The Impact of Using AI Technologies in Migration Management Policies and Control of Borders on Sustainable Development within the MENA Region

Salima Benhassine [1]

[1] Mohamed Khider University, Biskra, Algeria
salima.benhassine@univ-biskra.dz

Abstract. Artificial intelligence (AI) plays a crucial role in border control and protecting national security from all significant security threats. AI has been adopted in this field to detect migrant infiltration before they cross into other countries, analyze their data, and use proactive technological methods to predict their movements. Consequently, AI technologies have greatly contributed to mitigating the risks of migration in many countries in the MENA region. Especially since it causes strain on the economies and hinders their sustainable development efforts of these countries.

This research paper explores the impact of using AI tools in migration governance and border control policies on sustainable development in the Middle East and North Africa region. It highlights the applications of AI in migration management policies, which serve as an important source of information for government policymakers and all stakeholders in this field. This study aims to reveal the role of these government policies in promoting and supporting sustainable development in the region through their use of artificial intelligence tools in migration management and border control. Therefore, we conclude from this study that the use of artificial intelligence technologies in migration management is highly beneficial to sustainable development in the region; however, this benefit will not be widespread across the region without coordination, participation, and active involvement from the countries of the region in migration management.

Keywords: AI Technologies, Migration Management Policies, Borders' Control, Sustainable Development, MENA Region.

1 Introduction

The use of artificial intelligence is important in performing good migration management policies including identity verification, border security and control, data analysis on visa and asylum seekers, and other tasks.

The reliance on artificial intelligence (AI) systems in migration governance has become a reality in some countries, such as Canada, the United States, and the Euro-pean Union. These countries utilize algorithmic decision-making in determining migration and asylum criteria and in applying AI systems to all migration-related issues. Consequently,

D. Agti et al. (eds.), *Proceedings of the International Conference on Artificial Intelligence Applications in Business Administration in MENA Region (ICAIABA 2026)*, Advances in Economics, Business and Management Research 393,
https://doi.org/10.2991/978-94-6239-711-8_26

the discussion surrounding migration management within the framework of AI development has become pivotal. This is due to the multifaceted security, political, and economic concerns that migration issues present, requiring solutions that transcend the capabilities of any single nation. Furthermore, they necessitate cooperation and coordination among several regional and international countries to find comprehensive solutions that benefit all involved.

1.1 Problematic of the study

How does the use of artificial intelligence technologies in migration management and border control policies affect sustainable development in the MENA region?

1.2 Methodology of the study

In this study, we use the descriptive methodology which enables to collect the necessary information, and analyze and the perceptions, and to diagnosis of the phenomenone of this research, as well as the impact, the challenges of using the AIT in migration management policies and control of borders on sustainable development within the MENA region. **Sample Heading (Third Level).** Only two levels of headings should be numbered. Lower-level headings remain unnumbered; they are formatted as run-in headings.

2 Conceptual Background

2.1 Artificial Intelligence Technologies (AIT)

Artificial intelligence (AI) is the application of specific AI tools & technologies like machine learning, natural language processing, and computer vision to improve the productivity of business functions and employees and create increased business value. Where the application of AI helps in automating systems to take over repetitive jobs, generate data using machine learning methods, analyse and organise huge data sets in short time and obtain valuable insights, and predicting future happenings based on acquired data (1).

2.2 Migration management policies

Migration management policies are comprehensive, state-led frameworks designed to regulate the movement of people, focusing on safe, orderly, and legal migration while addressing irregular flows, trafficking, and humanitarian needs. Key strategies include strengthened border controls, labor migration agreements, social integration, and return procedure (2).

2.3 Control of borders in MENA region

The recurrent wars in the MENA have had a major impact on its borders with and the migrations that resulted displacement of thousands of refugees. The control and selection dimensions of borders, which are tools and symbols of prohibition, are now a major concern in the Middle East (3). With the increase of migration from the Middle East and North Africa (MENA) to Europe after the Arab revolts, refugees, migration

flows and border controls have entered on the agenda of the European decision maker's top priorities (4).

