Africa's Digital Transformation Agenda & the Role of Women

Africa Digital Rights Hub

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Acknowledgement

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Introduction

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This research was conducted as part of the aspiration of an equal future for all. Women, not just in Africa but across the globe, are the caregivers, they nurture and raise generations, and hold and transfer intimate knowledge from one generation to the other. Women are basically the guardians of any community. In addition, women form the majority of the population. Specifically, in Africa, 50% of the population are women. Nonetheless, women are less involved in socio-political and economic decision-making. This research was conducted in an effort to emancipate women and support policy and structural change towards women's inclusion in decision-making.

Gender inequality is not a new phenomenon. Efforts to overcome gender inequality are ongoing – In Africa and beyond. Digital transformation presents an opportunity to not only close the gender inequality gap, but also to prevent the widening of the gender gap in the digital economy. In this light, we conducted this research to assess the role of women in the digital transformation in Africa. Our objective is to, first, identify the status of women's inclusion and participation in the digital transformation process; second, identify challenges and potential blocks women face in participating in the digital transformation process; and third, propose measure to address those challenges and blocks so that women can equally participate in the digital transformation.

It gives me so much pleasure to present this report with our findings in the hope that it provides ground work for bridging the gender digital divide in Africa.

Teki Akuetteh
Executive Director – Africa Digital Rights Hub

Preface

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This report provides an assessment of the current gender digital divide in Africa – as a continent – and within specific African nations. To assess specific African nations, the research used five countries as case studies, namely Kenya, South Africa, Ghana, Egypt and Benin. The assessment made and conclusions are limited to data collected through a review and analysis of legal and regulatory strategies, and policy documents, as well as existing literature.

We, at the Africa Digital Rights Hub (ADRH), are thrilled to present the result of this research. The research, thanks to the Bill and Melinda Gates Foundation, enabled us to contribute to the world-wide efforts in closing the gender digital divide and support women's inclusion in the digital transformation. By identifying gaps (both policy and practical), as well as challenges faced by women and girls, and suggesting solutions for these, we are supporting governments and regional organisations in understanding the nature of the problem and the possible approaches to address it.

By assessing digital transformation strategies, policies and approaches of the regions and different countries (the selected case studies), we are able to show the best and worst approaches in terms of digital transformation – in general – and women's inclusion, specifically. By presenting this report, the ADRH hopes to bring positive policy changes in support of women's involvement in digital transformation and sustainable inclusion in the digital economy.

Dr. Patricia Boshe
Head of Research and Publications – Africa Digital Rights Hub

Executive Summary

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In Africa, women constitute a little over 50% of the rest of the population, i.e men and children. In addition, the world's majority of poor women are found in Africa - in the informal urban and rural settings. These women live in extreme poverty, have low level of education and income, and lack access to basic facilities. These aspects place women in a vulnerable position in relation to the digital transformation process. They predispose women to further exclusion from access to basic needs, which are now provided in a digital form or accessible within the digital realm. In fact, the gender digital divide in sub-Saharan Africa is recorded to be increasing instead of decreasing. This is despite several initiatives by the AU and individual states and private organisations, as well as international partners, to develop programmes to train girls (STEM education) and build women's capacity and skills.

Beyond training and capacity building, the African Union (AU), as the regional organisation, has rolled out several strategic plans to support the closure of the gender digital divide. The AU's Agenda 2063, the Data Policy Framework (2022) and the AU's Digital Transformation Strategy (2020-2030) are some of the recent and core initiatives to that end. All these documents recognise not only the role of digital transformation in promoting integration, inclusive economic growth and job creation, and eradicating poverty, but also recognise it as a tool towards closing the digital divide. They also emphasise the need to have women's participation in the digital transformation process. As the majority population, women's role in digital transformation in Africa cannot simply be ignored.

Countries in Africa have also taken initiatives towards digital transformation. In this report, four countries were selected as case studies. The research assessed the gender inclusiveness of their digital transformation strategies, policies and approaches. The research revealed that some strategies and policies acknowledge the existing gender digital divide and that strategies are put in place to address the core causes (For example, in Ghana and South Africa). In Egypt, policies and strategies indicate the need to have deliberate efforts to include women in and empower them towards digital transformation. Unfortunately, their implementation does not reveal deliberate efforts to specifically empower women and involve them in the digital transformation. On the lowest end is Kenya. Its digital-related policies neither mention the existing digital divide in the country, nor deliberate on empowering women's involvement in digital transformation. In fact, the assessed policy has zero mentioning of 'women' or 'girls'.

In terms of the overall strategic approach to digital transformation, the research identified different approaches. Egypt took a more centralised approach which seemed to yield more

positive results – in terms of process management, monitoring and assessment of policy implementation. In Ghana, despite the existence of the Ministry of Communications and Digitalisation, digital transformation is done in a more decentralised manner. There is a multiplicity of ICT (sectoral) policies. It would seem that the government chose to remain as an organ to set digitalisation standards and let individual sectors develop specific policies based on the set standards.

Given the different approaches, the report sees the need for countries to identify 'best practices' in both women's inclusion and the overall digital transformation approaches. For the latter, we are convinced that a centralised approach (as taken by the government of Egypt) is more viable. In relation to women's inclusion, we believe in a holistic approach involving strategic policy development and implementation on the one hand, and practical support, on the other hand. The former aspect is two tiered. The first tier requires women's involvement in policy dialogue, development and implementation, and the second tier involves structural changes by involving women in political decisions and institutional leadership. The latter aspect requires deliberate efforts to empower women and girls in order to support their digital inclusion. This entails digital and STEM education, promoting engendered access to and usage of ICTs, and online protection of women and girls.

Acronyms and Abbreviations

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ABSU-CEP	Beninese Agency for Universal Electronic Communications and Postal Services
ADFI	Africa Digital Financial Inclusion Facility
ADFI	African Development Bank's Africa Digital Financial Inclusion Facility
ADN	Digital Development Agency
AFAWA	African Development Bank's Affirmative Finance Action for Women in Africa Initiative
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AGRI-TECH	Agricultural Technology
AI	Artificial Intelligence
ANIP	National Agency for the Identification of Persons
ANSSI	National Information Systems Security Agency
APA	Africa Policy Accelerator
APDP	Personal Data Protection Authority
ARCEP	Electronic Communications, Postal and Print Media Distribution Regulatory Authority
ASIN	Agency of Digital Technologies and Information Systems
ASSI	Information Services and Systems Agency
AU	African Union
AUFIs	African Union Financial Institutions
BMGF	Bill and Melinda Gates Foundation
BPO	Business Process Outsourcing
CBE	Central Bank of Egypt
CBK	Central Bank of Kenya
CEO	Chief Executive Officer
CESA	Continental Education Strategy for Africa
CFA	Financial Community of Africa
CPA	Consumer Protection Agency
DE4A	Digital Economy for Africa Initiative
DFI	Digital Financial Inclusion
DFS	Digital Financial Services
DFS	Digital Financial Services
DPS	Digital Sector Policy Document
DSM	Digital Single Market
DTA	Digital Transformation with Africa

DTS	Digital Transformation Strategy
DWYPD	Department of Women, Youth and Persons with Disabilities
ECA	Egyptian Competition Authority
ECOWAS	Economic Community of West African States
EGDI	E-Government Development Index
ESCC	Egyptian Supreme Cybersecurity Council
FINTECH	Financial Technology
FMP	Free Movement of Persons
G7	Canada, France, Germany, Italy, Japan, the United Kingdom and the United States
GDP	Gross Domestic Product
GNI	Gross National Income
GSMA	Global System for Mobile Communications
HCD	Human-Centred Design
ICT	Information and Communications Technology
ICT4D	ICT for Accelerated Development
ID	Identity Document
ID4D	World Bank's Identification for Development Initiative
IT	Information Technology
J-PAL	Abdul Latif Jameel Poverty Action Lab
MCC	Millennium Challenge Corporation
MCIT	Ministry of Communications and Information Technology
MND	Ministry of Digital Technology and Digitalisation
NCA	National Communications Authority
NRI	Global Network Readiness Index
NTRA	National Telecommunications Regulatory Authority
Ph.D	Doctor of Philosophy
PIDA	Programme for Infrastructure Development in Africa
PRIDA	Policy and Regulatory Initiative for Digital Africa
R&D	Research and Development
SAATM	Single African Air Transport Market
SCMR	Supreme Council for Media Regulation
SDGs	Sustainable Development Goals
SEDA	Small Enterprise Development Agency
SMEs	Small and Medium-Sized Enterprises
STEM	Science, Technology, Engineering and Mathematics
SWOT	strengths, weaknesses, opportunities, threats
TBC	To Be Confirmed
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States
USAID	United States Agency for International Development
WAMA	West Africa Monetary Agency
We-Fi	Women Entrepreneur Finance Initiative
YDFS	Y'ello Digital Financial Services

Contents

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1. Background

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Digital transformation is the integration of technology into our daily life – including, but not limited to, the way we communicate, conduct business and educate - and into the civic rights participation. Digital transformation goes beyond 'importing' or 'adopting' digital tools. In fact, a crucial part of digital transformation entails the ability to effectively use or apply digital tools to improve one's life. The world is experiencing digital disruption where the ability to integrate digital tools into one's life determines their continued participation in their specific communities. The use of technology is no longer a luxury but rather a necessity. Experiences of the physical world have been migrated to the online/digital world. According to DataReportal, an average person spends "40 percent of their waking life online".[1]

In Africa, digital transformation is on the rise.[2] There are approximately 500 million+ internet users[3] and 330 million+ e-commerce consumers out of its almost 1.4 billion people.[4] This presents endless opportunities for societies and economies[5] in their public sector in terms of transparency, delivery and accountability. Some of the major industries are revising their ways of conducting business, including the information and communications technology (ICT), financial technology (FinTech), e-commerce, Agri-tech and health industries.[6]

There are some digital related processes that are mistaken as being digital transformation. Processes such as digitisation, i.e the process of converting paper-based information into a digital form, do not qualify as 'digital transformation'. Digital transformation is a process that is grounded in policy strategy and which also requires active changes from participants, i.e.

