THE STATUS OF
AFRICAN
WOMEN IN
RESEARCH

REPORT

African Women in Research: Power, Progress and Possibilities

Acknowledgments

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Executive
Summary

This report is based on data from the 2023 Mawazo Fellowship applications and the accompanying Academic Needs Survey. It examines the current state of African women researchers, particularly those pursuing doctoral studies and highlights the challenges they face along the way. It also advocates for strategic interventions to promote gender equality and empower women in research across the continent.

The findings reveal that while Life and Health Sciences are the most popular research areas, there are regional variations, with Eastern and Southern Africa having a more balanced disciplinary spread and Central and Western Africa skewing towards STEM fields. A significant gap exists in funding accessibility for African women PhD candidates, with 60% of the applicants relying on personal savings, 15% receiving funding from their own university, 10% from other academic institutions within Africa and 16% from other sources such as the government, philanthropic and professional organisations. An overwhelming 75% of the applicants were primary caregivers, with 98% of those with primary caregiving responsibilities reporting that the lack of funding had an impact on their research work.

Although intra-continental mobility is increasing, most women pursue their PhDs in their home countries due to family responsibilities and limited funding opportunities, which hinder international mobility. However, there is a noticeable movement of scholars to South Africa, with 66% of respondents based in South Africa originating from elsewhere on the continent. 94% of applicants reported that the lack of mentorship and career guidance has an impact. Lack of training in research and academic skills (e.g., grant writing, leadership, and financial management) also significantly impacts women's research work with 94% of applicants reporting an impact. Unsupportive supervisors and sexism/misogyny also pose challenges, though to a lesser extent, with 48% of applicants responding that unsupportive supervisors have an impact and 57% responding that sexism has an impact. African women PhD candidates also face unique challenges related to gendered responsibilities, ageism, and disabilities, often shouldering a disproportionate burden of care work, facing discrimination based on age, and lacking adequate support for disabilities. 82% of applicants reported that their research work was being impacted by lack of time due to family commitments.

To address these issues, the report recommends increasing targeted funding initiatives to address the financial barriers faced by African women PhD candidates, particularly caregivers. It also suggests developing tailored support programmes to facilitate both intra- and inter-continental mobility for women researchers. Investing in mentorship, career guidance, and training programmes is crucial to equip women with the necessary skills and resources. Additionally, policies and initiatives should be developed to address gendered responsibilities, ageism, and disabilities within academic institutions. The report underscores the need for a more inclusive and supportive research environment for African women. By addressing the systemic challenges they face, we can unlock their potential and contribute to the advancement of research and development on the continent.
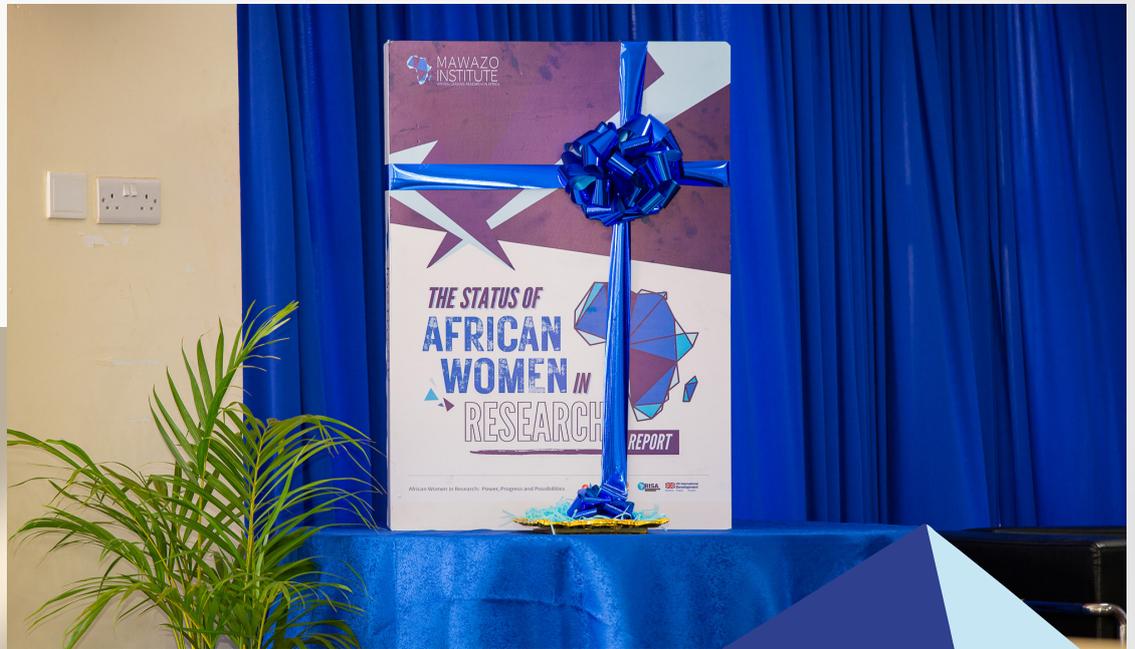
Introduction

Gender inequality in general, but even more so in higher education and research, is a societal issue facing many countries, especially in Africa, where women in academic roles and leadership are limited (Moodley et al., 2019). Despite this limitation, women have increasingly asserted themselves in higher education and research on a global scale in the last decade. There has been an increase in women's enrolment in universities and colleges globally by 9% between the years 2011 and 2020 (Mulwa, 2021). However, women still constitute only a third of the world's researchers, making up just 33.3% of the research population (Bello et al., 2021). African research currently produces less than 1.1% of global research outputs, with Sub-Saharan Africa having the lowest research capacity and output in the world, with only 33.5% of researchers on the continent being women (Bello et al., 2021).

Despite the progress achieved, persistent gender disparities are evident in various research sectors and across the continent. According to the United Nations Framework Convention on Climate Change (UNFCCC) (2018), women and girls continue to be underrepresented in the fields of Science, Technology, Engineering and Mathematics (STEM). As they progress up the ladder of their academic careers, they continue to be marginalised. More so, the proportion of women represented in academia varies depending on the discipline, with a notable increase in women in the life and health sciences, contrasted with a higher representation of men in the physical sciences (Sougou et al., 2022). Further barriers to women's participation in research include inadequate institutional oversight of women's representation and meaningful contribution to research and academia.

Additional research suggests that women lecturers appear to dedicate more time and effort to teaching and service-oriented tasks within the university, at the expense of their involvement in research work (Obers, 2014; Santus & Pho, 2019). Other barriers include gender bias in hiring, where men are implicitly favoured, while women receive smaller research grants, face longer delays in completing their doctorates, or even build a strong publication record (Sougou et al., 2022). As such, the majority of women academics reach retirement without being promoted (Fotaki, 2013; Nabawanuka, 2023). More so, there is a scarcity of women in leadership positions like principal investigators or research coordinators (Thompson-Burdine et al., 2019). This is evidenced by the low number of women vice chancellors in Africa as of recent reports. Across the continent, only about 40 out of 1,500 universities are led by women, which represents approximately 2.7% of the total (Chikere, 2021; Naidu, 2021). This gap contributes to a deficiency of gender equity due to the absence of gender supportive strategies that support the meaningful engagement of women researchers (Sougou et al., 2022). While African women researchers continue to encounter major obstacles in gaining access to higher education, their participation in research remains crucial to global development (Sougou et al., 2022). Their contributions drive innovation, enhance diverse perspectives in problem-solving, and address critical challenges such as public health, climate change, and food security (UNESCO, 2021). Research led by African women also promotes inclusive economic growth, improves social policies, and strengthens local communities by ensuring that solutions are culturally relevant and equitable (World Bank, 2020). Increasing their representation in STEM fields is particularly vital for advancing scientific progress and reducing gender disparities in knowledge production (African Academy of Sciences, 2022).

From the outset, this report seeks to understand the status of women researchers on the continent, and specifically, women researchers undertaking their doctoral studies across accredited universities in Africa. The report endeavours to ask who these women are, what fields they are in, and what challenges they routinely face in the course of their research work. It also explores whether these challenges are amorphously 'Africa-wide', or some are confined to specific parts of the continent. The report attempts to underscore the need for targeted initiatives to address these issues, emphasising the importance of fostering an inclusive research environment as well as giving voice to these women, who are often relegated to the fringes of the research ecosystem.

Defining African Research

After years of civil wars, political unrest and economic crises, many African countries have entered into periods of rapid growth within the past several decades (Irikefe et al., 2011). Research on the continent has been buoyed by this growth, albeit marginal, with Sub-Saharan Africa having increased its contribution to world scientific research from 0.44% to 0.72% between 2003 and 2012 (Blom et al., 2015). Since the early 2000s, publications in Africa that do not bear a foreign author have almost doubled, and larger investments in research in Africa are being made by international donor agencies (Adams et al., 2014; Beaudry et al., 2018). These insights suggest a new dawn for autonomous and reflexive research on the continent, with significance not only for the development of Africa but also for the world. As the continent continues to make incredible strides in enhancing research capacities, it is now a consensus among many African researchers and scholars that publishing research articles in highly revered peer-reviewed journals is of less relevance than producing locally relevant research that reflects the conditions on the ground (Tijssen and Kraemer-Mbula, 2018).

Science, knowledge and its methodologies cannot be separated from people's histories, cultural contexts or worldviews (Owusu-Ansah and Mji, 2013). One's worldview moulds awareness and constructs a theoretical structure through which knowledge can be pursued, critiqued and understood (Sarpong, 2002). When the term "African research" is referred to, the typical discourse is often "on" or "about" Africa and not necessarily research produced by Africans or coming from Africa. Modern African education is yet to be fully recognised as true and independent pedagogy (Ngara, 2007). While we can acknowledge the impact of Western knowledge systems on the development of modern Africa, there is a more important demand to focus on self-reliant productions of knowledge that meet both the material and intellectual needs of our African societies (Hountondji, 2009). Drawing from Asante's seminal work on the Afrocentric idea, Western concepts and schools of thought are insufficient in capturing diverse epistemologies as the understanding of "truth" is based on specific cultural experiences (1987). Within the educational context, "centricity" adopts a perspective that entails situating learners within their own cultural frameworks, aiming to foster connection to other social or cultural perspectives. Consequently, the centrist paradigm has been found to demonstrate that the most effective method of academic learning involves positioning the student within their own cultural context (Asante, 1990). Therefore, "Afrocentricity" as it pertains to defining African research, is the understanding of the African identity rooted and located in social, economic, political, and spiritual aspects of African culture. Mkabela (2005) argues that Afrocentricity is the examination of African reality from the perspective of the African; placing the African experience at its core and distinguishing the African voice as the starting point for establishing a dynamic and inclusive approach to research.

It is important to note that this is not a negation of western methods, but rests upon decentering western pedagogy, hence challenging scholars to develop alternative systems of inquiry that speak to their own sense of understanding for the development and empowerment of African people. Ngara (2007) describes this phenomenon as African ways of knowing, reflecting African worldviews and an African way of understanding within specific contexts, guiding the development of pedagogy in Africa. African researchers continuously persist in developing and utilising alternative ways of knowing and methods, often informed by their cultural backgrounds and community activities. Mbembe (2016) calls this pluriversity, a process that does not abandon the concept of universal knowledge for humanity but promotes a knowledge production process that is open to epistemic diversity and entails a radical reshaping of ways of thinking and overcoming divisions within disciplines.

In this report, we conceptualise **African research as rooted** in a thorough understanding and **incorporation of the global intellectual landscape** but deeply grounded in African thought and experience, **addressing questions and seeking solutions** to challenges and issues posed indirectly and directly by Africans.

African Women in Research

Historically, the exploration of the experiences of women in research has predominantly focused on women academics in universities in North America, Australia and Europe (Petersen and Gravett, 2000). Tamale and Oloka-Onyango (1997) recognise the modern university, akin to other institutions, as a product of Western education and institutional development transplanted into the African context. The enduring legacies of colonialism and apartheid, racism and exploitation continue to permeate the essence of higher education. Discussions on transforming Africa's higher education systems have, in many ways, attempted to highlight the centrality of gender as a crucial entry point in making system-wide changes. Leading critics of systemic gender disparities within Africa's higher education have consistently stressed the historical disadvantages that African women confront, attributable to culture, colonisation and the expansion of capitalism (Aina, 2010; Mama, 2003; Morley, 2006; Okeke-Ihejirika et al., 2020; Tamale and Oloka-Onyango, 1997). Fundamental to each of their assertions is the extension of colonial proclivity that maintains education as a preserve of men. Mama (2003) argues that Africa's universities still remain culturally and numerically male-dominated spaces with subcultures and norms that actively impede women and any persons from marginalised communities from progressing at a comparable pace.

As a consequence of this colonial legacy, women academics across the continent continue to face many challenges in their day-to-day lives. Recent studies on African women's academic experiences across the continent have attempted to document the conditions of women in higher education institutions. The barriers that manifest themselves include the significant impact of culture, gender role expectations, work-family tensions, gender stereotypes that marginalise women and impact their professional advancement, and the lack of role models and mentors (Chitsamatanga et al., 2017; Coronel et al., 2010; Gaidzanwa, 2010; Raburu, 2015). In West Africa, Tsikata (2007) identifies the challenges Ghanaian women in academia experience, including the imbalances created by family obligations and the need to conform to certain gendered norms that occur in order to succeed in the university. This is echoed by Sougou et al.'s (2022) study on the barriers faced by West African women scientists, on how insensitive organisational culture and institutional policies deepen gender disparities, making it more difficult for women to attain leadership positions. This can take the shape of unequal workloads, promotion limitations and institutional gender discrimination in practices such as assigning women to subordinate tasks like taking meeting minutes, while reserving visible leadership roles for men. In the Ugandan context, studies have highlighted that as a consequence of the dominance of masculine managerial culture, such as the "boys club" phenomenon, exclusionary language and environment, and a culture of tokenism, the support offered for the advancement of women academics in their careers is largely insufficient (Mulyampiti, 2016; Mulyampiti et al., 2018). Campion and Shrum (2004) found that the professional limitations experienced by East African women academics, particularly those in Kenya, were a combination of educational and travel impediments restricting their professional networks.

Many researchers have undertaken the task of researching the experiences of women academics in Southern Africa (see for example, Chitsamatanga and Rembe, 2019; Hlatshwayo and Ngcobo, 2023; Maodzwa-Taruvinga and Divala, 2014; Mokhele, 2014). Studies on women academics in South Africa illustrate a dual oppression; the oppression of Black women in the racially segregated political system and oppression from the patriarchal African culture (Mokhele, 2014). Khunou et al. (2019) detail the anguish and brutalities of navigating institutional racism, whiteness and oppression in research-intensive universities and the personal cost of one's mental health and psychological well-being. Chitsamatanga and Rembe (2019) and Msimanga (2014) delve into the strategies and resources employed by women academics to navigate and overcome barriers in South African and Zimbabwean universities, often involving seeking out informal mentors and building solidarity networks among other Black women academics.

African women researchers across the continent show resilience and determination to succeed in research in the face of historical, cultural and systemic barriers, and the extent to which they survive is a testament to their agency. However, this marginalisation is a source of pain and struggle for many women attempting to succeed on an uneven playing field (Maodza-Taruvinga and Divala, 2014). Hlatshwayo and Ngcobo (2023) assert that failure to tackle these heteronormative, patriarchal and predatory practices will continuously produce new forms of marginality for African women academics, rendering any meaningful attempts at decolonial and transformative interventions in higher education institutions entirely void.