2.4 Sustainable development

Migratory phenomenon has become increasingly transversal and globalized due to the Sustainable Development Agenda signed in 2015. There is increasing awareness that demographic changes, natural disasters and crises make migration one of today's global issues, which must be faced 'throughout the agenda and internationally: inter-state and intra-regional'. "Because migration is inevitable in view of the driving forces in an interconnected world; necessary, if skills are to be available, jobs to be filled and economies to flourish; and desirable for the contributions that migrants make both to countries of origin and destination" (5).

2.5 MENA region

The Middle East and North Africa region (MENA), counts from 19 to 27 states from its definition. MENA has abundant natural resources, for that reason its importance for the energy and economy of the world (6). he MENA definition comprises a vast geographical area, from Morocco to Iran, and includes all Middle East and Maghreb countries (7). Due to the critical importance of their oil supply, the countries of the MENA have been directly influenced by several major conflicts of local nature. Among these are the US invasions of Iraq and Afghanistan that disrupted much of the economic activity in the area and the Arab Spring protests in 2011 that initiated revolutions and civil wars in several countries, but particularly in Libya and Syria, which caused what the World Bank called "the biggest forced displacement crisis since World War II"1516. Other conflicts include the Israeli-Palestinian conflict, civil wars in Syria, Yemen, Iraq, and Afghanistan, political instability in Lebanon and an increasing rivalry between Iran and Saudi Arabia, among others (6). The magnitude of these wars makes MENA an important source of illegal immigration, as hopefuls are abandoning to more stable and wealthy countries. In turn, this makes the migratory threat greater for the countries receiving these immigrants.

3 The Uses of Artificial Intelligence Technologies in Migration Management and Borders' Control Policies Affect Sustainable Development in the MENA region

Migration Reality in the MENA Region

The growing need for awareness and development of policy capacities on migration and migration-related issues, in the steps towards achieving 'Good Migration Governance' resonates with the efforts of the global community in the attainment of the 2030 Agenda for Sustainable Development and the implementation of the Global Compact for Safe, Regular Migration. These policy processes may relate to either the development of overarching or thematic migration policies, for example in areas such as labour migration or climate change, or the mainstreaming of migration into other sectors (8).

Climate change-induced human mobility is already occurring wherein every year, millions are internally displaced persons (IDP) due to disasters, with weather and climate-related disasters among the common causes, such as storms, floods, wildfires, and droughts. In MENA, approximately, 233,000 persons were displaced due to disasters in 2021 (IDMC, 2022). As of mid-December 2022, 68,670 are still IDPs in Iraq due to drought (IOM Iraq, 2022). The impacts of slow onset events on human mobility are more complicated, with other drivers (socio-economic) closely interlinked with the mobility decisions. However, a projection by the World Bank Groundswell Part 2 report reveals that without climate and development actions to mitigate its worst impacts, as much as 19.3 million people may be internally-migrated by climate change in North Africa by 2050 (9).

4 Application Areas of Artificial Intelligence Technologies

AI technology can detect irregular behaviour and activities, the application of AI can supervise large quantities of information from multiple sources; including videos, social media, platforms and intelligence analytics, the evolution of machine learning, which is applied comprehensively in surveillance can learn the normative behaviour of the user and detect activities which deviate from normality in the domain of networks and information systems without any human interference.

4.1 The uses of AIT by the EU's migration management polices

The rise of algorithmic and AI enabled technologies that are being used on the EU external border will highly alter the EU's migration management and the power game between the actors involved in migration. New technologies allow to analyse data, predict migration flows, automatically identify suspicious vessels, or detect lies (although these technologies have not been scientifically proven to be valid and reliable). Due to the precise information available, migration management will become more data-driven and efficient as countries will be able to respond more specifically to detected phenomena. At the same time, the border becomes a 'Socio-Economic Setting', where the power is distributed highly unequally, as a result of the interactions between 'Human agents and techno-logical artefacts' (10).

