Ana Caroline Sales e Souza Garcia. "Artificial intelligence and demographic governance: Migration, risk, and dehumanisation in the European Union" (2025) 9 185-206 *Global Campus Human Rights Journal* https://doi.org/10.25330/3223

Artificial intelligence and demographic governance: Migration, risk, and dehumanisation in the European Union

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Abstract: *Artificial intelligence (AI) has become central to migration governance in the European Union (EU), where automated systems mediate identification, categorisation, and surveillance under the promise of efficiency and security. This study examines how AI reshapes demographic governance by transforming migrants into statistical objects of risk and control. Using a qualitative case study design focused on the EU, the research combines documentary analysis of legislation, policy frameworks, and institutional reports with secondary quantitative mapping of Eurostat asylum data (2013–2024) and Frontex reports. Rather than establishing causality, the study identifies temporal alignments between the expansion of automated border infrastructures, including Eurodac, ETIAS, and interoperability systems, and changes in asylum recognition rates. Guided by Foucault's concept of biopower, the analysis develops the notion of algorithmic biopower to explain how data-driven systems anticipate, classify, and filter populations based on inferred risk. The findings indicate a consistent convergence between the expansion of algorithmic infrastructures and a structural decline in recognition rates, alongside the consolidation of selective visibility. Externalisation practices supported by surveillance technologies render some populations statistically invisible, while others are subject to intensified profiling within EU territory. These dynamics raise significant concerns for fundamental rights, including due process and non-refoulement, particularly given the opacity and limited contestability of such systems. Although regulatory frameworks such as the GDPR and the EU AI Act aim to mitigate these risks, they appear insufficient where migration is primarily framed as a security issue. The study contributes by offering a critical conceptual framework and empirical mapping of how algorithmic systems reconfigure inclusion, exclusion, and protection in EU migration governance.*

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Keywords: *artificial intelligence; migration governance; biopower; algorithmic discrimination; European Union*

1. Introduction

In recent years, Artificial Intelligence (AI) has become central to migration governance worldwide. Presented as neutral and efficient, algorithmic systems now mediate the identification, categorisation, and surveillance of migrants. Behind this apparent progress lies a demographic transformation, as populations are increasingly governed through data, prediction, and risk assessment. In this context, the European Union (EU) has invested heavily in automated border systems under the label of "smart borders." These systems collect biometric and demographic data to manage mobility flows, promising security and efficiency. However, critical studies (FRA 2022; ENNHRI 2024; Molnar 2023) show that such technologies often amplify exclusion.

This article investigates how AI redefines the demographic management of migration in the EU, deciding who becomes visible or invisible within European statistics. By analysing official data and reports, the study reveals that the decline in asylum recognition rates coincides with the expansion of algorithmic border systems such as the European Dactyloscopy (EU fingerprint database for asylum seekers) (EURODAC), the European Travel Information and Authorisation System (ETIAS), and the Intelligent Portable Border Control System (iBorderCtrl). Rather than reflecting a reduction in migration, these figures represent the statistical dimension of dehumanisation, in which algorithmic decisions determine who enters and who is left out.

This study employs a qualitative approach based on documentary analysis and official EU data from 2013 to 2024. The analysis draws on Michel Foucault's concept of biopower to examine how algorithmic governance reconfigures population control at European borders (Foucault 2008 apud Bruno 2019).

Accordingly, the objective is to critically analyse how AI reshapes demographic governance in the EU by transforming migrants into statistical categories of risk and control. The article seeks to expose how automated decision-making systems produce new forms of exclusion and dehumanisation under the discourse of efficiency and national security.

This article makes three main contributions. First, it advances the concept of biopower by examining how contemporary forms of migration governance are increasingly mediated through algorithmic systems, proposing the notion of *algorithmic biopower* to capture this transformation. Second, it empirically analyses the temporal relationship between the expansion of AI-driven systems and the decline in asylum recognition

rates. Third, it introduces the concept of *statistical dehumanisation* to explain how individuals are reduced to probabilistic categories and risk profiles, reshaping their visibility, treatment, and access to rights within data-driven migration governance.

This article is structured as follows. Section 2 presents the methodology. Section 3 develops the theoretical framework. Section 4 reviews the literature and contextualises EU migration governance. Section 5 discusses the empirical findings. The final section outlines key implications and directions for future research.

2. Methodology

This study adopts a qualitative research approach, structured as a case study focused on the EU as the unit of analysis. The choice of the case study is justified by the need to investigate a contemporary phenomenon, algorithmic migration governance, within its real and institutional context, using multiple sources of evidence. The methodology was designed to enable a critical, in-depth analysis of the relationship among AI, migration governance, and human rights in the EU, covering the period from 2013 to 2024.

The research employs two main investigative techniques, bibliographic analysis and documentary analysis. The bibliographic analysis consisted of a critical review of theoretical works and recent studies on biopower, control technologies, and migration, based on authors such as Michel Foucault and Shoshana Zuboff, as well as institutional reports on AI and border governance. The documentary analysis involved examining primary and secondary sources, including EU legislation and policies, official reports from agencies (Frontex, EUAA, FRA), and publications from civil society organisations and research networks (EDRi, EuroMed Rights, ENNHRI). The methodological process was structured in three interconnected stages to ensure rigour and reproducibility.