Purpose of this report

This report aims to highlight the current circumstances and experiences of African women researchers on the continent. It hopes to bring to light the challenges that exist, such as the limited representation in thematic areas of research, unequal access to funding opportunities, and the embodied experiences of African women in research, amongst others. The study supports the achievement of Sustainable Development Goal (SDG) 5, which focuses on gender equality, which is not only a fundamental human right but also a cornerstone for creating a peaceful, prosperous and sustainable world (UN Women, 2020).

Furthermore, the report acknowledges the resilience and potential of women researchers in Africa, advocating for strategic interventions to promote gender equality and empower those in research across the continent. It utilises data collected from Mawazo Institute's 2023 Mawazo Fellowship Applications and the 2023 Academic Needs survey to create a picture of the current status of women in research and the various elements that facilitate or hinder their progress to PhD.

Theoretical
Framework

In this chapter, we probe into the theoretical underpinnings that inform our exploration of the academic experiences of African women researchers. At the foundation of our analysis lies Postcolonial Feminist Theory, which critically examines the enduring impacts of colonialism and imperialism and their effect on contemporary gender dynamics. Drawing insights from scholars such as Spivak (2023) and Crenshaw (1989), we aim to understand the critical position that African women researchers occupy, navigating the complex intersections of gender, race, culture, colonial legacies, and patriarchal power structures within the academy, and broader societal contexts.

Postcolonial Feminist Theory

Postcolonial studies offer a critical examination of the enduring impacts of colonialism, along with various manifestations of neocolonialism, imperialism, neoliberalism, and the far-reaching influence on the structure of our postcolonial world (Bhabha, 1994; Kerner, 2017). Postcolonial theory also seeks to centre the voice of the 'subaltern', rejecting the coloniser as an unreliable narrator of the existence of the colonised, insisting that the colonised must speak in their own voice and generate their own narratives and knowledge. In light of these considerations, postcolonial feminist theories centre the gender dimensions of these complex issues and the challenges they pose for the greater political project of global feminism.

Interrogating Agency in Postcolonial Contexts

At the heart of Postcolonial Feminist Theory lies a quest to unveil agency amidst structures of oppression, exploring how the marginalised are capable of interrupting or resisting dominant discourses. Scholars like Spivak (2023) assert that the concept of agency is intricately linked to the continual reconfiguration of power that suppresses the voice of the subaltern, those who have been subjected to colonialism. Moreover, non-western feminists critique the imposition of hegemonic western gender theories and gender research methodologies that produce authoritative knowledge and undermine localised perspectives (Chilisa & Ntseana, 2014). The consequence of imposing a universalised western gender theory is the failure to recognise the diversity of experiences of those within formerly colonised and historically marginalised societies, whose struggles, negotiations and resistance against various forms of patriarchal oppression and domination, including imperial domination, remain unrecognised (Fennell & Arnot, 2008).

Contextualising Gender: Beyond Western Paradigms

Postcolonial feminist theory goes further to critique and reject dominant narratives that generalise and essentialise the African experience. Instead, it seeks an understanding of specific contexts, cultures and people. Mohanty (2003) proposes an alternative method of "thoughtful, politically centred, context-specific analyses", encouraging a careful approach and avoiding the application of pre-existing concepts of 'women' and 'female oppression' onto distinct contexts and preconceived notions on diverse realities. Additionally, Tamale and Oloka-Onyango (1997) caution against uncritically projecting the concept of gender, which has predominantly evolved in western feminist theory spaces, onto African politics and culture. The nuances of gender dynamics exhibit diverse variables in different societies, shaping discourse on gender within specific contexts. In particular, the dialectic relationship between gender, class, colonialism and decolonisation holds significance in examining gender within the African context. Chilisa and Ntseana (2014) argue that African feminisms highlight the power and agency of African women to theorise from their cultures and lived experiences to produce knowledge that is contextually relevant. In turn, this process builds relationships, heals the self, strengthens the community and positively impacts the larger socio-cultural context, contributing new perspectives and insights to global discourse.

Intersectionality: Unveiling Complex Identities

Intersectionality, rooted in Black Feminist Thought, provides a critical framework for understanding the way multiple identities based on race, gender, class, ethnicity, nationality and sexuality are structurally and systemically oppressed (Crenshaw, 1989). Seabrook (2019) argues that intersectionality is a specific feminist theory that interrogates the ways different identities combine to create unique and complex dynamics of oppression and power for individuals and communities, as well as the broader social structures that sustain the marginalisation of certain identity positions. By embracing intersectionality, we espouse perspectives that recognise sameness and difference in connection to power dynamics, offering an understanding of how political environments impact identity and individual experience, thus paving the way for more inclusive and empowering feminist praxis (Cho et al., 2013; Levine-Rasky, 2011). However, intersectionality alone cannot be used to identify one's position or perspective. Therefore, there is a need to be cognisant of positionality, which encompasses the concept that individuals inhabit multiple identities that can be fluid and dialogical in nature, contextually situated and continuously evolving and reaffirming. This suggests that everyone is influenced by their position with respect to others in society, and that position is the result of fusing social factors and the identifiers recognised by intersectionality (Nelson, 2023). By recognising the dynamic nature of identity and the influence of social positioning, there is a need for a holistic understanding that incorporates intersectionality and positionality, thereby enriching our comprehension of the individual experiences of African women researchers within broader social contexts.

Towards a Theoretical Framework

Capabilities Approach: Fostering Empowerment

The capabilities approach is a framework that offers a lens through which to assess human development, using foundational ideas such as functionings, capabilities, agency, well-being and conversion factors (Nussbaum, 2006; Sen, 1999; Tsephe & Potgieter, 2022). According to Robeyns (2003) and Sen (1999), function refers to the achieved 'doings' and 'beings' that are valued by an individual. For example, obtaining a doctoral degree is valued by African women doctoral candidates; however, this desired outcome also relies on the actual opportunities and freedoms that each individual woman possesses to acquire education and improve their development and well-being. Tsephe and Potgieter (2022) refer to capabilities as the opportunities and freedoms that people have to realise their valuable function and the opportunity to decide who or what one wishes to become. The Capabilities Approach is comprehensive as it takes into account personal, societal and environmental 'conversion factors' that impact an individual's capacity to exert agency and convert their capabilities into functionings. Therefore, conversion factors act as facilitators or barriers to attaining desired outcomes. Consequently, women undertaking doctoral studies often experience personal, environmental (academic) and social factors as facilitators or obstacles in their doctoral pursuits (Tsephe & Potgieter, 2022; Sen, 1999). Alongside capabilities and freedoms, Crocker and Robeyns (2010) maintain that individuals also require agency to choose the doings and beings that they deem valuable. Agency is an essential concept within the capabilities approach, denoting an individual's willingness to take action or exert effort in order to achieve their desired goals.

The Strengths Perspective and Embracing Resilience

The strengths-based approach operates on the assumption that each individual possesses a diverse array of capacities, skills, resources and aspirations. These attributes can be utilised for personal growth when there is a focus on their positive personality traits and abilities (Saleeby, 1996; Tong, 2011). Therefore, irrespective of all the challenges that make women in Africa vulnerable, they have been able to draw upon their capabilities and resources to attain growth and success in what they do. The strengths perspective incorporates the concepts of resilience, empowerment, hope, healing, and meaningful construction throughout every aspect of the working relationship. Consequently, this perspective seeks to reveal individuals' strengths and hopes, actively putting them into practice, in contrast to the traditional approach that concentrates on deficits (Boateng, 2018; Saleeby, 1996). Through a lens of strengths and possibilities, the strengths perspective offers a transformative approach to feminist scholarship and activism.

Nego-Feminism: Negotiating Patriarchal Terrain

Coined by Nnaemeka (2004), nego-feminism emphasises the nuanced negotiation of patriarchal power structures within scholarship and development studies. By navigating colonial legacies, unequal power relations and cultural differences, nego-feminism embodies a dynamic process of negotiations and compromise. African feminism, in particular, embraces fluidity, challenging patriarchal norms while strategically manoeuvring and circumnavigating patriarchy within different contexts. Through negotiation and resilience, nego-feminism offers a pathway towards transformative change in postcolonial societies (Nnaemeka, 2004). African women scholars continually draw from both their innate and external resources to negotiate for space within academia (Boateng, 2018). In essence, the enduring legacy of African women scholars lies in their unwavering commitment to negotiating and reshaping systems of power, thereby challenging the status quo and contributing significantly to the broader discourse on transformative change in the postcolonial academe.
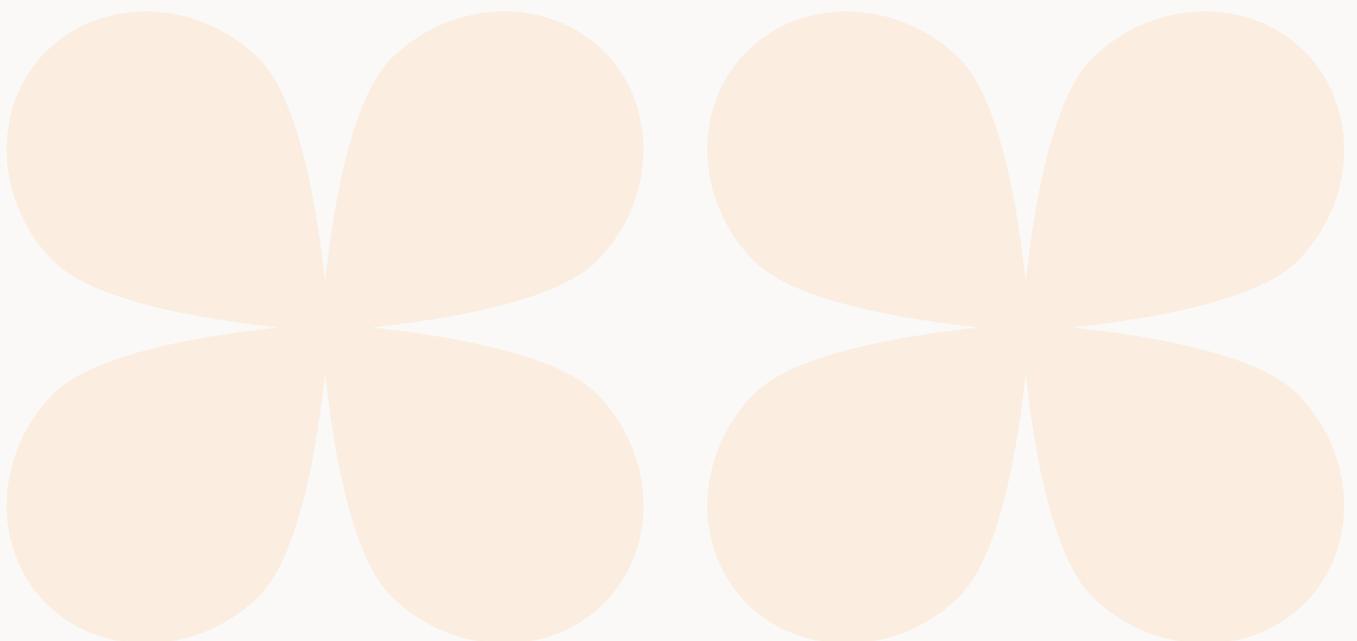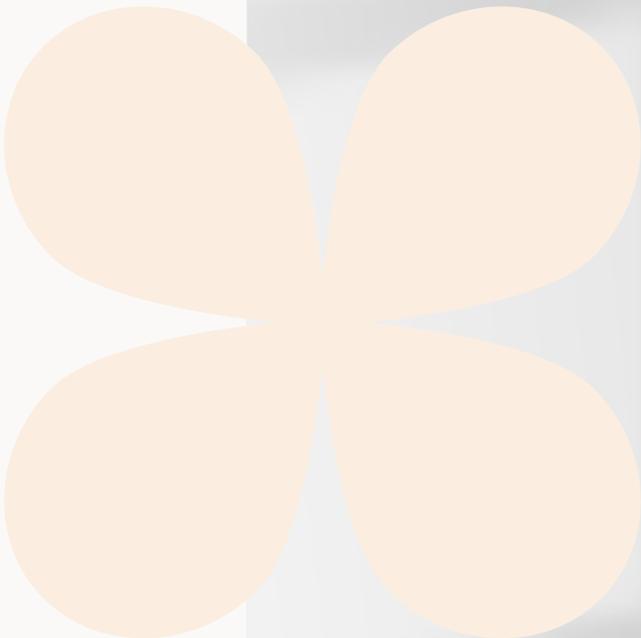
Demographics

The Status of African Women in Research report is the culmination of two main sources of data. In 2022, there was an open call for the Mawazo Fellowship, which resulted in 927 completed and submitted applications. An 'Academic Needs' survey was conducted to better understand the needs of women researchers in Africa and was embedded within the Mawazo Fellowship application process.

The data presented in this report largely consists of quantitative data but is supplemented by qualitative data collected through our continuous engagement and interviews with Mawazo Fellows and Alumni. At the time of publication of this report, this included 92 African women PhD researchers and recent PhD graduates from 20 African countries. The interviews conducted were part of the Mawazo Ideas Podcast that premiered in 2024. The Mawazo Fellows and Alumni interviewed represented Kenya, Uganda, Tanzania, Rwanda, the Democratic Republic of Congo, Namibia, South Africa, Eswatini, Ghana and Benin.

Distribution of Academic Needs Survey

The Academic Needs Survey was hosted on Survey Monkey Apply as the first stage of the Call for Applications. In total, 1557 applicants interacted with the Academic Needs Survey as the first task of the application process. By the end of the open call, 1445 applicants had completed the survey. Overall, there were 535 (34%) applications from Eastern Africa, 511 (33%) from West Africa, 221 (14%) from Southern Africa, 88 (6%) from Central Africa, and 13 (1%) from Northern Africa. The other 189 (12%) applications came from outside of Africa, divided between Europe, USA and Asia.

Distribution of Fellowship Applications

The 2023 Mawazo Fellowship Application call opened from 31st January to 17th March 2023, attracting a total of 927 completed submissions. The applications were regionally diverse, with 28 countries represented and all African Union (AU) regions present, of which 391 (42%) were from Eastern Africa, 322 (35%) from Western Africa, 151 (16%) from Southern Africa, 58 (6%) from Central Africa, and 5 (1%) from Northern Africa (Figure 1).
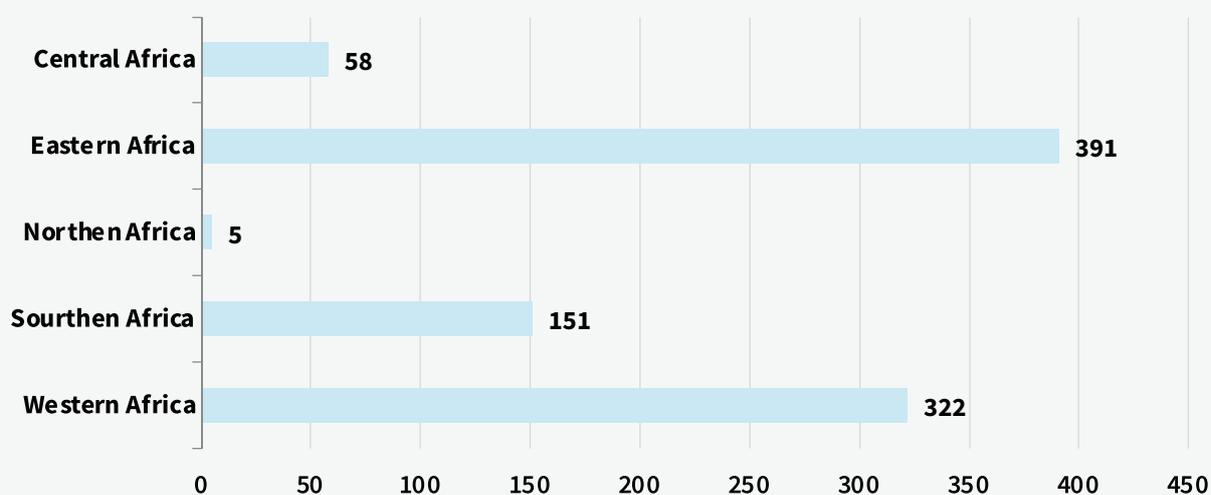
Figure 1. Regional distribution of 2023 Mawazo Fellowship applications.

