MITIGATING GENDER DISCRIMINATION THROUGH GENDER MAINSTREAMING OF ARTIFICIAL INTELLIGENCE POLICIES IN NIGERIA

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Abstract

Artificial Intelligence is a simulation of human intelligence that has become very crucial to human operations. It operates with the same perspective as is prevalent or acceptable to humans. Consequently, AI is prone to errors due to the possible presence of inaccurate or incomplete data. With regards to gender issues, AI has been recognized as manifesting gender bias; for instance, when women use AI-powered systems to diagnose illnesses, they often receive inaccurate answers, because AI is unaware of symptoms that may present differently in women. The aim of this work is to interrogate the reasons behind the manifestations of AI bias and to proffer solutions towards curbing the same. The methodology used in this study is doctrinal, constituting the use and analysis of already existing literature. This work found that AI manifestation of gender bias is a direct result of already existing gender inequality and discrimination in the society and that gender mainstreaming into AI is crucial to mitigating gender inequality and discrimination against women. The work recommends solutions inclusive of a change in the mentality that approves of male domination and gender profiling; positive policies towards gender inclusivity in AI development, aimed at feeding the machine with data possessive of the feminine perspective and improved mechanism for enforcement.

Keywords: Artificial Intelligence, Gender Mainstreaming, Gender Bias, Mitigation of Gender Discriminatio

1.0 Introduction

The use of AI has influenced almost every field and industry, altering and improving the ways in which individuals and organizations live and interact. Despite its revolutionization and the good that it has done, technology should always be treated objectively and periodically reviewed. Unfortunately, the data that is used to train AI

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systems and the codes are sources of bias as developers have their inherent bias that is likely to pass onto algorithms if left unchecked.[2] Among the myriads of harmful biases that AI perpetuates, gender is one of the most insidious. This insidious prejudice perpetuated by AI in many fields has resulted in women being penalized simply because of their gender. It can influence hiring decisions in subtle ways, limiting opportunities for women or reinforcing stereotypes during the hiring process.[3] One of the basic reasons for AI bias is the disproportionate percentage of male developers. It is imperative, therefore, to adopt gender mainstreaming as a strategy to eliminate or significantly reduce the level of AI bias.

2.0 Gender Mainstreaming

Gender mainstreaming is an approach to policy-making that takes into account both women's and men's interests and concerns. The concept of gender mainstreaming was first introduced at the 1985 Nairobi World Conference on Women. It was established as a strategy in international gender equality policy through the Beijing Platform for Action and subsequently adopted as a tool to promote gender equality at all levels. In 1998, the Council of Europe defined gender mainstreaming as:

"The (re)organization, improvement, development and evaluation of policy processes, so that a gender equality perspective is incorporated in all policies at all levels and at all stages, by the actors normally involved in policy-making."[4] Gender mainstreaming means integrating a gender equality perspective at all stages and levels of policies, programmes and projects. Women and men have different needs and living conditions and circumstances, including unequal access to and control over power, resources, human rights and institutions, including the justice system. The situations of women and men also differ according to country, region, age, ethnic or social origin, or other factors. The aim of gender mainstreaming is to take into account these differences when designing, implementing and evaluating policies, programmes and projects, so that they benefit both women and men and not increase inequality but enhance gender equality.

[2] QH Jerlyn *et al, "*Gender Biases within Artificial Intelligence and ChatGPT: Evidence, Sources of Biases and Solutions" *Computers in Human Behaviour: Artificial Humans* (volume 4, May 2025, 100145). Available at <https://www.sciencedirect.com/science/article/pii/s2949882125000295> accessed 17/08/25.

[3] *Ibid.*

[4] Gender Equality, what is Gender Mainstreaming? https://www.coe.int>web>what-is-gender-mainstreaming

Gender mainstreaming aims to solve, sometimes hidden- gender inequalities. It is therefore a tool for achieving gender equality.[5]

Gender equality issues need to be mainstreamed at all stages of policy making or project programming, but it is especially important to take it into account at the planning stage, when the problems, concerns and needs of the beneficiaries are identified and the ways to address them are defined. Therefore, gender analysis and gender impact assessments are crucial tools for gender mainstreaming. These tools support the practical implementation of gender mainstreaming. Other factors are equally important to ensure proper gender mainstreaming, such as political will, commitment to and awareness of gender equality issues, knowledge, resources (including expertise) and availability of information. Gender mainstreaming is a responsibility of all actors and is relevant for all policy areas that deal with the needs of people and at all levels. Policy areas which at first sight do not seem relevant, might contain (hidden) aspects of gender inequality.[6]

2.1. **The Principles of Gender Mainstreaming**

The following principles hold true for all gender mainstreaming activities and implementation measures.