First, secondary quantitative data were collected and analysed from public and institutional sources. Statistics on asylum decision outcomes from Eurostat (2013–2024) and reports on irregular crossings from Frontex (2024–2025) were compiled and examined. The purpose of this stage was not to conduct predictive statistical analysis but to identify and map macro-level trends and patterns, specifically the temporal correlation between the implementation of automated border systems and variations in asylum recognition rates. The analysis relied on descriptive statistical mapping and temporal correlation assessment, without using inferential or predictive modelling tools.

The second stage consisted of a qualitative content analysis of a selected documentary corpus. This corpus includes legal and policy documents

of the EU (e.g., the EU AI Act, the GDPR), reports from agencies (Frontex, EUAA, FRA), publications from civil society organisations and research networks (e.g., EDRi, EuroMed Rights, ENNHRI), as well as literature on the subject. The content analysis focused on how official narratives construct notions of algorithmic "efficiency" and "security", and how critical discourses articulate the risks of discrimination and dehumanisation.

Finally, the third stage articulates the findings from the previous stages through the theoretical lens of biopower. This interpretative phase connects the quantitative patterns (decline in recognition rates) and qualitative discourses (narratives of efficiency versus rights violations) with the Foucauldian conceptual framework. The objective is to demonstrate how algorithmic governance not only reflects but actively reconfigures the exercise of power over migrant populations, transforming bodies and lives into manageable risk categories. This approach allows the research to move beyond a descriptive account to offer a critical interpretation of the underlying mechanisms of power. Also, while temporal alignment between system rollouts and recognition-rate declines is robust, causality is not claimed without technical audits. Country-specific reforms and geopolitical shocks are considered as confounders.

The qualitative component follows a thematic content analysis approach, allowing the identification of recurring patterns in institutional documents and policy discourse.

3. Theoretical framework

The analysis in this study is grounded in Michel Foucault's concept of biopower, which describes the modern technology of power focused on the administration of life and the management of populations (Foucault 2008 apud Bruno 2019). Originally, Foucault identified two poles of this power: anatomopolitics, centred on the discipline of the individual body, and the biopolitics of the population, which governs collective life through the management of birth rates, mortality, health, and longevity (Foucault 1978 apud Kasapoglu et al. 2021). In the context of migration, biopower manifests itself in State control not only over territory but also over demographic composition, regulating who may circulate, remain, or be expelled.

This work, however, argues that the rise of AI represents a crucial evolution of this mechanism, giving rise to an algorithmic biopower. Whereas classical biopower operated through institutions such as hospitals and schools to normalise subjects, algorithmic biopower operates through databases, sensors, and predictive models to categorise and manage "lives" on a massive, real-time scale. It does not replace disciplinary power but rather intensifies and automates it, transforming the migrant's body into

a data double, a digital profile subjected to continuous surveillance and screening (Klein 2016 apud Selwyn 2019).

In this new configuration, governance relies not only on observation (the Panopticon) but on anticipation. Systems such as ETIAS and iBorderCtrl are not primarily aimed at disciplining present behaviour, but at predicting and neutralising future risk. AI, therefore, does not make autonomous or neutral decisions; it is the technical expression of a political rationality that already frames migration as a problem to be managed. Trained on historical data that reflect structural biases, AI automates and legitimises discrimination under the veneer of mathematical objectivity, transforming social, racial, and geographical inequalities into numerical patterns and statistical predictions.

Thus, this study employs the concept of biopower not as a static framework, but as a dynamic analytical tool to examine how power over life is reconfigured in the digital era. The aim is to expose how the promise of algorithmic "efficiency" conceals an intensified form of population control, producing new forms of exclusion and dehumanisation at the borders of the EU, ultimately deciding which lives are counted as worthy of protection and which are reduced to mere data points of risk.

4. Literature review

4.1. AI and migration governance: global trends

AI, as both a field of study and a technological practice, emerged in the 1950s with the aim of simulating human capacities such as reasoning, learning, and decision-making. Authors such as McCarthy (2012 apud Manning 2020) and Cerka (2015) proposed the use of computers to emulate intelligence, often grounded in the Turing test as an epistemological reference (Turing 1950, as cited in Garcia 2025).

Although definitions vary, AI is generally understood as the capacity of computerised systems to make decisions autonomously based on large volumes of data, often without direct human intervention. Miragem (2019), for instance, defines AI as the ability to interpret contexts and act according to internal representations, emphasising its decision-making autonomy. Similarly, Russell and Norvig (2013) describe AI as the systematisation and automation of human intellectual tasks across different domains.

Prior work by the author (Garcia 2025) examined the United States "Extreme Vetting" programme, which applied AI to refugee screening. That study demonstrated how predictive algorithms reproduced systemic biases by disproportionately targeting Muslim applicants and individuals

from the Global South, reinforcing the association between migration and security risk. It also showed how algorithmic systems legitimise exclusion under the rhetoric of efficiency and objectivity, illustrating how automation can institutionalise discrimination in migration governance.