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1   S. Kemp, "Digital 2022: Time Spent Using Connected Tech Continues to Rise" 26 January 2022 DataReportal https://datareportal.com/reports/digital-2022-time-spent-with-connected-tech accessed on 16.04.2024

2   European Investment Bank, "The rise of Africa's digital economy" (February 2021) 9 https://www.eib.org/en/publications/the-rise-of-africa-s-digital-economy; D. Porfido & Dr. Z. Mark, "Women and the Digital Economy in Africa" (October 2020) 1 Policy Brief, Harvard University https://africa.harvard.edu/files/african-studies/files/women_entrepreneurship_in_africa_policy_brief_-_digital_economy_final.pdf

3   Statista, "Internet usage in Africa - statistics & facts" https://www.statista.com/topics/9813/internet-usage-in-africa/#topicOverview

4   Accenture, "Tuning into Africa's digital transformation" (26 February 2022) https://www.accenture.com/us-en/insights/software-platforms/africa-digital-transformation

5   OECD, "Bridging the Digital Gender Divide" (2018) 22 https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf

6   D. Porfido & Dr. Z. Mark, "Women and the Digital Economy in Africa" (October 2020) 1 Policy Brief, Harvard University https://africa.harvard.edu/files/african-studies/files/women_entrepreneurship_in_africa_policy_brief_-_digital_economy_final.pdf

people. These changes range from adopting and understanding how to navigate digital tools, to change of mindset and cultural adjustments. These changes require a (policy) strategy to guide people. Most importantly, they must be able to address peculiarities in a community that might affect or be affected by digital transformation. These could be people such as vulnerable groups, the economy, deployed technology, language and natural resources such as electricity.

2. Methodology

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2.1 Research Approach

This report is a result of qualitative desk research. Specifically, it concerns the review and assessment of strategies, policies and approaches towards digital transformation in Africa and within individual countries selected as case studies for this research. In addition, a review of existing literature was also conducted to provide the research with necessary information for the assessment.

The report is mainly descriptive, identifying patterns, practices, legal and policy landscapes related to digital transformation, and promoting a digital economy. The assessment was done with women as a central focus with the aim of identifying aspects affecting their inclusion in or exclusion from the digital transformation process.

2.2 Research Questions

This report and the thought leadership project assess the key components of digital policies and frameworks, including the DTSA, and their impact on women on the continent. The research was guided by the following questions:

1. What are the barriers to digital transformation encountered by African women?

2. How inclusive are the AU digital policy interventions in addressing digital transformation challenges faced by women in Africa;

3. How are policy interventions being implemented (if at all) at country levels, and do they take cognisance of challenges faced by women?

4. Are there policy interventions, at the country level, being implemented/undertaken to include women in the digital single market agenda?

2.3 Objectives

The study provides an overview of the states and challenges facing women's participation in digital transformation in Africa and within the selected case study countries. It could be used as a foundation for other related studies aiming to provide actual support to women in order to enable their digital inclusion and participation in the digital transformation. It may also inform about the need for policy changes to feature objectives and strategies towards women's inclusion, and support the closure of the gender digital divide.

3. Digital Transformation and Women in Africa

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Digital transformation in Africa shows lack of inclusive participation of women.[7] [8] This has led to [9] the African Union's Digital Transformation Strategy for Africa (2020-2030) (DTSA) which acknowledges the existence of "a gender gap in mobile access and usage" as being one of the threats to digital transformation in [10] The AU also warns that, "Failure to address this [gender gap] could result in greater inequality for women across the continent[11]

Some of the core causes of the digital gender divide are barriers to accessing digital infrastructure, affordability, (lack of) education and relevant skills, and lack of technological literacy. Worse still are the inherent biases and socio-cultural norms that lead to gender-based digital exclusion.[12]

Luckily, the DTSA has set a goal of digital inclusion for every African by 2030. However, in order to achieve this goal, efforts must be made to identify and resolve barriers for African women and girls participating in the digital transformation.[13] In this light, the DTSA urges policy makers to give special attention to women's needs and suggests the "establishment of a platform for dialogue and social cohesion" involving women, and the promotion of "online cultural diversity to ensure that every person participates fully in society."[14]

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7   D. Porfido & Dr. Z. Mark, "Women and the Digital Economy in Africa" (October 2020) 1 _Policy Brief, Harvard University_ https://africa.harvard.edu/files/african-studies/files/women_entrepreneurship_in_africa_policy_brief_-_digital_economy_final.pdf

8   OECD, "Bridging the Digital Gender Divide" (2018) 22 https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf

9   This is a term used to refer to these types of gender differences in resources and capabilities concerned with accessing and effectively utilising ICTs within and between countries, regions, sectors and socio-economic groups. Cf. UN Women, "Gender Equality and Empowerment of Women through ICT" (2005) _UN Division for the Advancement of Women, Department of Economic and Social Affairs of the United Nations Secretariat_, www.un.org/womenwatch/daw/public/w2000-09.05-ict-e.pdf.

10   African Union Commission, The African Union's Digital Transformation Strategy for Africa (2020-2030), _African Union_ Executive Council Decisions related to ICT1, ECA Resolution (812 –XXXI) p. 3.

11   Ibid.

12   OECD, "Bridging the Digital Gender Divide" (2018) 22 https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf

13   D. Porfido & Dr. Z. Mark, "Women and the Digital Economy in Africa" (October 2020) 1 _Policy Brief, Harvard University_ https://africa.harvard.edu/files/african-studies/files/women_entrepreneurship_in_africa_policy_brief_-_digital_economy_final.pdf

14   African Union Commission, The African Union's Digital Transformation Strategy for Africa (2020-2030), _African Union_ Executive Council Decisions related to ICT1, ECA Resolution (812 –XXXI) p. 8.

3.1. Africa's Digital Transformation Strategy: The Role of Women

Digital transformation continues to play a vital role in Africa's economic growth. It is also considered as pivotal in poverty alleviation and a major component in improving people's lives. This is in addition to contributing to the AU's Agenda 2063.[15] Yet, there are major concerns that digital transformation "poses the risk of perpetuating existing patterns of gender inequality".[16] And although digital transformation provides unprecedented opportunities to break trends and reach marginalised social groups such as women[17], deliberate and policy actions are needed to stop this potential. To use the words from the UN Women report, this "requires transformative shifts, integrated approaches and new solutions. Based on current trajectories, existing interventions will not suffice to achieve a Planet 50-50 by 2030." Innovative approaches that disrupt "business as usual" are central.[18] Note that the AU's Agenda 2030 also has a target to ensure that every person participates fully in the information society.

3.2. Why Insisting on Women in Africa?

Women in Africa form more than 50% of the whole population. Nevertheless, only 25% of women in Sub-Sahara Africa have access to internet connectivity.[19] This is a global phenomenon. According to the UN Women report, among the 3.7 billion people with no access to the internet, over 50% are women.[20] Unfortunately, Africa, unlike other parts of the world, is struggling to close the digital gender divide. In fact, the divide is instead growing.[21] The need to close the digital gender divide is inevitable if Africa wants to reap the benefits of the digital economy. First, women represent the majority of the population, hence the overall work force. Second, women possess unique knowledge that is crucial to building up the economy and informing about trade and economic policy strategies. Basically, women, especially in the rural areas in Africa, are "creators, custodians and transmitters of traditional knowledge"[22]. Knowledge that is crucial to socio-political and economic development, and informs about governance structures.

Despite their roles in their respective communities, women are the by-standers in digital transformation. They are under-represented and marginalised in digitalisation, and as tech entrepreneurs.[23] Consequently, this affects communities' ability to reap substantial benefits of the digital economy. Women's inclusion would not only mean giving women access and

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15   G7, "Digital Transformation in Africa" 2019, annex-2-digital-transformation-in-africa.pdf (europa.eu) accessed on 17.04.2024

16   Wajcman J., et al., "The Digital Revolution: Implications for Gender Equality and Women's Rights 25 Years after Beijing, Discussion Paper No. 36, August 2020, UN Women 2020.

17   UN Women, "Making Innovation and Technology Work for Women: UN Women's Work in Innovation and Technology", (September 2017), New York.

18   Ibid.

19   Gutierrez D., Why_women_are_key_to_Africa's_digital_transformation.pdf (vodacom.com) accessed on 17.04.2024.

20   UN Women, Addressing the digital gender divide in Africa through the African Girls Can Code Initiative | UN Women – Headquarters, (8 October 2021) accessed on 17.04.2024.

