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Barriers to Artificial Intelligence (AI) Implementation in Humanities Research Across Arab Countries

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ABSTRACT

Human knowledge production and technological involvement have passed through three innovative stages in the last century: the manual period, the digital period, and the upcoming artificial intelligence (AI) period. The manual era was marked by manpower extensive empirical protocols, and the representatives of humanities conducted their work with the use of physical archives, handwritten notes and analog approaches to work with cultural and historical sources. The emerging age of AI expands these tools and advances with an injection of machine learning, natural language processing (NLP), and more advanced pattern recognition to the research workflows which previously have only been made possible by extensive human effort, allowing more depth and scale of analysis than ever before. With regard to Arab world, this trend carries an immense promise. Although some countries of Gulf Cooperation Council (GCC) made significant investments in AI projects, leading to significant achievements in cultural heritage maintenance and language technologies, other states, especially those involved in conflicts or those with few economic resources, experience problems in operation at the same pace. It is the listing of major structural, institutional, and socio-cultural constraints to the use of AI in humanities research throughout the Arab world. The findings suggest that the targeted policy reforms, regional cooperation and capacity-building programs, and investment in open access digitization projects will be required. Limiting these obstacles, the Arab countries will be able not only to preserve the high cultural heritage but increase the involvement of worldwide scholarly communities in them, so that the AI revolution in the humanities can be inclusive and holistic in terms of representation.

INTRODUCTION

1.1 Background and Rationale

Within the last decade, artificial intelligence (AI) has metamorphosed into a breakthrough interdisciplinary experience that cuts across the science, social science, and humanities as a specialized technical discipline based on computer science and engineering. The humanities were traditionally perceived as resistant to computational studies, where the most dominant methods were qualitative, interpretive, and highly contextualized knowledge. Nevertheless, there has been a gradual paradigm shift wherein scholars in the disciplines of history, linguistics, archaeology, literature, and cultural studies have begun to answer the question using AI-based tools to support more traditional research methods, and not to substitute the latter.

Advancement of natural language processing (NLP), optical character recognition (OCR), computer vision, and machine learning-based pattern recognition have enabled the implementation of AI in humanities in most parts of the world. Such technologies facilitate the work of researchers to process and interpret immensely large numbers of unstructured data-such as digitized manuscripts, historical maps, oral histories and audiovisual materials-at rates and in volumes that were inconceivable before the digital revolution. They can be thematic trends in dependency on centuries of literary production, OCR can digitize scanned documents and turn them into searchable ones, and computer vision can identify stylistic or iconographic patterns in artworks.

The Arab world is particularly attractive as the field upon which AI-based humanities studies can be carried out because of the diversity of culture and history, as well as the number of cultures and languages. This tradition comprises manuscripts of Islamic culture in medieval period, ancient epigraphy, classical Arabic poetry, Arab and Ottoman administrative records, colonial newspapers, political history archives, and oral histories in the modern era and contemporary digital media. The languages of the region, which range among Classical Arabic, Modern Standard Arabic, local dialects, Ottoman Turkish, Persian, Berber, and colonial European languages, pose both exceptional research and major computational problems.

Although the application of AI to humanities research has this potential in the Arab world, there are several factors limiting AI use in humanities research. Linguistically, the root-and-pattern morphology, orthographic diversity and variety of dialects of Arabic make text processing involved. Technologically, vast parts of the cultural heritage are yet to be digitized with the archives sitting at the risk of depreciation and sometimes even physical destruction because of fighting. At the institutional level, collaboration of computer scientists and humanities scholars is not a common practice and there is a paucity of training programs which cross the methodological gap.

There are also differences in technological and infrastructural systems in a wider sense. The richer Gulf Cooperation Council (GCC) nations, i.e., the United Arab Emirates, Saudi Arabia, and Qatar, have included AI in their national plans. As another example, in 2017, UAE created the first ever Ministry of Artificial Intelligence in the world, whereby in Saudi Arabia, its Vision 2030 blueprint clearly focuses on AI-driven preservation of cultural heritage.

However, in comparison, the Levant and Maghreb regions are usually resource-limited systems, and conflict-affected countries, like Syria, Yemen, and Libya, have huge obstacles concerning minimal digitization.