Building on this analysis, the present study shifts the focus from the United States to the EU, examining how algorithmic infrastructures shape demographic governance across European borders. While the earlier work focused on refugee processing, this research explores how AI systems redefine visibility, risk, and control within broader migration management frameworks.

With the expansion of AI, applications such as Natural Language Processing, computer vision, recommendation systems, facial and voice recognition, and robotics have become widespread (Perez et al. 2018). These technologies are now embedded in sectors including health, public safety, education, finance, and marketing. In this context, the use of AI in border and migration management should not be understood as an isolated development, but rather as part of a broader transformation in State governance, characterised by increasing reliance on technological solutions to complex policy challenges.

Within the EU, border externalisation has emerged as a central strategy. It refers to the extension of migration control beyond "migrant-receiving nations" in the Global North to countries of origin and transit in the Global South (EuroMed Rights 2023). This strategy is marked by two key dynamics: the use of development aid as a tool for migration control, and the outsourcing of surveillance technologies to third countries. As a result, regions such as the Middle East and North Africa have become sites of intensive technological experimentation, with the EU investing more than €250 million between 2014 and 2022 in 49 projects aimed at developing border technologies (ENNHRI 2024; EuroMed Rights 2023).

Another important trend is "crimmigration," understood as the convergence of criminal and immigration law. Queiroz (2019) argues that data technologies contribute to this process by producing forms of "digital illegality," blurring the distinctions among irregular migration, asylum-seeking, and criminality. The author identifies three key developments: the erosion of purpose limitation, the expansion of data access by law enforcement authorities, and the growing use of biometric systems.

Beduschi (2020) further argues that AI can reinforce unlawful practices related to non-refoulement, strengthening non-entry policies that already operate at the boundary between administrative and criminal law. Similarly, Forster (2022) highlights how opacity and discretion in decision-making create conditions conducive to algorithmic discrimination, while Sio (2024) points to broader risks to human freedom, including new forms of

control, diminished accountability, and increased concentration of power in States and technology companies.

In this context, algorithmic bias is a central concern because AI systems can reproduce and amplify existing inequalities. The EU Agency for Fundamental Rights (FRA) defines bias as the tendency of algorithms to produce outputs that disadvantage certain groups (FRA 2022). Importantly, the agency notes that bias can be reinforced over time when algorithmic outputs are fed back into future systems, creating a self-reinforcing cycle of discrimination.

Beduschi (2020) echoes this concern, arguing that the "black box" nature of many AI systems, often protected by commercial secrecy, makes it difficult to detect inaccuracies and prevent unlawful discrimination. In the context of asylum, Dumbrava (2025) concludes that this opacity undermines the ability to identify errors and challenge decisions, ultimately weakening asylum seekers' position within the system.

As noted by the UN Special Rapporteur on contemporary forms of racism, "the increasing digitisation of national border and immigration procedures disproportionately impacts racial and ethnic minorities, perpetuating discrimination" (quoted in ENNHRI 2024 pag. 5).

4.1.1. Potential benefits of AI (or promises of benefits) in migration governance

The official justifications for the massive investment in AI in migration management centre on promises of efficiency, security and resource optimisation. The European Commission, for example, frames AI "opportunities" in categories such as chatbots, risk assessment tools, knowledge management, and computer vision (EuroMed Rights 2023). The 2014–2015 European Agenda on Migration promised that the use of IT systems would "improve border management, reduce irregular migration and return illegally staying third-country nationals" (Queiroz 2019). Other promises include the prevention of "asylum shopping," the fight against terrorism and serious crime, and the improvement of general security on European territory.

Thus, AI systems are often presented with the promise of increasing efficiency and security in migration management. In this sense, there is Machine Learning (ML), which is a sub-area of AI and is based on the idea that systems can learn from data. Its algorithms identify patterns and make predictions without explicit programming (Faceli et al. 2011; Coppin 2017). Caldeira (2022) highlights its ability to solve complex problems based on previous experiences, whilst Deep Learning (DL) uses multi-layered neural networks to process unlabelled data and perform highly complex tasks, such as image recognition, speech and feelings.

The collection and analysis of large volumes of data, the so-called Big Data, are fundamental for the functioning of AI. The Internet of Things further amplifies this potential by connecting physical objects to the internet, enabling the continuous collection of information. However, as highlighted by Boyd and Crawford (2012), Big Data does not only represent volume, but also a transformation in the ways of thinking and governing. After all, the automation of tasks such as document verification, asylum application analysis, and border monitoring is justified to speed up processes, reduce costs, and mitigate human error. The official narrative around technologies like the EU's "Smart Borders" package emphasises the ability to process large numbers of travellers quickly and securely, distinguishing between "low-risk" travellers and those requiring greater scrutiny.

However, Sio (2024) warns that, "alongside the benefits, algorithms also pose risks to fundamental rights." This fundamental tension between promised benefits and concrete risks to human rights permeates the entire literature on AI and migration, suggesting that promises of efficiency often overshadow the grave ethical and legal implications.

