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Algorithmic discrimination and its impact on violating the principle of equality before public facilities

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Abstract:
Algorithmic discriminations is considered one of the advanced forms of discriminations known since ancient times, Digital development and reliance on artificial intelligence applications have resulted in legal challenges and risks that necessitate legislation and legal regulations to address these issues and provide practical solutions to the that may arise from the operation of these applications, Because this is a relatively new issue, it is observed that countries around the world are still lacking in legislation to combat this phenomenon, moreover, even in countries that have regulated algorithmic discrimination, they have limited themselves to imposing challenges on administrative threats offending companies and have worked to combat it, without explicitly and clearly criminalizing it in their legislation, However, despite the absence of such texts, discrimination is considered a criminal offense because the criminalizing texts mentioned this act mentioned discriminations in general and did not specify a particular type. However, with the inclusion of it in the laws that dealt with digital and algorithmic issues, there is legislative confirmation of this type of discrimination.

Introduction:

The digital advancements in technology across all sectors, including public utilities, have led countries to adopt algorithms in delivering public services to citizens, creating what is known as the "smart utility." This relies on artificial intelligence applications for resource allocation and administrative decision-making, minimizing human intervention. Despite the speed with which these applications are implemented...While it is efficient, effective, and high-quality in its work, it still contains some risks and challenges, the most important of which is the issue of algorithmic discrimination, which certainly leads to a violation of the principle of equality, which is one of the basic principles in the work of public utilities. This discrimination arises as a result of several reasons and has many types, but the issue of algorithmic discrimination remains one of the forms of discrimination that most constitutions, treaties, and agreements of the world's countries have worked to prohibit and prevent. Despite the importance of this issue due to its serious harm, the legislative direction of countries in combating it is still poor and does not rise to the level that its seriousness reaches.

Importance of the research: The topic of (Algorithmic discrimination)The impact of violating the principle of equality before public facilities is one of the important and modern topics that has occupied legal thought as a result of the digital development taking place in the world, which has raised the extent of the legal limits imposed by the law on the work of artificial intelligence applications and the statement of its position and the procedures taken to address the issue of algorithmic discrimination.

Research problem: The research problem lies in the questions raised by this topic, including: What measures have been taken by the countries under comparison regarding algorithmic discrimination? What is the nature of the penalties imposed on biased companies, and do these countries consider discrimination a criminal offense? Administrative? What is the concept of algorithmic discrimination and what are its causes? What is the impact of algorithmic discrimination on the principle of equality before public facilities?

Research methodology: In this research, we adopted the comparative descriptive analytical approach by analyzing the legal texts in the countries compared that dealt with the issue of algorithmic discrimination, and by showing the strengths and weaknesses in those texts and showing the extent of their suitability to the legal reality of Iraq.

Research structure: The research was divided into two sections, and each section was divided into two subsections. In the first section, we talked about the nature of algorithmic discrimination, and in the second section, we talked about the effect of algorithmic discrimination on the principle of equality and the position of legislations regarding it.

First topic

What is algorithmic discrimination?

Algorithmic fairness is one of the most important issues that must be available in the case of relying on artificial intelligence in the field of public utilities, which means "the fair and equitable use of algorithms".(1)Therefore, it has become imperative to have genuine guarantees that prevent unfair discrimination between individuals with equal legal standing in order for the digital transformation in the public sector to bear fruit in serving citizens. By examining countries' applications in the field of digital development, we can observe the various sectors in which algorithms have been incorporated. They have entered the field of education, as well as the health sector, where intelligent algorithms have helped improve medical diagnosis, increase the efficiency of healthcare, and even contribute to the development of medicines.(2)However, observations in countries that have undergone digital transformation reveal a clear algorithmic bias, violating the principle of equality, a fundamental principle in the operation of public utilities. This algorithmic bias can be observed in some criminal investigation systems that differentiate between certain social groups, which form the basis of predictive policing and assess the dangerousness of the accused.(3)The discrimination within this program led to the arrest of individuals based on their personal characteristics and ethnic origins, and a clear example of this is the application of "COMPAS, which used algorithmic discrimination against African Americans (4)He distinguished between white and black citizens, classifying the latter as more dangerous. Furthermore, the issue of algorithmic discrimination may appear in the field of predictive and generative artificial intelligence, where the latter relies on advanced machine learning models called "deep learning model algorithms." These algorithms simulate the learning process and decision-making, identifying patterns and relationships within a massive amount of data and using this information to determine user needs in order to provide them with content that matches those needs.(5)Thus, we will be faced with an administrative decision based on algorithms.(6)Biased towards a particular class or race, and to explain the meaning of algorithmic discrimination, this topic will be divided into two sections. In the first, we will talk about the concept of algorithmic discrimination, and in the second, about the nature of algorithmic discrimination and its causes, as follows:

First requirement

The concept of algorithmic discrimination

To explain the meaning of algorithmic discrimination, it is necessary to define it and its types, as follows:

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[1] Songül Tolan, Fair and Unbiased Algorithmic Decision Making: Current State and Future Challenges, European Commission, Joint Research Centre, December 2018.