Such lopsided uptake is reflective of trends in other Global South regions where AI in the humanities is likewise frequently developed in clusters of innovation via niche funding and international collaborations (Chen & Lee, 2022). To comprehend the role of the Arab region within such a global picture, it is relevant to trace how the history of scholarly practices theorized in this region developed since the time when the labor was performed manually to the moment when it was done with the help of AI.

Historical Trajectory: From Manual Scholarship to Al-Enabled Research

The Manual Era:Labor-Intensive Knowledge Production

Manual, artisanal forms of knowledge production characterized by the investigation of humanities over centuries. Historians went out to archives, transcribed manuscripts with pen and paper, and used letters to communicate with each other. There was literary analysis that was done where the texts were marked by hand, and archeological records were captured as sketches done by hand. Scribes, calligraphers, oral historians and artisans were instrumental in the cultural transmission and preservation in the Arab world.

Mechanization and the Printing Revolution

The industrial age brought mechanization of the production of knowledge, especially with the printing press, typewriter, and early reprographic technologies. In the Arab world, the printing press was introduced during the 19th century in places like Cairo,Beirut and Tunis where newspapers, books and literature on reformist ideas were massively printed.

The Digital Era: Virtualizing Archives andExpanding Access

The digital revolution of the late 20th century and the use of personal computers; relational databases and the internet changed archival access and scholarly communication. Enormous digitization efforts were initiated around the world, including Project Gutenberg (est. 1971) and Europeana (est. 2008) so that cultural artifacts could be accessed under open access. The Qatar Digital Library and Bibliotheca Alexandrina led mass digitization of the Arab context manuscript and rare book digitization. Although the digital age has (and continues to) overcome geographical limitations, it continues to use people to interpret the ever-increasing amounts of data.

The AI Era: From Data Access to Intelligent Interpretation

The beginning of the 21st century became the nascent era of the development of humanities studies that were marked by the possibilities of analysis with the help of AI. The algorithms used in machine learning were now able to detect authorship of contested writings, thematic or stylistic traits despite century-long gaps, and categories images of objects and masses. In the Arab world, AI applications in the humanities have been most developed in GCC states, where government programs and robust digital infrastructure make it viable to apply to curation of museums, archival collections, and linguistics. As an example, the Saudi Digital Library has an AI-enhanced semantic search technology, and UAE has been utilizing AI-enabled

technology, in translation of Arabic dialects. More modestly, in other regions of the territory, the introduction of AI is at the stage of pilot projects in cooperation with foreign universities and research institutions.

Overlapping Eras in the Arab Context

In contrast to other regions where the development from manual operations to AI integration, the Arab World demonstrates a complex stratification of these stages. In well-resourced circumstances, Al applications work with sophisticated digital repositories; in striver or low-input or conflict-ridden settings, manual systems predominate. This is a case in point of the relevance of contextualizing AI adoption in more expansive historical, infrastructural, and political jigsaws.

Comparative Global Context

The experience of the Arab world is like the overall trends in humanities adoption of AI across the world. Such computational projects are taking place in North America and Europe, with Al-enabled uses of digital humanities exemplified in the Stanford Literary Lab (which used computational analysis of 19th-century novels) or the digitized archives of the newspapers at the British Library. In East Asia, the National Digital Library Project of China has been developed to apply both OCR based on AI and classic Chinese text mining to examine the archives of the empire.

Nevertheless, the speed at which AI is adapted tends to be indicative of digital infrastructural investments, research investment, and higher education potential in nations. The Arab world has experienced high innovation centers, and infrastructural backlog alongside regions that have yet to achieve basic digitization, just as Africa below the Sahara does. This two-speed adoption situation presents both a challengeand an opportunity- outlining the necessity to implement policy that closes the gaps and provides improved equity in terms of accessibility with regards to Al-enabled scholarship.

Problem Statement

Though the world is eager to contribute to AI-related research in the humanities, by research in the Arab countries, not all the countries have observed a consistent development involving this aspect. The inequality is not only caused by economic resources but also by a systemic vulnerability in the form of a lack of complete digitization, the absence of large and accessible Arabic-language datasets, policy gaps,and interdisciplinary knowledge. Unless these problems are dealt with, Arab humanities scholarship will be marginalized in the international digitalization of scholarship. Also, the literature about AI in Arab contexts predominantly concentrate on commercial, governmental, or STEM-related applications and therefore lacks a detailed, region-specific study of the role of AI in the humanities. This thesis discusses that gap by methodically identifying and discussing barriers and developing actionable recommendations using secondary evidence.

