we find that Gulf societies face multiple challenges in adapting to these technological shifts. AI is not just a tool to improve productivity and efficiency, but a radical change in the way individuals and organizations think and interact. In this context, social adaptation becomes an ongoing process that requires individuals to develop strategies to cope with these changes by learning new skills and adopting innovative lifestyles.

Adapting to AI, while offering many opportunities, also raises philosophical questions about the values of cultural identity and how to preserve them in a technologically driven world. Can Gulf societies preserve their social and religious values in light of these major shifts? Will AI reinforce or threaten these values?

In addition, the theoretical framework reflects the importance of understanding social adaptation under globalization, where global and local forces overlap in shaping social and political identities. While globalization offers unprecedented opportunities for communication and access to information, it also poses challenges to preserving cultural and social specificity. In this context, AI is a pivotal force that can empower individuals to face social challenges, but it can also lead to social disruptions if not handled with caution (Castells, 2010).

Social adaptation refers to the ability of individuals and societies to modify their behaviors, habits, and practices in response to changes in the social, economic, or political environment. Social adaptation has been addressed in many studies that explore how individuals adapt to social and cultural changes. According to Laszlo's (1998) study, social adaptation is not a passive or automatic process, but requires individual and collective action to balance between environmental requirements and the challenges resulting from these changes (Al-Sayed, 2016).

In GCC society, social and technological changes represent a major challenge, especially with the significant expansion in the use of technology and artificial intelligence. In their study on societal changes during the COVID-19 pandemic, Al-Dhubyani and Al-Zufairi (2025) noted that Gulf society has shown high capacities for social adaptation, especially in the areas of distance education and digital transformation in government and service transactions. This adaptation was related to the type of cultural and social changes that occurred suddenly and unexpectedly, which made the adaptation process more challenging.

From another perspective, Murphy (2002) pointed out that social adaptation sometimes faces resistance due to cultural or social differences between individuals or groups. However, societies with a flexible social system and supportive leadership tend to adapt faster and more effectively. In this context, GCC society is an example of the high capacity for rapid adaptation to changes brought about by modern-day technologies, including AI.

The technological revolution represented by AI is one of the most prominent factors accelerating social changes. The effects of AI on society have been investigated through studies that have addressed its impact on economic, social, and functional dimensions. In this context, Ali (2017) pointed out that AI will lead to radical changes in the labor market, as it will require individuals to develop new skills to match the jobs that will arise as a result of the expanded use of these technologies.

In a recent study by Spear (2020), it was highlighted how AI can bring about changes in the social behavior of individuals within contemporary societies, requiring the building of integrative strategies between individuals and institutions to face the challenges of using this technology. In addition, other studies such as Jones et al. (2019) emphasized that AI is not just a technical tool, but a complex system that affects all aspects of daily life including the way decisions are made, business management, and education.

Within the framework of social adaptation of GCC society to AI, Al Thobiani's (2025) study showed that GCC society shows a remarkable ability to adapt to digital changes, including AI. For example, educational institutions in the Gulf have seen a rapid shift towards the use of digital educational platforms and distance learning, which is a major shift in dealing with educational technology.

The government of Saudi Arabia was one of the first GCC countries to launch digital transformation strategies, where AI was used in areas such as traffic management and healthcare, helping to improve service delivery to citizens. Moussa's (2022) study showed that AI technologies were crucial in addressing the challenges posed by the pandemic in terms of remote delivery of government and nursing services. GCC societies have also witnessed a remarkable growth in AI applications in daily life, demonstrating an effective response to these technological changes.

Previous studies have shown that to achieve effective integration between social adaptation and AI, there must be a focus on training, awareness, and community interaction. Al-Dhubyani (2025) pointed out the importance of building educational and training strategies aimed at improving the skills of individuals in the use of AI, including AI integration strategies in schools and universities. In this context, the role of governments is to guide these strategies and provide government support to organizations that integrate modern technology into their services.

Drawing on the ideas of Johnson et al. (2021), Gulf societies can ensure a more successful integration of AI and social adaptation by adopting a participatory education model that teaches individuals how to use AI in their daily life contexts and improve their social competencies.