[2] Dr.**eSalam Mahrous Ali Naji, Criminal Liability Arising FromAThe error of self-driving vehicles in the Kingdom of Saudi Arabia - a comparative study - a research paper published in the Journal of Legal Sciences, University of Baghdad, College of Law, Volume 40, Issue 2, 2025 AD, p. 341.**

[3] Dr. Mahmoud Salama Al-Sharif, The Legal Nature and Legitimacy of Crime Prediction Using Artificial Intelligence, Arab Journal of SciencesACriminal and Forensic Medicine Guide, Naif Arab University for Security Sciences, Kingdom of Saudi Arabia, Volume 3, Issue 2, 2011, p. 2.

[4] Brennan, Tim, William Dieterich, and Beate Ehret; Evaluating the Predictive Validity of the COMPAS Risk (7) and Needs Assessment System, Criminal Justice and Behavior, Vol. 36, l.1, 2009, pp. 21–40.

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[6] The algorithmic administrative decision "is the administrative decision taken by means of an algorithmic processing system approved by the public administration for this purpose", Belkhir Mohamed Ait Aouida, The algorithmic administrative decision, research published in the Journal of Ijtihad for Legal and Economic Studies, Faculty of Law and Political Science, University of Ghardaia, Algeria, Volume 9, Issue 3, 2020, p. 18.

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First branch

Definition of algorithmic discrimination

The term "algorithmic discrimination" has been defined in jurisprudence in many ways, each attempting to explain its meaning and define its content. We refer to the following definitions, which we believe have clarified its meaning and defined its content, as follows:

1. Algorithmic discrimination is (unfair treatment resulting from automated decision-making systems that reproduce or amplify existing social biases).[7]
2. (Systematic harm inflicted on individuals or groups through algorithms based on protected characteristics such as race, gender, or religion.)[8]
3. (A situation that occurs when automated systems produce morally unsound outcomes because they unjustifiably treat groups in an unequal manner.)[9]
4. (A term that refers to systematic errors in machine learning algorithms that lead to unfair or discriminatory results.)[10]
5. (Deviation in results due to biased or limited input data, leading to unfairness in the outputs.)[11]
6. (Reproducing human biases in machine learning systems, leading to unequal access to resources.)[12]
7. (Unintentional exclusion or marginalization of individuals by automated systems as a result of biased training data.)[13]
8. (This is something that emerges when computational models invisibly encode and perpetuate inequality across digital platforms.)[14]
9. (A violation of the principle of equality, resulting from automated systems that differentiate between individuals according to sensitive criteria).[15]
10. Unfair discrimination or preference that appears in the results or decisions made by computer algorithms or artificial intelligence systems that differentiate between people based on certain factors such as gender, race, religion, social origin or any other characteristics.[16]
11. A phenomenon related to discrimination, exclusion, or unjustified preference, manifested in unfair disparities or discriminatory treatment based on certain personal characteristics such as gender, religion, social class, nationality, age, or others.[17]
12. The tendency of algorithms, whether intentionally or unintentionally, to display racist results that differentiate between people in an invisible, automated way, thereby violating the constitutionally and criminally enshrined principle of equality.[18]

Furthermore, it becomes clear from reading and analyzing the aforementioned definitions that algorithmic discrimination, as a concept, is based on several elements, the most important of which are:

1. The technical element in discrimination, which consists of biased data, systematic errors and designed algorithms.
2. The legal element or consequence of discrimination, which is the violation of human rights, the degradation of his dignity, and his unfair treatment.
3. All definitions focus on the fact that algorithmic discrimination is an act that is not attributed to the will or intention of the algorithm, because it occurs due to human interference or due to a deficiency in the design of the models, resulting in a case of discrimination.

Some may confuse algorithmic discrimination with digital exclusion, which is "restricting access to digital content or services for certain groups, whether for political, economic, or social reasons."[19]

This algorithmic discrimination can be defined as an unlawful violation of the principle of equality directed at a person or group because of color, race, religion, or any other reason, in a way that appears in the decisions of intelligent systems as a result of discriminatory data or biased design.

Second Branch

Types of algorithmic discrimination

It must be clarified that algorithmic discrimination does not occur as a result of the algorithm itself, but rather as a result of the way programmers collect and encode the information they input for training. The following are some types of algorithmic discrimination.[20]:-

- **Discrimination in data**This type is considered the first stage of algorithmic discrimination because it begins at the beginning of the work of smart facilities, which is the process of collecting data for artificial intelligence and then entering it in order to process it, where it is evaluated or classified incorrectly and there is discrimination in it.
- **Excellence in algorithmic design:** This type occurs as a result of programming errors, where the AI designer makes unfair judgments during the decision-making process, as designers have some assumptions that lead to inaccuracy in the work. This type may also be intentional when the designer includes the algorithm based on his personal bias.
- **Discrimination in agent data:** AI applications may use proxies as a substitute for protected attributes such as gender and race, and discrimination appears here if the proxies are biased in the event that they have a false or even accidental association with sensitive attributes.
- **Discrimination in evaluation:** This type of discrimination occurs when the results of algorithms are interpreted based on the preconceived notions of specific individuals rather than the objective outcome, so that even if the algorithm is neutral and based on a list of correct data, the application of the algorithm's outputs by individuals and companies may lead to unfair results based on their understanding of the outputs.
- **discrimination in sample selection:** This type of problem occurs when the sample selected for data entry is flawed. For example, selecting a sample of white men will lead to bias against black men because the data input is limited to a specific sample. This exclusion of a particular group and sample results in incorrect decisions by intelligent systems.[21].
- **Discrimination in data measurement:** This type occurs due to inaccuracy in how data is measured and evaluated. An example is taking pictures of happy workers to measure the level of comfort in the work environment, where the system that accurately assesses weight will be biased if weights are rounded in training data.