Research Objectives

1. Identify and categorize the key barriers to AI adoption in humanities research across Arab countries.
2. Compare the nature and intensity of these barriers between well-resourced and resource-constrained contexts.

3. Synthesize existing evidence into a regional overview that integrates technical,institutional, and cultural perspectives.
4. Propose policy and practical recommendations to enable more equitable AI adoption in the Arab humanities.

Research Questions

1. What are the primary barriers to implementing AI in humanities research across Arab countries?
2. How do these barriers differ between high-investment contexts (e.g., GCC states) and lower-resource contexts?
3. What strategies, based on existing regional and global practices, could help overcome these barriers?

Significance of the Study

This study adds to what is becoming a growing body of literature about the AI and digital humanities by providing a localized, comparative backdrop. It mediates between the general AI studies areas in the Arab world and the requirements of humanities research. The results are expected to be of interest to policy makers,university administrators, funding agencies and research networks wishing to support the increase in digital research capacity in the region responding to cultural and lingual diversity.

LITERATURE REVIEW

Global Trends in AI and Digital Humanities

Comprising machine learning (ML) and NLP as well as computer vision, AI approaches are redefining humanities studies, which now have the support of large-scale textual analysis, computational philology, and heritage conservation (Burdick et al., 2022; Underwood, 2019; Smith & Cordell, 2021). Researchers have already resorted to AI to repair damaged manuscripts (Stokes et al., 2020), to improve semantic descriptions of stored records, and to analyze large corpora of texts in terms of style and subject matter (Vincent et al., 2023). The question of ethical issues revolves around the concern of the integrity of algorithms, bias, and the ability to reproduce the results (Champion,2021).

2.1 AI Adoption in the Arab World

The expansion of AI in the Arab region is lumpy-although developed investment in the Arab Gulf states is contrasted with difficulties in the rest of the region:

1. The countries of the GCC (UAE, Saudi Arabia, Qatar) have introduced national strategies on AI, funded research infrastructures, and put a particular emphasis on Arabic language processing and Arabic cultural heritage (UAE Government,2020; McKinsey & Company, 2024: Reuters, 2023).
2. The Maghreb and Levant areas are less dependent on the digitation sponsored by donors,but they have poor institutional capacity on AI and digital humanities (El-Khamsi & Taha,2021).
3. Such contexts as Yemen, Libya and Sudan are repeaters of infrastructural dysfunction, low investment and brain-drain (Al-Iriani, 2022).

2.2 Arabic NLP and Linguistic Complexities

The linguistic richness of Arabic has several technical obstacles:

1. All these issues of morphological richness, orthographic ambiguity, dialectal variation, and resource scarcity are well established (Communications of the ACM survey) (Communications of the ACM).
2. Other complexities are agglutination, non-capitalization, allowance of free word order, untypical variations in spellings and typographical noise, all of which daunt NLP task.
3. NLP is made difficult by dialect and code-switching: models which have been trained on Modern Standard Arabic (MSA) can perform poorly when given a colloquial one; code-switching (e.g. using Arabic and English/French) is yet to be well-tooled(Injy Hamed et al., 2025).
4. Data shortage is an urgent problem, which can be partially solved by such methods as data augmentation, few-shot learning, and active learning, yet these approaches have semantic and morphological integrity complications.
5. The new breakthroughs are Arabic-specific transformer models that provide an example of NLP advancements in the region (Antoun et al., 2020; Jais model,2023).

2.3 Institutional,Sociocultural,and Gendered Contexts

There are several structural and cultural drivers of AI adoption:

1. **Interdisciplinary Inertia**: Most of the universities in the Arab world are highly disciplinarily locked; digital research curricula are frequently underappreciated in comparison to conventional monographs (Hemmy & Mehta,2021).
2. **Educational and Policy Obstacles**: Institutional incentives do not provide much encouragement to interdisciplinary DH programs, and the AI ethics/data governance framework is patchy,throughout the region (UNESCO,2023)
3. **Gender Limits**: There are cultural limits that involve women lacking access to AI technology and education due to traditional expectations of women (e.g.,Saudi Arabia) reinforced by policy and technology exclusion and prejudice (Al-Zahrani & Alasmari, 2024).