4.2. EU frameworks: Smart Borders, Eurodac, ETIAS, and iBorderCtrl

The EU has developed a complex architecture of information systems for migration and border management. Of the nine large-scale databases used or envisaged under Justice and Home Affairs, six are intended to contain migration-related data (ENNHRI 2024).

EURODAC is the centrepiece of this system. Created to determine the Member State responsible for an asylum application (Dublin Regulation), its scope has been significantly expanded (Queiroz 2019). EURODAC II (2013) now allows the collection of fingerprints not only from asylum seekers, but also from migrants who have crossed the border irregularly and from people found illegally on EU territory (Queiroz 2019). The recast of EURODAC under the EU Pact on Migration and Asylum (2024) further expands the system to include additional biometric data, aiming to go beyond asylum and tackle irregular migration (ENNHRI 2024).

ETIAS is a travel authorisation system that uses profiling to categorise travellers into pre-defined risk profiles, based on factors such as historical overstay data and security information from Member States. Critics point out that the use of indicators such as education level and nationality can serve as a proxy for race or religion, creating a demonstrable risk of indirect discrimination (EDRi 2021).

The iBorderCtrl Project represents a paradigmatic case of the ambitions and dangers of AI at the borders. Funded by the EU and tested by several

Member States, the project included an AI-based "lie detector" to assess travellers' credibility through interviews. Human rights actors have heavily criticised the project due to its dubious scientific basis and high risk of bias. ENNHRI (2024) warns: "Emotion or lie detection technologies are built on pre-existing data that contains biases and, in migration contexts, can easily open the door to inaccurate results and misinterpretation, including, for example, due to cultural differences in emotion expression."

The project was terminated after the testing phase, and litigation over access to documents related to their legality and reliability resulted in restrictions on public access to crucial information, under the justification of protecting commercial interests (ENNHRI 2024). Finally, interoperability between the various databases (SIS II, VIS, ECRIS-TCN, etc.) is a central objective of the EU. In 2019, regulations were adopted to create a framework allowing border and law enforcement authorities to search all databases simultaneously. Although not yet fully implemented, this interoperability represents a massive expansion of capacity for migrant surveillance and categorisation (ENNHRI 2024).

Therefore, these systems are not static; on the contrary, there is a constant drive to expand them. The European Commission has proposed using more biometric identifiers for EURODAC, e.g., facial recognition, the collection of digital photographs, and the extension of the database's scope (Queiroz 2019). Moreover, it is also not a stand-alone system, but rather a broader network of algorithmic surveillance that includes the Travel Tracking Matrix, EUMigraTool (an ITFlows project), Eurodac, Frontex, iBorderCtrl, and the Smart Borders Package (Entry/Exit System – EES and ETIAS) (ENNHRI 2024). A particularly controversial example is iBorderCtrl, an EU pilot project for border security that used facial recognition and lie detection (Karagianni 2025).

4.3. Critical studies on risk, efficiency, and digital discrimination

Algorithmic opacity emerges as a central structural problem in migration governance. Pasquale (2015) introduces the concept of the "black box society," where the complexity of algorithms (often protected as commercial or national security secrets) renders decision-making processes inaccessible.

Beduschi (2020) reinforces this argument, noting that such opacity can conceal inaccuracies and lead to unlawful discrimination. In the specific context of asylum in the EU, Dumbrava (2025) further argues that the lack of transparency makes it difficult to identify errors and contest decisions, ultimately weakening asylum seekers' position within the system. In practical terms, this opacity prevents individuals from understanding the

logic behind decisions that affect their lives, undermining the right to due process and effective remedy.

However, Amoore (2020) introduces an important theoretical divergence. While authors such as Pasquale, Beduschi, and Dumbrava emphasise transparency as a solution, Amoore questions whether transparency alone is sufficient. As she argues, many critics assume that the ethical problem lies in the opacity of algorithms, and that opening the "black box" would restore accountability.

Amoore does not dismiss the importance of transparency, but challenges its limits. She suggests that this perspective presupposes the existence of a fully autonomous and responsible human subject outside the algorithm. In reality, however, algorithmic governance is relational and distributed. As she notes, "the emergence of algorithmic power in society has been overwhelmingly understood as a problem of opaque and illegible algorithms infringing… a legible world of rights belonging to human subjects" (Amoore 2020). This framing, she argues, oversimplifies the problem.

From this perspective, governance is no longer based solely on traditional statistical reasoning. Instead, it relies on learning algorithms that identify emerging patterns and define what is "interesting" or "suspicious" beyond predefined rules. As Amoore explains, drawing on Rakesh Agrawal, earlier systems relied on hypothesis testing, whereas contemporary systems generate associations directly from data.

As a result, algorithmic biopower operates on a horizon of possible futures, governing not only present populations but also anticipated risks.

A concrete example of these dynamics can be observed in the Centaur system, implemented in refugee camps in Greece. Partially funded by the EU COVID Recovery Fund, Centaur operates through a centralised control room within the Ministry of Migration and Asylum. The system integrates approximately 40 cameras per camp, thermal imaging, drones, motion sensors, and AI-based predictive tools that can identify and flag "threats," such as weapons, unauthorised vehicles, or unusual movements.