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[21] Nazem Hussein Rashid, Mai Ablahad Afram, Bias Auditing in Artificial Intelligence in Light of the Institute of Internal Auditors' AI Auditing Framework (IIA), a research paper published in the Journal of Contemporary Business and Economic Studies, Volume 6, Issue 1, Algeria, 2023, p. 446.

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- **Racial discrimination in algorithms:** This type occurs when data is biased in favor of a particular group or segment of society. This type often occurs in facial recognition and automatic speech recognition programs that may fail to recognize some citizens but not others.
- **Relational bias:** This type of bias occurs in machine learning by reinforcing data with its own model, which amplifies cultural bias. The data may contain a set of functions that discriminate between males and females, thus giving the opportunity to work to the male but not the female, or vice versa.(22).

Second requirement

The legal nature and causes of algorithmic discrimination: Algorithmic discrimination is considered one of the modern phenomena that may lead to numerous problems and deviate from the true purpose for which smart facilities were used and artificial intelligence was introduced into public life on a daily basis. In order to have a clear picture of algorithmic discrimination, it is necessary to explain its legal nature as well as the reasons that lead to its occurrence, as follows:

First branch

The legal nature of algorithmic discrimination: Algorithmic discrimination is considered an advanced type of prohibited and illegal discrimination that has two forms (direct, indirect). The first means "treating a person in a certain situation in a less favorable manner because of his gender, origin, health condition or other reasons compared to another person who is not in that situation or was or will be in a similar situation."(23)The second type (indirect discrimination) is classified as a seemingly neutral measure that harms the rights of a group of people based on an illegal standard for the purpose of discrimination, even though there is no legitimate objective that objectively justifies the discrimination, as the means of achieving the objective are characterized by unnecessaryness and disproportion.(24).

It might be assumed that artificial intelligence applications are completely neutral, but this is not true, as in-depth jurisprudential studies have proven otherwise.(25)This is because, through its application of its work, it produces the two types of discrimination mentioned above, through the analysis of the data that the algorithm performs and how it arrives at extracting the links and relationships between them, which may be tainted by the discrimination that it is trained on, in addition to what may affect artificial intelligence in design, which consequently leads to adopting non-neutral directions.(26).

Based on the above, the legal nature of algorithmic discrimination is classified as a modern and advanced pattern of illegitimate discrimination, and thus it is subject to all legal texts that criminalize discrimination between persons, whether these texts are constitutional, as stated in the Iraqi Constitution of 2005 under Article (14).(27)Likewise, the penal provisions contained in the Iraqi Penal Code No. 111 of 1969, as amended, which criminalized discrimination in all its forms, and the liability that is raised against the perpetrator of the crime of algorithmic discrimination in particular, and against the damages resulting from artificial intelligence applications, cannot be based on contractual liability or on tort liability, due to the lack of the conditions of both of the above liability with the liability raised from the crime of algorithmic discrimination.(28)

From this perspective, it becomes clear that criminalizing discrimination based on discriminatory practices constitutes a new fundamental interest that necessitates criminal protection. This is because the interest protected by criminalizing discrimination is itself a form of discrimination and criminalizing it achieves the principle of equality among persons, which means non-discrimination based on race, origin, religion, or any other grounds for discrimination. Thus, the link between justice and equality is strong and close.(29)Because equality is a characteristic of justice, since the latter presupposes achieving equality among all, and it is not permissible to differentiate between them in the event that their legal positions and circumstances are similar.30)Perhaps what increases the danger in the issue of algorithmic discrimination is the mistaken belief that has arisen among the majority of people that artificial intelligence programs in all their forms possess a reasonable degree of accuracy, with the possibility of error and bias in their work, which generates the absolute truthfulness of the information presented by these applications. Consequently, if there is algorithmic discrimination issued by the smart facility, there will be a mistaken belief among those dealing with it that this procedure is correct, and thus the idea of discrimination will be marketed as something acceptable. However, in reality, the claim of accuracy and trust in it is nothing but a marketing matter in the first place and is subject to the principle of competition, and its purpose is to control the field of academic writing.31

Second Branch

Reasons for algorithmic discrimination

Artificial intelligence systems that rely on machine learning may exhibit some biased results due to race or gender, and thus many scientists have gone so far as to say, "We are at risk of inventing a generation of racist and sexist robots."(32) Although the bias in algorithms is caused by the users themselves, there are other reasons that lead to smart facility bias, including the following:

1- **Discrimination caused by biased data**Bias is a human trait, and therefore, artificial intelligence applications do not possess this trait automatically. Rather, they acquire it through machine learning from the baseline data they are fed. Thus, discrimination in algorithms is considered an inheritance from humans or from the designer or programmer of these algorithms. In reality, humans pass on their bias to machines despite knowing the real harm this bias inflicts on rights, indicating a serious flaw in the human structure and a dangerous flaw in the concept of human security.(33)Since artificial intelligence applications are generally designed by humans, and humans have a set of psychological biases, these biases will affect how these applications work, resulting in algorithms that only benefit a segment of users who resemble the designers of these systems.(34)Therefore, feeding machine learning models with data collected from the world can amplify pre-existing biases in the data, which may contain discrimination based on gender or race. The discrimination here lies in the type of data from which the learning is based. For example, if you search for a picture of a player on the Google search engine, most of the results will show

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[23] L. CHANCERELLE "The majority of discriminations in Europe contain artificial intelligence and large data," JDJ, nº 381, 2019, pp. 25-37, p. 27 et 28.
[24] L. CHANCERELLE, Op. cit. p. 28.
[25] Alex Gorman; There's no such thing as a neutral algorithm': the existential AI exhibition confronting Sydney, (1) the Guardian, Accessed 23-1-2026, On this website; https://www.theguardian.com/artanddesign/2023/aug/12/rafael-lozano-hemmers-atmospheric-memoryexhibition-powerhouse-museum-sydney-things-to-doweekend?utm_source=ground.news&utm_medium=referral.
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[27] Article 14 of the 2005 Constitution of the Republic of Iraq states that "Iraqis are equal"AThe law applies without discrimination based on sex, race, nationality, origin, color, religion, sect, belief, opinion, or economic and social status.
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[32] Dr. Andrew Hundt, Racist and Sexist Robots: Concerns about AI Profiling, a newspaper article published on the websitehttps://www.alaraby.com/news/ Visit date 24/1/2026, visit time 3:55 PM.
[33] Al-Mukhtar Salem Ahmed Al-Salem, In the Shadows of Letters, 1st EditionE-kutub ltd, London, 2019, p. 9.
[34] Dan Riley, "To overcome bias in artificial intelligence, we must first acknowledge its existence," research published on the website /https://fortuneraabia.com Visit date 2/2/2026 AD, Visit time: 3:00 PM.

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players playing football, while you won't find a player playing chess, for instance.[35]A prime example of data bias is what occurred in a certain country where specific algorithms were used to detect potholes and trenches for repair. These algorithms relied on data captured by citizens' smartphones. Discrimination ensued, with repairs benefiting wealthier areas where residents owned smartphones, while less affluent areas were deprived of them. This illustrates the fact that learning from data inevitably leads to algorithmic bias, as the algorithm's performance is influenced by the quality of the data it receives from humans. Consequently, it will learn to discriminate in all its forms.[36]This is because it is far from perfect, as it inherits bias from humans and not only reflects human discrimination but can also be amplified in ways that are difficult to detect and prevent.[37].

2- **Discrimination due to false generalization**Discrimination here occurs because of the generalizations of risk that are disseminated and fed into algorithms. This leads to algorithmic racism. For example, the generalization that most Black people are dangerous will result in algorithmic discrimination against innocent people simply because they are Black. Thus, this false generalization poses a significant threat to freedoms, as it places a specific group under constant suspicion and accusation.[38].

3- **Discrimination due to flawed algorithms:** The reason for this discrimination lies in a flaw within the algorithm itself, due to its design or biased data. If left to its own devices for intelligent decision-making, we are faced with decisions that favor one group over another. Algorithms amplify biases through feedback. An example of this is in the field of predictive justice, where the use of flawed algorithms contradicts the principle of equality before the law, which guarantees the accused the right to access all evidence and information. In reality, the public and the accused are often prevented from fully understanding the "formula of the future crime" that the algorithm might reveal, or even from knowing how the degree of risk is calculated.[39].

4- **Discrimination based on the selected sample:** One of the main reasons for discrimination in algorithms is related to sample selection. This stems from a lack of diversity in the sample, preventing it from becoming a truly representative model upon which the algorithm can be fully relied. Furthermore, the sample size is a significant factor. Since machine learning algorithms are fundamentally statistical tools, they suffer from problems due to variations in sample size. Algorithms may also encounter difficulties when the population is divided into different segments.[40].

We can classify the causes of algorithmic bias into two categories. The first is "cognitive biases," which are unconscious errors that affect decision-making, thus impacting the brain's information processing. Consequently, these biases are naturally transferred to the intelligent machine. The second is "lack of complete data." When data is incomplete or poor, we are faced with a biased artificial intelligence that results in harm to those who interact with it.[41]

From what has been mentioned above, the reasons for algorithmic bias can be summarized as being due to the two elements on which the work of smart facilities is based, namely algorithms and data. Anything that affects their neutrality leads to algorithmic discrimination, starting from the programmers to the users to the input data.