2.4 Existing Studies on Barriers in Arab DH/AI

Even though there is an increasing growth in literature and digital humanities in the Arab world, there has been limited large-scale studies. This rich review has indicated the following gaps that this thesis is going to cover:

1. **Holistic,Humanities-Specfic Mapping:** Typical prior instances occur in STEM disciplines or media-related disciplines; an integrated coordination of humanities disciplines is underrepresented.
2. **Cross-context Comparison**: Very little work comparatively between GCC investment climates and resource-constrained and conflict-affected, or gender-sensitive contexts.
3. **New Trends** in **NLP**: New models such as AraBERT and Jais are promisingand have not been evaluated with respect to humanities.
4. **Ethical, Cultural and Gender Aspects:** These are under researched when it comes to AI-humanities debate as it pertains to Arab studies.

Theoretical Framework and Conceptual Framework

Theoretical Framework

There is a need to have a strong theoretical basis to explain the obstacles to humanities research in Arab nations in the implementation of Artificial Intelligence (AI). Three interconnected theories which are used in this research study include:Diffusion of Innovations Theory (Rogers, 2003), Technology Acceptance Model (TAM) (Davis, 1989), and the Institutional Theory (DiMaggio & Powell, 1983).Collectively,these frameworks furnish one with a lens through which he or she can analyze cultural, organizational, and structural elements that shape the adoption of AI.

Diffusion of Innovations Theory

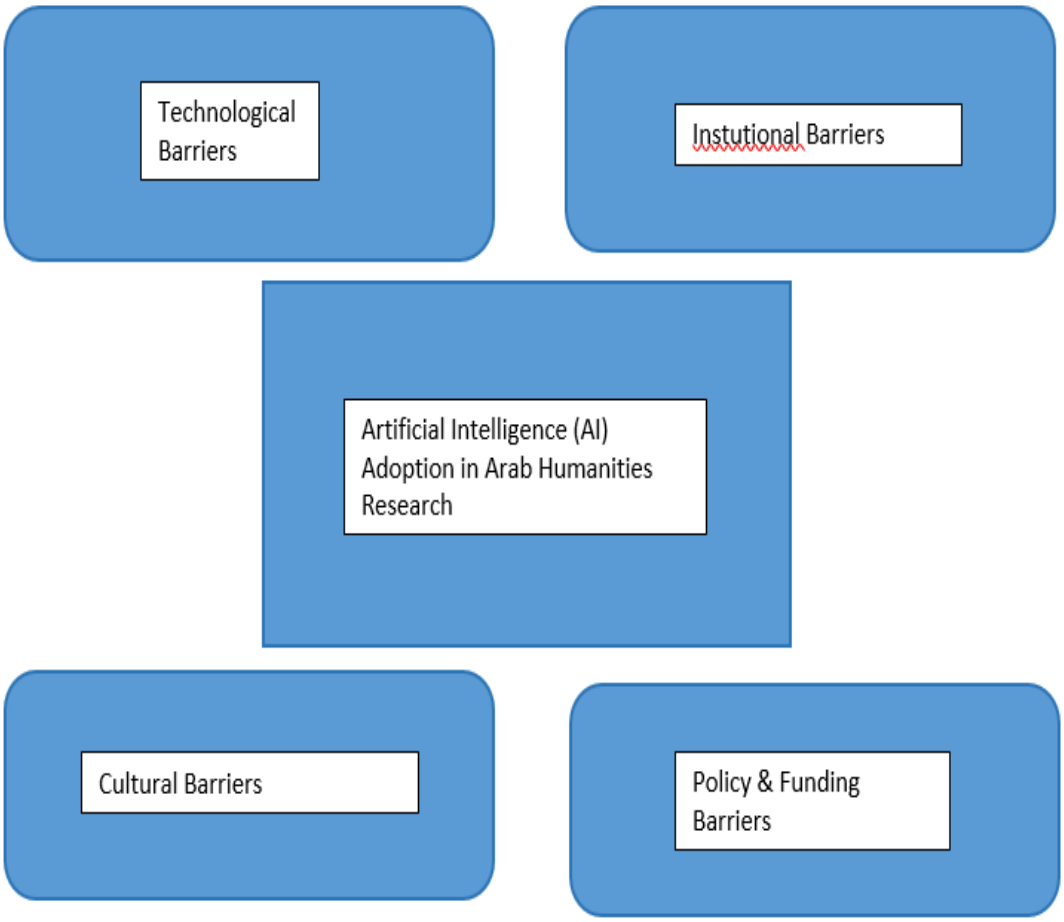
Diffusion of Innovations theory, proposed by Rogers, describes ways through which new technological developments are adopted in the social system and diffused.It focuses on five important characteristics that affect adoption which are relative advantage, compatbility, complexity, trialability, and observability. In Arab nations,some of these areas constitute a threat of adopting AI in humanities. To illustrate, the relative advantage might not be apparent to the scholars who are entrenched in the conventional qualitative methodologies, and the complexity of the AI tools usually scares the adoption. The pace of diffusion is also concerned by the lacking local case studies portraying the success of AI incorporation into the humanities.