21   Amanzima Mazibuko A., "Africa's Digital Gender Divide", ACCORD - Conflict & Resilience Monitor (May 31, 2023), Africa's Digital Gender Divide – ACCORD, accessed on 17.04.2024. Cf. The Digital Revolution: Implications for Gender Equality and Women's Rights 25 Years after Beijing, p.3

22   Okeyo N. O., 'Role of Epistemic Data Justice in Data Governance for Rural Women in Africa', March 22, 2024

23   The Digital Revolution: Implications for Gender Equality and Women's Rights 25 Years after Beijing, p.3

opportunities to tap into the benefits which digital economy brings, but also improve their civic participation. One crucial example of women's exclusion concerns the financial sector. Approximately 60% of the 400 million people that cannot access digital financial services in Africa are women.[24] As a result, women who own small and medium-sized enterprises (SMEs) are unable take advantage of digital payment applications due to lack of access to mobile phones or digital banking. Women are also omitted from digital jobs, networks and business associations that link job seekers to the tech industry.[25] Women's participation and inclusion in digital transformation would provide an opportunity to bridge the conventional gender gap and it would be a step towards overcoming conventional "cultural and mobility barriers they face offline".[26]

Factors Affecting Women's Participation in Digital Transformation

There are many factors affecting women's participation in digital transformation and inclusion in the digital economy. The most prominent ones include lack of access to digital infrastructure, lack of (equal) access to funding/financial services, existing gender gaps in the physical world and exclusion from training. Of course, several initiatives are and have been implemented to address some of these challenges. Such initiatives include the African Girls Can Code Initiative (AGCCI), an initiative of UN Women, the African Union Commission (AUC) and the International Telecommunication Unit (ITU) to impart digital skills to girls. Training is the most 'popular' approach taken to address digital divide. Private sector organisations such as Vodafone with 'Code Like a Girl initiative', and other initiatives by international partners such as the 'eSkills4Girls initiative', introduced during the Germany G20 Presidency, are some of the examples. We, however, see the need to go beyond training and digital capacity building – if we are to close the gender digital divide. A holistic approach that looks beyond access issues (skills, infrastructure and affordability). Strategic policy direction and implementation that empowers women beyond 'access' issues. There is a need to pierce the veil and look at power dynamics affecting the use of technology by women, and the issues with policy development and (resistance in) policy implementation.

Socio-cultural reasons are also a significant barrier to digital transformation for women in Africa. In North Africa, particularly Egypt, one-fifth of women believe that the internet is not appropriate for them because of some cultural and religious reasons. This leads to families creating barriers to internet access that can vary from lack of support to absolute prohibition or discouragement.[27] Safety concerns are also a major barrier as they are one of the main reasons why families oppose the ownership of mobile phones (smartphones) and the use of the internet for women and girls. This is mainly due to exposure to online harassment,[28]

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24   Bill & Melinda Gates Foundation "Women's Digital Financial Inclusion in Africa" (July 2019) *G7 Partnership* https://docs.gatesfoundation.org/Documents/WomensDigitalFinancialInclusioninAfrica_English.pdf

25   D. Porfido & Dr. Z. Mark, "Women and the Digital Economy in Africa" (October 2020) 3 *Policy Brief, Harvard University* https://africa.harvard.edu/files/african-studies/files/women_entrepreneurship_in_africa_policy_brief_-_digital_economy_final.pdf

26   The Digital Revolution: Implications for Gender Equality and Women's Rights 25 Years after Beijing, p.3

27   OECD, "Bridging the Digital Gender Divide" (2018) 22 https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf

28   GSMA, "Connected Women 2015: Bridging the Gender Gap: Mobile Access and Usage in Low- and Middle-income Countries", (2015a) www.gsma.com/mobilefordevelopment/wpcontent/uploads/2016/02/ConnectedWomen-Gender-Gap.pdf .

cyberstalking or even sexual trafficking.[29] Basically, there is a lack of trust on the internet[30], and girls and women are seen as more vulnerable on the internet.

The ability of women in the rural areas in accessing and using digital technologies is directly and indirectly affected by the market related factors. It is less economically profitable for service and internet providers to invest and install infrastructures like cell phone towers and broadband in the rural areas which are usually scarcely populated.[31] Yet, 70% to 80% of women in Africa live in rural areas.[32] There is a need for policies and digital strategies to have a strategic outlook on women, especially in rural areas. Otherwise, a huge portion of economic contributors will be left behind. We advocate for the African digital transformation where no one is left behind.

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29   OECD, "Bridging the Digital Gender Divide" (2018) 22 https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf

30   D. Fallows, "How Women and Men Use the Internet" (28th December 2005) *Pew Internet and American Life Project*, www.pewinternet.org/2005/12/28/how-women-and-men-use-the-internet/

31   UN Statistics "Table 7: Population by age, sex and urban/rural residence: latest available year, 2007- 2016" (2016), *in Demographic Yearbook – 2016 (database), United Nations Statistics Division*, https://unstats.un.org/unsd/demographic-social/products/dyb/index.cshtml

32   Okeyo N.O., Role of Epistemic Data Justice in Data Governance for Rural Women in Africa - Centre for Intellectual Property and Information Technology law (strathmore.edu), accessed on 17.04.2024.

4. Women's Inclusion in Digital Transformation: African Union Policy Intervention

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As far back as the year 2004, the AU had already noticed growth in the gender digital divide. The Solemn Declaration on Gender Equality in Africa (SDGEA) not only recognised the gender digital divide, but also the opportunity which digital technologies bring in bridging that divide. This Declaration invoked member states to sign it, ratify it and take action to remedy gender inequality. Despite having 43 ratifications and 9 signatures, its implementation is stalling. Furthermore, some states limit its application through reservation clauses. The SDGEA is not the only initiative launched by the AU. In 2009, the AU came up with a gender policy to support implementation of the SDGEA and support gender mainstreaming in institutional and policy decision-making.

The Gender Policy (GP) acknowledges the presence of gender mainstreaming initiatives within Regional Economic Communities (RECs) and respective member states. The GP mentions the existence of Gender Units (at REC levels) and 'elaborated Gender Policies, Gender Declarations, Action Plans and Frameworks, and gender analysis tools which guide gender mainstreaming, programming and budgeting' within member states.[33] According to the GP, all these initiatives are hampered by limited funds to enable actual implementation.[34] The GP's priorities towards gender equality are general and not specifically in relation to digital transformation. Although there is a mention, on page 11, of the need to advocate for 'equal access to ICT infrastructure and applications, global alliance for IT development and building a sustainable e-future', the central focus is to improve women's participation in decision-making and women's political empowerment.

A strategy to implement the two initiatives was laid down in the AU Strategy for Gender Equality and Women's Empowerment (GEWE) 2018–2028. The GEWE project is built upon lessons learnt from implementing the GP. Like the GP, the GEWE project's central objective of the strategy is to empower women and girls to equally and fully participate in and contribute

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33   African Union, Gender Policy, REV 2/Feb 10, 2009, at p. 5.

34   Ibid.

to socio-economic and political activities. Unlike the GP, the GEWE project sets specific 'digital empowerment' strategies for women and girls.

- Training and empowerment - Access to quality education to enable women and girls to gain necessary digital skills and capacities, and giving women control over productive resources. According to the GREWE project, this can be possible through

    a. Maximising economic outcomes, and
    b. Creating e-tech dividends.

- Re-enforcing human dignity, security and resilience towards gender equality

- Reviewing legal and institutional frameworks to address actual challenges. The GEWE project recommends that member states harmonise laws and policies with actual situations on the ground. The objective is to close the differential gap between challenges to gender equality 'in the books' and 'on the ground'.

- Women's representation – the GEWE project expresses the crucial need for women's inclusion in policy development and leadership. The logic is to have women's voices and needs heard from the women themselves and to have women presence in decision-making processes.

The AU made a commitment through the GEWE project to:
i. Endorse digital solutions by member states to promote gender equality and women's empowerment,
ii. Endorse platforms developed to support gender equality and empower women,
iii. Advocate for tech firms and financial institutions to provide funds for start-ups and innovation hubs that promote engendered solutions, and
iv. Support women's equal participation in technology development.

To support GEWE realisation, the AU established the Women, Gender, Development and Youth Directorate (WGDY). The WGDY's role is to oversee the implementation of GEWE by developing and coordinating solutions and programmes towards gender equality and youth empowerment, and supporting policy harmonisation towards that purpose. The WGDY has been collaborating with regional and international partners to create funds and scholarships to promote tech innovation and capacity building for African youths. Some of these programmes include the Digital Innovation Fellowship Programme, and the Civic Tech Fund. However, the programmes are not exclusively for women and girls.

In 2020[35], the AU adopted the Digital Transformation Strategy for Africa (2020-2030) (DTSA). The DTSA is the compass towards Africa's digital transformation into a Digital Single Market (DSM). The African Union Commission (AUC) envisions that the implementation of the DTSA would put Africa on an advantageous level in the global digital economy by 2030.[36]

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35   African Union, "The Digital Transformation Strategy for Africa (2020-2030)" (18 May 2020) https://au.int/en/documents/20200518/digital-transformation-strategy-africa-2020-2030

36   DTSA, p. 3.

To support this vision, the DTSA identifies crucial aspects to support digital transformation in Africa. These include enabling a digital environment, policies and regulations, digital infrastructure, digital skills, human capacity and entrepreneurship.[37] Most importantly, the DTSA considers digital transformation as a tool towards inclusive economic growth, job creation, and a means to break the digital divide, among other things.[38]

On the role of women in digital transformation, the DTSA views the existing gender digital gap as a threat to inclusive digital economy by 2023. It, therefore, expresses the inevitable need to address the gender digital gap to avoid widening the inequality gap between men and women on the continent. The DTSA sets roughly three strategic actions to ensure women are included in the process and form part of the African digital economy. The three strategic actions are;

- Creating an enabling policy and regulation environment;
- Digital skills and human capacity; and
- Developing digital identity systems.

In 2022, the AU adopted the African Union Digital Education Strategy and Implementation Plan (DESIP) (2023-2028). The DESIP reinforces the Continental Education Strategy for Africa (CESA).[39] The CESA was developed and adopted by the African Union, in partnership with Member States and key stakeholders, to ensure that training institutions and educators would respond to the continental need for digital training.[40] In this regard, the DESIP lays down three main foci, namely:

- Digital technology appropriation in education – accelerating the adoption of digital technologies for teaching, learning, research, assessment and administration;

- Education in digital technologies for digitally empowered citizens - for the digital economy and society – strengthening digital literacy and skills for all, especially for teachers and students; and

- Building the capacities of AU Member States in digital infrastructure (devices and networks). Infrastructure development is the primary strategic objective of the digital education strategy.[41]

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37   DTSA, p. 5. Cf. Boshe/Hennemann/von Meding, African Data Protection Laws – Current Regulatory Approaches, Policy Initiatives, and the Way Forward, GPLR 3 (2022), 56 p. 81.