Second topic

The impact of algorithmic discrimination on the principle of equality and the stance of legislation on it: Undoubtedly, algorithmic discrimination constitutes a serious violation of the principle of equality, which is one of the principles that must be available in order for us to have public facilities that benefit everyone without exception, and for the quality of the service provided to be high and accurate. Therefore, the legislation of countries has differed in combating this discrimination, each according to the approach it has followed. Therefore, this topic will be divided into two sections. In the first, we will talk about the effect of algorithmic discrimination on the principle of equality, and in the second, we will talk about the position of legislations on this discrimination, as follows:

First requirement

The impact of algorithmic discrimination on violating the principle of equality: The primary objective of establishing public facilities is to satisfy the public needs of all citizens fairly and equally, especially those in similar legal positions. However, despite this, the state is not legally obligated to achieve actual equality for all; rather, it has a political obligation to find ways to narrow the gap between legal and actual equality.[42]The introduction of artificial intelligence applications into these facilities must fully consider this fundamental objective. If it is violated, we will face an undesirable digital development where equality disappears from its operation and it does not operate on that basis. Thus, the significant impact of algorithmic discrimination on the operation of smart facilities becomes apparent, as violating this principle will result in a set of considerations that can be divided into general and specific considerations as follows:

First branch

General considerations for violating the principle of equality : Public considerations are divided into political considerations and considerations related to freedom of expression and opinion. Equality in politics must guarantee equality without any discrimination in political rights such as voting, candidacy, and even holding high office, as equality must be the foundation upon which all rights are built and a pillar that ensures balance.[43]If we were to consider a program designed using artificial intelligence to create a voter database, and this program exhibited bias, it would exclude a specific group or category from being included in the database. This would disenfranchise them, resulting in elections where not all segments of the population participated. Therefore, political stances and party affiliations should have no influence or discriminatory effect on algorithms, as citizens have the right to hold any political belief or party affiliation, provided it complies with the prevailing law and does not threaten the safety and security of the country.[44]It is not permissible to deprive followers of a particular policy or supporters of a particular party opposed to the ruling regime, for example, from benefiting from the services of the facility in all its forms.[45]

Regarding freedom of expression and opinion, international conventions and treaties, as well as global constitutions, have affirmed the individual's right to express their opinion freely and without discrimination between citizens. This is emphasized in the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights. Therefore, smart systems that rely on algorithms must not discriminate between service users based on their opinions, nor should they prevent critics from accessing those services. It is impermissible to apply strictness to one group over another or to deprive them of the privileges granted by law.[46]Therefore, the smart facility must not discriminate between beneficiaries who express their opinions and those who do not, because everyone is equal.[47].

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Second Branch

Special considerations for violating the principle of equality: Discrimination based on religion and gender falls under the category of special considerations. One consequence of enshrining the principle of equality before public services is the citizen's feeling that their benefit from smart facilities is equal to that of other citizens, without discrimination based on religion or religious beliefs. This is because freedom of religion is a cornerstone of a democratic state, where every individual has the right to adopt any religion or belief they choose, provided it does not infringe upon other freedoms and religions. Therefore, the state has an obligation to ensure equality among all individuals, regardless of their religion. This obligation must be reflected in the algorithms used to provide services to all citizens. This principle is enshrined in all international charters and treaties and is almost always included in the constitutions of the world's nations.[48]
Regarding gender equality, it refers to equality between men and women in terms of the rights and responsibilities incumbent upon each. The issue of gender equality has evolved throughout history. Initially, there was clear discrimination between the sexes, but due to the development of the concept of freedoms and rights, and women's entry into many fields, this concept has changed. Women now have rights equal to men, and they share political rights with men, even in holding judicial positions. Charters and treaties have stipulated the necessity of equality between them.[49]This is what artificial intelligence applications should include in terms of equality and non-discrimination based on gender, since the existence of algorithmic discrimination due to special considerations (mentioned above) will result in algorithmic bias and thus strike at the heart of the principle of equality and make the smart facility unproductive and useless, and thus deviate from the goals for which it was designed, which is to provide service to the public.
Thus, it is observed that the issue of algorithmic discrimination affects the principle of equality in several ways, as follows:

- **practical and realistic impact:** Algorithmic discrimination leads to depriving a group of access to services, as it excludes a group who actually need services, thus harming minorities. In addition, it leads to an unfair distribution of the country's resources, as discrimination may lead to the marginalization of specific groups of the people from benefiting from these resources based on erroneous historical data that was fed to the algorithm.
- **Constitutional and legal impact:** Algorithmic discrimination results in a violation of the principle of equality and is therefore a clear violation of constitutional and legal texts, even if this discrimination is unintentional and without ulterior motives. Public entities bear responsibility for this, even if the discrimination occurs through modern digital technologies, as it is the state's duty to monitor and combat discriminatory activities.[50].
- **social impact:** The issue of algorithmic bias significantly impacts public trust in public institutions in particular and artificial intelligence technologies in general. This leads to rejection of modern technologies, thus placing the country (with algorithmic bias) at a technological disadvantage compared to countries where algorithms are unbiased. Furthermore, bias exacerbates social and economic disparities, contributing to increased conflict among different segments of the population.[51].