Despite the great potential of AI to improve the quality of life in GCC society, there are several challenges associated with the process of social adaptation. Taylor et al. (2019) point out that these challenges include resistance to change, anxiety about losing jobs due to automation, and the inability of some individuals to use new technologies. These challenges require the development of sustainable support policies that help individuals adapt to these technological and social changes.

Through a review of previous studies, it is clear that social adaptation in the age of AI is one of the most prominent issues facing contemporary societies. Understanding these changes and developing effective strategies to deal with them is essential to maintain the stability of Gulf society. Therefore, it will be necessary to follow up on these studies and develop a theoretical framework for social adaptation strategies that are in line with future trends in the use of AI in GCC society

3:**Methodology**

3-1:**Study design**

The nature of the phenomenon studied in this study imposed the necessity of choosing the qualitative approach, given that it is a complex phenomenon associated with rapid social and technological changes in the Gulf society. These changes are not just superficial shifts, but deep and structural changes that require in-depth analysis to understand how AI affects

social adaptation in Gulf society, as well as designing effective strategies for the future. Hence, the methodology of the study requires a flexible and non-linear approach to enable the researcher to explore the multiple and intertwined dimensions of this phenomenon.

Accordingly, the **Grounded Theory methodology** was chosen as the main approach to achieve the study's objective and answer its questions. Grounded theory is a qualitative methodology that provides research tools that allow the production of new theories based on data extracted from reality, which fits perfectly with the nature of the study, which requires building an innovative conceptual framework to understand social adaptation in the context of AI in GCC society.

Grounded theory was chosen because of its superior ability to deal with complex and changing qualitative data, especially in rapidly changing societal contexts such as the digital age and advanced technology. This approach allows researchers to document and observe multiple social interactions within GCC society and how AI affects these interactions. It also allows for the generation of theoretical concepts based on the original data collected, contributing to the discovery of social adaptation and its future directions based on societal realities.

In terms of applying the **grounded theory**methodology, the researcher follows the stages of open coding, axial coding, and selective coding, which are analytical techniques used to gradually analyze the data and extract key patterns and relationships that indicate how GCC society is adapting to AI developments. This methodology enables access to new ideas and conceptual frameworks that can be applied to guide future policies in GCC society, especially in the face of the challenges and changes resulting from rapid technological transformations.

3-2:**Tools of the study**

The study adopted the **grounded theory** method using the **developed Straussian model**, which relies on three basic stages of data coding, namely:

1. **Open Coding**: At this stage, the raw data was analyzed in detail, breaking down the information into smaller units and identifying key concepts, attitudes, and practices that relate to the topic of the study. These units were categorized through the initial coding of words or phrases that carry important meaning in the context of social adaptation and the use of AI in the Gulf community.

2. **Axial Coding**: After open coding, the concepts identified in the first stage were grouped and linked together into major categories or themes. This stage aims to build connections between the concepts and look for patterns and general trends that may contribute to a deeper understanding of how GCC society interacts with AI in the context of social adaptation.

3. **Selective Coding**: In this final phase, key concepts and patterns that emerged in the previous two phases were emphasized and integrated to form an overarching theory or conceptual framework. Key factors influencing social adaptation to AI were identified and conclusions were formulated that contribute to building effective strategies to deal with future challenges (Al-Thibani, 2021).

3-3:**Procedures**

The study relied on the use of interviews as the main tool for data collection, as individual interviews were conducted with participants to explore their experiences and opinions about social adaptation in Gulf society in the era of AI. Electronic tools were also utilized in case of difficulty in communicating directly with some participants.

To increase the level of reliability and dependability in collecting and analyzing the data, a **triangulation** methodology was adopted, which ensures the diversification of data sources and data collection methods. The data was collected from a variety of sources including personal interviews, group interviews via online platforms (Zoom, Thames, and other reliable platforms), as well as data and reports on the development of AI in the Gulf community, to ensure the comprehensiveness of the analysis.

Purposive **sampling** was followed in the selection of participants, as individuals with rich knowledge and experience related to the concept of social adaptation and the use of AI in the Gulf community were identified. The sample included individuals from different disciplines, such as technologists, academics, social planning specialists, as well as government officials and community members who have been directly affected by the development of AI.