As mentioned before, the technologies used in the border environment are mainly developed by private companies, which are de facto the only actors that can build robust algorithmic and AI-based tools. Often, these actors are provided with research scholarships by the institutions of the EU (for example by the Horizon 2000 programme) to develop the technology specifically for the context of migration. However, private actors are hardly (if at all) subjected to public scrutiny and build such tools under conditions of extreme confidentiality. By acquiring the algorithmic and AI-based systems for the management of migration control from the private actors, the institutions of the EU create 'a political economy of global security' and, to some extent, outsource the responsibility for their implementation supposedly 'far away' nowadays datafication on the external border of the EU. In fact, even the European Commission outsources the assessment and dissemination of the information related to these technologies. The two main reports of the European Commission, which assess the implementation of AI in

the context of migration management, were drafted by private actors (the consultancies Delta and Ecorys). The published results of these reports were drafted in a technical language that is almost dehumanizing, focusing only on the efficiency of algorithmic and AI-based tools, ignoring the implications for people on the move. As the recommendations highlighted in the reports were issued by 'objective' third parties, it allows the European Commission to avoid difficult questions regarding them as well as to be partially protected from providing account-ability for their consequences. The public-private partnership is the tool that consolidates the power over the maintenance of algorithmic and AI-based tools in the hands of state and private actors alike (10).

4.2 The uses of AIT by the Gulf states's migration management polices

Although the MENA region countries, especially the Gulf states, have made considerable investments in artificial intelligence, they have not yet reached the point of applying artificial intelligence with good governance in managing migration, due to the fact that this region is witnessing conflicts and political, economic and social instability. Thus, they haven't national AI strategies and policies for Migration management.

The biggest challenge in the MENA region is how to shift migration management policies from theoretical concepts of artificial intelligence to practical applications of AI governance, identifying potential problems before they arise rather than seeking solutions after they occur. In other words, AI governance should contribute as a proactive tool to support migration management policies to solve immigration problems in the MENA region (11).

Therefore, Application of AI Technologies to support migration management policies in the MENA region requires establishing these data practices, and promoting innovation while safeguarding privacy and integrity. To overcome this, governments must implement policies to develop, attract AI talents and thus this region can achieve sustainable progress in the region (11). Canada, for example, adopted algorithms to study immigration and asylum files with the aim of speeding up processing, but it faced criticism on the grounds of a lack of transparency and the difficulty of appealing automated decisions (12). At the European Union level, smart border control policies - based on drones and predictive systems - constituted an example of giving priority to security concerns at the expense of humanitarian considerations, as accusations were made that the Union was indirectly responsible for the tragedies of migrants in the Mediterranean (13).

5 The Effects of uses of AIT in Migration Management and Borders' Control Policies on Sustainable Development in the MENA Region

The MENA region is highly vulnerable to migration, as it knows more problems. Thus, the integration of artificial intelligence AIT into migration management policies in the Middle East and North Africa (MENA) region offers significant potential for enhancing sustainable development. By harnessing AI technologies, governments can improve migration management systems, promote social cohesion, preserve human

rights, and address the complex challenges associated with migration. Here are several key roles that AIT of migration management policies can play in supporting sustainable development:

5.1 Enhanced Data Collection and Analysis

- Real time Data Insights: AI can be employed to collect and analyze large amounts of data on migration flows, demographics, and economic needs in real-time. This enables policymakers to make informed decisions based on accurate, up-to-date information, allowing for more effective migration management.
- Predictive Analytics: By using predictive analytics, governments can anticipate migration trends and potential humanitarian crises, allowing for proactive measures to be put in place. This foresight can help in better resourcing and planning for social services and infrastructure.

5.2 Streamlined Processes and Efficiency

- Automation of Administrative Tasks: AI technologies can automate various administrative tasks related to visa applications, refugee status determinations, and other migration-related processes. This can lead to quicker processing times and reduce bureaucratic bottlenecks, facilitating smoother migration pathways.
- Resource Allocation: AI can help optimize resource allocation for migration management by analyzing patterns in resource use and identifying areas of need, ensuring that services are provided efficiently and effectively.

5.3 Improved Service Delivery and Integration

- Personalized Services: AI driven platforms can assist in providing tailored support services for migrants, including language training, job matching, and access to social services. This can help facilitate their integration into host communities, contributing to social cohesion and local economic development.
- Cultural Sensitivity: AI tools can assist in designing culturally sensitive programs that address the specific needs of diverse migrant populations. This inclusiveness can foster social harmony and engage migrants as active contributors to the community.

5.4 Monitoring and Compliance

- Ensuring Compliance with Human Rights Standards: AI governance can enhance the monitoring of compliance with human rights protections in migration management policies. AI tools can analyze data and flag potential issues or abuses, facilitating timely interventions by authorities.
- Fraud Detection: AI can assist in detecting fraudulent activities within migration systems, thereby ensuring the integrity of processes and protecting the rights of genuine migrants.