Second requirement

The legislative stance on algorithmic discrimination : Most legislations worldwide treat algorithmic discrimination as a direct threat to the principle of equality, thus infringing upon the rights and freedoms enshrined in their constitutions. However, the legal framework for combating this phenomenon varies among countries, depending on their digital development and the legislative framework of their respective legislative bodies. For example, Iraqi legislation does not specifically address algorithmic discrimination; rather, it addresses discrimination in general terms, lacking specific and detailed provisions regarding algorithmic discrimination. It is worth noting that discrimination is a crime punishable by law, as the constitution stipulates the necessity of equality among Iraqis.[52]This constitutional text prohibits any discrimination among Iraqis for any reason whatsoever. However, upon reviewing the legislation, no legislative text is observed that stipulates or regulates discrimination based on hierarchy. The same issue is observed with regard to Egyptian law, as the Egyptian constitution stipulates that "sovereignty belongs to the people alone, who will exercise and protect it. They are the source of powers and safeguard their national unity, which is based on the principles of equality, justice, and equal opportunities for all citizens, as outlined in the constitution."[53]It also stipulated that "the state is committed to achieving equal opportunities for all citizens without discrimination."[54]Furthermore, the Egyptian Penal Code criminalizes discrimination in all its forms. The difference between international legislations regarding the criminalization of discrimination stems from the general drawbacks of internationalizing criminal law. Among these drawbacks are the direct impact on national sovereignty and the globalization of criminalization. Internationalization also contributes to the potential for double standards in international positions.[55]The question also arises: can algorithmic discrimination be considered an internet crime?[56]This will be explained by discussing the position of EU and US legislation regarding algorithmic discrimination, as follows:

First branch

Combating algorithmic discrimination in accordance with EU laws: The law concerning the fight against algorithmic discrimination in the European Union is the "European Digital Services Act".Digital Services Act[57]This law represents a radical shift in regulating the internet and artificial intelligence applications in the European Union. Its aim is to make the internet safer and define user responsibility. This approach is pursued by imposing binding rules on giant technology and digitization companies. We will discuss the details of the above law regarding algorithmic discrimination through the following points:

1. Legislation This law was enacted based on a proposal submitted by the European Commission in 2020, after which the European Parliament reached an agreement to pass it. It entered into force on November 16, 2022, and was published in the Official Journal of the European Parliament on October 27, 2022. To make the Digital Services Act more effective in combating algorithmic discrimination, the European Centre for Algorithmic Transparency was established.The European Center for Algorithmic Transparency, which was granted technical powers for the purpose of monitoring and supervising the neutrality of algorithms for search engines and digital platforms, began its work in 2023.

2. The purpose of the law This law includes a set of rules aimed at imposing measures on major internet platforms and global social media platforms to do more to prevent the dissemination of illegal content and combat social risks in the services provided by these companies and platforms to EU countries, including risks resulting from their algorithms, such as algorithmic discrimination resulting from their work. The law aims to establish global standards for the management of platforms related to algorithmic services.[58]The law also aims to make digital platforms more transparent regarding digital management and how their algorithmic systems operate, and to hold these digital companies

[48] Ali Abdel Fattah Muhammad, Freedom of Political Practice for Public Employees - Restrictions and Guarantees - previous source, p. 232.
[49] Balba Rima, "Dedication of the Principle of Gender Parity in Light of the 2016 Constitutional Amendment," a research paper published in the Journal of In-Depth Legal Research, Faculty of Law, University Center, Algeria, Issue 12, 2017, p. 69.
[50] Saar Alon-Barkat, Algorithmic discriminations in public service provision: Understanding citizens' attribution of responsibility for human versus algorithmic discriminatory outcomes, Journal of Public Administration Research and Theory, 2025, 35, p 472.
[51] Xukang Wang, Algorithmic discriminations: examining its types and regulatory measures with emphasis on US legal practices, National Library of Medicine, USA, 2024.

[52] The text of Article 14 of the aforementioned 2005 Constitution of the Republic of Iraq.
[53] Text of Article 4 of the Egyptian Constitution of 2014, as amended.
[54] Text of Article 9 of the Egyptian Constitution of 2014, as amended.
[55] For more details, see: Dr. Kazem Abdullah Al-Shammari and Noor Karim Radhi, The Mechanisms of Internationalizing Criminal Policy in the Field of Criminalization, a research paper published in the Journal of Legal Sciences, University of Baghdad, College of Law, Volume 38, Issue 2, 2023, pp. 686-688.
[56] Internet crime is "an illegal act committed by a computer system connected to the Internet against another computer system connected to the same network", Dr. Jamal Ibrahim Al-Haidari, Electronic Crimes and Ways to Confront Them, a research paper published in the Journal of Legal Sciences, University of Baghdad, College of Law, Volume 19, Issue 2, 2004, p. 62.
[57] European Digital Services Regulation No. 2065/2022 is available at the following link:https://eur-lex.europa.eu/eli/reg/2022/2065/oj/eng .
[58] A guide to the Digital Services Act, the EU's new law to rein in Big Tech, article, Accessed this website https://algorithmwatch.org/en/dsa-explained/29/1/2026.

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accountable for any risks they pose to society, through the establishment of an independent and neutral digital system to which these platforms are subject at least once a year.[59].

3. Duties of algorithmic platforms The law mandates that all digital platforms and companies providing services through artificial intelligence applications must appoint an employee with the title of "Coordinator Services Dig" and obligated them to provide him with all the necessary capabilities to access data and systems in order to assess the companies' compliance with the rules imposed by law.[60]In addition, the law mandates identifying methods that prevent bias in algorithms and working to correct such biases if they occur. It also requires large companies to assess potential risks of discrimination and take preventive measures to prevent algorithmic discrimination by using diverse data and monitoring the operation of these algorithms. Furthermore, it obliges companies to report discrimination if it occurs, and this report must contain a full description of the bias, an analysis of the reasons that produced it, and solutions to it as well.