38   African Union, "The Digital Transformation Strategy for Africa (2020-2030)" (18 May 2020) https://au.int/en/documents/20200518/digital-transformation-strategy-africa-2020-2030

39   African Union, "Digital Education Strategy and Implementation Plan" (September 2022) https://au.int/en/documents/20221125/digital-education-strategyand-implementation-plan

40   Association of African Universities, "Continental Education Strategy for Africa" https://aau.org/current-projects/continental-education-strategy-for-africa/

41   African Union, "Digital Education Strategy and Implementation Plan" (September 2022) https://au.int/en/documents/20221125/digital-education-strategyand-implementation-plan

Specifically, regarding women, the DESIP expresses the need to invest in women's education, which would also involve the provision of connectivity, devices, capacity, literacy and skills. The table below highlights the chapters of the Digital Education Strategy and Implementation Plan that address women's digital transformation in Africa. The DESIP gives "particular attention to reducing gender inequality in digital competence at all levels as this can help enhance girls' and women's employability and empowerment; and prosperity."[42] The DESIP also insists on increasing women digital educators, saying, "women educators should be encouraged to excel in digital literacy and skills to serve as role models".[43]

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42   African Union, "Digital Education Strategy and Implementation Plan" (September 2022) https://au.int/en/documents/20221125/digital-education-strategyand-implementation-plan, p. 37.

43   African Union, "Digital Education Strategy and Implementation Plan" (September 2022) 36-37 https://au.int/en/documents/20221125/digital-education-strategyand-implementation-plan

5. Women's Inclusion in Digital Transformation: International Partners Contribution

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Several international partners have been supporting the AU and its member states to build on women's and girls' digital skills and capacity. This report investigated two such initiatives, namely the Digital Transformation with Africa (DTA) and the Digital Economy Initiative for Africa (DE4A).

5.1 Digital Transformation with Africa (DTA)

On 14th December 2022, President Biden announced the launch of the Digital Transformation with Africa (DTA) initiative at the US-Africa Business Forum in Washington, DC. The DTA, a signature initiative of the Biden-Harris Administration, seeks to expand digital access and literacy, and enhance digital enabling environments across Africa. This initiative, in collaboration with the US Congress, intends to invest over $350 million and facilitate over $450 million in finances for Africa, in line with the African Union's Digital Transformation Strategy and the U.S. Strategy toward Sub-Saharan Africa.

When it comes to women, the DTA works towards the following objectives:

- To empower women and other marginalised people through and within the digital ecosystem,

- To facilitate inclusive access to digital skills and literacy, particularly for the youth and women,

To implement the above (and other objectives of the DTA), the United States Agency for International Development (USAID) and the Millennium Challenge Corporation (MCC) are at the centre. The USAID leverages existing capabilities and networks, such as through the Young African Leaders Initiative, to mobilise digital leaders, especially women and members of other marginalised communities, across sub-Saharan Africa to foster the growth of local digital businesses and ecosystems, while the MCC ensures that digital skills and services

reach underserved communities, the youth and women; promote digital innovation; and harness the private sector to drive economic growth and reduce poverty.[44]

5.2   The Digital Economy for Africa (DE4A) Initiative

The Digital Economy for Africa (DE4A) Initiative was launched on 14th April 2018 as a World Bank Group flagship programme to support internet roll-out in Africa.[45] The main goal is 'to ensure that every individual, business and government in Africa will be digitally enabled by 2030.' This objective aligns with the African Union's 'Digital Transformational Strategy for Africa.'[46] The DE4A recognises that the digital economy can facilitate the achievement of the UN Sustainable Development Goals (SDGs)[47] and the World Bank Group's twin goals[48].

Specifically, regarding women, the DE4A intends to support:

- Digital ID and trust services – The idea behind this is to empower women to be able to make financial decisions and transactions. Having an ID would provide them with verified identities, digital authentication and e-signatures for secure transactions.

- Digital Commercial Platforms that are more inclusive, hence new opportunities for women and the youth. This also means women will have an opportunity to identify and tap into new market niches. Thus, they create new jobs, improve financial inclusion and increase women's labour participation.[49]

5.3   African Union-European Union Initiative

The European Union is a long-time supporter of AU policy initiatives. In 2020, the EU formally announced its commitment to support Africa "in creating an African data economy for the benefit of its citizens and businesses".[50] In the same year, the AU and the EU entered into a partnership in order for the EU to support the continent's digital transformation.[51] The partnership document recognises African women as "key drivers of sustainable growth, development and peace". As a result, the future of the continent depends on responding to

44   The White House, "FACT SHEET: New Initiative on Digital Transformation with Africa (DTA)" (14th December 2022) https://www.whitehouse.gov/briefing-room/statements-releases/2022/12/14/fact-sheet-new-initiative-on-digital-transformation-with-africa-dta/

45   P. Vir OBE, "Digital Economy for Africa (DE4A) Initiative" (1st May 2018) https://www.linkedin.com/pulse/digital-economy-africa-de4a-initiative-parminder-vir-obe-1

46   Security & Fire Africa, "What is the Digital Economy for Africa Initiative?" (1st August 2023) https://securityafricamagazine.com/what-is-the-digital-economy-for-africa-initiative/

47   The World Bank, "The Digital Economy for Africa Initiative" https://www.worldbank.org/en/programs/all-africa-digital-transformation

48   In 2013, the World Bank Group adopted two new goals to guide its work: ending extreme poverty and boosting shared prosperity

49   The World Bank Group, "Digital Economy for Africa Initiative" (24th June 2019) *TICAD Seminar Series: DE4A initiative* https://thedocs.worldbank.org/en/doc/312571561424182864-0090022019/original/062519digitaleconomyfromafricainitiativeTimKelly.pdf

50   European Strategy for Data, COM (2020) 66 final); Cf Boshe/Hennemann/von Meding, African Data Protection Laws – Current Regulatory Approaches, Policy Initiatives, and the Way Forward, GPLR 3 (2022), 56 p. 83.

51   European Commission, The Joint Communication to the European Parliament and the Council Towards a Comprehensive Strategy with Africa, JOIN (2020) 4 final 4 (Brussels, 9 Mar. 2020), www.africa-eu-partnership.org/sites/default/files/documents/towards_a_comprehensive_strategy.pdf accessed on 22.05.2024.

women's aspirations.[52] The document indicates the need to develop specific policies to ensure "full digital inclusion and digital equality for women"[53] among other vulnerable social groups and marginalised communities. It identified specific aspects requiring special attention to ensure women's inclusion in digital transformation. These include:

- Special attention to women and girls to ensure their access to inclusive and equitable quality education;[54]

- Women's empowerment by tackling discriminatory regulations and practices;[55]

- Supporting women's economic empowerment;[56] and

- Ensuring women's active involvement in decision-making processes.[57]

The initiative rolled out in partnership between the AU and the EU includes the AU-EU Digital4Development Hub. The Hub was launched in December 2020 as a multi-stakeholder platform to support human-centred digital transformation in Africa.[58] In fact, the Digital Transformation Strategy for Africa (2020-2030) is an initiation of this Hub.[59]

Other initiatives within the AU-EU partnership towards digital transformation include the EU-AU Data Flagship and AU-EU Digital Innovation Bridge (AEDIB). The two initiatives aim to support Africa with access, affordability, skills/capacity building and digital policy development.[60]

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52 Ibid, p. 1.

53 Ibid, p.4.

54 Ibid, p. 9.

55 Ibid.

56 Ibid, p. 13

57 Ibid.

58 Boshe/Hennemann/von Meding, African Data Protection Laws – Current Regulatory Approaches, Policy Initiatives, and the Way Forward, GPLR 3 (2022), 56 p. 84.

59 Ibid.

60 Ibid.

6. Women's Inclusion in Digital Transformation: Countries' Policy Initiatives

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Countries, member states of the AU, have also taken initiatives towards women's digital inclusion. A sample of five African countries, namely Kenya, South Africa, Egypt, Ghana and Benin, have been selected for the purposes of this report. This section looks at policy initiatives launched within the selected countries to answer the following questions:

- What policy interventions are being implemented (if at all) at the country levels? And do they take cognisance of the challenges faced by women? And;

- How are the interventions at the country level being implemented/undertaken to include women in the digital transformation agenda?

6.1   Kenya

Kenya is considered as a continental leader when it comes to access to digital infrastructure[61] and a frontrunner in the use of smartphones and internet access.[62] Kenya's digital economy contributes to the Gross Domestic Product (GDP) at 7.7%, followed by Morocco at 6.82% and South Africa at 6.51%.[63] A study[64] conducted by Dalberg, in partnership with the Omidyar Network, validates Kenya's status in digital transformation by finding out that 98% of people in Kenya own a SIM card, more than half use a smartphone and 65% have access to the internet.

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61   Dalberg, "Kenya's Digital Economy: A People's Perspective" (November 2021) https://dalberg.com/our-ideas/kenyas-digital-economy-a-peoples-perspective/

62   Digital Global, "Digital Transformation Center Kenya" https://www.bmz-digital.global/en/initiatives/digital-transformation-center-kenya/

63   M. Namasaka, "Why Kenya needs an inclusive digital transformation" (March 2023) _UNDP Kenya_ https://undp-kenya.medium.com/why-kenya-needs-an-inclusive-digital-transformation-ce8b162e9c94

64   A Dalberg study into how people in Kenya experience and use digital devices and services offers insights for stakeholders seeking to advance and deepen digital engagement for all Kenyans.