2.1.1 Gender Sensitive Language

Texts referring to or addressing both women and men must make women and men equally visible. This applies to, amongst others, forms, documents, telephone directories, texts on the intranet and the internet, advertising for events, folders, posters and films. Attention must also be paid to a gender-sensitive choice of images when preparing public relations material.

2.1.2 Gender-Specific Data Collection and Analysis

Data must be collected, analyzed and presented by gender. Social dimensions, such as age, ethnicity, income and level of education, should also be reflected where possible. Gender-specific analysis of the initial situation must provide the basis for all decisions.

2.1.3 **Equal Access to the Utilization of Services**

Services and products must be assessed as to their different effects on women and men. It is important to identify who uses the services (women or men or both)?, who are the

[5] Gender Equality, what is Gender Mainstreaming? https://www.coe.int>web>what-is-gender-mainstreaming
[6] *Ibid.*

clients (women or men or both)?, who are the target groups?, do women and men have different needs?, are the different circumstances of women and men taken into account when planning and designing services?, have all target groups access to the same sources of information?, who benefits most?, which group would suffer most if they could not use the services offered? Are the offices providing the service structurally gendered and barrier free?

2.1.4 Women and Men are Equally Involved in Decision Making

Measures and strategies geared towards a balanced gender ratio must be taken at all levels of decision making. This is also important when appointing working groups, project teams, commissions and advisory boards, as well as when organizing events, e.g. when selecting speakers.

Workplaces must be structurally gendered and barrier free where possible (e.g. gendered signage, sufficient lighting, avoiding potentially frightening situations as in poorly accessible basement archives, access without steps, social rooms for different occupations).[7]

3.0 **Artificial Intelligence**

Artificial Intelligence (AI) refers to the theory and development of computer systems capable of performing complex tasks that historically required human intelligence, such as recognizing speech, reasoning, making decisions, identifying patterns or solving problems.[8] It has also been described as a science and a set of computational technologies that are inspired by, but typically operate quite differently from, the ways people use their nervous systems and bodies to sense, learn, reason, and take action.[9]

Today, the term "AI" describes a wide range of technologies that power many of the services and goods we use every day – from apps that recommend tv shows to chatbots that provide customer support in real time.[10] AI works through algorithms.

[7] https://www.wien.gv.at/englisg/administration/gendermainstreaming/principles/five-principles.html

[8] Coursera, What is Artificial Intelligence? Definition, Uses, and Types, coursera.org/articles/what-is-artificial-intelligence. Accessed August 26, 2024.

[9] Peter Stone, R Brooks et al, "Artificial Intelligence and Life in 2030." One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel, Stanford University Stanford, CA. http://ai100.stanford.edu/2016-report. Accessed: August 26, 2024.

[10] Coursera, *supra*

An algorithm is a set of instructions to be followed in calculations. An AI algorithm is the programming that tells the computer how to learn to operate on its own.[11] While a general algorithm can be simple, AI algorithms are by nature more complex. AI algorithms work by taking in training data that helps the algorithm to learn. How that data is acquired and is labeled marks the key difference between different types of AI algorithms.

At the core level, an AI algorithm takes in training data (labeled or unlabeled, supplied by developers, or acquired by the program itself) and uses that information to learn and grow. Then it completes its tasks, using the training data as a basis. Some types of AI algorithms can be taught to learn on their own and take in new data to change and refine their process. others will need the intervention of a programmer in order to streamline.[12]

3.1 Benefits of AI to operating systems

Adapting artificial intelligence for Nigeria is not just about embracing cutting edge technology but tailoring it to meet local needs, cultures and challenges. AI has the potential to drive significant advancements across various sectors, but its true power is unleashed when it is localized to address specific Nigerian contexts. to address local needs. Localizing AI means incorporating local data, languages and cultural nuances and understanding the unique social-cultural landscape. This approach ensures that AI solutions are not only effective but also relevant and accessible to the people they aim to serve.

In Nigeria, the application of localized AI spans multiple industries, showcasing its versatility and impact. AI is revolutionizing how Nigerians access banking and financial products in financial services, using algorithms to provide personalized services, improve security, and enhance fraud detection. The healthcare sector will benefit from AI through diagnostic tools that consider local diseases and treatment methods, improving patient care and outcomes. In education, AI-powered platforms offer customized learning experiences that adapt to the needs of Nigerian students, bridging educational gaps. Agriculture sees AI optimizing farming techniques, predicting weather patterns, and managing resources more efficiently, which is crucial for a country where a large portion of the population is farming. Moreover, AI could transform government operations and election management through more efficient public service delivery and ensuring the integrity of electoral processes. In security, AI technologies can be

[11] Atificial Intelligence (AI) Algorithms: a Complete Overview, https://www.tableau .com>data-insights>ai>algorithms. Accessed August 31, 2024.
[12] ibid

deployed to tackle challenges unique to Nigeria, enhancing safety and peace. AI-driven insights and automation in customer service and operations management across industries will make it more streamlined and responsive. Additionally, AI's role in fraud detection could provide robust tools to combat financial crimes and ensure the integrity of transactions.[13] Most importantly, the use of AI can mitigate the plague of gender inequality in our society.