Data was collected using **open coding, axial coding, and selective coding** concurrently. These three stages of coding helped to build categories and analyze the data accurately, extracting key patterns that reflect the evolution of social adaptation in the face of AI

3-4:**How to analyze the data**

The data was analyzed through the following stages:

1. **Open Coding Phase**

In this phase, primary data was collected directly from the field through individual and group interviews, including interviews conducted via online platforms. This data was analyzed concurrently, extracting key words or phrases and identifying initial categories that represent different aspects of social adaptation in GCC society in the AI era. Each set of interviews was collectively analyzed using the **Zoom**platform, and the results were verified to be interpreted with up to 95% accuracy, and in case of any ambiguity or discrepancy in interpretation, the data was returned to the field for further data collection.

2. **Axial Coding Phase**

During this phase, the data was rearranged and linked in a more complex way, allowing for an understanding of the interrelationship between the different axes that were extracted in the open coding phase. Emphasis was placed on extracting connections between the initial categories, which helped to clarify how different factors (such as technological development, changes in societal values) affect social adaptation in Gulf society. This phase was the link between open coding and optional coding.

3. **Selective Coding Phase**

At this stage, the focus was on identifying the selective category that reflects the final result of the analysis. Through this stage, a final conceptual framework was arrived at that tells the main story of the phenomenon studied and clarifies the relationships between the various interrelated factors. Both inductive and deductive reasoning were utilized to reach a deep understanding of social adaptation in the age of AI within GCC society.

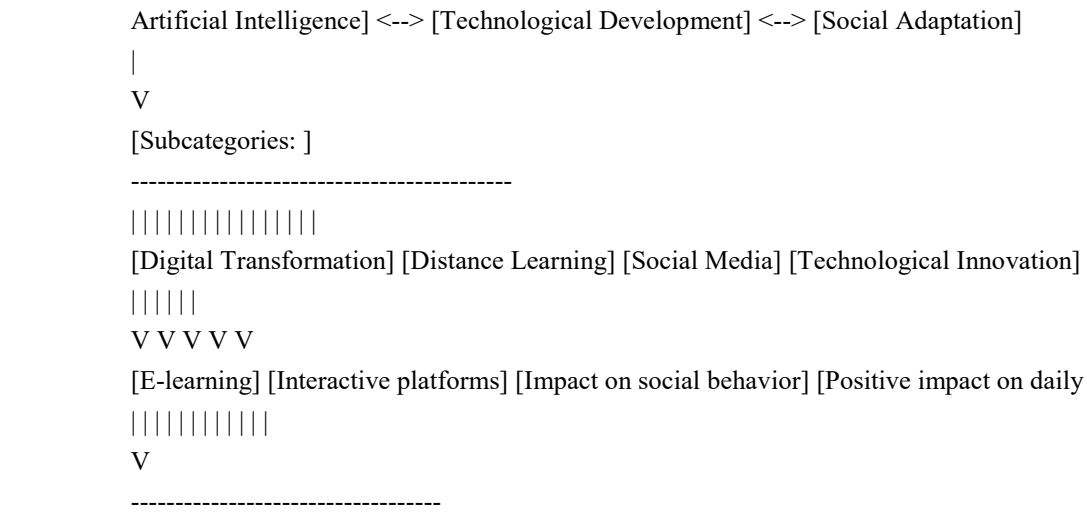


Figure 1

(Main category: “Digital Technology").

3-5:**Participants**

As part of the study's methodology based on **grounded theory**, **the theoretical sample** was recruited in the GCC countries, namely **the Kingdom of Saudi Arabia, the United Arab Emirates, the Kingdom of Bahrain, and the**

Sultanate of Oman. The sample was thoughtfully selected from the **educational sector (universities)** and**the local community (families)**, with a total of **30 participants**.

The participants were divided as follows:

1. The**educational sector (universities)**: 15 participants were university professors, graduate students, and faculty members in various disciplines from universities in the Gulf countries, who represent the group most engaged with technological changes, especially AI in the academic field. This group was chosen because of their direct influence in shaping social awareness about this technology and how to adapt to it.

2. **Local community and family**: 15 families from different communities in the Gulf countries, selected based on their diversity in cultural and social backgrounds. The focus was on how AI affects the daily lives of individuals and families, and how they adapt to these changes within the framework of family life and societal traditions.