Among the countries with the highest number of applicants were Kenya (26%), Nigeria (20%), Ghana (9%), South Africa (7%), Cameroon (6%), and Uganda (6%), accounting for over 74% of the overall applications (Figure 2).

Figure 2: Distribution of applicants by country.

In terms of age distribution, the highest proportion of applicants were in the 35 to 39 year age group (31%), followed by the 30 to 34 year age group (25%). Among the other age groups represented were 40-44 years (18%), 45-49 years (11%), 25-29 years (9%), 50-54 years (5%), and 55-59 years (1%). The age groups 20-24 years, 60-64 years and 65-69 years attracted no applications (Figure 3).
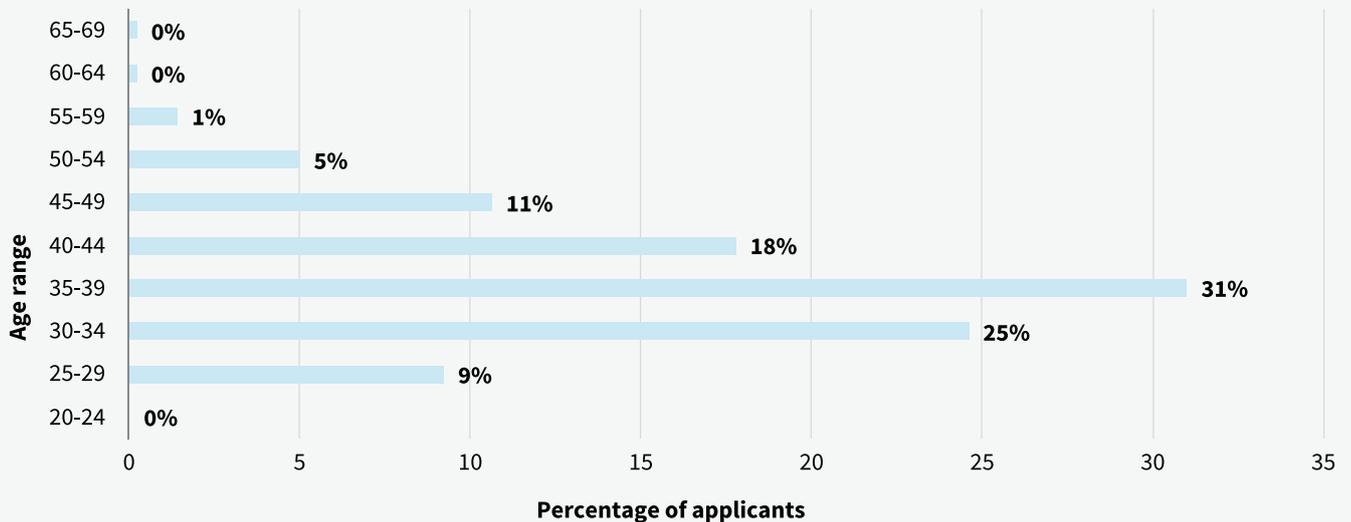
Figure 3. Age distribution of 2023 Mawazo Fellowship applicants.

A significant proportion of applicants reported being caregivers, with 697 (75%) of applicants indicating that they are the primary caregiver. 230 (25%) applicants responded they were not caregivers (Figure 4).
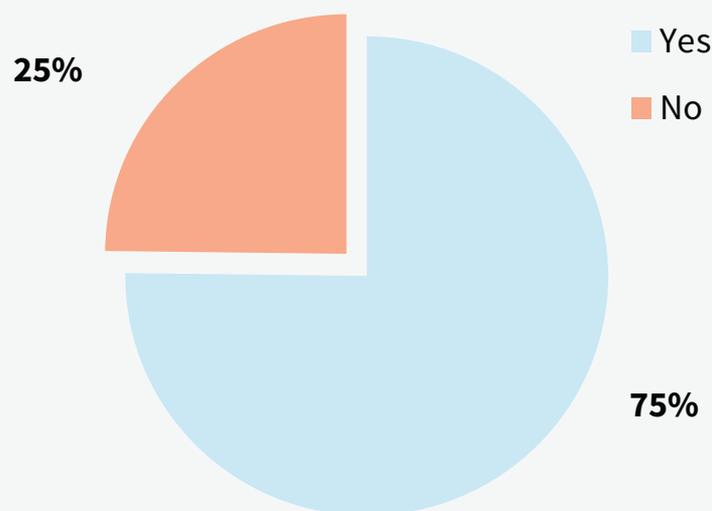
Figure 4. Distribution of caregivers and non-caregivers of the 2023 Mawazo Fellowship applicants.

It is important to note that the survey that generated these results did not use probability sampling methods to select respondents. Crucially, some of the observed differences between groups, particularly results relating to regional differences, were made relative to the total number of applicants in each region and not the total fellowship applicants.

Data Analysis

The data for this study was collected as part of a mixed-methods (quantitative and qualitative) approach. This report examines five key themes identified from the Academic Needs survey and the Fellowship Application data, namely: Academic Interests and the Status of Funding Opportunities; Research Mobility; Academic Support and Guidance ; Professional Growth; and the Embodied Experiences of African Women PhD Candidates. Moreover, additional thematic analyses offered a deeper examination of the qualitative interviews of Mawazo Fellows and Alumni, shedding light on the significant themes that emerged.

Ethnographic approaches such as in-depth interviews and semi-structured/open-ended questions were employed to engage the participants in conversation and share their PhD life stories. The life histories approach provided a look into the women's histories and experiences within a particular time framework. The data collected involved words, experiences, recollections and events in the everyday lives of the participants (Nyamnjoh, 2014). It offered an understanding of how various actions and perspectives of a person influence their ability to cope in social and institutional structures (Dhunpath, 2000; Gramling and Carr, 2004). Interview transcriptions, along with the quantitative data collected, were the main source of analysis. During the transcription process, themes began to emerge, and the data collected was grouped and coded. This selective coding, referred to as Grounded Theory, involved integrating the multiple categories that were developed to give rise to the theoretical framework and an understanding of the data (Pandit, 1996). These nuanced insights provide a richer understanding of the multifaceted experiences and perspectives within each thematic category, contributing to a more comprehensive view of the challenges and opportunities facing African women PhD candidates in academia today.

Thematic Areas
of Research

Funding Opportunities for African Women [1]

In this section of the report, we focus on understanding thematic areas of study for African women in research across the continent. We received 426 responses to the question on 'Thematic Areas of Interest', gaining valuable insight into the research sectors in which women across Africa are producing knowledge. The section proceeds further to interrogate funding opportunities for African women PhDs, which identifies the availability and access to financial resources for African women undertaking their PhD degrees in the thematic areas in question.

The thematic areas of research included in the 2023 Mawazo Fellowship application stem from internal research carried out by the Mawazo Institute as part of the Emerging Trends in Research Report (2023), which sought to understand areas of emerging priorities, needs and future growth in African research to better identify and support Mawazo Fellowship programme participants. To this end, the Mawazo Institute identified thematic priorities of 39 institutions financing research on the continent; surveyed 20 African experts from the institute's wider network working across universities, research institutions and the private, public and voluntary sectors; and reviewed 11 reports and journal articles discussing trends in the topical and thematic focuses of publications produced by researchers based in Africa. Mawazo identified nine major themes of emerging interest in the ecosystem as follows: (1) Agriculture and Food Security; (2) Business, Trade and the Economy; (3) Climate Change, Natural Resources and the Environment; (4) Education and Pedagogy; (5) Energy and Engineering; (6) Gender, Rights and Governance; (7) Information and Technology; (8) Life and Health Sciences; and (9) Mathematical and Physical Sciences. Figure 5 and Table 1 outlines the thematic areas of research for the 2023 Mawazo Fellowship programme applications across Africa.
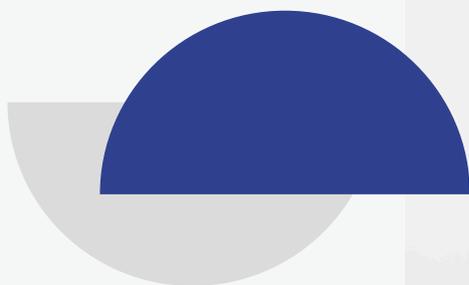
1 Data used in this section is selected from 426 applicants who submitted an answer to 'Adding Value to Thematic Area'; 501 applicants left the section "blank" and did not provide an answer.

Table 1. Thematic areas of research for the 2023 Mawazo Fellowship programme applications across Africa.

Thematic Area of Research	Central Africa	Eastern Africa	Northern Africa	Southern Africa	Western Africa	Grand Total
Agriculture and Food Security	5	43	0	7	40	95
Business, Trade and the Economy	0	17	0	9	10	36
Climate Change, Natural resources and the Environment	6	29	0	9	35	79
Education and Pedagogy	0	13	0	9	6	28
Energy and Engineering	0	7	0	3	3	13
Gender, Rights and Governance	1	16	0	11	10	38
Information and Technology	1	12	0	2	7	22
Life and Health Sciences	10	38	1	12	37	98
Mathematics and Physical Sciences	1	11	0	2	3	17
Grand Total	24	186	1	64	151	426

4%
22.3%
23%
8.5%
5.2%
8.9%
18.5%
3.1%
6.6%

- Agriculture & food security
- Business, Trade and the Economy
- Climate Change, Natural resources and the Environment
- Education and Pedagogy
- Energy and Engineering
- Gender, Rights and Governance
- Information and Technology
- Life and Health Sciences
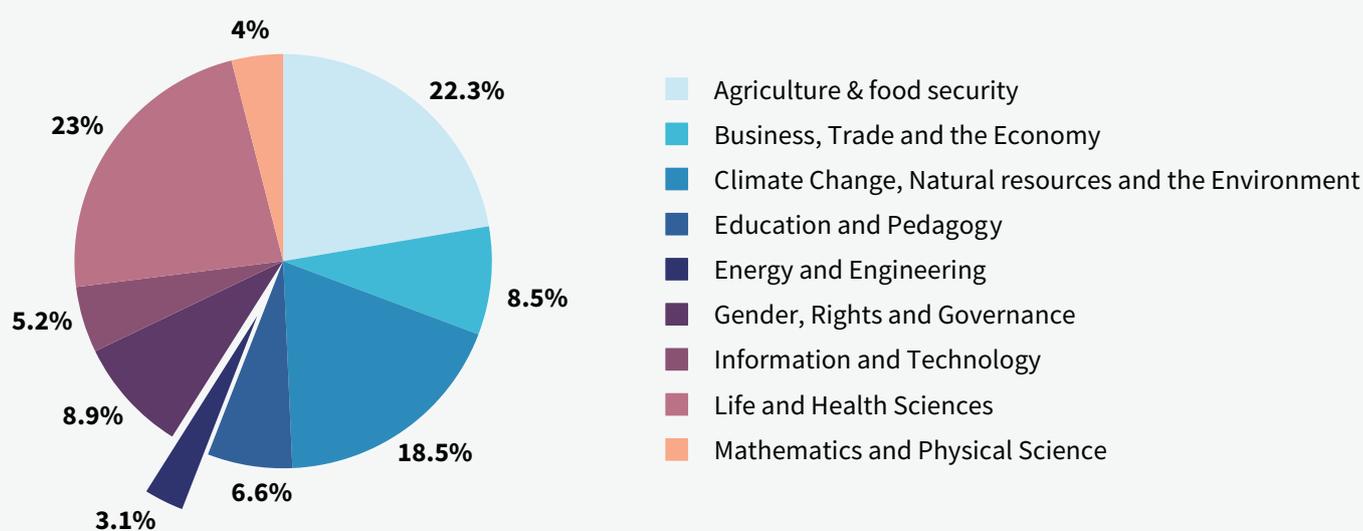- Mathematics and Physical Science

Figure 5. Overall alignment of Fellowship applicant research to Mawazo thematic areas

Figure 6 below illustrates the distribution of thematic areas among the Fellowship applicants, revealing distinct regional preferences.[2] The majority of the regions have a strong inclination towards Life and Health Sciences, where the regional distribution of applications consists of Central Africa (42%), Western Africa (24%), Eastern Africa (20%), and Southern Africa (19%). For the second most popular thematic area, Agriculture and Food Security, Western Africa leads with 26%; Eastern Africa at 22%; Central Africa with 21%; and Southern Africa at 11%. Lastly, for Climate Change, Natural Resources and the Environment, 25% of the applications were from Central Africa, Western Africa had 23%, Eastern Africa represented 16% and Southern Africa at 13%.
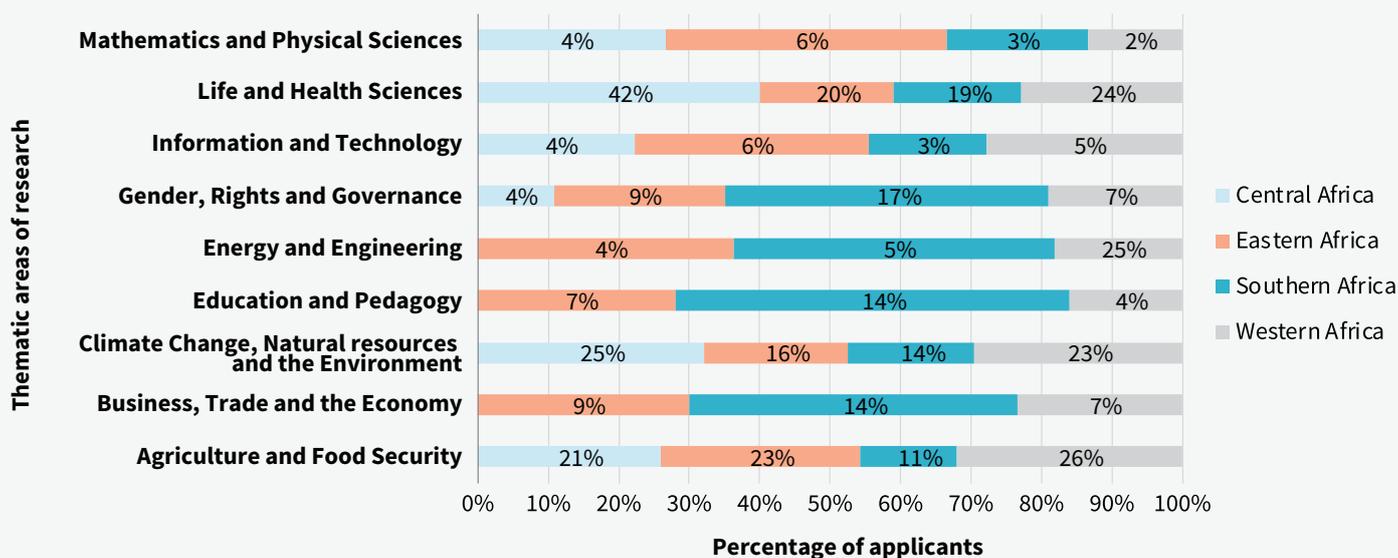
Figure 6. Regional distribution of thematic areas among Mawazo Fellowship applicants.