3.2 **AI and Gender Bias**

The world has a gender equality problem and AI mirrors the gender bias in our society. Although globally, more women are accessing the internet every year, in low income countries, only 20 percent are connected. The gender digital divide creates a data gap that is reflected in the gender bias in AI. Who creates the AI and what biases are built into AI data, can perpetuate, widen or reduce gender equality gaps.[14] A study analyzed 133 AI systems across different industries and found that about 44 per cent of them showed gender bias.[15]

3.2.1 Instances of AI Gender Bias

Since AI tools are fed with publicly available information, their results can sometimes perpetuate biases and discriminatory attitudes – particularly when it comes to gender. For instance, a user was experimenting with ChatGPT and prompted it to write a dialogue between a boy and a girl discussing their career options. ChatGPT had the girl say that she couldn't manage all the math in the engineering program.[16]

Beyza Doğuç, an artist from Ankara, Turkey, encountered gender bias in Generative AI when she was researching for a novel and prompted it to write a story about a doctor and a nurse. Generative AI creates new content (text, images, video, etc.) inspired by similar content and data that it was trained on, often in response to questions or prompts by a user. The AI made the doctor male and the nurse female. Doğuç continued to give it more prompts, and the AI always chose gender stereotypical roles for the characters and associated certain qualities and skills with male or female characters. When she asked the AI about the gender bias it exhibited, the AI explained it was because of the data it had been trained on and specifically, "word embedding" – which means the way certain words are encoded in machine learning to reflect their meaning and association with

[13] Adapting AI For Nigeria, aiinnigeria.com/adapting-ai-for-nigeria/

[14] UN Women, Artificial Intelligence and Gender Equality, https://www.unwomen.org/en/news-stories/explainer/2024/05/artificial -intelligence-and-gender-equality. Accessed August 26, 2024

[15] A study by Berkeley Haas Center for Equity, Gender and Leadership, quoted in UN Women

[16] testGorilla, How to keep AI's Gender Biases out of Hiring. TestGorilla .com

other words – it's how machines learn and work with human language. If the AI is trained on data that associates women and men with different and specific skills or interests, it will generate content reflecting that bias.[17]

A student from Rwanda who participated in the first coding camp organized under the African Girl Can Code Initiative in 2023, stated, "I have noticed that [AI] is mostly developed by men and trained on datasets that are primarily based on men," said Sangwa, who saw first-hand how that impacts women's experience with the technology. "When women use some AI-powered systems to diagnose illnesses, they often receive inaccurate answers, because the AI is not aware of symptoms that may present differently in women."[18]

According to the Global Gender Gap Report of 2023, there are only 30 per cent women currently working in AI. If current trends continue, AI-powered technology and services will continue lacking diverse gender and perspective, and that gap will result in lower quality of services, biased decisions about jobs, credit, health care and more.

4.0 AI Gender Regulation for Nigeria

There is currently no specific law that directly regulates AI in Nigeria. However, there have been efforts to draft a bill to that effect. Instances include:

The National Information Technology Development Agency (NITDA), which announced in 2022 that it was seeking the contributions of stakeholders to enable the development of the National Artificial Intelligence Policy (NAIP), the first draft of which was announced to have been completed in March 2023. In August 2023, the Federal Ministry of Communications, Innovation and Digital Economy (FMCIDE) released a white paper announcing steps to expand on the draft NAIP by developing a comprehensive National Artificial Intelligence Strategy.[19]

[17] UN Women

[18] Un women

[19] White & Case LLP, AI Global Regulatory Tracker – Nigeria, https://www.whitecase.com>insight-our-thinking>ai- accessed 26th August 2024.

4.1 Other Laws that Regulate AI

There are various laws that do not directly regulate AI but affect the development or use of AI in Nigeria. A non-exhaustive list of key examples include:

4.1.1The Cybercrimes (Prohibition, Prevention, etc.) Act, 2015.

The Act prohibits intentional and unauthorized interception of computer data or content by technical means. Section 23(1) makes it an offence for anyone to use any computer system or network for producing , offering or making available , distributing or transmitting or procuring child pornography. It is also an offence to possess child pornography in a computer system or in a computer storage medium. Gender is mentioned only in section 26 of the Act which makes it an offence for a person to distribute, through a computer system or network materials which approve of acts constituting crimes against humanity directed against any civilian population, with the knowledge of the potential of such material to cause serious bodily or mental injury. The persecution of an identifiable group on different grounds including gender was viewed as being a form of crime against humanity.