Breakdown of participants by sector and country:

Sector	UAE	Saudi Arabia	Bahrain	Oman	Total
Educational	4	4	3	4	15
Local Community & Family	5	4	3	3	15
Total	9	8	6	7	30

To codify the names, just number the names from M1 to M9 (UAE), M10 to M17 (Saudi Arabia), M18 to M23 (Bahrain), and M24 to M30 (Sultanate of Oman). M18 to M23 Bahrain, and M24 to M30 Oman.

The most important considerations for selecting the theoretical sample include suitability and adequacy; suitability is to be the most capable of providing answers to the questions posed, and is raised by coding the data for the first stage of participants; then the participants are identified as a second stage and are the most suitable and most capable of providing the answer to the questions raised to tell the subject of the study and, of course, to approach the theory that the study aims to reach, while adequacy is the adequacy of the sources necessary to collect data (people, places, events, type of data) to achieve depth of description (Fossey, 2012).

Regarding the selection of the study sample from the four countries, the researcher focused on starting through individual interviews with participants from the educational sector, then coded and analyzed the data prepared with 15 participants from the educational sector from all the countries covered by the study, and the number of participants from the After analyzing their data and linking it to the previous results in a systematic manner that resulted in raising a set of questions, which were answered by the participants, they were coded and analyzed directly and linked to the above about how to build a strategy for social adaptation in the Gulf society in the era of artificial intelligence.

In-person interviews, group interviews via online platforms (such as Zoom and Teams), data and reports were very convenient tools for gathering information that led to real and effective results. These tools enabled the researchers to gather in-depth and comprehensive insights into how AI is impacting individuals and GCC society, which helped provide accurate and realistic results that reflect the reality of technological shifts in society.

3-6: **Examples include:**

- **Interviews**:

Interviews were an appropriate tool for understanding the societal shifts that GCC society has experienced under AI, as they provide an opportunity to obtain individualized, in-depth and detailed opinions. Interview participants provided vital details on how individuals are adapting to technological changes at the individual and organizational level.

: “The in-person interviews were important to understand the changes in government regulations and how individuals are dealing with them,"**said M1 from the UAE**, reflecting the importance of this type of tool in collecting accurate and relevant data to understand technological shifts first-hand.

- **Group interviews via online platforms (such as Zoom and Teams)**:

Cross-platform group interviews were used effectively in the study, as these tools provided an opportunity to connect

with a large group of participants from different locations. These interviews are a convenient tool as they allow for immediate interaction and flexibility in discussing multiple issues related to new technologies and their impacts.

He noted : **M10 from Saudi Arabia**: "Through Zoom, the group interviews were suitable for exchanging views on technological shifts, and allowed us to discuss the challenges of digital transformation easily and quickly, in addition to the possibility of sharing the ideas of participants from different countries at the same time."

- **Data and reporting**:

Data and reports were an important and convenient tool in studying the impact of AI, as they provide objective and analyzable data. By analyzing government reports and research data, we were able to observe patterns and trends that influenced societal transformations, which helped strengthen the study's findings.

M19 from Bahrain explained, "The data and reports from government agencies were relevant to understanding the impact of AI on education, as these reports showed the impact of digital transformation on distance education in Gulf societies."

3-7: **Sample selection considerations:**

- **Relevance**: Participants were selected based on their ability to provide comprehensive and in-depth answers about the impact of AI on education and families, as these participants are a vital focal point for understanding how Gulf society can adapt to this technological shift in their daily and professional lives.
- **Sufficiency**: The sample was selected based on its ability to provide diverse and rich information about how different segments of society interact with and are affected by AI. It was emphasized that this sample would contribute to enriching the study by providing real-life experiences and examples from everyday life.

Data was collected through **individualand group interviews**, **via electronic media**. These various methods were used to ensure that the researchers obtained multiple perspectives, which helped deepen the understanding of how Gulf society is adapting to technological shifts.

3-8: **How the sample was collected:**

Online communication was done using Zoom and Teams: These tools were used to reach participants from target groups such as students, teachers, and members of the Gulf community in general. Invitations to participate in the study were posted online, either through email or social media platforms.