Southern and Eastern Africa have a more balanced distribution of disciplinary spread, with applications from both STEM and non-STEM subject areas. According to studies on building the capacity of PhD research in sub-Saharan Africa, over the past ten years, non-STEM subjects have experienced growth in their share of PhD production, even in the countries where STEM subjects have traditionally dominated (Herman and Sehoole, 2018). On the other hand, Western Africa and Central Africa are slightly more skewed in favour of the sciences. This might be due to the fact that these two regions have faced numerous health challenges in the past, including when Ebola and HIV were first reported. However, the need to build capacity in health sciences to respond to these and other health crises has driven a focus on scientific research in health-related fields across all regions. Investments in health sciences have increased in efforts to strengthen the regions' ability to handle health emergencies and improve overall health outcomes (World Bank, 2021a). The regions also face significant challenges in food security and agricultural productivity, hence the emphasis in agricultural and food security sciences (World Bank, 2021a). Central Africa in particular is heavily skewed towards the sciences, where only 4% of the applicants are in Gender, Rights and Governance, and no other non-STEM applications were received (Figure 6).

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2 Regions are defined along the African Union regional division. Northern Africa region is not represented in the data due to a significantly low application rate.

Despite some progress, gender gaps and discriminative social norms persist in Central Africa. Issues such as gender-based violence, low educational attainment for girls, and early marriages hinder the participation of women in fields like Gender, Rights, and Governance. Such social barriers limit the number of applicants in these areas (World Bank, 2021b). The region's economic development strategies often prioritise sectors that can drive immediate economic growth, such as agriculture, health, and STEM. This focus on economic development through scientific research can overshadow the importance of social sciences and governance (World Bank, 2024).

Research priorities across the four regions focus on science and technology areas, with an emphasis on health, agriculture, food security, energy, poverty reduction, and sustainable development, amongst others. These priorities also bear alignment to the UN Sustainable Development Goals (SDGs) and the African Union's Agenda 2063. Women's roles in managing household resources and ensuring family well-being often drive their interest in sustainable development, health and energy solutions, as these directly impact their daily lives and economic opportunities. Additionally, women face significant barriers in accessing financial services and training programmes, which influences their focus on research areas that can improve their socio-economic status and community resilience. The under-representation of women in Africa in physical sciences, mathematics, and engineering is significantly influenced by negative stereotypes and discrimination, lack of encouragement and role models, and workplace barriers (Liani et al., 2021).

Pervasive negative stereotypes about girls' and women's capabilities in STEM fields, coupled with discrimination in the classroom and workplace, discourage women from pursuing these subjects (Nguyen & Riegle-Crumb, 2021). Additionally, there is inadequate encouragement for girls to pursue math and science from an early age, and the lack of mentors further deters young women from aspiring to careers in these thematic areas (Okeke et al., 2017). In the professional realm, women face barriers such as lack of supportive organisational policies, gender stereotypes, and legal barriers in some countries, which limit their opportunities in technical roles and reduce their participation in higher-paying STEM-related jobs (Kolb et al., 2022).

National priorities also guide research and training at institutional levels to a large extent. For example, according to Herman (2013), the majority of universities in South Africa synchronise their strategic objectives and aspirations with key national papers. Concurrently, the South African government guides and directs these institutions towards national priorities via diverse funding channels. Another example is Kenya, which has focused its research agenda on its Vision 2030. This programme maintains a strong inclination towards STEM areas and is further exemplified by the focal areas endorsed by Kenya's National Research Fund (NRF Kenya) (Jowi, 2021). However, such initiatives often set highly ambitious targets that may not be achievable within the stipulated timelines. These goals can become an albatross, creating pressure on institutions to meet unrealistic expectations. For instance, the Vision 2030 agenda in Kenya aims to transform the country into a newly industrialising, middle-income nation providing a high quality of life to all its citizens by 2030. However, the socio-economic and political challenges faced by the country may hinder the realisation of these goals within the set timeframe. Whilst there is a promise of funding for government directives such as Vision 2030, the SDGs, and the AU Agendas, actual resource allocation is often hindered by corruption and inefficiencies, leading to a mismatch between national priorities and institutional needs. The top-down approach of these directives can stifle institutional autonomy and innovation, imposing one-size-fits-all policies that may not suit diverse local contexts. This focus on short-term goals can undermine the sustainability and long-term impact of research and training initiatives, with political instability and its cyclical nature further disrupting progress. Additionally, aligning research with global agendas, which often lack a true understanding of the local context, may divert attention from pressing local issues.

While most African countries have broad research priorities and their universities' research plans are aligned with these priorities, Jowi (2021) argues that in some instances there is a misalignment between PhD research foci and these priorities. This primarily arises from insufficient funding directed towards designated priority sectors or limitations in capacity. It is worth noting that merely establishing national or regional research preferences does not necessarily ensure that universities will align their research agendas with these priorities. Smaller public universities in particular may struggle with inadequate funding, outdated facilities, harmful internal politics, and limited research capacity, which hinder their ability to align with national research priorities. Meanwhile, larger more prestigious public universities attract top-tier faculty and students and often possess the infrastructure to support cutting-edge research. For instance, in South Africa, institutions like the University of Cape Town (UCT) and Stellenbosch University may not face significant limitations in funding or capacity due to their established reputations, strong alumni networks, and access to international funding (Teferra, 2013).

Women researchers in underfunded institutions may find it more difficult to secure funding for their projects, access state-of-the-art research facilities, or collaborate with international peers. This can limit their career advancement and contributions to their fields. Moreover, aligning research with national priorities may inadvertently marginalise research areas that are of particular interest to women or that address gender-specific issues. For example, research on maternal health, gender-based violence, or women's economic empowerment may not receive the same level of funding or institutional support as research in STEM fields, which are often prioritised.
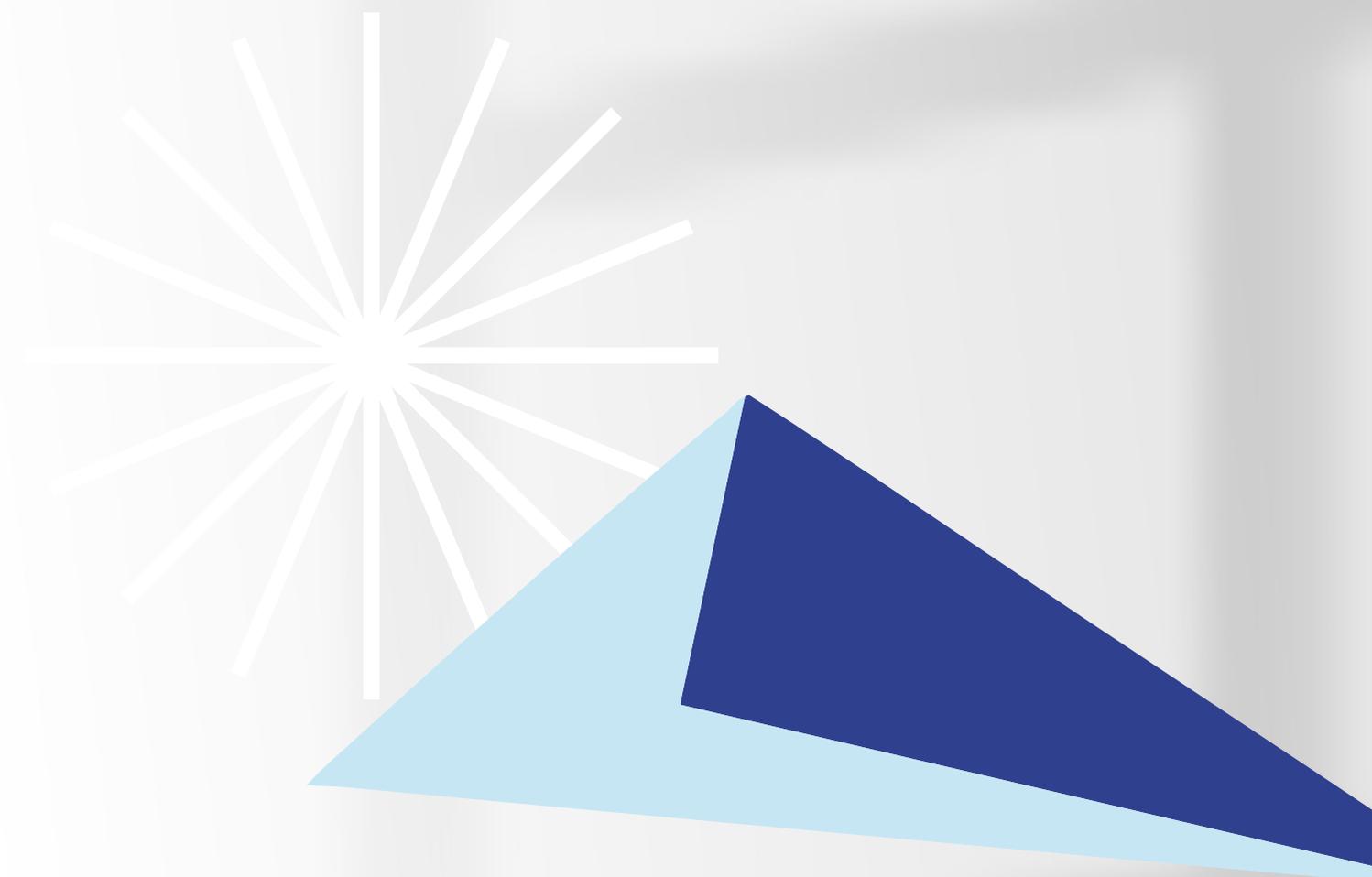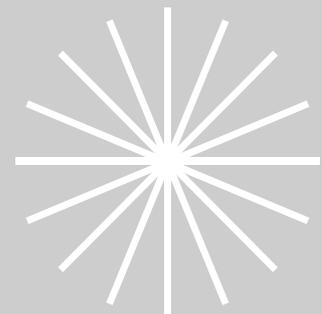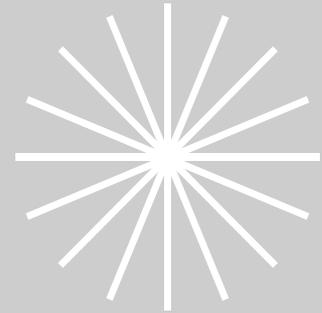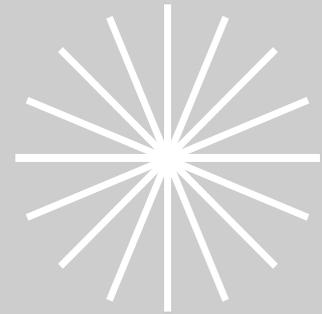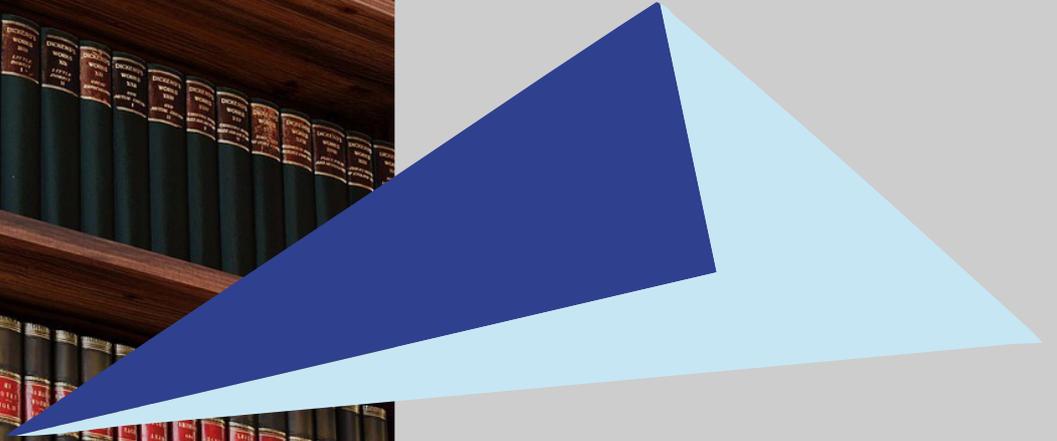
Funding Opportunities
for African Women PhDs

Funding is one of the most fundamental challenges for higher education in Africa (Oyewole, 2009; Jowi and Obamba, 2013). Whilst the rapid growth in student numbers in higher education across the continent is a positive sign, funding for universities remains severely limited (Jowi, 2021). According to the Department of Higher Education Training (DHET) (2020) in South Africa, obtaining research funding presents considerable challenges for many academics. The few who are knowledgeable about available opportunities usually take full advantage of them. However, many academics face difficulties in securing funding, mainly due to a lack of visibility of available funding, insufficient knowledge about these opportunities, and a lack of expertise in accessing them (Ramnund-Mansingh and Khan, 2020).

Monnapula-Mapesela (2017) and Shober (2014) emphasise that funding is especially problematic for the advancement of African women academics, derailing their academic progress. Further reporting by Herman and Sehoole (2018) noted that local government funding for higher education prioritises undergraduate studies in most African countries[3], meaning the allocations for PhD and research provisions remain low. The majority of public universities in Africa receive inadequate support from their national governments, which often translates into insufficient funding for research and the development of research capacities (Desmennu and Owoaje, 2018). Consequently, departments and doctoral schools do not provide paid studentships to PhD researchers. Instead, a majority of PhD students are self-funding, relying primarily on teaching contracts, research consultancy work, loans and financial assistance from their families to supplement their income. A Mawazo alumna from Eastern Africa took 3 years between her Masters and PhD to seek funding opportunities. During those 3 years, she worked as a part-time lecturer and had registered for a PhD course in the hope that the teaching salary would convert into tuition fees. However, she took on other work outside of academia to continuously supplement her personal expenses. With this additional income, she eventually begun her PhD. She narrates:

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3 Most of this funding for undergraduate study is in the form of loans, which students are required to repay after graduation.

> **... During those three years, I was working as a part-time lecturer at two different universities, and as much as I was doing other things, I was trying to save up to fund my cost of living with the part-time work. I knew that the part-time work would not be enough to pay for the tuition fee, and there are other expenses as well as the research activities, such as my lab work. My main aim was to have something to sustain me even as I looked for more opportunities.**

There is empirical evidence from Sub-Saharan Africa indicating perceived gender inequities in the allocation and distribution of tangible institutional research resources. For instance, in Ghana and Kenya, disparities have been observed in the provision of computers (Campion and Shrum, 2004), and across Sub-Saharan Africa, there are inequities in access to laboratory supplies and equipment (Beoku-Betts, 2005). In South Africa, a qualitative study among early-career women academics in Gauteng within the STEM fields revealed that women aged 30 to 35 often face gendered penalties in research funding allocation—participants felt that predominantly male reviewers consider this age group to be heavily involved in childcare responsibilities, thereby preferring to allocate resources to their male colleagues, who are perceived as having more time for research (Mawela, 2014). This bias not only perpetuates gender inequality within the academic community but also diminishes the immense contributions that women in this age group can make to their respective fields. Moreover, it fails to acknowledge the increasing role of men in childcare responsibilities and the importance of their physical, emotional and mental well-being for researchers of all genders. Additionally, the lack of funding for doctoral studies has been reported as a contributing factor to the low graduation rate of African women (Tsephe, 2023).