4. Risks classified by law The law identifies four systemic risks related to digital risks for which digital platforms are held accountable:

- The first category: - which is related to publishing illegal content, as stipulated in Article 80 of the law, such as publishing material on sexual abuse of children, or publishing hate speech, or any type of abuse.
- The second category: - which is related to attacks on fundamental rights such as human dignity, freedom of expression, and consumer rights, which may be violated by algorithms while performing their work, as stipulated in Article 81 of the law.
- The third category: Risks related to attacks on democracy, the electoral process, and public security, as stipulated in Article 82 of the law.
- Risks that have a negative impact on health and on minors and children, as stipulated in Article 83 of the law.

The law requires digital service providers to assess these risks, address them, and fix any technical flaws and systems that may exacerbate these risks. It is noted that the issue of algorithmic discrimination falls within the risks classified by the law, considering that algorithmic discrimination is an illegal act in the first place, and it undermines freedoms and wastes rights.

5. Penalties imposed by law The law imposes a fine on companies, digital platforms, and global search platforms that violate its provisions. This fine is estimated at 6% of the total annual sales, calculated based on the profits of the year preceding the violation.[61]Based on this, the Digital Services Act combats digital discrimination and imposes fines on algorithmic platforms that discriminate in their work.

By reviewing the above law and the penalty of the fine imposed on those who violate its provisions, it is noted that the law has established a new crime, which is the crime of algorithmic discrimination, as it considered it a fully-fledged crime, as it placed an entity responsible for imposing the fine, namely the executive arm of the Union, the European Commission. However, this crime cannot be considered a criminal crime, but rather falls under administrative violations, because for the fine to be considered a criminal, it must be issued by a competent judge, and this is not available with regard to the above fine. This does not reduce the seriousness of discrimination, nor does it reduce the fact that it is considered a violation and warrants punishment, because in combating algorithmic discrimination there is an interest for people and an establishment of the principle of equality.

Branch Two

Combating algorithmic discrimination in US legislation: With the expansion of work on artificial intelligence systems and algorithms in the United States, and the tremendous digital development achieved in this field, numerous legal challenges and concerns have inevitably arisen from the operation of these applications. One such challenge is the issue of algorithmic discrimination. A review of US legislation reveals no independent law specifically addressing algorithmic discrimination. However, the approach adopted in the United States is indirect and multi-layered, given that the principle of equality is a constitutional principle and the protection of equality before the law is guaranteed for all. Efforts to combat algorithmic discrimination have begun at two levels: federal and state. At the federal level, the most significant initiative concerning algorithmic discrimination is the "Algorithmic Accountability Act," first proposed by the US Congress in 2019. This bill was introduced weeks after lawsuits were filed against Meta, accusing the company of racial discrimination in housing. The court ruled that Meta must remove all biased algorithms.[62]The primary objective of this project is to direct the Federal Trade Commission to require entities that use or store personal information to conduct assessments of the impact of automated decision systems that utilize algorithms. Article 2 of the project defines the term "assessment of the impact of automated decision systems," outlining how automated decisions function and how to improve and protect them from bias. The term "automated decision systems" refers to algorithms, as there is no fundamental difference between the two terms except technically. The former is broader in scope, and the main distinction lies in the fact that algorithms are a set of instructions or steps, while the latter are systems that employ an algorithmic approach to make a specific decision.[63]Companies that use algorithms are required to conduct a comprehensive assessment of all their activities. If they find algorithmic discrimination based on race, gender, or religion, they are obligated to conduct a comprehensive remediation of this discrimination within a reasonable timeframe. This reasonable timeframe has not been specified because the important thing is to conduct the remediation and correction of this discrimination. One issue can be deduced from the draft law, which is that the responsibility for combating algorithmic discrimination lies with the companies through detecting and addressing it. The law no longer considers discrimination a criminal offense but rather an administrative violation, and the violation imposes administrative penalties by the Federal Trade Commission. Because the above bill failed to pass, it was proposed for the second time in the year (2022).[64]After it was updated and made more stringent, it compelled covered entities, including natural and legal persons, to publish any process related to a critical decision.[65]This has made its work more transparent regarding the processes related to algorithms, and the penalties imposed on violating companies may include a fine of up to (43,792) dollars for each violation committed.

At the state level, the states of (New York)[66]Washington[67]California[68]It is the pioneer regarding draft laws that deal with algorithmic discrimination and combating it, through the draft laws that were proposed in the years (2017 - 2019 - 2023), as the above draft laws included obligating companies to disclose information about the algorithmic systems that they rely on in order to be transparent and to show the steps they have taken to reduce algorithmic discrimination, as well as making personal data available to people that companies rely on in their work. Based on a review of the above draft laws, the following observations can be made:

- The name of the law, “Algorithmic Accountability,” does not mean stating the legal responsibility of algorithms, but rather making the work of algorithms more transparent for the purpose of combating racial discrimination, and this is evident from the common goal of all the legislations above.
- The projects did not classify algorithmic discrimination as a criminal offense, but rather worked to prohibit it and take appropriate measures to prevent and combat it, while imposing administrative penalties on companies that are slow to implement the project's provisions. This is not evidence that discrimination is legitimate, but rather confirmation that it is an incorrect practice and that ways must be taken to get rid of it.