3-9: **Personal data collection:**

Participants who responded to the invitation and started cooperating with the researcher were enrolled.

After the participants agreed to participate, their basic data such as their names and professional biographies were requested to ensure that the participants properly represented the target population.

3-10: **Credibility and reliability**

In qualitative studies, the term credibility is used to refer to the realization of realism and logicality in the results, which is essential in ensuring the validity of the interpretation of the studied phenomenon. Credibility is manifested in the participants' trust in the researchers and credibility in collecting and analyzing the data, which enhances the understanding of changes in Gulf society under the effects of AI. For the current study, the triangulation strategy was used as a tool to achieve credibility, by diversifying the data collection methods, between individual and group interviews and electronic media (Hajjar, 2003).

As for Dependability in qualitative research, it parallels the term consistency in quantitative research, as it refers to the ability of researchers to show that the results obtained can be relied upon when the same conditions are repeated. To ensure this aspect in our study, rigor was followed in the stages of data analysis, especially in the coordination between the multiple disciplines of researchers belonging to five different humanities disciplines. This specialized diversity helped in achieving accuracy in interpreting the results by including several cognitive and analytical angles, and thus a more comprehensive and reliable interpretation of the social phenomena associated with the impact of AI on Gulf society (Merriam & Tisdell, 2016).

Thus, it can be said that the study has contributed to enhancing credibility and reliability by following a rigorous scientific methodology and a variety of data collection and analysis tools commensurate with the complexity of the studied phenomenon.

4: Results of the study:

The study data was analyzed according to the main axes included in the strategic box for societal change in the Arabian Gulf, where a set of results were reached that summarize the most prominent transformations that have occurred in Gulf society in light of the transformations resulting from AI. The findings focused on the individual and institutional dimensions, and documented the various changes and mechanisms adopted by Gulf society to adapt to these transformations in various fields.

4-1: First: Regulations and Procedures

The study showed that changes in regulations and procedures were one of the most important axes of the study that shaped the structure of social adaptation in Gulf society in the face of AI-related technological transformations. M1 from the UAE noted that "adjustments in government regulations were necessary to ensure business continuity, especially with the digital transformation that was inevitable to keep up with AI developments." M10 from Saudi Arabia explained that "new measures such as automation and e-government have helped accelerate the pace of work." M18 from Bahrain added, "Despite initial challenges, such as difficulty in accessing digital tools, GCC society has shown resilience in adapting quickly." M24 from Oman noted that "a remarkable development in the use of digital systems has been positively observed in the face of new challenges."

4-2: Second: Training and Development

This axis was embodied in the development of technical and technological skills to keep pace with the changes imposed by AI. The results of the study highlighted the urgent need to provide training and educational programs in areas related to the use of modern technologies. M2 from the UAE noted "the need to improve the digital skills of the community to keep up with the rapid technological transformations." M11 from Saudi Arabia emphasized that "continuous training is one of the government's priorities to ensure that new skills are available to meet the needs of digital transformation." M19 from Bahrain explained that "digital education has been one of the key factors that have helped achieve social adaptation in our societies." M27 from Oman added, "The training programs available in schools and universities have been instrumental in mitigating digital divides."

4-3: III: Digitalization

The shift towards digital technology has been one of the most prominent changes affecting GCC society in recent times. M4 from the UAE noted that "digital transformation has facilitated interaction between individuals and organizations." M12 from Saudi Arabia added, "Artificial intelligence has played a major role in facilitating processes in various fields, especially in distance education." M20 from Bahrain emphasized that "digital technology has contributed to enhancing society's ability to face social and economic crises more effectively." M28 from Oman explained that "digital technologies such as e-learning have helped minimize the negative effects on education."

4-4: IV: Behavior and Priorities

The results showed that societal shifts resulting from AI have affected the behavior of individuals in GCC society. M5 from the UAE explained that "AI has helped to rearrange life priorities, focusing more on necessities than spending on luxuries." M13 from Saudi Arabia said, "I saw that the family has become more interconnected by increasing family time, which helped strengthen family ties." M21 from Bahrain added, "Digital transformations have helped improve family interaction and deepen relationships between individuals." M29 from Oman noted that "the use of modern technologies in daily life has helped change people's behaviors towards greater financial awareness."