Despite the opportunities available to them, women continue to encounter obstacles in securing grant approvals. A Mawazo Fellow from Southern Africa describes her experience of applying for a European scholarship as gruelling due to the bureaucratic requirements, such as an endorsement from a UK-based supervisor. She elaborates:

> **When I registered for my PhD, I could not begin lab work immediately as I needed to develop the techniques to test for chem photosynthesis, and we do not have a chem expert in my country. Therefore, I had to seek funds to travel to the University of Oxford. Around the same time I applied for my PhD, I also saw a call for a UK scholarship, and I applied. The scholarship wanted confirmation that someone based in the UK would be able to supervise you. At that time, I had not made contacts (in the UK), but I submitted anyway. Eventually, they reached out for a reference from a UK-based supervisor. The application was very intense and it required a lot of work and effort... I think I really just operate with the faith (I have) in me.**

This experience encapsulates the bureaucratic and logistical barriers African women face when seeking scholarships and funding opportunities abroad, specifically requiring references based in the scholarship's country of origin, which can be a significant barrier (Huggins and Kihato, 2013). Nonetheless, in Johnson's (2014) exploration of the lived experiences of higher education women administrators in Sub-Saharan Africa, personal agency and the belief in oneself emerged as powerful tools for career success. In a similar manner, the Mawazo Fellow attributes her success in securing the scholarship to her innate strength and confidence to overcome obstacles for her upward mobility in higher education.

Research on the financial challenges faced by African women students, particularly mothers, indicates they require more financial assistance, which can become a source of anxiety, negatively affecting their studies. For example, a study by Chiloane-Tsoka (2016) found that South African women entrepreneurs, including students, face significant financial constraints due to limited access to funding and resources. Similarly, a study by Mlambo and Mabokela (2017) highlighted that African women in higher education often struggle with balancing academic responsibilities and motherhood, with the cost of childcare being a major barrier. These financial difficulties are compounded by the lack of institutional support and the increasingly rising cost of living, making it challenging for student mothers to continue their education. Although not focused on African women in particular, studies by Kensinger and Minnick (2018) on college mothers in the USA revealed that participants heavily relied on student loans to pay for childcare expenditures, exacerbating their financial difficulties. Most women depend on the family to take care of their children, and in the few cases where funding is achieved, it is usually not enough to support themselves and a family (Loots et al., 2016; Tsephe, 2023). Magano (2013) stressed that financial aid through bursaries or grants alone is insufficient to achieve gender equity in academia. Emotional and social support from the academic community, as well as from family and friends, is essential for success.

However, a number of African countries have put into place mechanisms to improve women's access to funding opportunities. For example, in South Africa, agencies such as the National Research Foundation (NRF) have financed initiatives like the Thuthuka programme to promote the advancement of women, and in Senegal, efforts have been made to improve women's access to research funding through the establishment of the "Projet d'Appui à la Promotion des Enseignantes Chercheures du Sénégal" (Support Project for the Promotion of Female Teacher-Researchers in Senegal) (PAPES) (Schultz and Rankumise, 2023; Sougou et al., 2022). The Regional Scholarship and Innovation Fund (RSIF) is another notable initiative aimed at nurturing Africa's next generation of women scientists. The RSIF gender strategy sets an ambitious target for women's representation among its PhD scholars, aiming for 50% of the target scholars to be women. The programme also includes a formal mentoring programme and gender-sensitive codes of practice to support and supervise the scholars (Bentil et al., 2021). In addition, the Africa Regional Scholarship and Innovation Fund for Applied Sciences, Engineering, and Technology (ASET) provides scholarships to finance PhD programmes in priority areas for citizens of Sub-Saharan Africa (SSA) countries at African host universities. The project prioritises meritorious and promising young African faculty without PhDs. In particular, it aims to improve mechanisms and design strategies for increasing the participation of women in PhD programmes and research in ASET fields. This includes developing communication, marketing, and recruiting strategies to achieve greater participation of women and supports opportunities for women researchers to present their research (World Bank, 2020).

Personal agency and the **belief in oneself** emerged as **powerful tools** for career success.

Paths to Research Funding

Figure 7 below demonstrates the distribution of Mawazo Fellowship applicants who obtained additional funding for their studies. 34% of applicants were successful in securing funding or scholarships, in stark contrast to the substantial 66% who did not receive any financial assistance for their PhD research. This significant disparity highlights a considerable gap in funding accessibility, suggesting that a majority of PhD candidates face challenges acquiring the necessary financial resources to support their research. Such imbalance has implications for the progress and completion rate of PhD programmes, affecting the overall advancement of research in their fields. It is important to recognise that "funding" does not always equate to free grants or scholarships. In many cases, funding encompasses a variety of financial support mechanisms designed to assist students in covering the costs of their education. These mechanisms include loans which must be repaid after graduation; co-pay arrangements where costs are shared between the student and the funding body; government advance loans that offer low-interest rates but still require repayment; work-study programmes that provide part-time employment opportunities to help cover expenses; deferred payment plans that allow for tuition payments to be spread out over time; and income-share agreements (ISAs) where students agree to pay a percentage of their future income for a set period after graduation.
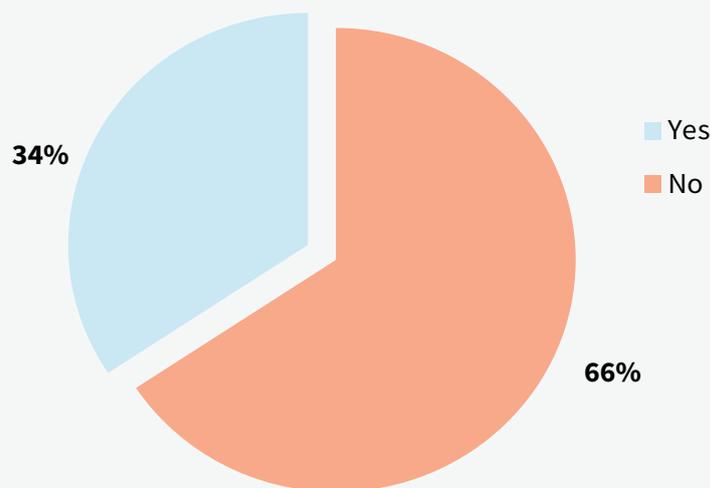

34%

■ Yes
■ No

66%

Figure 7. Percentage of the 2023 Mawazo Fellowship applicants who received further funding to support their research.

The most funded thematic areas are:

Energy and Engineering

Climate Change Natural Resources and the Environment

Further, Table 2 below provides a description of the sample of individuals across the continent who have received some form of funding for their PhD research. Southern Africa (53%), Northern Africa (40%), and Central Africa (33%) had the highest proportions of individuals who were successful in securing funding; however, this pales in comparison to the proportions that were unsuccessful. Southern Africa is the only region registering more applicants with funding compared to those without. It is noteworthy to acknowledge that research and innovation are resource-intensive, and that national governments, to a reasonable extent, will determine the importance of research as a key driver of economic development. Mugwagwa et al. (2019) argue that this is crucial because researchers, innovators and funders in Africa often follow the government's priorities on research and innovation, as well as its administration of allocated resources.

Table 2: Regional distribution of Mawazo Fellowship applicants who received funding.

Region	No funding (%)	Received funding (%)
Central Africa	67%	33%
Eastern Africa	68%	32%
Northern Africa	60%	40%
Southern Africa	47%	53%
Western Africa	71%	29%

Figure 8 provides further insight into the distribution of additional funding received across our strategic thematic areas. The most funded thematic areas are Energy and Engineering, Climate Change, Natural Resources and the Environment, Information and Technology, Life and Health Sciences and Agriculture and Food Security. These thematic areas received substantial financial support due to their critical role in addressing global and regional challenges. For instance, the Intergovernmental Panel on Climate Change (IPCC) highlights the importance of mobilising resources for climate change mitigation and adaptation, which includes investments in renewable energy and energy efficiency. Additionally, substantial funding in climate finance supports efforts to invest in cleaner energy, more resilient communities, and stronger economies (Otundo, 2024). Conversely, the least funded thematic areas are Education and Pedagogy, Mathematics and Physical Sciences, and Business, Trade and the Economy. This indicates a glaring disparity in funding allocation, due to a perceived lower immediate impact or urgency for development in Africa compared to the more heavily funded thematic areas.

Information and Technology   **Life and Health Sciences**   **Agriculture and Food Security**

A less educated African population perpetuates cycles of poverty, inequality, and dependency, making it easier for external interests to exploit the continent's vast resources and labour force. The underfunding of education in Africa also has direct implications for business, trade, and the economy since it contributes to a workforce that is less productive and less capable of adapting to new technologies and market demands. **This situation perpetuates a reliance on low-skilled labour and primary commodity exports,** which are often subject to volatile global prices and exploitative trade practices. As a result, African economies remain vulnerable and unable to achieve the diversification and value addition needed for long-term stability and growth.
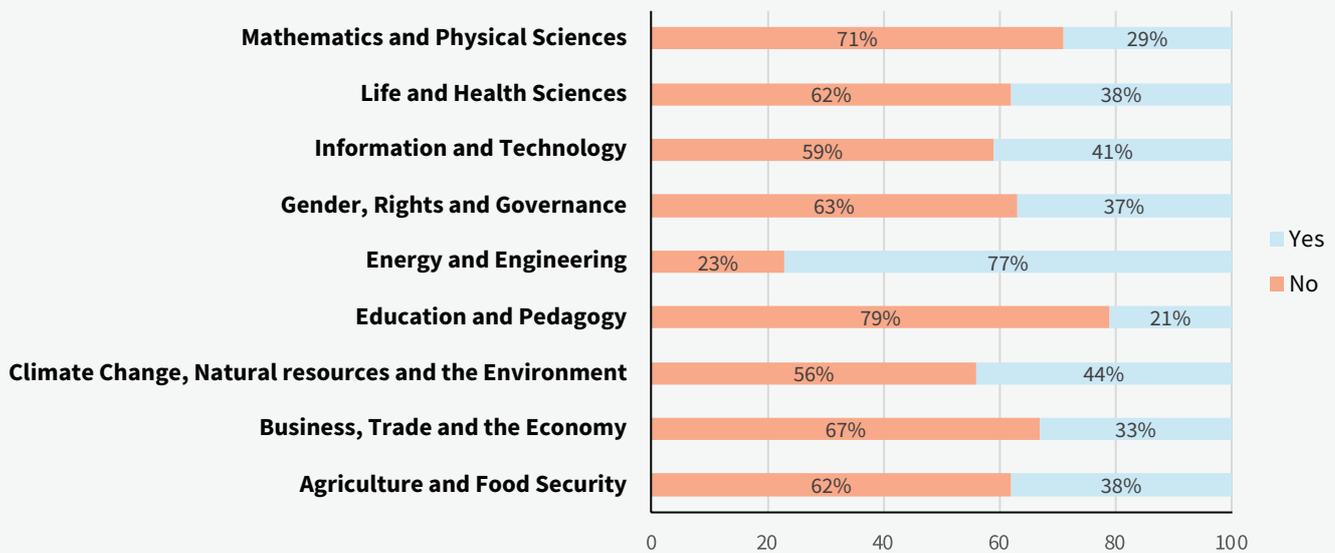
Figure 8. Distribution of additional funding received across Mawazo strategic thematic areas.

The impact of lacking access to research funding opportunities

Overall, the lack of access to research funding opportunities has a profound impact on African women undertaking their PhDs, with 97% reporting a negative impact on their research work and only 3% reporting no impact (Figure 9a). These figures indicate that a significant majority of applicants face substantial challenges due to insufficient funding. The Africa Regional Scholarship and Innovation Fund (RSIF) has noted that the overall proportion of women applying for scholarships remains low. This is due to various barriers, including societal expectations, family commitments, lack of awareness about available opportunities, and restrictive/inaccessible/hindering application processes (World Bank, 2020). The share of women graduating from tertiary education in engineering and other STEM-related fields is below 30% in many Sub-Saharan Africa countries, the underrepresentation means that women are less likely to receive funding opportunities, which are often competitive and limited to STEM-related fields (Marie-Nelly, 2021). Research funding provides the necessary resources for conducting experiments, accessing data, and acquiring the materials and equipment essential for high-quality research. It also enables women scholars to focus on their research without the added burden of financial stress. Many full-time PhD candidates rely on funding to cover tuition fees, living expenses, and research-related costs. Without this support, they may need to take on additional jobs or responsibilities, which can detract from their research time and productivity. This is particularly challenging for women, who often face additional societal and familial expectations. Without adequate funding, women scholars may struggle to complete their research projects, publish their findings, and contribute to their fields (Bentil et al., 2021).

The lack of funding not only affects the immediate research capabilities of women PhD candidates but also has long-term economic and social impacts. Women are more likely to remain in lower-paying jobs that are less economically impactful, which perpetuates the cycle of underrepresentation and limited access to resources. Funding plays a critical role in levelling the playing field for women in academia. Receiving research grants can significantly impact future outcomes for women scholars (Sato et al., 2021). For instance, funding can enhance their ability to publish in top journals and secure future large grants, which is crucial for building a successful academic career and achieving recognition in their fields. Developing formal mentoring programmes and creating gender-sensitive codes of practice in support and supervision of women scholars as an effort to level the playing field and ensure equal opportunities for women and men therefore becomes essential.
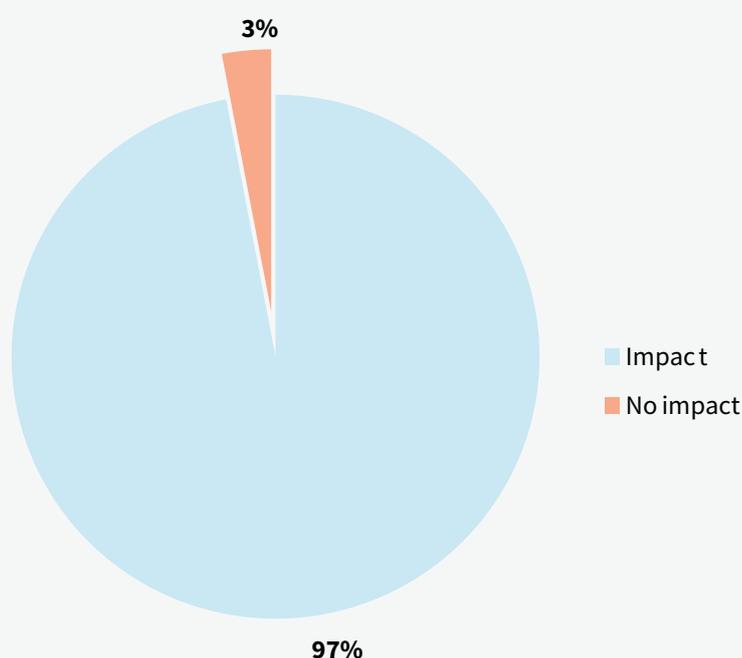
Figure 9a. Impact of lacking access to research funding opportunities.