Technology Acceptance Model (TAM)

Perceived usefulness and perceived ease of use are the main determinants of technology acceptance stress on the TAM framework. TAM in the context of the humanities research in the Arab region provides an explanation of the ways that the scholars come up with their attitudes towards AI based on their expectations of enhanced efficiency, relevance, and quality of research. Provided that the AI tools are regarded as too technical or unfriendly to humanistic inquiry, their uptake is unlikely to go far, despite possible advantages.

Conceptual Framework

The conceptual framework of the study combines the above theories and explores the multidimensional barriers of adoptionof AI in humanities. It breaks these barriers down into four main realms: Technological, Institutional, Cultural, and Policy-Related



(Figure 1: Conceptual framework Model of Barriers to AI Adoption in Arab Humanities Research)

The integrated model (Figure 1) demonstrates how the interaction between technological,institutional, cultural, and policy-related barriers slows the adoption of AI in the Arab humanities research landscape.

METHODOLOGY

Research Design

This research adopts qualitative, exploratory, and descriptive in its design as it attempts to study the obstacles to AI adoption in humanities research in Arab countries. The study entailed the use of a desk research method where secondary sources of data like peer-reviewed journal articles, books, institutional reports,conferences proceedings, and policy briefs were utilized.

This type of design is aimed at synthesizing disparate evidence into a coherent form in the context of addressing the patient identified barriers to improve outcomes, with both a breadth perspective (the whole Arab region) and a depth perspective (thematic synthesis of the barriers).

Research Approach

The study can be defined as its interpretations, which distinguishes the research as driven not only by specific technological possibilities but also by

cultural, ethical and socio-political realities peculiar to the context of the Arab world.

As opposed to quantitative hypothesis-based research, the study attempts to make sense out of patterns, show contextual details, and merge some different perspectives present in available literature.

Data Sources

The data that was collected as secondary was of the following types:

1. **Academic Databases**: Google Scholar, Web of Science, JSTOR,ScienceDirect and Scopus.
2. **Regional Reports**: UNESCO Arab States Science Report (2021), policy briefing on AI by the Arab League.
3. **Institutional White Papers**: OECD, World Bank, Arab Organization for Education, Culture and Science (ALECSO) reports.
4. **Conference Proceedings**: AI in MENA,and Digital Humanities conferences from 2019-2024.

An example of some of the key sources:

1. UNESCO (2021). *The Arab States Science Report.*
2. Al-Emran, M., & AlQasem, L (2023). Challenges of Artificial Intelligence (AI) in Arab *Academia.International Journal of Educational Technology.*
3. World Bank (2020). *Technology and Innovation In the Middle East*

Selection Criteria:

Relevance: It directly addresses AI in the humanities and its general application in academic institutions in Arab nations.

Recency: Preference to 2018-and-later publications,making a good match with the new developments in AI.

Credibility: Peer reviewed articles and reports of international or regional organizations for recognized organizations.

Validity and Reliability

To ensure validity, only reputable academic and policy sources were used, and the same kind of data was displayed in a crosscheck mode through multiple sources.The reliability was achieved owing to the uniform coding scheme and using the code on a regular basis on all documents. Also, the triangulation approach was attained, combining the views of scholarly sources, governmental statistics, and international institutions.

Ethical Considerations

Direct human subjects of this study were absent since this research only requires publicly available secondary sources.However:

1. **Good Reference**: All thoughts and information used were referenced to avoid plagiarism.
2. **Careful Representation**: An attempt to represent in a biased approach was avoided as various sources were referred to in different countries.
3. **Cultural Sensitivity**: Localists with locally based interpretations entertain local socio-politics.

Scope and Limitations

Scope:

Scope includes the Arab nations in North Africa and the Middle East.