4-5: Fifth: The impact of AI on the organizational environment

At the organizational level, the results of the study showed strong signs of digital transformation across different sectors. According to M6 from the UAE, "Government organizations have been quick to adopt AI to improve efficiency and productivity." M14 from Saudi Arabia noted that "the health sector has greatly benefited from AI in providing remote healthcare." M22 from Bahrain emphasized that "technological development in different sectors has had a positive impact on organizational work and reduced the need for physical presence in offices." M30 from Oman explained, "Organizations in Oman have responded quickly to digital transformations, which has helped improve operational efficiency."

5: Discussion of findings:

In recent years, GCC society has undergone rapid changes as a result of accelerating digital transformations, most notably artificial intelligence (AI). These shifts have directly contributed to reshaping individual and organizational structures in society. This discussion aims to analyze the findings of the study and provide an in-depth explanation of the social adaptation strategies adopted by Gulf society to cope with these changes. Here, we will discuss the most important axes that represent the structure of this strategy and how society interacts with the challenges and opportunities created by AI.

First: Systems and Procedures: Adapting the institutional structure to AI

The results of the study showed that GCC society has shown great flexibility in adjusting institutional systems and procedures to keep pace with the technical challenges posed by AI. Digital transformations in government and private organizations have been crucial in this context, as digital systems have been implemented to speed up procedures and facilitate access to services. Interviewees pointed to the shift towards automation and e-government, as these systems have improved work efficiency and reduced the time spent on administrative procedures.

These findings show that GCC societies were able to adopt these systems quickly, reflecting an internal readiness to adapt to new technologies. However, the interviews revealed some challenges, such as limited access to smart devices or poor digital literacy among some groups. However, these challenges represented a transitional phase, which participants indicated were overcome by government policies aimed at increasing digital awareness and offering training programs aimed at facilitating adaptation to new systems.

This rapid response to the needs of digital transformation indicates that GCC society has a high capacity for organizational adaptation to technological changes and the adoption of technologies that will improve the quality of daily life. Here, the role of systems and procedures appears as a key factor in enabling individuals and organizations to use AI effectively. This result is consistent with what Laszlo pointed out in his book (1998), where he indicated that social adaptation is not an automatic process but requires collective effectiveness, which is consistent with the result that shows the readiness of GCC society to adopt digital systems that facilitate government services. The study of Al-Dhubyani and Al-Dhafiri (2025) also showed that the Gulf society showed a high ability to adapt to digital changes such as e-government, which enhances the society's ability to absorb technological changes.

Second: Training and development: Human Capacity Building

One of the most prominent findings of the study is the emphasis on the importance of training and development to keep up with the technological changes imposed by AI. Interviews with participants showed that training in the use of digital tools and modern technologies, including AI, has become a clear priority for individuals and organizations alike.

Participants explained that there is a strong desire to enhance their digital skills, reflecting a growing awareness of the importance of adapting to the digital age. Despite challenges related to making training accessible to all segments of society, especially in areas that lack adequate technical infrastructure, some pointed to government and private initiatives aimed at bridging these gaps. These initiatives included training courses and workshops that helped individuals gain the skills needed to work in AI-driven environments.

The challenges mentioned are mainly related to digital divides that affect those less able to access technology, and this opens the door to the need to direct more efforts towards ensuring the equitable distribution of educational and technological resources. However, this response indicates that GCC society is characterized by the ability to adapt to technological changes by investing in education and training, thereby contributing to the promotion of sustainable development.

This finding is consistent with what Pearson et al. (2017) pointed out that AI will lead to drastic changes in the labor market, and therefore, it is necessary to enhance the skills of individuals to keep up with these changes. This is consistent with the results of the study, which showed that there is a desire to enhance digital skills to facilitate adaptation to this transformation

Third: The digital technology pillar: Enhancing Adaptability through Innovation

The digital technology axis is one of the main pillars of the social adaptation strategy, as the study showed that digital technologies have contributed significantly to accelerating social interaction, facilitating access to services, and enhancing

the effectiveness of work in various fields such as education and health. Especially in light of the spread of artificial intelligence applications that facilitate many daily operations such as distance learning, telemedicine, and innovation in the field of e-commerce.