According to the data (Figure 9b), age differences reveal that women within the ages 30-49 experience a higher impact on their research work due to a lack of funding opportunities, with an average of 98% reporting an impact. This might be because women in the 30-49 age group often bear significant economic responsibilities, including supporting their families and managing household expenses. Women in this age range often face compounded discrimination, where both their gender and age work against them in securing loans and investments. Financial institutions may perceive them as higher-risk borrowers compared to their male counterparts or older women, further limiting their access to necessary funds. Furthermore, societal expectations and cultural norms often place additional pressure on women in the 30-49 age group. This age group is also likely to have dependent children, increasing their financial burden. They are frequently expected to balance professional responsibilities with caregiving roles, which can limit their time and energy to pursue funding opportunities in a proactive and strategic manner. This dual burden can lead to higher stress levels and reduced capacity to engage in activities that can improve their financial situation, such as networking, attending training programmes, or seeking out beneficial connections both within and outside of academia. Another

factor is that women in this age group are often rejoining academia after having spent time away to pursue careers and/or to focus on family responsibilities. They would be re-entering the academy with limited networks, connections or support and thus having to find funding with little experience in securing research grants. The compounded effect of the aforementioned hurdles leads to a higher reported impact.

Older respondents, ages 50 and above, reported the highest no impact level of 7%, followed by the youngest group aged 25-29 with 5% (Figure 9b). This can be attributed to the fact that older respondents (50 and above) may have fewer financial obligations, such as dependent children, and are more financially stable, leading to a lower reported impact. The youngest group (25-29) may still be in the early stages of their careers, with fewer financial responsibilities and lower expectations for funding, resulting in the lower perceived impact. Additionally, this age group may also benefit from supervisors who were able to secure funding to onboard PhD students, with supervisors often selecting strong candidates already known to them straight from Masters programmes at the same university.
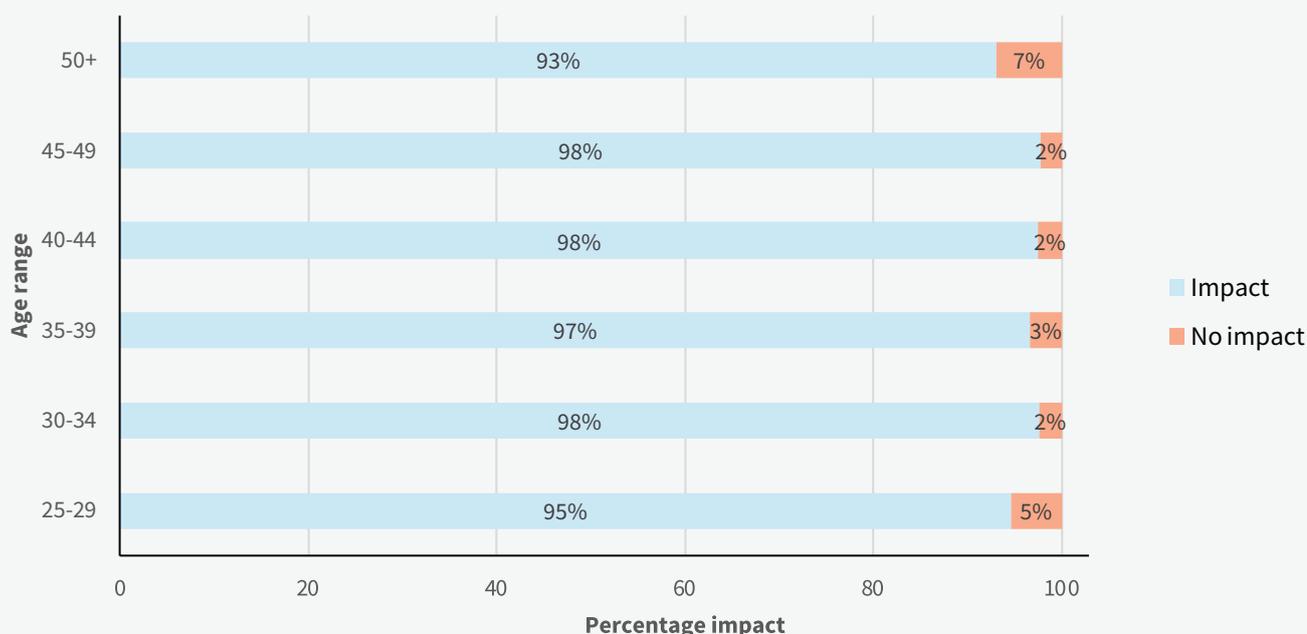
Figure 9b. Impact of lacking access to research funding opportunities, by age group.

Figure 9c shows how caregiver status increases the impact of lacking access to research funding. Among those who are caregivers, 98% reported an impact on their research work from their lack of access to research funding. In comparison, 94% of non-caregivers reported that they were impacted by a lack of access to research funding opportunities. Very few respondents reported no impact for both groups, with a nominal 2% of non-caregivers and 6% of caregivers reflecting no impact. This data indicates that caregivers are more likely to experience significant barriers due to a lack of funding. This is likely linked to time constraints, which can make it more challenging for caregivers to apply for research funding, meet deadlines, and fulfill the requirements of funded projects. As a result, caregivers may find it more difficult to compete for and secure research funding compared to their non-caregiver counterparts.

Caregiving can also impose financial strain on individuals. The costs associated with caregiving, such as medical expenses, special equipment, and additional household needs, can reduce the financial resources available for other purposes, including research activities. This financial strain can make it more challenging for caregivers to invest in their research, attend conferences, or purchase necessary materials and equipment. Without adequate funding, caregivers may struggle to advance their research, leading to a greater impact on their work compared to non-caregivers. Also, researchers often rely on professional networks to learn about funding opportunities, collaborate on grant proposals, and gain support from colleagues. Caregivers are likely to have limited opportunities to engage in networking activities due to their caregiving responsibilities. This limitation can reduce their visibility in the research community and hinder their ability to form collaborations that can enhance their chances of securing funding. The psychological and emotional impact of caregiving can also affect researchers' ability to secure funding. Caregiving can be emotionally taxing, leading to stress, burnout, and reduced mental well-being. These factors can impact caregivers' productivity, motivation, and overall ability to focus on their research. The added stress of securing funding in an already competitive environment can exacerbate these challenges, making it more difficult for caregivers to succeed in obtaining research grants.
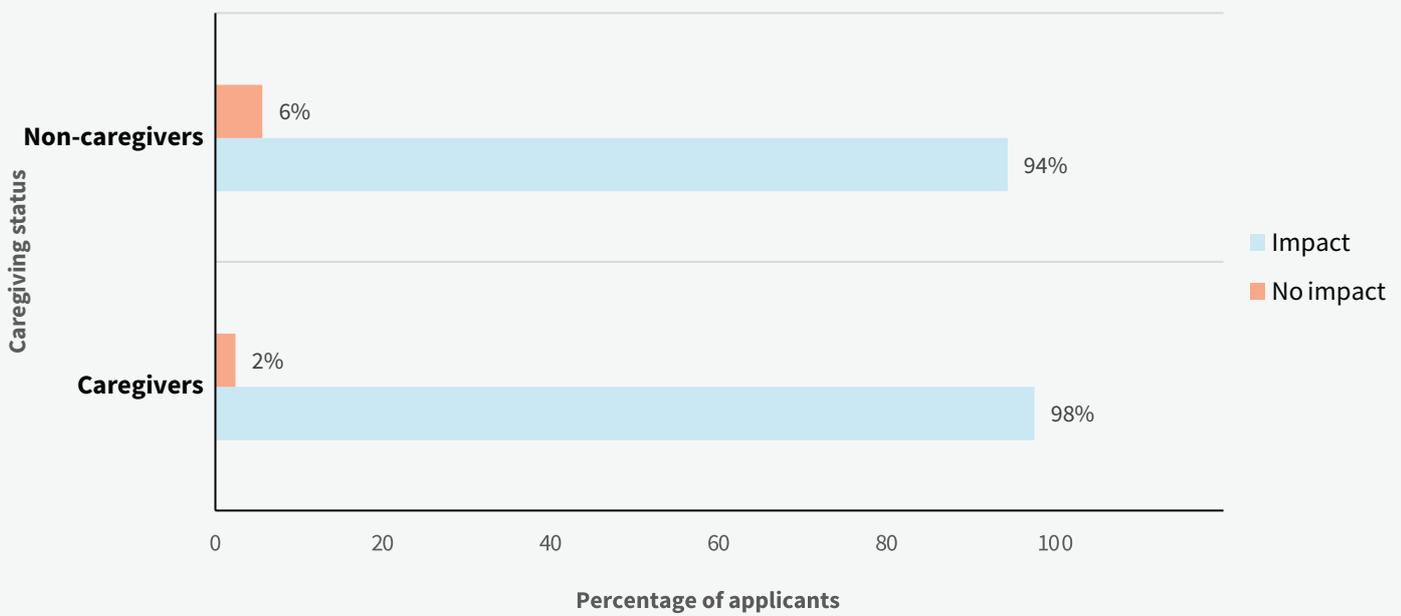

Figure 9c. Impact of lacking access to research funding opportunities, by caregiver status.

Various Means of Funding Research

Overall, 60% of applicants are currently funding their research with their personal savings, 15% are funded by their own academic institutions, 10% by other academic institutions in Africa and 16% are relying on other means of funding, including grants from academic institutions outside Africa, government, philanthropic organisations and professional associations (Figure 10a). This indicates that academic institution-provided funding is not a primary source of financial support for the majority of African women PhD candidates.

Other 16%
Own Savings 60%
Other academic institution in Africa 10%
Own academic institution 15%

0 20 40 60 80 100

Percentage of applicants
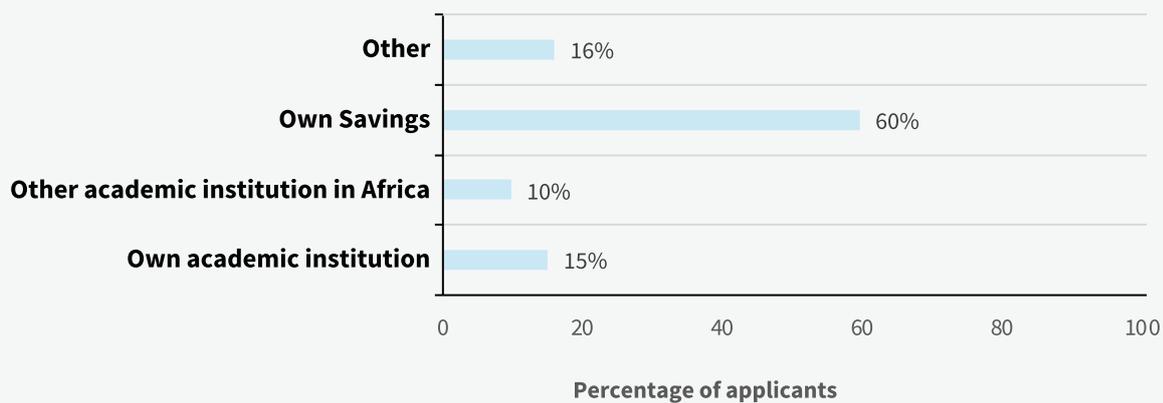
Figure 10a. Overall sources of research funding for applicants.

This is plausibly because academic institutions may face budget constraints that limit their ability to provide adequate funding for research projects. In some cases, academic institutions may choose to allocate resources to other areas of operation, such as teaching and administration, rather than prioritising research funding. As a result, researchers are compelled to seek alternative sources of funding or use their personal savings. Funding opportunities from external sources, such as grants from academic institutions outside Africa or professional associations, are often highly competitive, making it challenging for researchers to secure the necessary financial support.

Regional differences in self-funding for research reveal significant disparities across the continent. Central Africa exhibited the highest proportion of applicants who are self-funding their research, with 69% using their own savings. This is followed closely by Western Africa, where 66% of applicants were self-funding their PhDs, and 58% in Eastern Africa. Southern Africa had the least number of self-funding applicants at 45%. While still showing substantial percentages of applicants self-funding, it is indicative that these regions have slightly better access to alternative funding resources. Southern Africa stands out with the highest proportion of applicants receiving grants from their universities, at 28%. The rest of the regions fall significantly behind; Eastern Africa trails with 15%, followed closely by Western Africa with 11% and Central Africa with 4%. These great variations highlight the uneven distribution of university resources and indicate better financial support systems in Southern Africa compared to other regions.
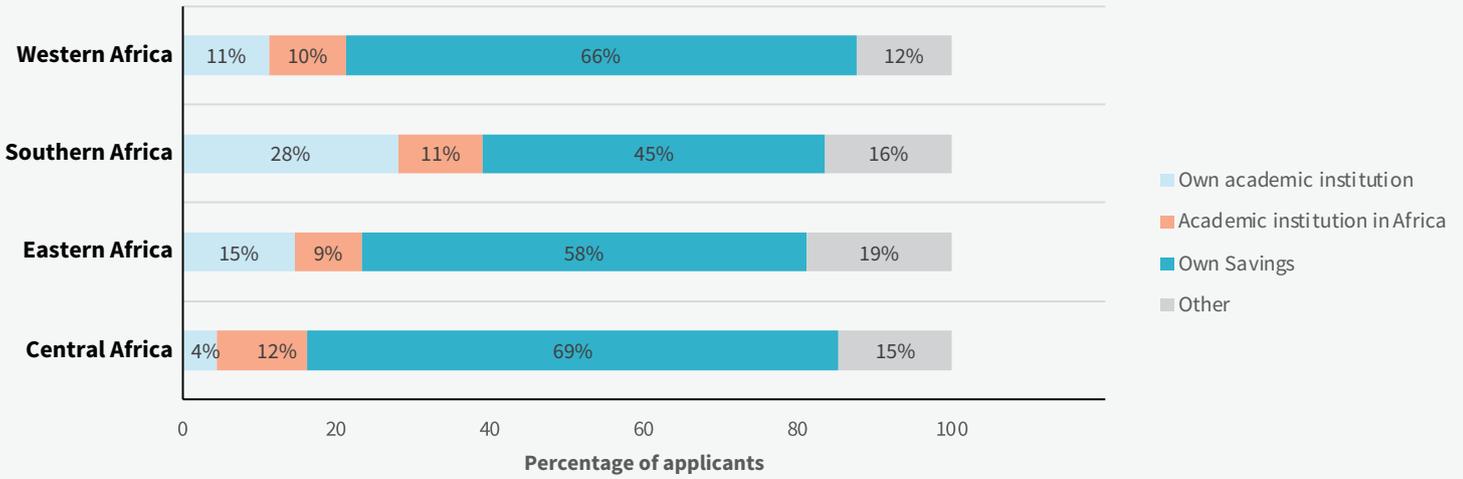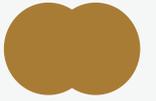
Figure 10b. Percentage of applicants by region with various sources of research funding.