The same study also found that 94% of Kenyans use mobile money and 44% of them increased their usage during the period of the Covid-19 pandemic.[65] Nevertheless, the gender divide is still stark as women continue to fall behind.

However, the Global System for Mobile Communications (GSMA) Mobile Gender Gap Report of 2019 highlighted that women in Kenya are 39% less likely than men to have access to mobile internet and are also 23% less likely to own a smartphone.[66] This gender digital divide appears to be growing, with the gender gap in mobile internet use increasing from 34% in 2019 to 42% in 2020. A 2021 study titled 'Kenya's Digital Economy: A People's Perspective' also found that only 35% of women use advanced digital services compared to 54% of men.[67] According to the FinAccess 2021 Household Survey, formal financial access increased to a healthy 83.7% in Kenya in 2021. This means that the gender gap also reduced considerably to 4.2% in 2021 from 8.5% back in 2016 (Putting women at the centre of inclusive finance, 2022).[68]

Kenya is currently adopting various high-level policies and strategies to better embrace digital transformation. At the same time, the country is improving its ICT sector.[69] Kenya has enabled forward-leaning investment and innovation in core digital infrastructure. It has created a booming technology start-up ecosystem for advanced digital applications and services supported by the guidance of Kenya's long-established mobile money sector, and a favourable regulatory environment. It has also made progress in defining policies and frameworks for enabling resources, such as the country's digital ID system, and investing in support ecosystems that can help people access and use digital services.[70]

Kenya has a strong institutional framework which establishes effective regulatory authorities for the ICT sector and across economic sectors.[71] These regulatory authorities include:

- Multiple authorities and bodies that advise, implement policies on and regulate the ICT sector housed in the Ministry of ICT. These include:

  - the Communications Authority which is largely tasked with the licencing and regulation of ICT activities in Kenya; and

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65   Dalberg, "Kenya's Digital Economy: A People's Perspective" (November 2021) https://dalberg.com/our-ideas/kenyas-digital-economy-a-peoples-perspective/

66   A. Muhura, "Accelerating digital inclusion for women in Kenya" (28 May 2019) *GSMA* GSMA | Accelerating digital inclusion for women in Kenya | Mobile for Development

67   M. Namasaka, "Why Kenya needs an inclusive digital transformation" (March 2023) *UNDP Kenya* https://undp-kenya.medium.com/why-kenya-needs-an-inclusive-digital-transformation-ce8b162e9c94

68   M. Sharma & K. Kariuki, "The need for innovative digital financial services to improve the lives of female micro- and small entrepreneurs operating in open-air and cross-border markets: A case from Kenya" (29 August 2022) *MicroSave Consulting* Female Micro- And Small Entrepreneurs : A Case From Kenya (microsave.net)

69   International Telecommunication Union, "Collaborative regulation for digital transformation in Kenya: A country review" (2023) 1 https://digitalregulation.org/wp-content/uploads/D-PREF-THEM.32_Kenya-2023-PDF-E.pdf

70   Dalberg, "Kenya's Digital Economy: A People's Perspective" (November 2021) https://dalberg.com/our-ideas/kenyas-digital-economy-a-peoples-perspective/

71   International Telecommunication Union, "Collaborative regulation for digital transformation in Kenya: A country review" (2023) 2 https://digitalregulation.org/wp-content/uploads/D-PREF-THEM.32_Kenya-2023-PDF-E.pdf

- the ICT Authority which manages all governmental ICT functions.

- The Competition Authority of Kenya – It issues/implements general consumer protection and competition rules. Concerning the digital economy, the authority recently examined the digital credit market in terms of how policy can support consumer protection and competition;

- The National Communications Secretariat – It provides advisory services to the Ministry of ICT on ICT policies. Regarding the digital economy, the secretariat published the second Draft Digital Economy Strategy in October 2020;

- The Central Bank of Kenya (CBK) - It formulates monetary policy, issues currency and is the government's banker. Concerning the digital economy, the CBK launched a consultation on the creation of a central bank digital currency in February 2022; and

- The Office of the Data Protection Commissioner – It protects data privacy and regulates the collection and processing of personal data. Regarding the digital economy, it launched the Strategic Plan 2022–2025 which enables a digital ecosystem that promotes data protection.[72]

The ICT Authority and the Communication Authority frequently work together with sectorial bodies to develop strategies and policies that enhance the position of Kenya in the digital economy. Some of the Ministry-led policies to promote the ICT sector and digital transformation include:

- Digital Economy Blueprint (2019);

- National Information, Communications and Technology (ICT) Policy (2019);

- The National ICT Policy Guidelines (2020);

- The Digital Economy Strategy (2020); and

- The National Broadband Strategy (2018 – 2023).[73]

- Policy on Information and Communication Technology in Education and Training (2021)

The Digital Economy Blueprint (DEB) neither takes special cognisance of women or girls' vulnerabilities, nor sets goals to close the existing gender digital divide. In fact, the DEB has no mentioning of gender digital divide. It has a total of 96 pages and women are mentioned only two times, and girls only one time on page 62. Similarly, women are mentioned only once and there is no mentioning of girls in the National Information, Communications and Technology (ICT) Policy (NICTP). However, the NICTP recognises the need to create special

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72   International Telecommunication Union, "Collaborative regulation for digital transformation in Kenya: A country review" (2023) 9 https://digitalregulation.org/wp-content/uploads/D-PREF-THEM.32_Kenya-2023-PDF-E.pdf

73   International Telecommunication Union, "Collaborative regulation for digital transformation in Kenya: A country review" (2023) 10 https://digitalregulation.org/wp-content/uploads/D-PREF-THEM.32_Kenya-2023-PDF-E.pdf

opportunities for women, as part of disadvantaged social groups, to acquire ICT skills through e-inclusion and e-accessibility activities and programmes.[74] The same thing is observed with regards to the National Broadband Strategy (NBS). Women are categorised as an underserved social group who require "affirmative action programmes to ensure [they] fully participate in the affairs of the society".[75] Again, in the NBS, women are mentioned once on page 21. The Digital Economy Strategy (DES) and Policy on Information and Communication Technology in Education and Training (PICTET) do not mention women or girls at all.

All of the above-mentioned policies and strategies lack indication of the gender digital divide and as a result, no specific action or strategy is developed towards closing the existing gender digital divide in Kenya. Women in Kenya continue to experience exclusion due to lack of access (to internet and/or devices), skills and capacity.

6.2   South Africa

South Africa, being the most industrialised nation in Africa, has diverse milestones in its digital transformation.[76] It has adopted digital transformation as one of its strategies for promoting inclusive growth.[77] Approximately two-thirds of South Africa's population use the internet, with trends suggesting that the most common means of access is via mobile phones. There is a minor gender digital divide in South Africa, specifically in terms of access to the internet and smartphones.[78] In terms of access to digital financial services, research suggests that 11.6% of women compared to 16.8% of men can access digital financial services.[79]

As part of its digital transformation goals, the Government of South Africa has developed policies that encourage the digital access and digital inclusion agenda.[80] Gender equality is fixed in the Constitution of the Republic of South Africa, 1996.[81] The Constitution also establishes the Commission for Gender Equality under Section 187. This Commission promotes respect for gender equality and the protection, development and attainment of gender equality.[82]

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74   Ministry of Information, Communications and Technology, "National Information, Communications and Technology (ICT) Policy" (November-2019), https://www.ict.go.ke/wp-content/uploads/2019/12/NATIONAL-ICT-POLICY-2019.pdf, p. 33.

75   Republic of Kenya, "the National Broadband Strategy (2018 – 2023), https://www.ict.go.ke/wp-content/uploads/2019/05/National-Broadband-Strategy-2023-FINAL.pdf, p. 21.

76   The Exchange, "South Africa's digital transformation acquires new allies" *Further Africa* 8 August 2023 https://furtherafrica.com/2023/08/08/south-africas-digital-transformation-acquires-new-allies/

77   M. I. Manda & J. Backhouse, "Inclusive digital transformation in South Africa: an institutional perspective" (April 2018) 464 https://www.researchgate.net/publication/326598661_Inclusive_digital_transformation_in_South_Africa_an_institutional_perspective

78   T. V. Osch et al. "Gender Analysis of the Digital Transformation in South Africa" (May 2022) 76 https://oqconsulting.eu/wp-content/uploads/2022/07/3.-Gender-Analysis-of-the-Digital-Transformation-in-South-Africa.pdf

79   T. V. Osch et al. "Gender Analysis of the Digital Transformation in South Africa" (May 2022) 22 https://oqconsulting.eu/wp-content/uploads/2022/07/3.-Gender-Analysis-of-the-Digital-Transformation-in-South-Africa.pdf

80   M. I. Manda & J. Backhouse, "Inclusive digital transformation in South Africa: an institutional perspective" (April 2018) 469 https://www.researchgate.net/publication/326598661_Inclusive_digital_transformation_in_South_Africa_an_institutional_perspective

81   T. V. Osch et al. "Gender Analysis of the Digital Transformation in South Africa" (May 2022) 20 https://oqconsulting.eu/wp-content/uploads/2022/07/3.-Gender-Analysis-of-the-Digital-Transformation-in-South-Africa.pdf

82   Constitution of the Republic of South Africa No.108 of 1996 https://www.gov.za/sites/default/files/images/a108-96.pdf

Some of the policies developed by the South African government to encourage the digital access and digital inclusion agenda include:

- **The National Integrated ICT Policy White Paper (2016)**

- **National Policy Framework for Women's Empowerment and Gender Equality83**

- **The Strategic Plan of the Department of Women, Youth and Persons with Disabilities (2020 – 2025)**

- **The Women's Charter for Accelerated Development (2021)**

- **The ICT and Digital Economy Master Plan for South Africa (2021)**

The National Integrated ICT Policy White Paper (NIIPWP) is the main policy paper that outlines South Africa's strategies to facilitate access to and enable participation in a digital society, but it makes limited reference to gender equality. Its reference to gender considerations is deficient. For example, regarding access, the policy highlights that access means "the ability of all people to use and access services regardless of education, disability, age, gender etc."