- Is concentrated in the effects of AI on humanities research (e.g., history, literature,linguistics, cultural studies).
- It takes into account obstacles on several levels (technical, institutional, socio-cultural, economic, policy).

Limitations:

- Scarcity of uniform data in all Arab nations Some nations (e.g. the UAE, Saudi Arabia) have more research to hand than others.
- No primary data to be collected; results are to rely on accuracy and depth of the available literature.
- The fast development of AI implies that the boundaries of barriers defined here and now are subject to rapid changes.

Findings

The present chapter is a synthesis of the information that has been obtained through secondary research, plotting the obstacles to AI application in studies in humanities within the Arab world. The results are presented in thematic categories of which the conceptual framework developed in Chapter 3 was reflected.

Technological Barriers

Among the best-known barriers is the technological level between Arab nations and areas that have taken the forefront in AI innovation. Some studies cited that the research infrastructure of most Arab universities in terms of AI is developing mainly in the humanities where AI research can be met with only basic databases or library system.

1. **Localized applications of High-Performance Computing (HPC):** AI systems need high computing power to process textual analysis, documentation of historical documents, preservation, and other forms of cultural heritage. Most institutions do not have access to cloud or servers to support machine learning at the scale.
2. **Lack of Digitized Humanities Data:** Corpora in Arabic (histoire, letters,lingvistique) are knowledge fragmented, under-Resources, and even not freely available.

Institutional Barriers

Technological shortcomings are supplemented by institutional shortcomings.

1. **Lack of interdisciplinary programs:** Adaptation of AI in humanities needs teamwork between the departments of computer science and humanities.Nonetheless,strict departmental arrangements can be found in majority ofthe Arab universities and cross-projects are not many.
2. **Artificial Intelligence with Weak Research Culture:** In contrast to STEM in some Arab nations, there exist small yet vibrant clusters of researchers working on AI but that is not the same case with humanities-oriented AI.

Cultural and Ethical Barriers

Incorporation of AI in humanities is affected by cultural understandings and moral questions.

1. Skepticism with Regards to AI in Humanities Work: To some researchers,AI can be seen as an enemy of classic interpretive studies.
2. Data Privacy and Sensitivities: In the Arab countries, data must be archival in nature, but it may include politically or religiously sensitive informnation,which makes people reluctant to digitize it, at least to allow AI to analyze it (OECD,2021).

Policy and Regulatory Barriers

1. Lack of National Strategies in Humanities AI: Unlike the USAID and Europe, there are no national strategies for AI in the humanities on the national scale in the Arab world (e.g., there are no national strategies in the UAE or Saudi Arabia, instead of national strategies, they mostly focus on the economic and defense AI strategy.

Regional Disparities

These barriers are considerably diverse among Arab countries.

1. More advanced AI infrastructure is observed in Gulf States (UAE, Saudi Arabia, Qatar), even though in these countries, the development of Arabic-speaking humanities datasets is problematic.
2. Jordan, Lebanon and Palestine (Levant Countries) possess a better humanities tradition but are severely challenged by funding and infrastructure.
3. In North Africa (Egypt, Morocco, Tunisia) there are burgeoning digital humanities undertakings, but they are party to restrictive bureaucracies and information sharing.

RESULT AND DISCUSSION

The findings of this study prove the synergy between the Technology Acceptance Model (TAM) and Diffusion of Innovation Theory (DOI) in reference to the Arab context. The data reveal that scholars are both active (interest in using AI in the study of a humanities subject) and aware of the potential of the technology to be very useful in terms of research; however, the ease of use has a low value because it was judged to be too technical, use of Arabic-speaking AI tools, and there are low levels of digital literacy.

DOI-wise,the trend in AI implementation in humanities across the Arab world is still at the initial stages of adoption, although it is concentrated in the most technologically mature organizations (e.g. in the UAE and Qatar) and far behind in less resourceful areas.

Interconnection of Barriers

The results indicate that the identified barriers discussed in Chapter 4 do not exist independently of each other.

- The absence of localized AI datasets, as a form of technological barrier,compounds institutional barriers when universities do not know how to integrate AI into curricula.
- Both policy support and funding of AI-based humanities projects are slowed by cultural and ethical issues, such as worries about ideological bias in the products of AI.

- The financial realities worsen the shortage of skills because the skills training programs are underfunded.