When a potential threat is detected, alerts are triggered in real time, prompting immediate intervention by authorities (Emmanouilidou and Fallon 2021).

Greek authorities justify the system on the grounds of security and prevention. As Migration Minister Notis Mitarachi stated, "we use technology to prevent violence… because safety is critical for everyone" (Emmanouilidou and Fallon 2021). However, civil society organisations such as EDRi offer a sharply contrasting view, criticising these initiatives

as part of a broader trend in which migrants are subjected to experimental surveillance systems under the guise of innovation.

The lived experience of these systems reveals their ambivalence. Mohammed, a Palestinian refugee living in the Samos camp, describes this tension: "Sometimes it's a good feeling… sometimes not. There's not a lot of difference between this camp and a prison" (Emmanouilidou and Fallon 2021).

This testimony illustrates what can be described as statistical dehumanisation, where individual experiences are reduced to data points within risk-based systems. Notably, requests from organisations such as Homo Digitalis and EDRi for information on data protection and system functioning went unanswered, further reinforcing concerns about opacity and accountability.

In this context, algorithmic bias should not be understood merely as a technical flaw, but as the amplification of structural inequalities. Beduschi (2020) highlights, for example, the use of the COMPAS system in the United States, which has been associated with racial discrimination in judicial decision-making. Dumbrava (2025) adds that human decision-making itself is already shaped by cognitive biases and contextual factors, which can be further reinforced through automation.

Garcia (2025) extends this analysis to migration governance, arguing that AI systems trained on historical data reproduce and intensify existing patterns of exclusion.

Amoore (2020) pushes this argument further by suggesting that algorithms do not simply reflect bias, but actively generate new proxies for categories such as race, gender, and ethnicity. Through data-driven associations, these systems redefine what is considered relevant or suspicious within governance frameworks.

This perspective aligns with the notion of "algorithmic Jim Crow," which highlights how AI can reproduce deeply rooted racial and social inequalities while maintaining an appearance of neutrality and objectivity (Hu 2017, as cited in Garcia 2025).

4.4. Demographic data and statistical patterns and non-refoulement and human rights in the algorithmic era

The systems under review, such as EURODAC, ETIAS, and Frontex's risk analysis platform, are primarily designed to manage asylum and border security. For this reason, refugee data constitutes the most reliable proxy for analysing algorithmic governance in migration. In this sense,

the asylum regime operates as a laboratory of broader migration control, where practices and technologies are first tested and later expanded to other categories of migrants.

Against this backdrop, the analysis of Eurostat data between 2013 and 2024 reveals a consistent pattern: average asylum recognition rates in the EU have progressively declined alongside the incorporation of AI systems into migration governance. Notably, the years 2016, 2018, 2020, 2022, and 2024 correspond to key technological milestones, including the introduction of the iBorderCtrl pilot, its expansion, the ETIAS testing phase, the interoperability of major databases (EURODAC, SIS, VIS, ECRIS-TCN), and the implementation of the Entry/Exit System (EES). Each of these moments coincides with significant drops in positive decision rates.

At the aggregate level, the EU average decreases from 70.1 percent in 2013 to 48.1 percent in 2016, when iBorderCtrl was first tested. Although there is a temporary increase in 2018 (61.6 percent), the downward trend resumes in 2020 (63.3 percent) and becomes more pronounced after full system integration, reaching 42.4 percent in 2022 and 52.4 percent in 2024.

This pattern is even more visible at the national level. Germany's recognition rate drops from 73.6 percent (2013) to 31.2 percent (2016) and stabilises at 46.5 percent in 2024, indicating a structural shift following the introduction of automated systems. Greece presents the most dramatic decline, from 96.1 percent to 28.4 percent. France shows a gradual but consistent reduction, while Spain's rate is nearly halved over the period. Portugal and Slovenia exhibit oscillations but follow the same overall downward trajectory.

The year 2016 represents a critical inflexion point. It coincides with the introduction of the iBorderCtrl pilot and the highest volume of asylum decisions recorded in the dataset (851,810 decisions). Of these, 521,465 were positive, and 330,345 were negative.

Paradoxically, despite the high number of positive decisions in absolute terms, the recognition rate fell sharply to 48.1 percent. This suggests that increased migratory pressure may have accelerated the adoption of automated screening systems as an institutional response to growing application volumes.

A closer look at decision ratios further reveals a structural shift. In 2013, for each negative decision, there were only 0.38 positive decisions. In 2016, this ratio increased to 1.58 positive decisions per negative. However, from 2017 onwards, it declined again, fluctuating between 0.57 and 1.12.

This inversion indicates not merely a statistical fluctuation but a reconfiguration of decision-making criteria, potentially mediated by the calibration of automated risk assessment systems.

Germany exemplifies this transformation paradigmatically. In 2016, the country processed 433,905 positive decisions, accounting for 83 percent of all positive decisions in the EU that year. This exceptional volume reflects both the open-door policy and the institutional pressures that likely contributed to the subsequent adoption of automated systems.