The NPFWEGE puts emphasis on the social empowerment of women. Regarding digital transformation, the policy recognises science and technology as fundamental components of the development that is changing the way businesses are conducted, work is done and societies are interacting. The NPFWEGE realises that women form a large number of the work force in South Africa. Therefore, there is a need to devise mechanisms "engaging women with science and technology in order to enhance their productivity and, thus, increase the quality of national production. Women should be actively involved in the definition, design, development, implementation and gender-impact evaluation of policies related to the economic and social changes."[84]

The Strategic Plan of the Department of Women, Youth and Persons with Disabilities (DWYPD) is set on, as one of its key priorities, improving access to STEM education for girls[85], and is committed to advocating for gender equality[86]. The department has been active towards the demasculinisation of Science, Technology, Engineering and Mathematics (STEM) courses in schools and at tertiary institutions. It has done so "[b]y engaging with places of higher learning. At the National Student Financial Aid Scheme (NSFAS), we work to ensure more young women are accepted into tertiary institutions, and are able to pay for their studies."[87] Beyond education, the department has taken actions to ensure women and girls are safe online.

83   National Policy Framework for Women's Empowerment and Gender Equality   https://www.dffe.gov.za/sites/default/files/docs/national_policy_framework.pdf

84   Republic of South Africa, Department of Women, Youth and Persons with Disabilities, Strategic Plan 2020-2025, http://dwypd.gov.za.www76.jnb2.host-h.net/wp-content/uploads/2024/02/Strategic-Plan-2020-2025.pdf, p. V.

85   Ibid, p. 15.

86   Ibid, p. 17.

87   Republic of South Africa, Department of Women, Youth and Persons with Disabilities, Strategic Plan 2020-2025, http://dwypd.gov.za.www76.jnb2.host-h.net/wp-content/uploads/2024/02/Strategic-Plan-2020-2025.pdf, p. 5.

This is through focused "actions to prevent and respond to violence against women and girls facilitated by technology (online sexual harassment, online stalking, non-consensual sharing of intimate images)."[88]

The ICT and Digital Economy Master Plan for South Africa (IDEMP) was finalised in 2022.[89] The idea behind the IDEMP is to digitally empower South Africa to support its citizens' full participation in the digital economy. Sadly, the Master Plan neither mentions the existing gender digital divide nor acknowledges the vulnerable position of women and girls in the digital transformation process. In fact, the 86-page document does not have a single mentioning of the words 'women' or 'girls'.

In August 2021, the South African Parliament tabled the Women's Charter for Accelerated Development (WCAD). The WCAD was initiated as a tool for women's transformation in light of the trajectory of women's struggles. In addition to improving the enrolment of women in STEM education[90], the Charter insists on designing and assessing policies for their impact on inclusiveness and growth. This approach is supportive of structural change. According to the Charter, the economic structure has not changed since colonial times. This structure "continues to reflect distorted patterns of ownership and exclusion, which has very specific race and gendered dimensions."[91] The Charter suggests the need to have women's empowerment clearly articulated in policy documents and policy interpretation, implementation, monitoring and evaluation must inculcate a gender focus. [92]

Beyond strategies and policy development, the South African government established the Department of Communications and Digital Technologies (DCDT) to facilitate its digital transformation journey.[93] This Department not only implements the above-mentioned policies, it is also in charge of the country's digitisation, monitoring and maintenance of broadband connectivity, as well as liaising with other institutions to spearhead digital transformation in South Africa. In mid-2021, the Department "submitted a bid for funding to support digital access for low-income households and stimulate job creation and economic growth through household broadband connectivity and public WiFi access."[94] The DCDT came up with the Digital and Future Skills Strategy (DFSS). Within this Strategy, there is no mentioning of women or girls. However, under strategic lever 7, the DCDT undertakes to promote gendered capacity and skills building.

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88   Ibid, p. 20.

89   ICT and Digital Economy Master Plan for South Africa (Final draft), 22 February 2021:

90   Parliament of the Republic of South Africa, The Women's Charter for Accelerated Development: Setting a 25-Year Vision and Agenda to Advance Women's Equality, Growth and Development, https://www.parliament.gov.za/storage/app/media/1_Stock/Events_Institutional/2021/19-08-2021_Launch_of_the_Womens_Charter/docs/Womens_charter_for_accelerated_development.pdf, pp. 26, 32 and 33.

91   Ibid, p. 16.

92   Ibid, p. 18.

93   Cf. https://www.gov.za/about-sa/communications-0

94   https://www.gov.za/about-sa/communications-0

Despite South Africa having some of the most progressive policies in promoting digital transformation, actual implementation is still a challenge. This is a result of poor coordination among government institutions, lack of cohesion in institutions coordinating the digital transformation, power and politics.[95]

6.3   Egypt

In Egypt, the sustainable development strategy sets digital transformation as a priority. Key players of enabling the ongoing digital transformation of Egypt's economy are the Ministry of Communications and Information Technology (MCIT) and the National Telecommunications Regulatory Authority (NTRA). They both engage in collaborative regulatory activities and other joint projects with other ministries and regulatory authorities in Egypt.[96]

Egypt's key ICT sector policies and programmes towards digital transformation and the adoption of new digital services include:

- **Digital Egypt**

- **The Egypt Vision 2030**

- **The ICT 2030 Strategy**

- **Egypt National Strategy for Women Empowerment 2030**

Digital Egypt (DE) is described by the MCIT as "an all-encompassing vision and plan, laying the foundations for the transformation of Egypt into a digital society."[97] According to the DE website, it is a well-planned and comprehensive strategy towards digital transformation. It has three key features: digital transformation, digital skills and jobs, and digital innovation. Through this project, the government has been able to digitise all public services which are now available on the Digital Egypt ePlatform. The government has also ensured that all government buildings – nationwide – are connected through intranet. This is more than 33,000 buildings.[98] To facilitate Digital Egypt (DE), the government established the Egyptian Root Certificate Authority (Root CA). An authority which implements electronic signatures and digital transactions.[99]

Digital Egypt entails an integrated strategy building a base of digital competences. Women are among the social groups mentioned as being beneficiaries of the 'Digital Upskilling' strategy. However, no special considerations (such as women/girls' scholarships, special SEM programmes for women etc.) are given. There are more than 12 upskilling STEM

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95   M. I. Manda & J. Backhouse, "Inclusive digital transformation in South Africa: an institutional perspective" (April 2018) 469 https://www.researchgate.net/publication/326598661_Inclusive_digital_transformation_in_South_Africa_an_institutional_perspective

96   International Telecommunication Union, "Egypt's digital transformation and collaborative regulation" (2023) 1 https://mcit.gov.eg/Upcont/Documents/Reports%20and%20Documents_1262023000_Egypt%E2%80%99s_Digital_Transformat_on_Collaborative_Regulation_12062023.pdf

97   MCIT, Digital Egypt, https://mcit.gov.eg/en/Digital_Egypt

98   Read more at https://mcit.gov.eg/en/Digital_Egypt

99   Established under Electronic Signature Law No. 15 of 2004.

programmes.[100] The majority are offered free of charge (DE Cubs Initiative, DE Marvel Initiative and Practical Data Scientist Academy - Amazon Web Services) and some offer scholarships. The emphasis is on the youth in need of digital skills and capacity building, school pupils and government employees.

The ICT 2030 Strategy (IS) and Egypt Vision 2030 (EV) are the bedrock of Digital Egypt. EV has four guiding principles:

- Human-centred development;

- Equity and accessibility;

- Resilience and adaptation; and

- Sustainability.

EV acknowledges the fact that gender disparities in technology usage affect women's participation in tech-based activities.[101] The 'equity and accessibility' principle has a goal towards social justice. Within this goal, EV expects to "reduce the gender gap, provide social protection, and achieve inclusion and equal opportunities, including [for] women."[102] This is expected to be done through women's empowerment and "by making various services available to them inclusively, and with high quality[103]", also by bolstering women's rights to education,[104] implementing training programmes to enhance women's skills in technological and digital fields[105], and enhancing their participation in decision-making processes at both the central and local governments[106]".

In addition, Egypt has the National Strategy for Women Empowerment (NSWE). The NSWE has the core objective to empower women. Through the NSWE, the government of Egypt believes that technology can be used to empower women and leverage social justice and gender equality. Women's ability to access information and use ICT tools is key to their empowerment.[107] In 2016, the Ministry of ICT launched the "ICT for women" portal.[108]. The portal's goal was to support and empower women in using ICTs. The portal was also an information point for girls and women who are interested in the ICT field and seek to learn or to join a career opportunity.[109] Unfortunately, at the time of writing this report, the portal

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100   See the programmes here: https://mcit.gov.eg/en/Human_Capacity/MCIT

101   Ministry of Planning and Economic Development, "The National Agenda for Sustainable Development: Updated Vision 2030 (Published 2023); https://mped.gov.eg/Files/Egypt_Vision_2030_EnglishDigitalUse.pdf, p. 30.