The data in Figure 10c below shows notable variations in research funding for applicants coming from their own savings across different age groups. The highest percentage is seen in applicants aged 45-49 years and above, with 83% using personal savings to fund their research. This is closely followed by women aged 50 and above at 78% and those aged 40-44 at 73%. The data indicates that older applicants have accumulated savings over their careers, allowing them to self-fund their research. The reliance on personal savings decreases with younger age groups, with 58% of women aged 35-39, 51% of those aged 30-34 and 39% of those aged 25-29 fund their research in this manner (Figure 10c). This is due to younger groups having less financial stability or fewer accumulated resources.
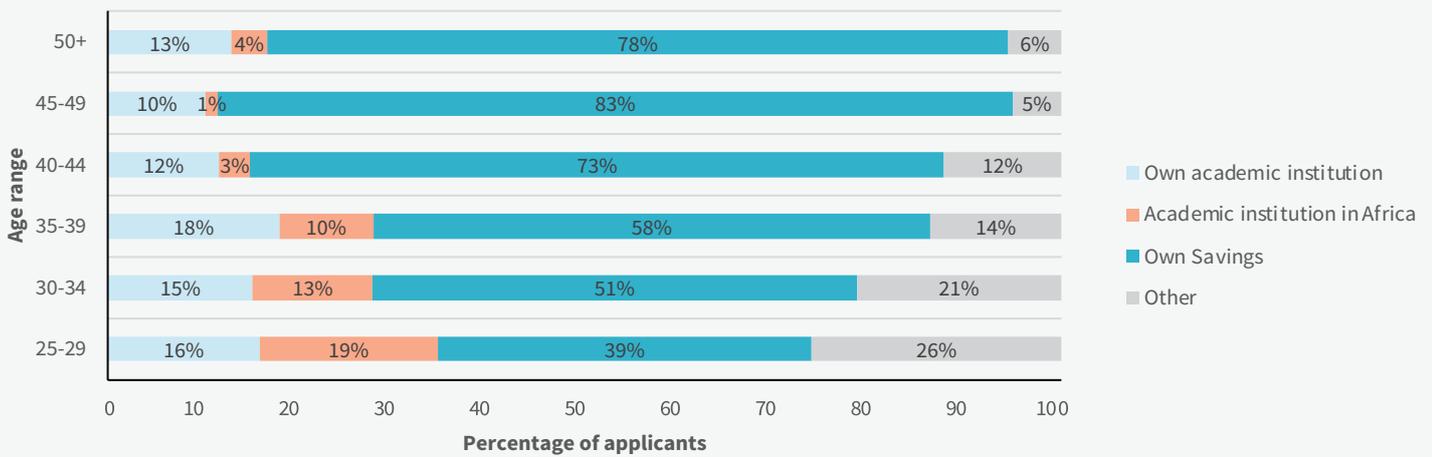
Figure 10c. Percentage of applicants by age group with various sources of research funding.

Younger researchers have access to a broader range of funding opportunities specifically targeted at early-career researchers. They are also more open to exploring innovative funding models, such as crowdfunding or partnerships with industry, to secure the necessary financial support for their projects. These opportunities include scholarships, fellowships, and grants from academic institutions, government entities, or philanthropic organisations. This suggests that younger PhD candidates have marginally better access to university grants compared to their older counterparts, reflecting differing institutional priorities or support structures for early-career researchers. This age group may also benefit from supervisors who have secured funding to recruit PhD students, as they often select strong candidates from their own university's Master's programmes, choosing those they are already familiar with.

Research
Mobility

Academic achievement is frequently evaluated through collaborative efforts involving researchers worldwide and international partnerships. Consequently, research mobility generally pertains to a researcher's capacity or chance to relocate and engage in their academic activities in different locations, institutions or countries in pursuit of their research goals. Research mobility can manifest in various forms, including academic exchanges, collaborative projects, attendance at conferences and seminars, and participation in international research programmes (Momeni et al., 2022).

International mobility for scholars is a key feature of the research ecosystem. Mobility is known to have positive effects on scholars and researchers alike, providing them with opportunities to interact with other scholars and network extensively both within and beyond their fields (Prozesky & Beaudry, 2019). Studies have shown that mobile researchers publish and are cited more often (Kong et al., 2022). They also have better access to funding and further training (Canibano et al., 2008; Prozesky & Beaudry, 2019). Additionally, they gain exposure to multicultural environments that push them beyond their comfort zones (Kerey & Naef, 2005), have access to top researchers in a specific field, and have the opportunity to work in the best laboratories and departments in the world (Beaudry et al., 2018). Momeni et al. (2022) observed higher rates of mobility for social scientists at the advanced career stages, as well as a positive correlation between mobility and scientific outcomes. However, there was no clear difference between men and women. The pursuit to embark on a new research journey outside of a scholar's home country is echoed by Mawazo Alumna, a Southern African national who undertook her PhD in East Africa:
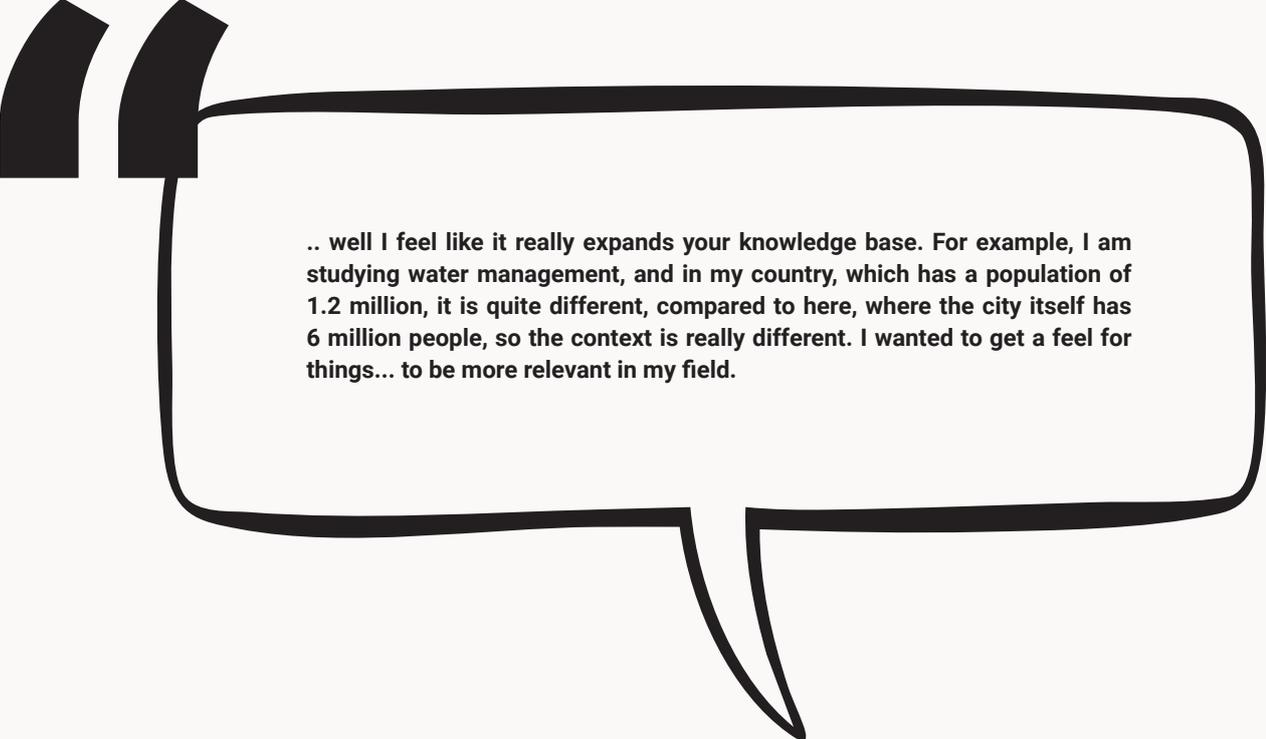
> .. well I feel like it really expands your knowledge base. For example, I am studying water management, and in my country, which has a population of 1.2 million, it is quite different, compared to here, where the city itself has 6 million people, so the context is really different. I wanted to get a feel for things... to be more relevant in my field.

She further elaborates on how her relocation to East Africa opened up greater access to opportunities for her career advancement:
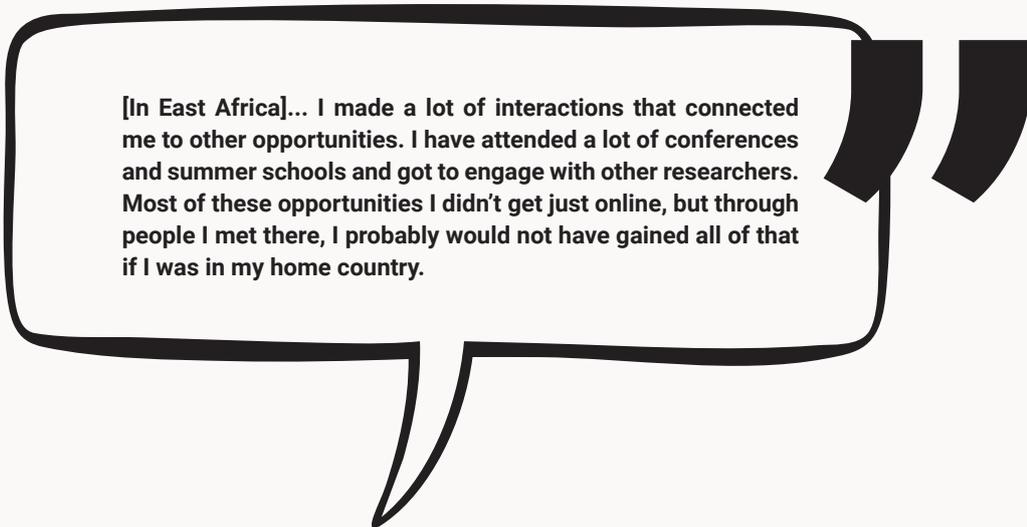
> [In East Africa]... I made a lot of interactions that connected me to other opportunities. I have attended a lot of conferences and summer schools and got to engage with other researchers. Most of these opportunities I didn't get just online, but through people I met there, I probably would not have gained all of that if I was in my home country.

The alumna's choice to conduct her PhD in East Africa highlights the turning tide of African researchers opting to undertake their scholarly work on the continent. This academic mobility has only recently gained traction among African higher education institutions since the 1990s, following years of civil wars, political unrest and economic crises, which favoured international academic mobility outside of the continent (Knight & Woldegiorgis, 2017). Strong colonial segregation of African higher education institutions along Anglophone, Francophone and Lusophone lines facilitated more international mobility to European countries than within African higher education institutions (Woldegiorgis & Doevenspeck, 2015). However, despite the many challenges that have faced African higher education institutions since the independence era, there has been a growing trend of intra-regional academic mobility. This slow and steady growth has been a result of the increased economic benefits, political and social stability in some African countries since the mid-1990s, as well as the progressive economic integration among African countries and the rapid expansion of the higher education sector (Knight & Woldegiorgis, 2017).

Our findings showed that 79% of applicants are undertaking their PhD in their home country, 21% of applicants are undertaking their PhD in another African country, and less than 1% undertook their Masters outside of the continent. This reflects a degree of intra-continental mobility among African women scholars and indicates a strong commitment to contributing to research and academic developments within local, regional and continental contexts. Kenya (24%), Nigeria (19%), and South Africa (15%) emerged as the countries with the highest number of applicants undertaking their PhD in their home country and also had the highest number of applicants of other African nationalities undertaking their PhD research in the respective countries. South Africa had the most diverse PhD applicants in terms of nationalities, with 16 countries from across the continent represented. Additionally, South Africa also had the highest number of regional applicants, with 31% of applicants coming from the Southern Africa region. While South Africa was a prominent choice for many applicants to undertake their PhD, there were no South African applicants undertaking their PhD outside of South Africa. Additionally, <1% of Southern African applicants undertook their PhD in another region. These findings indicate that the distribution of applicants may reflect the varying capacities and strengths of higher educational institutions in different African countries. Strong institutions attract local and regional scholars, while those regions with fewer applicants may need more support and recognition.

Morocco

Tunisia ①

Egypt

Mali ①

Niger ②

Senegal

Sudan

Burkina Faso

Benin ①

Nigeria ⑱

Ethiopia ①

Côte d'Ivoire

Ghana ⑥

Cameroon ②

Somalia

Uganda ③

Kenya ⑮

Rwanda ①

Burundi

Tanzania ④

Malawi ④

Zambia

Zimbabwe

Namibia ⑤

Bostwana ②

Movement of applicants to Kenya

Movement of applicants to Nigeria

Movement of applicants to South Africa

South Afrca

Eswatini ②

Lesotho ④
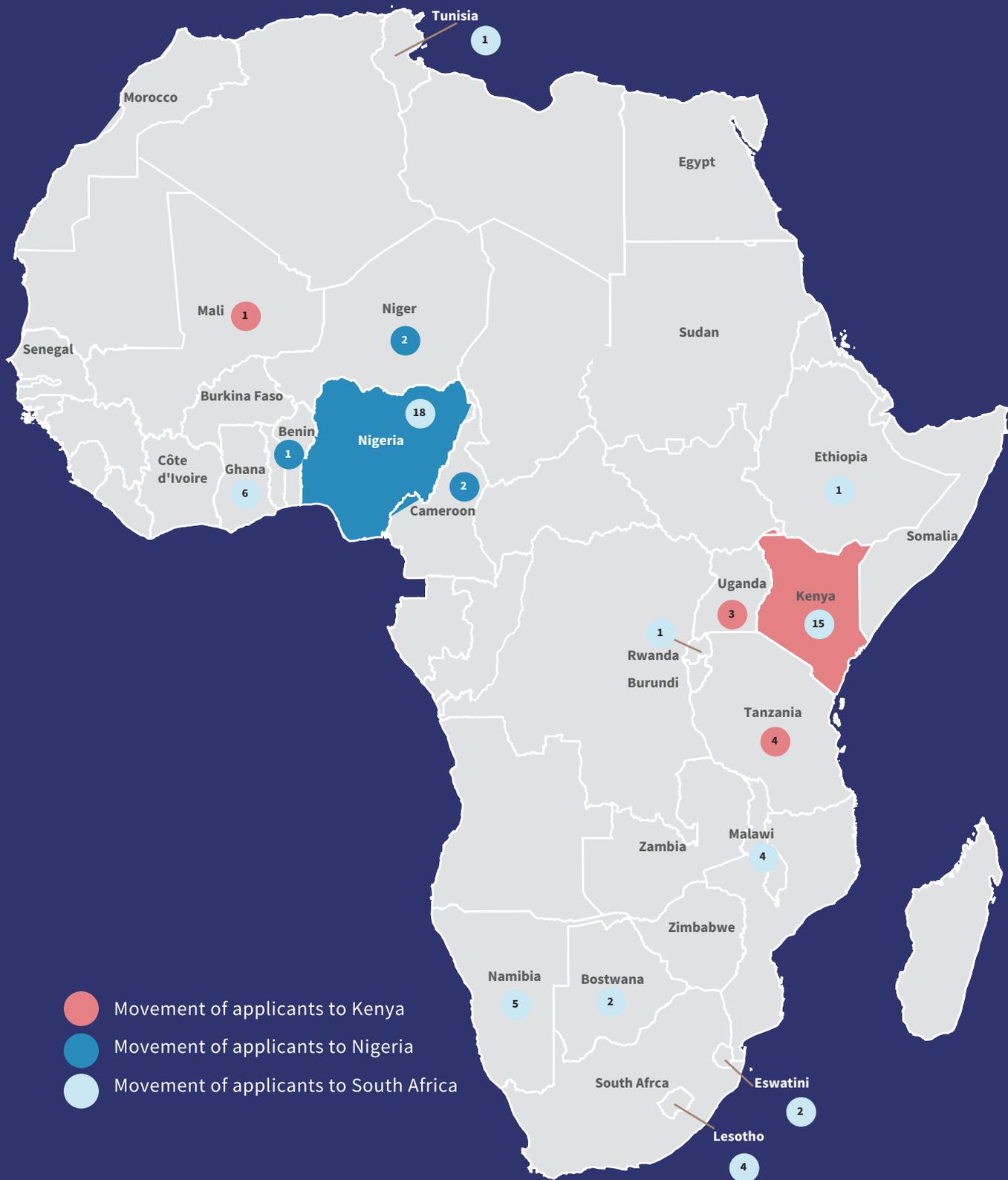
Figure 13. Number of applicants moving to undertake their PhD studies in Kenya, Nigeria and South Africa.