In later years, however, the number of positive decisions drops significantly, reaching 128,460 in 2022 and 133,710 in 2024. At the same time, recognition rates fall sharply, reinforcing the argument that migration governance has undergone a structural transformation mediated by automated screening technologies.

Greece, as an external border State, illustrates a different dimension of this shift. While the absolute number of positive decisions increases from 500 in 2013 to 39,565 in 2024, the recognition rate declines dramatically from 96.1 percent to 28.4 percent.

This suggests that although more migrants can reach the EU and apply for asylum, the criteria for recognition have become progressively more restrictive. Such a pattern is consistent with the expansion of automated risk analysis systems implemented by Frontex and national authorities.

At the EU level, the total volume of asylum decisions also reveals an important structural transformation. After peaking at 851,810 decisions in 2016, the number does not return to pre-crisis levels (190,140 in 2013), but instead stabilises at a significantly higher baseline: 508,165 in 2022, 534,955 in 2023 and 618,105 in 2024.

This sustained increase, combined with lower recognition rates, suggests that automated systems have not reduced migratory pressure but have instead reconfigured approval criteria, making access to international protection more restrictive.

In parallel, official Frontex documents from 2024 to 2025 reveal the emergence of a progressively automated governance architecture, even when not explicitly labelled as such. The Risk Monitoring and Analysis report describes the use of automated tracking and forecasting systems (Eurosur Fusion Services) that integrate data from drones, satellites, and sensors in real time to detect anomalies and predict vessel movements.

Although AI is not explicitly named, the technical vocabulary clearly indicates the use of machine learning techniques. Similarly, the January 2025 report highlights a 38 percent reduction in irregular crossings,

presenting it as a policy success without directly acknowledging the role of algorithmic systems.

According to the Latest Asylum Trends – Monthly Overview (EUAA 2025), approximately 64,000 applications for international protection were registered in May 2025, while around 1.3 million cases remained pending. At the same time, 4.4 million individuals were under temporary protection following the war in Ukraine.

The report also indicates a diversification of migration patterns, with decreasing applications from Syrians and Afghans and increasing numbers from Venezuelans, Haitians, and Guineans.

Beyond these figures, the report reveals the depth of automation embedded in contemporary migration governance. Data collection increasingly relies on systems such as the Early Warning and Preparedness System, which aggregates national datasets to generate real-time alerts and predictive assessments of migratory "pressure."

In addition, tools such as the Survey of Asylum-related Migrants use self-administered digital questionnaires accessible via smartphones, enabling large-scale and continuous monitoring of migrant populations.

Finally, the declining recognition rates for specific nationalities, such as Syrians (from 90 percent to 25 percent) and Turks (from 40 percent to 11 percent), illustrate how migration governance operates through data-driven hierarchies of credibility, reinforcing differentiated access to protection.

4.4.1. Non-refoulement and human rights in the algorithmic era

The principle of non-refoulement, a cornerstone of international refugee law, faces new challenges in the algorithmic era. Forster (2022) warns that AI systems may lead to significant harm if they contribute to the wrongful return of asylum seekers to unsafe countries where they may face persecution or serious human rights violations.

Beduschi (2020) reinforces this concern, arguing that AI technologies can be used to strengthen practices that violate Article 33 of the Refugee Convention. Similarly, Dumbrava (2025) highlights that inaccurate or biased algorithms may result in the rejection of asylum applications and the subsequent return of individuals in need of protection.

The statistical analysis presented above reveals a strong temporal correlation between the implementation of smart border systems and the decline in asylum recognition rates. While a full technical audit would be required to establish direct causality, the convergence between empirical

data and these theoretical warnings suggests that AI may be contributing to violations of the principle of non-refoulement.

For instance, the sharp decline in Greece's recognition rate, from 96.1 percent to 28.4 percent, occurred during the same period when the Centaur surveillance system was introduced, and the use of Frontex risk-analysis technologies intensified.

AI does not operate in a vacuum. Rather, it functions as the technical expression and accelerator of a pre-existing political rationality that frames migration as a risk to be managed. In this sense, AI should not be understood as an isolated cause, but as a determining factor that intensifies and automates exclusion.

By increasing the efficiency of refusal decisions, these systems also risk legitimising them under a veneer of technological objectivity.

As Amoore (2020) observes, predictive algorithms govern populations within a "horizon of possible futures," intervening before risks materialise. In practice, this means that asylum seekers may be classified as "high risk" not on the basis of their individual circumstances, but through statistical patterns derived from nationality, migratory routes, or demographic characteristics.

These classifications are produced by opaque systems operating beyond meaningful public scrutiny. The use of surveillance technologies to deter or prevent migrant arrivals raises additional concerns. Since most European States require physical presence in order to lodge an asylum claim, such practices may undermine both the principle of non-refoulement and the right to seek international protection (ENNHRI 2024).

Border externalisation, supported by these technologies, creates a more fundamental form of invisibility: individuals who are prevented from reaching European territory simply do not appear in official statistics (EuroMed Rights 2023). This statistical absence does not indicate a lack of protection needs, but rather reflects an algorithmically mediated denial of access to asylum.