The results showed that the positive interaction with these technologies is clearly visible through the data collected from the interviews. GCC society has shown a great willingness to embrace digital innovations such as smart systems and applications that facilitate daily life. There is a growing awareness among individuals of the need to use these technologies to improve their daily lives in various aspects, such as health and education.

However, there are some challenges, such as the digital divide between individuals in urban and rural areas, as well as the difficulty of accessing modern technological devices for some households. Therefore, there is a need to increase governments' investments in improving technical infrastructure and providing accessible technologies for all segments of society. In this context, the role of the government is to pave the way towards technological adaptation by providing opportunities for all to benefit from these technologies.

These findings corroborate with Speer's (2020) study, which showed how AI can bring about changes in social behavior and needs integrative strategies to face the challenges resulting from this use. The results that showed positive interaction with these technologies are consistent with this vision, as GCC society has shown a great willingness to adopt digital innovations despite the challenges related to access to technology in some areas.

Fourth: Behavior and Priorities: The Social Impact of AI

The findings showed that AI has contributed to changing people's behaviors and attitudes in daily life. During the interviews, many participants mentioned that they have become more interested in public health, and that digital technologies have contributed to enhancing health awareness and providing online medical information. Individuals' priorities have also changed from a focus on luxuries to basic necessities, and this shift has had a positive impact on consumer behavior.

The impact on individual behaviors is evident in the shift in priorities, with a growing interest in health and financial savings. The interviews also showed that there has been a shift in family relationships, as technology has facilitated communication between family members, which has had a positive impact on family cohesion.

In addition, this shift in behavior reflects a change in the concept of education, with many individuals beginning to adopt digital learning models in their daily lives. This shift indicates that GCC society has realized the importance of adapting to AI technologies to improve multiple aspects of their lives.

Jones et al. (2019) noted that AI is impacting all aspects of daily life including the way decisions are made and business is conducted. This is consistent with the behavioral shifts observed in the study, as the use of technology has contributed to enhancing health awareness and improving consumption priorities among individuals.

V: Future challenges and opportunities: Expanding the use of artificial intelligence

Despite the significant progress that GCC society has shown in adapting to AI, there are still many challenges facing the society. The most prominent of these challenges relate to the digital gaps that still exist between different groups in society, as well as the need to improve technical infrastructure and provide continuous training. On the other hand, there are great opportunities to leverage AI in the development of education, health, and government services, enhancing the adaptability of society in the future.

The findings emphasize that future strategy should focus on enhancing digital education and training opportunities for all segments of society, while working to strengthen technical infrastructure in remote areas. In addition, efforts should be intensified to accelerate the transition of government and private institutions to fully digitized work environments, with a focus on using AI to improve the delivery of public services.

Through this discussion, it can be said that GCC society has shown great willingness to adapt to the changes imposed by AI. The societal strategy focuses on developing systems and procedures, enhancing training and development, and expanding the use of digital technologies in various sectors. Although there are some challenges, the opportunities available by leveraging AI put GCC society in a strong position to adapt to future changes and achieve sustainable development.

Taylor et al. (2019) pointed out that resistance to change and anxiety about losing jobs due to automation are among the most prominent challenges that societies may face in adapting to AI. These challenges are also addressed in the study, as there is a need to ensure comprehensive technological integration with continuous training.

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6: Overview of key findings

This study is an important step towards understanding how GCC society is adapting to the socio-economic transformations associated with AI technologies, and how to guide this adaptation within a strategic framework that ensures sustainable development. The study addressed the topic of artificial intelligence and its multiple impacts on Gulf society, noting the role of this technology in reshaping the social and institutional structure at the level of individuals and societies.

The study focused on key strategic axes that represent the core dimensions that shaped the process of social adaptation in Gulf society in the face of technological transformations caused by AI. The findings were divided into the following main themes: Systems and Procedures, Training and Development, Digital Technology, and finally Behavior and Priorities.

Systems and procedures: The study showed that GCC society has quickly adopted adjustments in government regulations and procedures in order to keep pace with technological shifts. By reacting quickly to AI developments, such as e-government applications and transaction automation, there has been an enhancement of transparency and efficiency in government and private organizations. Despite the initial challenges faced by some categories, these obstacles were gradually overcome by enhancing technical infrastructure and expanding access to smart devices.