102   Ibid, p. 8.

103   Ibid, p. 15.

104   Ibid, p. 79.

105   Ibid, p. 81.

106   Ibid, p. 81.

107   National Council for Women, "National Strategy for the Empowerment of Egyptian Women 2030: Vision and Pillars", (First edition, March 2017), https://nwm.unescwa.org/sites/default/files/2023-04/national-strategy-for-the-empowerment-of-egyptian-women-2030-en.pdf, pp. 36 and 48.

108   ICT for Women Portal https://www.itu.int/net4/wsis/archive/stocktaking/Project/Details?projectId=1514831513

109   Dr. M Osman, "Women in ICT Sector" (May 2019) 12 https://en.enow.gov.eg/Report/12.pdf

could not be accessed. It is possible that this initiative has been overtaken by the Digital Egypt project which is "all-encompassing" and navigates towards Egypt's digital transformation.

Egypt has a more centralised approach to digital transformation and less scattered policies and strategies on the matter. Nevertheless, it seems to be a well strategised and well-coordinated country among the four case studies. It focuses on digital transformation, its policies and strategies take cognisance of women as a social group that needs 'special' attention and tries to ensure their equal participation in the digital transformation process, and their sustainable participation in the digital economy. However, it is worth mentioning that the educational programmes initiated by the MICT under the DE project do not indicate any special preference given to girls and women. It would appear that admission and access to the programmes by women and girls would be based on similar conditions faced by men and boys.

6.4   Ghana

Ghana is among the first countries in Africa to invest in internet connectivity. As of the end of 2022, Ghana's major internet service providers were MTN Ghana, Vodafone, Surfline, Busy 4G, AirtelTigo, iBust and Teledata ICT. Policies and decisions that initiated the digitalisation campaign could be tracked back to the liberalisation of the economy in the early 1980s.[110] Here are some key policies and strategies which support the digitalisation campaign towards a digital economy.

- **ICT for Accelerated Development (ICT4AD) Policy (2003)**

- **Draft ICT Implementation Standards (2020)**

In June 2003, the internet picked up and policy makers took the first step towards harnessing the internet for the purposes of socio-economic transformation. The government launched a policy initiative by the name of the Ghana ICT for Accelerated Development (ICT4D) Policy. Policy makers used a consultative approach to create an ICT for development policy framework for Ghana, with a vision "to improve the quality of life of the people of Ghana by enriching their social, economic and cultural well-being through the use of ICTs as the engine for accelerated socio-economic growth", this was enacted into law in 2004.[111]

Some of the challenges identified within the ICT4AD policy include:[112]

- Lack of literacy and access to higher education, including a high school drop-out rate, especially for girls and women;

- Limited and under-developed (ICT) infrastructure;

- Lack of human capacity;

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110   M. Kpessa-Whyte (PhD) & J. S. Dzisah, (PhD) "Digitalisation of Basic Services in Ghana: State of Policies in Action and Lesson for Progress" (September 2022) 8 *Include Platform* https://includeplatform.net/wp-content/uploads/2022/10/Digitalisation-of-Basic-Services-in-Ghana-State-of-Policies-in-Action-and-Lesson-for-Progress.pdf

111   M. Kpessa-Whyte (PhD) & J. S. Dzisah, (PhD) "Digitalisation of Basic Services in Ghana: State of Policies in Action and Lesson for Progress" (September 2022) 9 *Include Platform* https://includeplatform.net/wp-content/uploads/2022/10/Digitalisation-of-Basic-Services-in-Ghana-State-of-Policies-in-Action-and-Lesson-for-Progress.pdf

112   Republic of Ghana, ICT for Accelerated Development (ICT4AD) Policy, (2003), pp. 7 and 58.

To overcome these challenges, the ICT4AD policy set as its objectives, among others, empowering and developing women in order to:[113]

- Eliminate gender inequalities (especially in education);

- Improve women and girls' opportunities with ICTs

- Build women and girls' ICT capacities and skills

- Develop and implement necessary legal, institutional and regulatory frameworks and structures to support the deployment and utilisation of ICTs

The ICT4AD policy laid out approaches to attain the above objectives to include positive discrimination in favour of girls in order to create a balance in trained information technology manpower, promote women's rights to expression through ICTS and develop mechanisms to monitor progress towards gender equality in ICTs.[114] In addition, the government of Ghana committed itself to carry out two major actions to support women and girls' inclusion in digital transformation and their sustainable participation in the digital economy. The Government undertook to:

- Put in place a mechanism to ensure the participation of women in developing the information society and to ensure that information and communication policies at all levels are engendered and geared towards meeting specific development needs of women.

- Build capacity of the national machinery responsible for women and children to encourage more participation of women and children in the ICT initiatives and industry by addressing gender-based inequalities and instituting gender-sensitive policies.115

- Put in place policy directives to ensure and facilitate equal access for women (among other disadvantaged groups)116

Implementation of the ICT4AD is stalling. In 2020, 17 years after the publication of the ICT4AD policy, the government, through the National Information Technology Agency (NITA), released draft ICT implementation standards for public consultation. The call for public consultation stated that the draft standards were aimed at implementing the ICT4AD objectives and the call was made on the basis of the ICT4AD policy "[p]ursuant to Sections 3.3/3.8/3.10 and 4.5.2 of the Ghana ICT for Accelerated Development (ICT4AD) Policy (2003)"[117]

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113   Ibid, p. 9.

114   Ibid, p. 20.

115   Republic of Ghana, ICT for Accelerated Development (ICT4AD) Policy, (2003), p. 58.

116   Ibid.

117   The call is available here https://nita.gov.gh/guidelines/ accessed on 22.05.2024.

Unlike Egypt, it would appear that the digital transformation process in Ghana is not strictly centralised. The draft ICT Policy sets general "standards in the adoption, deployment, configuration and implementation of Information Communication Technology"[118] and specific sectors adopt and contextualise them. The result is that the country has several ICT policies for specific sectors such as forestry[119], the health sector[120], the education sector[121], the railway sector[122], to mention just a few.

However, Ghana, through the Ministry of Communications and Digitalisation (MCD), is currently implementing the eTransform Ghana project or the 'Digital Ghana' project. This project started in 2013 and is funded by the World Bank. The project's objectives are to create a digital Ghana through:

- Creating an enabling environment for the creation of eGovernance and eCommerce; Supporting digitalisation and connectivity;

- The launch and scale-up of priority digital services and applications; and

- Establishing mechanisms for project management.

To support girls' involvement in digital transformation and inclusion in the Digital Ghana, the MCD developed the Girls-in-ICT project. The aim is to expedite the training of more girls in ICT.[123] Since the project launch in 2012, a total of 10,980 girls and 900 teachers received training in ICT and STEM. In addition, about 282 schools and 50 centres are engaged in the project.[124]

6.5. Benin

As from the year 2016, the government of Benin started "implementing a digital transformation of the administration and placing ICT at its heart".[109] The government of Benin has also been creating an environment that favours the digital public service implementation to benefit its citizens. Even though the government is working so hard to digitalise public services, their accessibility is still rather unequal. A large percentage of Benin's population do not own a computer or smartphone that are essential for accessing and using digital services.[125]

The digital divide is persistent in the rural areas (as compared to urban areas) and there is an expanding gap between men and women. This gap is evident in the ownership of mobile phones, computers and internet, as well as internet connection.[126] A report published in 2021

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118   Ibid.

119   Forestry Commission, ICT Policy (2019).

120   Ministry of Health, Health Sector ICT Policy and Strategy (2005).

121   Ministry of Education, ICT in Education Policy (2015).

122   Ministry of Railway Development, ICT Policy (2021).

123   https://moc.gov.gh/girls-in-ict-2022/ accessed on 22.05.2024.

124   Ministry of Communications and Digitalisation, Snapshot Report: Ghana Girls-in-ICT project, (27th March – 9th May, 2023)

125   African Development Bank, An Assessment of the Impacts of Covid-19 on Women and Girls, (Country Gender Profile - Benin), 2021, pp. 12 and 32.

126   Ibid.

by the AfDB indicates that 51.1% of Benin's women have a mobile phone compared to 79.5% of men. However, only 26.9% use mobile phones for business or financial transactions.[127]

The important thing to note about Benin is the literacy level of women. This is important as literacy determines the ability of an individual to navigate technological devices and the level of interaction with others (in the digital sphere), hence their participation in the digital transformation. It is reported that about 59.4% of women have no level of education, 24.9% have primary education, 14.2% have secondary education (Only one in ten girls aged 21-24 have completed secondary school[128]) and only 1.5% have completed higher education.[129] These numbers are alarming and may be of concern in relation to women's participation in the digital transformation and inclusion in the digital economy. Especially considering the fact that women consist of 50.75% of the country's population. Furthermore, lack of disaggregated gender data on ICT use and gender mainstreaming policies makes it difficult to precisely determine the gender digital divide for purposes of improvement.

Benin is a country where gender equality is recognised by the Constitution.[130] Therefore, the government has been making efforts to bring about gender equality (in general), both in terms of legal and policy development, and institutional restructuring. Notable efforts include the following:

- **The National Gender Promotion Policy (2008)**

- **The Directorate of Women's Advancement and Gender**

- **The National Institute for Women (INF) (formerly the National Institute for Women's Promotion).**

- **The National Council for the Promotion of Gender Equity and Equality (CNPEEG),**

- **The Government Action Programme 2021-2026**

As seen, these policies were adopted 16 and 23 years ago respectively. A substantial part of their content is outdated in relation to digital transformation. The latest is the National Gender Promotion Policy. The idea behind this Policy was to ensure that Benin's gender equality index would improve by the year 2025. Through this Policy, the country wants to support women's participation in decision-making, as well as increase their 'access to and control of productive resources to achieve sustainable human development.'[131]

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127 African Development Bank, An Assessment of the Impacts of Covid-19 on Women and Girls, (Country Gender Profile - Benin), 2021, p. 12.