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[59] Article 37 ;

[60] Article 40; “Data access and scrutiny: 1. Providers of very large online platforms or of very large online search engines shall provide the Digital Services Coordinator of establishment or the Commission, at their reasoned request and within a reasonable period specified in that request, access to data that are necessary to monitor and assess compliance with this Regulation.”

[61] Article 74; " Fines ; 1. In the decision referred to in Article 73, the Commission may impose on the provider of the very large online platform or of the very large online search engine concerned fines not exceeding 6% of its total worldwide annual turnover in the preceding financial year where it finds that the provider, intentionally or negligently ;….."

[62] Adi Robertson, What happens next in the housing discrimination case against Facebook? , 2019, On this website; https://www.theverge.com/2019/4/2/18286660/facebook-hud-housing-discrimination-case-section-230-legal-defense, Accessed 1/2/2026.

[63]Dr. Mahmoud Salama Al-Sharif, Criminalizing Algorithmic Bias - A Comparative Analytical Foundational Study - previous source, p. 860.

[64] Posted on the electronic linkhttps://www.wyden.senate.gov/imo/media/doc/2022-02-03%20Algorithmic%20Accountability%20of%202022%20Section-by-section%20(SxS).pdfDate of visit: 1/2/2026.

[65]Critical decisions refer to "any algorithmic decision that has a legal or material impact on the consumer's life in relation to access to the cost, conditions, or availability of any rights to ensure non-discrimination."

[66] Published on the following web link, date of visit: 1/2/2026https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=3137815&GUID=437A6A6D-62E1-47E2-9C42-461253F9C6D0 .

[67] Published on the following web link, date of visit: 1/2/2026https://lawfilesext.leg.wa.gov/biennium/2019-20/Pdf/Bills/House%20Bills/1655.pdf .

[68] Published on the following web link, date of visit: 1/2/2026https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240AB331.

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Conclusion:

In conclusion, the research led us to a set of conclusions and recommendations, as follows:

First: Conclusions:

1- Algorithmic discrimination is defined as "unfair discrimination or preference that appears in the results or decisions made by computer algorithms or artificial intelligence systems that differentiate between people based on certain factors such as gender, race, religion, social origin or any other characteristics."

2- The public's loss of confidence in the necessity of relying on artificial intelligence systems is due to ignorance of how artificial intelligence works, on the one hand, and the lack of transparency in its work and the decisions it issues, on the other.

3- Algorithmic discrimination is considered a type of administrative, non-criminal offense that is punishable administratively in most countries' laws around the world.

4- The algorithmic discrimination violates the principle of equality, which is one of the constitutional principles and one of the principles that must be available in the work of public facilities, as well as violating human rights and basic freedoms, especially the right to privacy and the right to political participation.

5- Algorithmic discrimination is considered the advanced form of discrimination due to the digital and technological development taking place in the world.

6- There is a significant deficiency in most Arab and international legislation regarding the issue of criminalizing algorithmic discrimination.

7- Like many other legislators, the Iraqi legislator did not regulate the issue of algorithmic discrimination within its legislation by a special text.

8- The European Digital Services Act is considered the best law in the matter of combating algorithmic discrimination, as it forced algorithmic company platforms to assess and address risks, including algorithmic discrimination, although the penalties imposed by the law are administrative and not criminal.

9- There is no criminal provision in American laws that classifies algorithmic discrimination as a crime; rather, most of the proposed projects combat discrimination, but without referring to it as a crime.

Second: Recommendations:

1. The Iraqi legislator should enact a law that deals with the topics of algorithms, digitization, and artificial intelligence applications in general, in order to regulate their legal work, in order to clarify their obligations and duties, including the issue of algorithmic discrimination and combating it as much as possible so that it does not violate constitutional principles.

2. Amend the Iraqi Penal Code No. 111 of 1969, as amended, and stipulate the criminalization of discriminatory practices and the imposition of an appropriate criminal penalty for the purpose of combating and reducing them.

3. Establishing an independent, competent executive management team to oversee algorithms, as well as to develop smart systems and instructions issued to regulate public utility activities.

4. Enacting legislation that requires developers and users of algorithms to periodically evaluate the principles of neutrality and transparency, and to announce and publish the results of the evaluation.

5. Introducing new courses to be taughtIn the faculties of law, the Faculty of Artificial Intelligence, and the computer departments in both the faculties of engineering and science, to graduate specialists in artificial intelligence and smart law.

6. Holding courses and seminars to raise public awareness about the dangers of algorithmic discrimination and conducting workshops to train specialists on how to detect and combat it to ensure digital development free from algorithmic discrimination.

7. We recommend that the international community work on agreements to combat algorithmic discrimination and establish global frameworks to reduce it, given that most algorithmic companies are global companies with operations in most countries of the world, so that the issue of regulating the fight against discrimination can be governed by unified rules.

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