4.1.2 The Nigeria Data Protection Act, 2023. AI deployed in processing personal data will come within the scope of the Nigeria Data Protection Act, 2023 (NDPA), which has extra-territorial applicability and applies to entities outside Nigeria that process the personal data of Nigerian residents. *section 37* of the NDPA provides that a data subject shall not be subject to a decision based solely on automated processing of personal data, including profiling which produces legal or similar effect except where there is human intervention and the logic of the decision made is capable of being contested. Again section 29 of the NDPA requires entities to implement technical and organizational measures to protect personal information, this may involve making use of AI tools to protect personal data.

In summary, both the AI developer and entities or persons using AI to process personal data must ensure that they comply with the NDPA and other applicable laws in developing and using AI.

4.1.3 The Security and Exchange Commission (SEC) Rules on Robo-Advisory Services. The SEC Rules on Robo Advisory Services require a 'Robo Adviser' (i.e., a person who provides digital advisory services) to implement measures that will

effectively mitigate against fault and bias in algorithms.[20] Although there is no specific law against the offensive use of AI, certain laws, such as those mentioned above, may be applicable depending on the offence committed and the nature of the AI.[21] It is notable however, that none of these alternative AI regulations is gender based.

4.2 AI Regulation in the United States

Just like in Nigeria, existing US federal laws have limited application to AI. There is currently no comprehensive federal legislation or regulations in the US that regulate the development of AI or specifically prohibits or regulates their use. The US congress has been considering numerous AI bills covering a wide range of issues. Many of the proposed bills emphasize the development of voluntary guidelines and best practices for AI systems, reflecting a cautious approach to regulation aimed at fostering innovation without imposing strict mandates. There are however, more state laws, aimed at regulating AI.[22] Colorado, for instance, enacted the first comprehensive US AI legislation, the Colorado AI Act. The Act creates duties for developers and for those that deploy AI. Unlike certain state privacy laws, there is no revenue threshold for applicability – the Act applies to all developers and deployers of high-risk AI systems in Colorado. The Act focuses on automated decision-making systems and defines a covered high-risk AI system as one that "when deployed, makes, or is a substantial factor in making a consequential decision" that has a material legal or similarly significant effect on the provision or denial to any consumer of, or the cost or terms of: education, employment, essential government services, healthcare, housing, insurance, and legal services. There is a specific focus on bias and discrimination, and developer and deployers must use reasonable care to avoid discrimination via AI systems that make, or are a substantial factor in making a consequential decision in the above enumerated fields. The Act will go into effect in 2026.[23]

.5.0 Conclusion

AI is increasingly giving shape to the world we live in - our job prospects, our health-care outcomes, our access to benefits and services. The list of areas affected by AI is

[20] *Ibid.*
[21] *Ibid.*
[22] AI Watch: Global Regulatory Tracker – United States, available at http://www.whitecase.com/insight-our-thinking/ai-watch-global -regulatory-tracker-united-states accessed 25/08/25
[23] *ibid*

long and is growing. Unless we learn how to harness the potential of AI to bridge inequalities - including gender inequality - and prevent discrimination, AI can and will become a force that entrenches, perpetuates and amplifies inequality**.** A recent Council of Europe study has pointed to shortcomings in existing mechanisms to prevent discrimination from arising in the development of algorithmic systems. It sets out ways to leverage technology to promote equality and the need for human rights impact assessments throughout the AI lifecycle**.**[24]

Who develops AI, and what kind of data it is trained on, has gender implications for AI-powered solutions. In the current AI architecture, benefits and risks are not equitably distributed, with power concentrated in the hands of a few corporations, states and individuals, who control talent, data and computer resources. There is also no mechanism to look at broader considerations, like new forms of social vulnerability generated by AI, the disruption of industries and labour markets, the propensity for emerging technology to be used as a tool of oppression, the sustainability of the AI supply chain, or the impact of AI on future generations. In a rapidly advancing AI industry, the lack of gender perspectives, data, and decision-making can perpetuate profound inequality for years to come.

6.0 Recommendations

There is need for a specific and compact regulatory policy to regulate the use of AI technology and foster inclusivity in AI development. Addressing gender bias in AI starts with prioritizing gender equality as a goal, as AI systems are conceptualized and built. This includes providing data that is representative of diverse gender experiences, and reshaping the teams developing AI to make them more diverse and inclusive. There is a critical need for drawing upon diverse fields of expertise when developing AI, including gender expertise, so that machine learning systems can serve us better and support the drive for a more equal society. There is also for a continued gender equality campaign and enlightenment geared towards changing the mentality that approves of male domination and gender profiling

[24] Artificial Intelligence – Bridging the Equality Gap: Statement by Secretary General Marija Pejcinovic Buric ahead of the International Women's day, available at <https:// www.coe.int/en/web/genderequality/-/artificial-intelligence-bridging-the-equality-gap> accessed 25/08/25