Garcia (2025) argues that AI systems trained on historical data reinforce systemic biases and deepen the marginalisation of vulnerable groups. The analysis of EUAA (2025) data supports this claim. The significant decline in recognition rates for certain nationalities, such as Syrians (from 90 percent to 25 percent) and Turks (from 40 percent to 11 percent), suggests that algorithmic systems may be reproducing data-driven hierarchies of credibility, in which nationality functions as a proxy for risk.

Such practices undermine the principle of individualised assessment, a core requirement of international refugee law, and contribute to the

institutionalisation of structural discrimination. Taken together, the convergence between empirical findings and theoretical critiques cannot be overlooked. The systematic decline in recognition rates, coinciding with the expansion of algorithmic systems, raises serious concerns about the relationship between efficiency and rights protection.

The central issue, therefore, is not whether AI makes borders more efficient, but whether such efficiency, when detached from principles of justice and humanity, is transforming the European asylum system into a mechanism of automated exclusion.

4.5. Regulatory frameworks and the limits of accountability

Although regulatory frameworks, such as the EU's GDPR and the UK's AI audit systems (Garcia 2025), seek to ensure transparency and accountability, the persistent decline in asylum recognition rates suggests these measures are insufficient. Beduschi (2020) proposes that "to overcome these issues, Citron proposed the concept of 'technological due process', which encompasses guarantees of accountability, fairness and transparency." Dumbrava (2025) observes that "high-risk AI systems are subject to strict regulatory requirements, such as mandatory risk management processes, transparency measures, human oversight and fundamental rights impact assessments." However, he also warns that "these exceptions and loopholes include limited transparency (the registration of AI systems must be in a secure and non-public database) and more relaxed human oversight requirements."

Garcia (2025) concludes that "consequently, the study concludes that stronger regulation and state oversight are crucial to mitigate algorithmic biases." Amoore (2020), however, diverges by questioning the very premise of accountability based on a "responsible human subject," arguing that "in such a framing, there is an exterior to the algorithm, a responsible human subject who is the locus of responsibility, the source of a code of conduct with which algorithms must comply." After all, the technical regulation of AI does not address the underlying political rationality that frames migration as a threat. The solution, therefore, lies not only in algorithmic audits, but in questioning and transforming the very logic of securitisation that sustains these systems of population control.

While existing literature highlights issues such as bias, opacity, and discrimination in AI systems, this study advances the debate by situating these dynamics within the broader context of demographic governance and their implications for visibility and rights in the EU.

5. Discussion and results

This section presents and discusses the study's main findings.

5.1. Visibility, risk, and the data-making of populations

The findings indicate that the relevance of ML, DL, and Big Data to the analysis of AI in migration regimes is central, as these technologies form the basis of algorithmic surveillance, screening, and automated decision-making systems applied to migrants and refugees. The promise of efficiency, however, obscures the inherent risks of discrimination and exclusion within these systems. In the field of migration, sensors, drones, and biometric databases feed algorithmic systems that, under the argument of efficiency, classify, monitor, and exclude individuals based on historical data often marked by structural inequalities.

The way AI redefines the demographic management of migration is intrinsically linked to how data are collected, categorised, and interpreted, determining who becomes visible or invisible within statistics. The strategy of border externalisation, supported by surveillance technologies, creates the most basic form of invisibility, as people prevented from reaching European territory simply do not appear in EU asylum or migration statistics (EuroMed Rights 2023). For those who manage to arrive, visibility is selective and discriminatory. Database systems such as EURODAC create multiple categories of visibility (asylum seeker, irregular migrant), each with distinct legal implications, while profiling systems such as ETIAS create discriminatory visibility by categorising individuals as "legitimate" or "suspicious" based on risk profiles.

5.2. Algorithmic biopower and statistical dehumanisation

It is here that the concept of algorithmic biopower becomes crucial. AI is not simply "failing" or being "biased," as noted by the FRA (2022) analysis. On the contrary, it functions exactly as programmed within a political rationality that already conflates migration with criminality (Queiroz 2019). Algorithms are the technical materialisation of this pre-existing suspicion, transforming the migrant's body into a "data double" (Selwyn 2019), a risk profile to be managed. This process generates what may be called *statistical dehumanisation*, a condition in which an individual's life and history are abstracted into data points, and decisions about their future are outsourced to a system that operates on probabilities rather than rights.

The FRA (2022) analysis is fundamental, as it demonstrates that the official demographic data used to train algorithms is already biased. Crime statistics, for example, do not reflect the reality of crime but rather patterns of policing and reporting, which are influenced by racial and socioeconomic biases. AI, when trained on such data, does not merely replicate but amplifies these distortions, making certain demographic groups disproportionately more "visible" to the control system. This confirms that algorithmic biopower operates in an anticipatory way; its

purpose is not only to manage existing populations but to filter future ones, neutralising "risk" before it even materialises.