This implies that policy interventions must be a combination of enablers;implementing one of them (e.g. funding the policy) without the others (e.g.enhancing digital literal skills/literacy) does not work in the long term to trigger adoption.

Regional Disparities

One startling issue is the computer gap between the Arab world itself. Gulf Cooperation Council (GCC) states have even better infrastructure,more concentrated centers of AI research, and higher possibilities of international collaboration. In comparison, other nations impacted by political instability (e.g., Yemen, Syria, Libya)are disadvantaged in the regards of meeting the challenges to AI explained above,infrastructure disruption, brain drain and institutional weakness introduce even more complexities where an implementation of AI in humanities studies in suchplaces is an unattainable ideal.

Implications for Humanities Scholarship

Otherwise,such barriers would exacerbate the knowledge production gap existing between Arab humanities and their international peers. AI has potential to:

1. Good sampling of texts of Arabic-derived literature and history
2. Cultural heritage preservation and electronification
3. Improved multilingual download of scholarly literature

Nonetheless, the issues of linguistic adaptation, research investment, and policy integration are rectified; the region stands to continue being dependent on AI systems developed by the West that might not be appropriate to the local epistemologies.

Policy and Practice Implications

1. **On-site Artificial Intelligence**

The Arab world is experiencing serious lack in AI tools which are adaptable to Arabic as well as the various dialects including the Gulf Arabic, Levantine Arabic and Maghrebi dialects. Majority of AI systems currently operate having been trained on majorly the English or other western languages, and as a result, the systems tend to perform sub-optimally once subjected to Arabic syntax, semantics or cultural sensitivity. Policy makers are urged to make concerted efforts by investing through governments, tech companies of the private sector and universities to work on Arabic Natural Language Processing (NLP), modeling and building linguistic corpora on the same massive scale. To provide a practical example, the work of Qatar Computing Research Institute on the Arabic Language Technologies project may be extended to other regions such that the results of the machine learning-related work would be culturally adaptable, linguistically sound, and accepted by the audience of scholars throughout the humanities.

2. **Digital Literacy and Capacity Building**

The central problem of implementing AI in the humanities in the Arab world is an AI illiteracy of the traditional scholarship. Such a gap could be filled by introducing some courses of AI for Humanities into graduate and

undergraduate curricula.Professional development opportunities in the application of Al-assisted research methods also need to be provided to faculty members so that they may inform students how to utilize such tools ethically and properly. Consider, in the case of Egypt: Cairo University already has the Faculty of Arts, which could partner with local technological companies to create short certification courses in history,literature,and sociology and enable a generation of researchers prepared to blend computational and critical approaches.

3. **Networks in Regional Collaboration**

Instead of sitting in separate silos, Arab universities, culture and research centers must form Pan-Arab research groups in AI studies. These networks may help to share digitized manuscripts, machine learning models, and project frameworks. As an example,King Abdulaziz Foundation for Research and Archives in Saudi Arabia has an opportunity to collaborate with the Bibliotheca Alexandrina in Egypt to create the AI-based platforms to analyze the historical documents. Such collaboration would fast track innovations and ensure that the resources available are not spent in case of duplication.

4. **Ethical and Cultural precautions**

The problem with the usage of AI in humanities studies conjures up the issue of cultural appropriation, historical inaccuracy, and biasness in algorithmic results.Region-specified frameworks of AI ethics, based on the Islamic principles of law,local norms of culture, and international best practices are needed by the Arab world.These guidelines may cover such problems as the possibility of avoiding incorrect Quranic quotations in machine translation or guaranteeing that autotomization of art restoration is performed with a valid respect to original aesthetics in mind.National research councils,e.g. Arab League Educational, Cultural and Scientific Organization (ALECSO),may become the key in the preparation and implementation of these standards so that AI use would not only be culturally sensitive but also socially responsible.

5. **The funding and Incentives**

The humanities cannot afford to wait until AI usage becomes evenly spread and slow unless carried out by continuous funding. Specific grant programs should be provided to governments which will fund culturally oriented projects that digitize historical museums, create Arabic datasets, and develop AI-based learning environments. As an example, the UAE-based Mohammed bin Rashid Al Maktoum Knowledge Foundation might fund Al-aided digitization of endangered Bedouin oral poetry and make it available to scholars and the general audience alike. Moreover,some tax benefits may be proposed to businesses that approach AI tools to preserve cultural and language-related heritage.