5.5 Addressing Root Causes of Migration

- Understanding Migration Drivers: AI can analyze socioeconomic and environmental data to gain insights into the root causes of migration, such as poverty, conflict, or climate change. This understanding can guide the development of targeted policies that address these underlying issues, leading to long term sustainable solutions.

• Disaster Risk Management: AI can assist in enhancing disaster risk management strategies and predicting climate induced displacement, contributing to increased resilience among communities at risk of migration due to environmental changes (9).

5.6 Fostering Regional Cooperation

• Data Sharing Platforms: AI enabled platforms can facilitate data-sharing and collaboration among MENA countries and international organizations, promoting cohesive migration management strategies. Such platforms can strengthen regional cooperation and address cross-border migration issues.
• Joint Policy Development: Collaborative AI tools can support transnational analyses of migration trends, encouraging MENA nations to develop common migration management frameworks that support sustainable development across the region.

5.7 Engaging Stakeholders

• Public Participation: AI can facilitate inclusive dialogue between governments, civil society, and migrants themselves. Engaging stakeholders in AI based decision making processes can enhance policies and promote democratic governance in migration matters.
• Grassroots Innovations: AI governance can enable grassroots organizations to harness AI tools to address the needs of migrants and promote sustainable development at the local level (9).

Artificial intelligence represents a revolution in border control, contributing to enhancing national security and combating asymmetric security threats in innovative and effective ways. By developing smart sensing systems that continuously and accurately collect data on border activities, it enables relevant authorities to take immediate corrective actions upon detecting any threats or unauthorized activities (8).

International Migration and Sustainable Development examines the linkages between international migration and the social, economic and environmental dimensions of sustainable development. It discusses how international migration is defined and measured, examines levels and trends in international migration at the global and regional level and by income group, explores the growing scope and impact of international migration and reviews its relevance for achieving internationally agreed sustainable development Goals and targets. The report also offers policy recommendations focusing on the social, economic and environmental causes and consequences of international migration.

The main purpose of the series is to provide informed analysis of population patterns and trends in the context of sustainable development in a manner that can help to guide the policymaking of Member States and the deliberations of the United Nations Commission on Population and Development (2).

6 Challenges of Using AIT in Migration Management and Borders' Control Policies in the MENA Region

Smart systems have the ability to collect and process huge amounts of data on migrants, which raises the risk of violating their privacy in the absence of clear legal

frameworks and effective oversight mechanisms. The issue of algorithmic discrimination and digital exclusion also arises, as algorithms may contain built-in biases that reflect or magnify social and geographic differences, or are linked to gender, color, or nationality, leading to indirect racial discrimination. The right to seek asylum and ensure procedural fairness are also threatened, as automated decisions taken in processing applications may deprive individuals of the possibility of appeal or human review, which affects the principles of justice and equality before the law (14).

At the same time, people on the move are subjected to mass surveillance without their consent as their data are scraped and analysed to provide greater insight into their movement and even their motivations. While they cross the borders, they are reduced to mere clusters of data points, a dehumanising process demonstrating the dominance of the state and its agencies in the border space. Surveillance tools assume every person on the move to be a potential 'illegal immigrant'.

The modern surveillance landscape 'can deepen asymmetries'among migration actors. This is happening as the EU directs millions of euros towards the surveillance tools development while outsourcing some of these systems to non-democratic repressive states through the troubling trend of border externalisation. While emerging technologies augment the surveillance capabilities of the EU, legal safeguards against algorithmic and AI-based tools in migration management are still largely missing. As the EU border space is increasingly turning into 'a high tech fortress Europe', the power asymmetries in migration management deepen further, shifting agency from people on the move to state authorities and private actors (10).

In addition, limited transparency and accountability constitute a major obstacle, as the lack of a clear understanding of how algorithms work makes it difficult to hold the system accountable or correct wrong decisions (15). Together, these challenges point to the urgent need to develop robust legal and ethical frameworks that balance technical efficiency in migration management and protection of the fundamental rights of migrants and refugees.