5.3. Externalisation and statistical invisibility

Recent UNHCR/Eurostat data (2025) show that in May 2025, 64,000 asylum applications were received, with a sharp drop in applications from Syrians following the regime change in their country. While these figures show the visibility of those who have been able to apply for asylum, they raise the fundamental question of invisibility: how many potential asylum seekers have been prevented from reaching European territory through externalisation measures and technological surveillance, thus remaining absent from official statistics?

AI not only processes demographic data, but actively participates in its creation, deciding who is counted, how they are categorised, and what meaning is assigned to that counting. It is important to emphasise that the reduction in irregular border crossings may not represent a decline in migration itself, but rather an increasing invisibilisation of migrants, resulting from predictive filtering and automated surveillance systems. Within this logic, the algorithm decides, even before arrival, who will be detectable and who will be disposable. Subsequently, the creation of the EBCG FADO consolidates this structure by defining harmonised digital image standards for identity authentication, that is, standardised training datasets for future facial recognition systems.

5.4. Transnational evidence and the global dimension of algorithmic exclusion

It should be noted that this pattern is not exclusive to the EU. In Canada, Molnar and Gill (2018) documented that automated decision-making systems in immigration disproportionately flagged individuals from African and Muslim-majority countries as high risk, leading to unjust refusals and further marginalisation of vulnerable populations. These cases demonstrate that algorithmic discrimination is a transnational phenomenon, rooted in global power structures that AI reproduces and amplifies. This demonstrates that automated exclusion is not only technical but also geopolitical, as certain States use technology to control populations and reshape existing forms of biopower. This is reinforced by another concept, that of Richmond (1994), who describes global apartheid as a system in which wealthy nations use political, economic, and technological means to preserve their resources and security at the expense of vulnerable populations. In this sense, AI systems such as ETIAS and EURODAC are contemporary expressions of this apartheid, creating digital borders that reproduce and intensify racialised global inequalities.

Furthermore, Hu (2017) refers to this phenomenon as algorithmic Jim Crow, arguing that the supposed neutrality of AI conceals deeply rooted

racial and religious prejudices, making algorithmic discrimination even more insidious because it is presented as objective and scientific. In this sense, AI systems automate and legitimise discrimination under the veneer of mathematical objectivity, transforming social, racial, and geographical inequalities into numerical patterns and statistical predictions. This interpretation reinforces the view that algorithmic bias is not a technical flaw but an automated reflection of historical hierarchies (Garcia 2025).

5.5. Regulatory frameworks and the limits of accountability

Moreover, the massive collection of biometric data, such as fingerprints and facial recognition, not only transforms migrants into digital profiles but also exposes them to heightened risks of privacy violations and continuous surveillance. Therefore, this mandatory submission of personal data intensifies the vulnerability of already marginalised populations, creating a permanent state of invisibility directed towards State control (Garcia 2025).

Although there are regulatory frameworks such as the EU's GDPR and the United Kingdom's AI auditing systems (UK Information Commissioner's Office 2021, as cited in Garcia 2025), which seek to ensure transparency and accountability, the persistent decline in asylum recognition rates suggests that such measures are insufficient. After all, the technical regulation of AI does not address the underlying political rationality that frames migration as a threat. The solution, therefore, lies not only in algorithmic audits but in questioning and transforming the very logic of securitisation that underpins these systems of population control (Garcia 2025).

6. Conclusion

AI-driven migration systems are not merely technical tools, but mechanisms that shape how populations are classified, monitored, and governed. While often presented as instruments of efficiency, they operate through data infrastructures that reproduce and amplify existing inequalities. In this context, AI does not simply process demographic data; it actively shapes systems of visibility and exclusion, determining who is counted, how they are categorised, and under what conditions they are granted or denied protection.

From a practical perspective, these findings also point to structural limitations in existing accountability mechanisms within EU migration governance. While recent regulatory developments, such as the EU AI Act, introduce formal safeguards for individuals affected by high-risk systems, their effective implementation remains uncertain, particularly in complex decision-making environments such as border control.

In this context, strengthening institutional oversight is essential, particularly through mechanisms that can review and contest decisions

involving high-risk AI systems. This could include developing specialised review mechanisms to ensure transparency, enable meaningful contestation, and reinforce procedural guarantees. Such measures would not eliminate the structural dynamics identified in this study, but they could help reduce opacity and limit the risk of unchecked algorithmic decision-making in migration governance.

In theoretical terms, this study contributes to advancing existing understandings of power and governance in the digital age. By extending the concept of biopower into the realm of algorithmic systems, it proposes the notion of *algorithmic biopower* to capture how data-driven infrastructures reconfigure the management of populations. In addition, the concept of *statistical dehumanisation* offers a lens to understand how individuals are reduced to probabilistic categories and risk profiles, reshaping their visibility, treatment, and access to rights within migration governance.

However, this article also highlights a critical gap in the existing literature. While current research, including the present study, has predominantly focused on the structural and systemic dimensions of AI-driven migration governance, there remains a limited understanding of how these systems operate in practice, particularly at the level of decision-making.

Future research should therefore examine how algorithmic classifications are implemented in concrete contexts, such as border control and asylum procedures, where decisions are effectively made and experienced. This would contribute to a more precise understanding of how AI-driven governance shapes migrants' access to rights in practice.

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