128 Picarelli N. et al., Empower HER! Supporting Gender Reforms in Benin with Development Policy Financing, World Bank Blogs (October 21, 2022), https://blogs.worldbank.org/en/nasikiliza/empower-her-supporting-gender-reforms-benin-development-policy-financing accessed on 11.07.2024.

129 Ibid, pp. 13 and 41.

130 New Article 26 of the Constitution of 11 December 1990, revised on 7 November 2019

131 African Development Bank, An Assessment of the Impacts of Covid-19 on Women and Girls, (Country Gender Profile - Benin), 2021, pp. 12 and 32.

Implementation of this Policy has been very slow. The coordination for implementing it was established 5 years after its introduction, i.e. in 2013. The action plan to implement it was completed in 2015, two years later. Unfortunately, in the absence of gender disparity data, it is difficult to assess the level of its actual implementation to date.

Beyond policy development, Benin has established several administrative mechanisms to promote gender equality. Notably, they are the Directorate of Women's Advancement and Gender (DPFG)[132], the National Institute for Women (INF)[133] and the National Council for the Promotion of Gender Equity and Equality (CNPEEG). All these three organs are parallel to one another as they reinforce women's empowerment. However, specific goals towards women's inclusion in digital transformation are yet to be seen – at least through publicised actions. What seems to be the main goal is eliminating gender-based violence (sexual and physical), child forced marriages, and female genital mutilation.[134]The Directorate of Women's Advancement and Gender has, in general terms, stated in its mandate to include the 'coordination, monitoring and evaluation of gender mainstreaming mechanisms in national strategies and ensure that they are taken into account in national development policies and programmes'.[135]It is unclear how the three organs coordinate their activities to empower women in specific contexts.

In terms of digital transformation, the government has launched several projects to fast-track the country's transformation to a digital economy. The most notable ones are the Government Action Programme 2016-2021 and Government Action Programme 2021-2026, shortened to PAG. (Phase one and phase two respectively).

The government is now implementing phase two of the PAG. Phase one was mainly feasibility studies to determine the state of things, and design interventions, including deciding on appropriate execution models, as well as appropriate financing schemes for each of the projects.[136] As a result, three reform pillars were identified and they form the second phase of the PAG. The identified three are as follows:

- Pillar 1: Strengthening democracy, the rule of law and good governance

- Pillar 2: Continuing the structural transformation of the national economy

- Pillar 3: Continuing to improve the social well-being of populations

Digital transformation is embedded within Pillar 2 with a 'digital'theme. The digital theme includes four (4) reforms spread over 6 projects. The reforms are:

- The regulation of the deployment of digital local networks for all construction, professional or collective uses,

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132   A department attached to the Ministry of Social Affairs and Micro-finance.

133   It is attached to the Office of the President of the Republic of Benin.

134   See respective websites at https://www.inf.bj/ accessed on 11.07.2024.

135   https://social.gouv.bj/affaires-sociales/dgas/dpfg accessed on 11.07.2024.

136   You can access information about phase one of the PAG here: https://beninrevele.bj/pag-2016-2021/ accessed on 11.07.2024.

- The modernisation of the regulatory and institutional frameworks of audiovisual and communication,

- The creation of a digital observatory, and

- The reform on required digital skills (during recruitment of State personnel and in the education system)

The first three reforms are in progress while the last reform is yet to start.[137]

The six (6) projects within the reforms include:

- The deployment of very high-speed internet across the country,

- The promotion of trust and the use of digital platforms,

- The modernisation of media to support access to quality information,

- The strengthening of eGovernance and eServices,

- Digital transformation of the local authorities, and

- Digital technology in higher education.

The first two projects are in progress and the rest are yet to start.[138] The overall reform is set to be completed in 2026.

In the PAG 2021-2026 report, there are no specific goals to ensure women's participation in digital transformation and their inclusion in the digital economy. However, in terms of education and skills acquisition, the government has set a goal to 'support the training of girls and mothers who are excluded from the formal education system in the field of homekeeping to support their autonomy'[139], but, in particular, to 'encourage girls to undertake scientific courses.'[140] Achieving this goal would also support women's and girls' ability to navigate technological devices/ platforms and participate in the digital sphere.

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137   Information available at https://beninrevele.bj/secteur/numerique/

138   https://beninrevele.bj/secteur/numerique/

139   Presidency of the Republic of Benin, Government Action Programme (2021-2026), p. 37.

140   Ibid, pp. 61 and 143.

7. Conclusion

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This research confirms the existence and persistence of the gender digital divide in Africa as a continent and within individual African states. Although the gender digital divide is not only in Africa, there is still a need to address it. The research shows that, not only in the region but also within the countries studied, women form a majority of the population. Inevitably, this calls for an urgent intervention – policy, legislative, institutional and structural – to address core causes of gender inequalities. The latter manifests itself in the access and use of digital tools, hence the gender digital divide.

Despite the fact that the gender digital divide seems to persist – regardless of intervention deployed – research shows that there is hope in closing this divide. The hope lies within the proper use of ICTs. ICTs have huge protection to prevent the traditional gender inequalities experienced offline in our communities. Proper and inclusive policy development and implementation may be the start. Countries might need to carefully implement their digital transformation strategies to be able to yield the expected benefits and, at the same time, ensure no one, especially women and girls, is left behind.

In the four case studies assessed in this report, we observed different policy strategies and approaches towards digital transformation. Sadly, women's inclusion in policy development and efforts to engender existing structures are not a popular feature. The ICT4AD Policy from Ghana laid out a very good plan to ensure women's inclusion in the digital transformation and the making of 'Digital Ghana'. Unfortunately, the strategy to implement those objectives is lacking. A sad revelation is portrayed by ICT policies and strategies in Kenya. Women and girls seem to be the 'forgotten'. In the policies assessed, there is no mentioning of either women or girls. The policies and strategies also ignored the fact that women and girls need special considerations to ensure their involvement in digital transformation and inclusion in the digital economy.

It is also important to think beyond policy development. Strategic implementation of the policies and the strategic approach to digital transformation are as important as policy development. Among the case studies, Egypt seems to have managed to centralise and coordinate its policy development and implementation, and approach towards digital transformation. On the contrary, Ghana's decentralised approach seems to lead to a multiplicity and scattering of policies, strategies and approaches to digital transformation. As a result, it is difficult to monitor and assess its success or failure.

We believe that closing the gender digital divide requires identifying the policies and practical challenges causing the divide. This is what this research did. In terms of policy development, the research identified the following as challenges to addressing the gender digital divide:

- Women's exclusion from policy dialogue;

- Failure to acknowledge the existence of the gender digital divide in strategic policies;

- Lack of deliberate strategic objectives to address the gender digital divide; and

- Failure to implement policies.

In terms of practical challenges, the research identified the following as existing challenges:

- Lack of access (to mobile/computer devices and the internet);

- Affordability;

- Illiteracy (digital illiteracy); and

- Inherent socio-cultural biases.

8. Recommendations

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This report recommends the following actions to close the gender digital divide in order to achieve gender equality in the digital transformation in Africa:

- **Design engendered digital strategies and policies** - Policy makers at both regional level and country level should take cognisance of the unique needs of women, value their perspectives and experiences, and intentionally consider them when designing, implementing and measuring digital transformation programmes, strategies and policies.

    a. This would include having:

        i. National gender-responsive digital strategies and policies that aim at closing the gender digital access, adoption and use gaps, and enhancing women and girls' digital presence.
        ii. Subsidy programmes to ensure affordability of digital technologies for women and girls.
        ii. Legal, regulatory and institutional frameworks to support and advocate for the training of women and girls in online safety techniques. To enable women to be more vigilant online.

- **Adapt national strategies to promote access to technology in rural and underserved areas** – African national governments should work on increasing internet connectivity in remote and underserved areas. This research shows not only that women form the majority of the population, but also that the majority of the women are in the rural and technological underserved areas.

- **Continue rolling out capacity and digital skills building projects for women and girls** – Training and educational programmes should address stereotypes and target existing gender biases. Develop curricula that encourages greater female involvement in STEM studies and, more generally, bridges the gender skills divide in the digital transformation era. This research shows that there are still very few women in high-technology sectors that require STEM degrees. National governments in Africa could consider making the following commitments:

        i   Agree to establish (time bound) targets for women in STEM;

ii. Create fund and grant schemes aimed at enhancing the enrolment of women in STEM education (offering internships and traineeships);

iii. Establish awards and prizes enhancing the visibility of women in STEM and in high-technology sectors (hackathons and coding competitions); and

iv. Create mentoring programmes connecting young women with more experienced professionals in STEM.

- Promote women's involvement in the national action plans - Women must be included in the national action plans promoting the use of internet, digital rights and digitalisation. By involving women, governments will not only give women a voice and perspective to strategic policy development, but also enable the overcoming of gender pre-conceptions and cultural norms that sideline women from participating in the digital economy.

- Policy implementation mechanisms – The AU and national governments need to establish measurable mechanisms for the implementation of the digital transformation policies, strategies and programmes. These need to be monitored, evaluated and updated based on emerging needs and outcomes. Developing policies, strategies and programmes without setting out timelines/deadlines is setting out for failure.

- Centralised and coordinated strategic policy implementation – There is an inevitable need to have a centralised and coordinated approach to digital transformation policy/ project/programme implementation. Having a centralised and coordinated approach would:

    a. Avoid a multiplicity of efforts and promote coordinated efforts;

    b. Lead to better management of funds;

    c. Easy monitoring and evaluation of policy/project/programme implementation; and

    d. Create accountability.

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