Artificial intelligence Technologies offers broad prospects for bringing about a digital transformation in the way countries and international organizations manage migration issues, by employing it in tasks that include identity verification, border control and security, analysis of visa and asylum seeker data, algorithmic decision-making mechanisms to determine immigration and asylum files, and other procedures related to migration governance. The MENA region countries started with a gradual expansion of the use of AIT in various stages of immigration management (16).

7 Conclusion

Migration management policies, when supported by effective AIT in the MENA region, can contribute significantly to sustainable development. By enhancing data collection, improving service delivery, monitoring compliance, and addressing the root causes of migration, AI can provide solutions that not only optimize migration processes but also uplift migrants and local communities, and solving migration problems in MENA region, sustainable development ca benefit widely in this region. However, it is crucial to ensure that AIT is grounded in ethical considerations, transparency, and a commitment to human rights, ensuring that the integration of technology in migration management contributes to sustainable development objectives.

References

1. Vázquez, Camilo Quiroz. What is artificial intelligence (AI) in business? [Online] https://www.ibm.com/think/topics/artificial-intelligence-business.
2. United, Nations. International migration and ustainable development. [Online] https://www.un.org/development/desa/pd/content/international-migration-and-sustainable-development.
3. Véronique, Bontemps. Borders and circulation in the Middle East. L'Espace politique. 2016, 28.
4. Jean, Pierre and A, Del Sarto. The gonernance of migration and border controles in the European North African context, , No. 13, September 2018. Menara Working Papers. Septemper 2018, 13.
5. International Organization, for Migration. 5 key aspects of migration management that must be addressed through international cooperation. [Online] https://lac.iom.int/en/blogs/5-key-aspects-migration-management-must-be-addressed-through-international-cooperation.
6. James, Chen. Middle East and North Africa (MENA): Key Economies and Oil Reserves Insights. [Online] August 27, 2025. https://www.investopedia.com/terms/m/middle-east-and-north-africa-mena.asp.
7. European Union Institute, for security studie. MENA. [Online] https://www.iss.europa.eu/regions/mena.
8. International Organization for Migration, United Nations. Migration policy and governance. [Online] https://www.iom.int/migration-policy-and-governance.
9. United Nations, Children's Fund. Global Report on Internal Displacement 2022. 2021.
10. Kristina, Fort. Migration Management in the Era of AI: How emerging technologies shape the border space, January 12th 2024. LES International Development.
11. Hana, Trigui and Fatma, Guerfali . Commentary exploring AI governance in the Middle East and North Africa (MENA) region: gaps, efforts, and initiatives. Cambridge: Published by Cambridge University Press, 2024.
12. The Canadian Bar Association. Law, Technology, and Accountability: Reimagining Canadian Immigration for the 21st Century, [Online] The Canadian Bar Association, May 2025. https://cba.org/CBA/media/PDFs/Our%20Impact/Submission/2025/25-19-Sub-eng.pdf.
13. Inside Europe's AI Border Fortress, How AI technologies at Europe's borders — drones, scanners and surveillance -compromise the rights of people seeking refuge, Investigative

Journalism for Europe. Investigative Journalism for Europe. [Online] 2024. https://investigativejournalismforeu.net/projects/inside-europes-ai-border-fortress/?utm_source.
14. European Parliament Briefing. [Online] Artificial intelligence in asylum procedures in the EU, European Parliament, July 2025. https://www.europarl.europa.eu/RegData/etudes/BRIE/2025/775861/EPRS_BRI(2025)775861_EN.pdf.
15. Artificial Intelligence and Migration, Council of Europe, Parliamentary assembly, C. Committee on Migration, Refugees and Displaced Persons. [Online] https://rm.coe.int/report-artificial-intelligence-and-migration/1680b67b8a.
16. Technology, and Accountability: Reimagining Canadian Immigration for the 21st Century, The Canadian Bar Association, p: 13-14, In:
17. Ismahan Saadi, Ayad Mohammed Samir, The Impact of Artificial Intelligence Technology on Border.
18. Law, Technology, and Accountability: Reimagining Canadian Immigration for the 21st Century. The Canadian Bar Association. [Online] May 2025. https://cba.org/CBA/media/PDFs/Our%20Impact/Submission/2025/25-19-Sub-eng.pdf.
19. LNCS Homepage, http://www.springer.com/lncs, last accessed 2023/10/25