6. **Inclusion in the National Education Policies**

AI competencies must be integrated into the national education strategy not only as technical skills, but also as methods of making cultural and historical studies more enhanced. Regional Ministries of Education might require AI-using research elements in any high school-level, university level, and humanities projects. Take the example of the Ministry of Education in

Jordan that could incorporate AI-powered data visualization into its history lessons, so that students have a chance to learn about migration trends and trade routes, as well as important historical events through interactive lessons. This especially helps mediate between STEM education and humanities as the new approach encourages interdisciplinary thinking.

7. **Cross-Sector Partnerships**

University alliances in AI in humanities research should be expanded to tech startups,non-governmental organizations and international agencies to maximize the information utility. The real-life problems (protection of archaeological sites,translation of extinct dialects, curation of museum collections) may be used in collaborative projects. As another illustraion, the AI powered 3D reconstruction models of the Carthaginian ruins as the joint product of the National Heritage Institute of Tunisia, AI startup local in the country and UNESCO may no give only educational materials but also an opportunity to utilize the tourist attraction points.

8. **Infrastructure Enhancement**

Lastly, relative inaccessibility to computing resources makes adoption of AI by many Arab countries, especially those which have not developed a strong technological infrastructure, very high. Governments ought to invest in construction of regional artificial intelligence laboratories, a cloud computing center, and data centers that have vast capabilities of processing linguistic and cultural data. Nations such as Morocco can create a North African Digital Humanities Center to share AI processing power amongst scholars in such countries as Algeria, Tunisia, and Libya, rather than relying on foreign infrastructure and paying high costs to use them but facilitating homegrown innovation.

CONCLUSION

This paper aimed to investigate the obstacles to the adoption of the Artificial Intelligence (AI) usage in humanities research in the Arab countries based on the secondary data analysis in academic studies, policy reports, and institutional studies.The results indicate that, although AI holds the potential to catalyze radical improvements in the scale, depth, and effectiveness of humanities inquiry, it is an uneven uphill battle to produce the adoption of AI in an Arab academic setting. Barriers have been outlined in regard to technology, institutional, cultural and ethical,economic, and policy barriers as the main ones. Technological obstacles are associated with the lack of high-quality data in digital humanities based on Arabic,inadequate computational capacity, and the shortage of humanists with AI literacy in the field. The institutional obstacles are characterized by stereotypical academic systems preventing the integration of disciplines, a lack of financial motivation to conduct AI-related studies, and the lack of cohesion of the research enterprise. That is another dimension of cultural and ethical considerations where there are fears of misuse of data, distrust of AI-produced results, and cultural-heritage

preservation issues. Additional challenges exists in economic barriers where there is low investment in research and development in humanities and these are mostly favored on fundings in STEM. Lack of policy and regulatory is also a barrier to adoption,including the lack of coherent, AI governance concepts specific to the humanities.Ultimately, these obstacles have a relationship that the poor policy architecture discourages investment, infrastructure development cannot increase due to funding shortages, and it becomes challenging to develop and manage AI in an ethical and efficient manner with poor structures. This interdependence implies that the interventions should take account of the comprehensive nature of the intervention instead of a patchwork approach.

RECOMMENDATIONS

1. Technological Development

a. Increase Arabic-based data sets in humanities studies that can lessen AI model-linguistic prejudice.
b. Establish inter-regional centers of AI research that would share computing capabilities among the research community in different countries of the Arab World.

2. Institutional Strengthening

a. Encourage the interdisciplinary approach by developing joint courses between the faculties of both the humanities and computer science.
b. Offer research enhancement of methods involving AI in the humanities field.

3. Governance and Policy

a. Develop local arrangements of AI policies with regard to the present market demands of culture and heritage.
b. Establish ethical AI principles, where there should be transparency,accountability, and the community needs to be involved in the AI-driven humanities initiatives.

4. Capacity Building

a. Develop domain-specific AI training of humanities scholars by workshops,online courses and exchange programs.
b. Propose the integration of Al-related modules into the humanities at universities.

5. Final Reflection

Provided such obstacles are overcome using a well-coordinated approach between the governments, universities, players in the private sector, and international collaborators, AI would enable the Arab humanities research to make a leapfrog towards a new era of innovation and global competitiveness.

Unless it does this, the region can only lag more and further verify the digital and eptistic divide between the Arab world and the nations more integrated with AI technologies.

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