Training and development: The results of the study revealed the urgent need to develop effective training programs targeting all segments of society. Respondents recognized the need to improve their digital skills in order to adapt to the new demands created by AI. In addition, these programs were essential in improving the quality of distance education and remote work, and equipping individuals with the skills to apply AI technologies in their daily lives. These efforts have contributed to enhancing the ability of GCC society to quickly adapt to technological shifts.

Digital technology: The study found that the shift to digitalization has been one of the most prominent changes in GCC society. This shift was characterized by the application of AI technologies in various fields such as education, health, and commerce. The results of the study showed that the use of these technologies has significantly contributed to improving the efficiency of institutional and administrative processes, and highlighted the role of technology in speeding up procedures and reducing direct interaction between individuals, which positively affected performance in various sectors.

Behavior and priorities: The study addressed the impact of digital transformations on the behavior of individuals and their social orientations. With the adoption of artificial intelligence and digital technologies in daily life, changes in personal priorities have been observed, with many individuals beginning to change their economic behaviors and focus on saving and financial planning. These changes have also contributed to strengthening family relationships, as communication time between family members has increased, which has contributed to strengthening family bonding and raising awareness about the importance of community collaboration.

The impact of AI on the organizational environment: The results of the study confirmed that organizations in GCC society have quickly adapted to the transformations brought about by AI. Many public and private organizations have adopted digital systems to improve internal communication, increase productivity, and reduce the need for physical presence in offices. This digital transformation has enhanced organizational effectiveness and contributed to a more responsive and flexible corporate environment.

In light of what has been reviewed in this study, it can be said that GCC society has undergone remarkable changes as a result of the technical and technological shifts associated with AI applications. These transformations were not limited to the technological aspect, but extended to all dimensions of society, from administrative systems and procedures to training and development, through education and health technologies, to their impact on individuals' behavior and priorities. The study showed that GCC society has shown a rapid response and adaptation to these changes, recognizing the challenges that some social groups may face, but remaining within a framework of continuous adaptation and seeking to develop digital skills and capabilities.

Through a thorough analysis of the themes addressed in the study, it was found that the transformation towards a digital society supported by artificial intelligence is an important step towards achieving sustainable development. The integration of efforts between governmental and private institutions and the adoption of effective technological strategies will accelerate the process of social transformation and ensure that society benefits from these transformations in line with its priorities and goals.

7: Recommendations

Based on the results of the study, a set of recommendations can be formulated that aim to enhance the process of social adaptation in Gulf society in light of AI and achieve the best results in the long term:

- Developing social policies based on digital transformations

The study recommended the need to establish a specialized center to monitor digital transformations at the local, regional, and international levels. This center would work to develop social policies aimed at directing changes towards positive aspects, and provide proactive solutions to potential technical challenges. The center can help assess the extent of the impact of digital changes on society, thereby enhancing society's ability to adapt to these changes.

- Enhance the flexibility of administrative systems and procedures

Government organizations must ensure that systems and procedures are flexible to be able to quickly adapt to technological changes. Adopting effective digital policies contributes to speeding up procedures and achieving the best response to challenges that may arise in the future.

- Expand training and professional development programs

It is necessary to develop continuous training programs to raise the level of technical skills of the community, especially with regard to artificial intelligence and new technologies. These programs should be directed to include all societal groups, emphasizing the importance of providing professional training for individuals to enable them to deal with digital changes with confidence and professionalism.

- Encourage the development of digital technologies and their use in daily life

The adoption of modern technologies and the use of artificial intelligence should be promoted in various fields such as education, health, and commerce. By studying and employing everything new in this field, GCC society can achieve leadership in the fields of digital applications globally.

- Raising societal awareness about the importance of digital transformations

It is important to intensify media and awareness efforts on the importance of AI and digital technologies, through media channels and social media. The social and economic benefits of these technologies should be highlighted, while motivating young people to embrace these changes and work towards achieving a world-class level of development.

- Public-private sector integration

The current stage calls for enhanced collaboration between the public and private sectors in order to develop effective strategies to deal with technological transformations. This integration can contribute to sustainability in the face of the challenges that AI may bring to GCC society

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