Barriers to Women's Academic Mobility

Though participation in research by women-identifying individuals has seen significant advancement over the last few years, the vast majority of women researchers are not mobile (Jöns, 2011; Ovseiko et al., 2017). Studies have shown that African women are less likely to pursue international mobility. Various factors influence a woman researcher's ability to move abroad, including country of origin, family responsibilities, academic discipline, career stage, and limited funding opportunities, including age restrictions in funding criteria. Other challenges include environmental disasters, domestic terrorism, increased poverty, and political unrest, among societal threats conspiring to restrict women's academic mobility (Momeni et al., 2022).

As a consequence of fewer African women studying abroad, they usually do not receive the opportunity to develop links with institutions in other countries. In some particular cases, a combination of cultural, educational and travel limitations restricts the professional networks of African women academics, while men are more likely to travel abroad for education (Campion & Shrum, 2004; Tsikata, 2007). More so, Prozesky (2008) and Obers (2015) argue that the gender-differential effect of familial responsibilities on women's early career mobility has amplified negative impacts due to a lack of a dynamic research culture. Family responsibilities further translate to limited mobility, such as the inability to travel to conferences, restricting their access to supportive networks, which contribute positively to their research productivity.

Furthermore, poorer countries would rather favour men in mobility than women due to cultural norms, particularly where patriarchal power aligns women's actions with the belief that women should "stay at home" (Jayachandran, 2015). Other gender-related mobility restrictions on women's movements are extensively linked to patriarchal norms; for example, in some African countries, restrictions on women's interactions with non-familial men inhibit their movement outside of familiar and local areas (Miller & Shrum, 2012; Prozesky & Beaudry, 2019; Tamale & Oloka-Onyango, 1997).
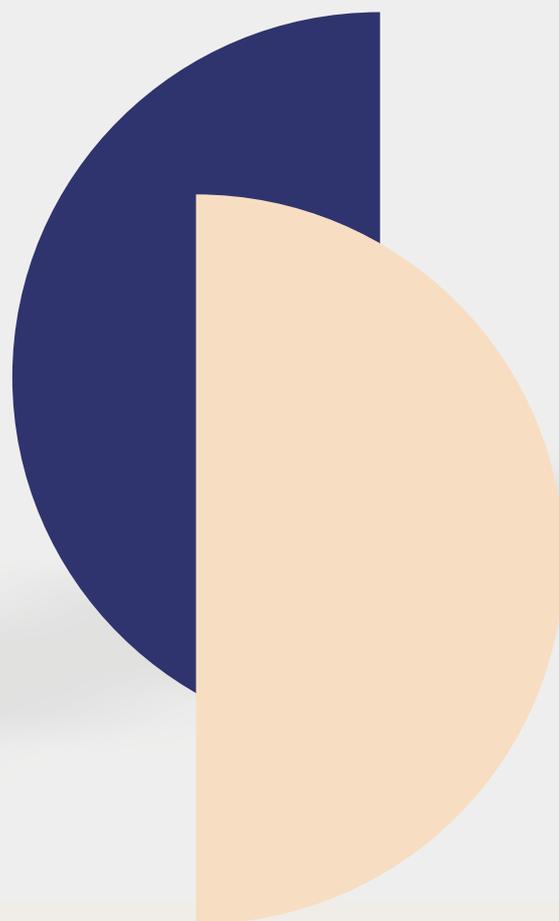
When women do have the opportunity to make the decision to travel abroad for career-enhancing opportunities, known as maternal migration, they have to leave behind partners and children due to visa restrictions or existing responsibilities within their communities requiring part of the family to stay behind. This separation, often for long periods of time, has devastating effects, including stress-induced miscarriages, a reality first-hand experienced by some of Mawazo's network of African women researchers. Maternal migration can have significant impacts on the well-being of the mothers themselves. Research indicates that these women often experience heightened levels of emotional distress, including feelings of sadness, guilt, and depression, particularly during the initial years of separation from their children. A study published in Frontiers in Psychiatry found that 22% of transnational mothers reported depression severe enough to interfere with daily activities, and 10% felt a lack of meaning in life without their children (Pineros-Leano et al., 2021). Furthermore, maternal migration can have significant impacts on the well-being of the children left behind. Research indicates that children separated from their mothers due to migration are more susceptible to emotional challenges, including feelings of loneliness, anxiety, and depression (Fellmeth et al., 2018). The absence of maternal care often leads to a decline in academic performance and social adjustment difficulties. While communal caregiving practices in certain cultures may offer some support, they do not fully mitigate the adverse effects of a mother's absence.

The COVID-19 pandemic significantly reduced mobility for researchers worldwide, affecting their ability to travel for academic and professional opportunities. However, our 2022 report on the impact of COVID-19 on Africa's Higher Education System (Mawazo Institute, 2022) showed that African women researchers, already less likely to be internationally mobile, experienced greater constraints on travel, further reducing their access to career-advancing opportunities. The COVID-19 pandemic further restricted their movement, reducing access to conferences, fieldwork, and international collaborations. Increased household and caregiving duties during lockdowns made it even more difficult for women to pursue mobility opportunities, reinforcing their disadvantage compared to male researchers. Travel bans and funding cuts further limited their ability to collaborate internationally, restricting academic exposure and career progression. Additionally, women researchers faced challenges such as age restrictions in funding criteria and fewer financial resources, making it harder to resume mobility even as restrictions eased.

However, the COVID-19 pandemic also disrupted the status quo of academic mobility (Oanda et al., 2022). This is especially true for researchers from Africa, Latin America and Asia, who often experience difficult and complicated travel requirements. For researchers from these regions, the preference to travel to America and Europe for academic purposes is facing a shift as strong institutions in their home countries become hubs for intra-regional mobility and collaboration. Oanda et al. (2022) further argue that there is a transition towards virtual mobility as virtual webinars and meetings continue to advance and hybrid conferences become the norm. The travel restrictions imposed by COVID-19 further built solidarity and collaboration among African researchers, redirecting their efforts toward new partnerships that strengthen intra-regional mobility, cooperation and resource sharing within the continent.
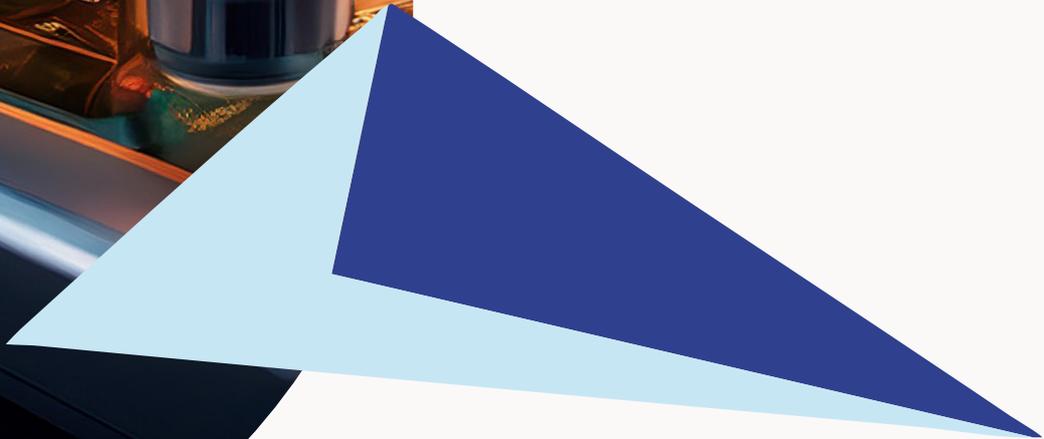
Academic
Support and Guidance

The journey to obtain a PhD has often been described as lonely, but doctoral candidates find support from various networks such as family, friends, colleagues, supervisors, and university staff, among others. University institutions cannot guarantee the support that emanates from family and friends; however, academic support has been linked to productivity and research experience (Seckin & Varol, 2022). Academic support is often composed of academic, conceptual, linguistic, and editorial types of support. High-quality PhD support plays a crucial role in building research capacity by developing a significant number of skilled individuals capable of conducting independent, original research and mentoring others. Therefore, PhD support demands considerable time, supervision, mentorship, robust research networks, and immersion in strong research environments (Manabe et al., 2018).

Ability to Collaborate

Academic mobility can significantly influence co-authorship patterns, thereby affecting both the quality and quantity of academic output. Collaboration is widely regarded as a means to improve researchers' abilities and performance, increase access to expertise, and gain national and international recognition (AOSTI, 2014; Confraria et al., 2020). However, African researchers face unique challenges that often hinder their academic progress and collaboration opportunities. The significance of international collaboration and the enduring influence of colonial ties are recognised as crucial factors affecting Africa's research outputs. Bibliometric studies have shown that there is little scientific co-authorship between African countries as a preference for partnering with high-income countries remains the preferred choice (Guns & Wang, 2017; Mêgnigbêto 2013; Narváez-Berthelemot et al., 2002; Onyancha & Maluleka, 2011).

In the cases where African countries collaborate with one another, collaborations have often been initiated by a non-African country (Boshoff, 2009; Toivanen & Ponomariov, 2011). More so, African researchers seldom serve as lead authors in international publications, and their contributions are relegated to data collection and involvement in local policy discourse (Boshoff, 2009; Carbonnier & Kontinen, 2014). Melber (2015) has argued that the postcolonial sphere of science, research and academic knowledge production (and its dissemination) is still largely shaped by external factors and western influences. Scholarly efforts still struggle to be acknowledged as "home-grown", yet African scholars, recognising and confronting this challenge, engage in persistent struggles to mitigate, if not entirely overcome, these distortions. Despite these efforts, ownership still remains outside the African continent, including the authority to define what is considered "truly" academic and relevant.

These challenges are experienced even more acutely by African women researchers as they experience what is known as double oppression, where their marginalised identities of being women and African face compounded forms of oppression, resulting in their distinct experiences and social disadvantages (Muthukumar, 2023). Yet, women view collaborations as a way to circumnavigate academic isolation in higher education institutions where men have historically been overrepresented and a masculine culture is enshrined. In such environments, academic debate, access to collaboration and research funding are often dominated by the informal and formal networks composed exclusively of male researchers (Abramo et al., 2013).

When examining the impact of their ability to collaborate, Figure 14a illustrates that Eastern Africa demonstrated the highest impact of applicants' struggle to collaborate with other researchers on their research work at 95%, followed by Central Africa at 94%, then Southern Africa at 93%, and Western Africa at 88%. Notably, few respondents experienced no impact on their ability to collaborate. This was only reported by 12% of Western Africa respondents, followed by 7% from Southern Africa, 6% from Central Africa, and 5% from Eastern Africa.
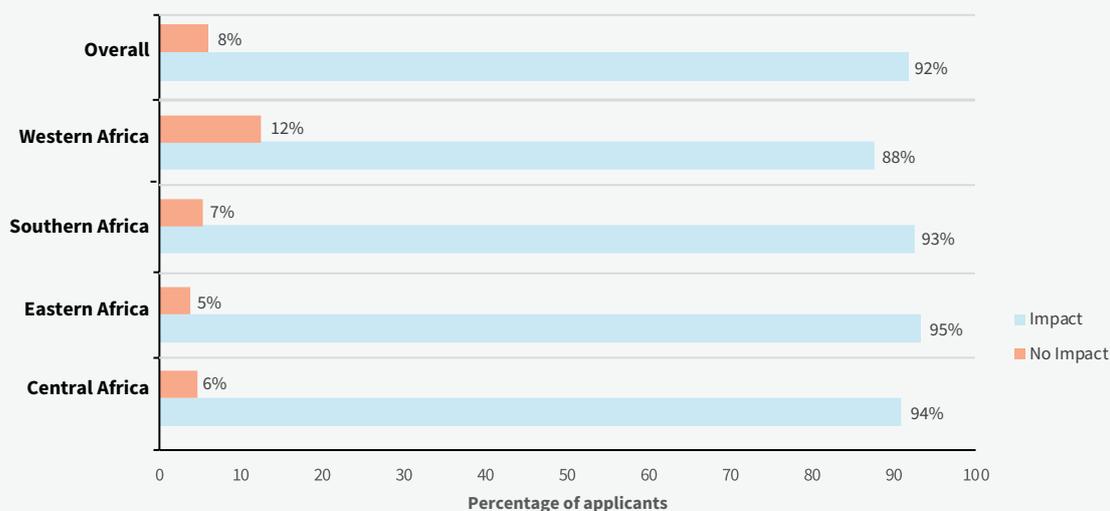
Figure 14a. Impact from struggling to collaborate with other researchers, by region.

The high impact of applicants' struggle to collaborate with other researchers can be attributed to the fact that many regions in Africa face significant resource constraints, including limited access to funding, research facilities, and technological infrastructure, which hinder researchers' ability to collaborate effectively. Additionally, the vast geographical distances between research institutions in different parts of Africa pose logistical challenges for collaboration, such as high travel costs, limited transportation infrastructure, and the time required to coordinate across different locations. The level of institutional support for research collaboration also varies across regions, with some areas lacking the necessary frameworks or policies to facilitate and encourage collaborative efforts. Communication challenges due to limited internet connectivity and communication infrastructure further impede researchers' ability to maintain regular and effective communication with their collaborators, leading to misunderstandings, delays, and reduced efficiency in collaborative projects.

Moreover, the availability of training and capacity-building programmes for researchers impacts their ability to collaborate. In regions where such programmes are limited, researchers may lack the skills and knowledge needed for successful collaborative research, including project management, grant writing, and the use of collaborative tools and technologies. Cultural and language differences also play a role in the challenges faced by researchers in collaborating, as these differences can lead to misunderstandings and difficulties in establishing effective working relationships, particularly in regions with diverse linguistic and cultural backgrounds. However, there are also efforts and mechanisms in place that help mitigate these issues to some extent. Western Africa appears to be better at collaboration due to the presence of strong partnerships and collaborative research opportunities, albeit often in collaboration with or supported by non-African partners. For instance, the Development Impact West Africa (DIWA) initiative fosters collaboration between Ghanaian researchers, Centre for Effective Global Action (CEGA) researchers, and policymakers, creating a robust environment for joint research efforts (CEGA, 2023). Furthermore, initiatives like the Transform Nutrition West Africa project by IFPRI demonstrate the commitment to collaborative efforts in addressing nutrition and food security issues (Ndibalema & Odhong, 2023). These projects bring together researchers, policymakers, and other stakeholders to develop and implement effective strategies for improving nutrition and health in the region.

Moreover, the collaboration between Harvard and West African institutions on climate adaptation in the Gulf of Guinea exemplifies the region's ability to engage in meaningful partnerships to tackle pressing environmental challenges (The Salata Institute for Climate and Sustainability, 2024). This collaboration focuses on understanding and addressing the extreme effects of climate change on coastal communities, showcasing the region's proactive approach to research

and adaptation. Political instability and institutional weaknesses in Eastern and Central Africa can create an environment that is not conducive to collaboration. Issues such as bureaucratic red tape, lack of supportive policies, and governance challenges can impede the ability of researchers to work together across borders.

Figure 14b shows women in the age groups of 35-50+ experienced the highest impact of struggling to collaborate with other researchers, with 95% of the applicants aged between 35-39 and 50+ reporting a struggle to collaborate and 93% of those aged 40-49 reporting an impact of struggle to collaborate with other researchers on their PhD work. Younger age groups were more likely to experience no impact on their ability to collaborate in research, with 10% aged 25-29 and 11% of those aged 30-34 experiencing no struggle, compared to 7% of those aged 40-49%, and 5% for those aged 35-39 and 50 or older.
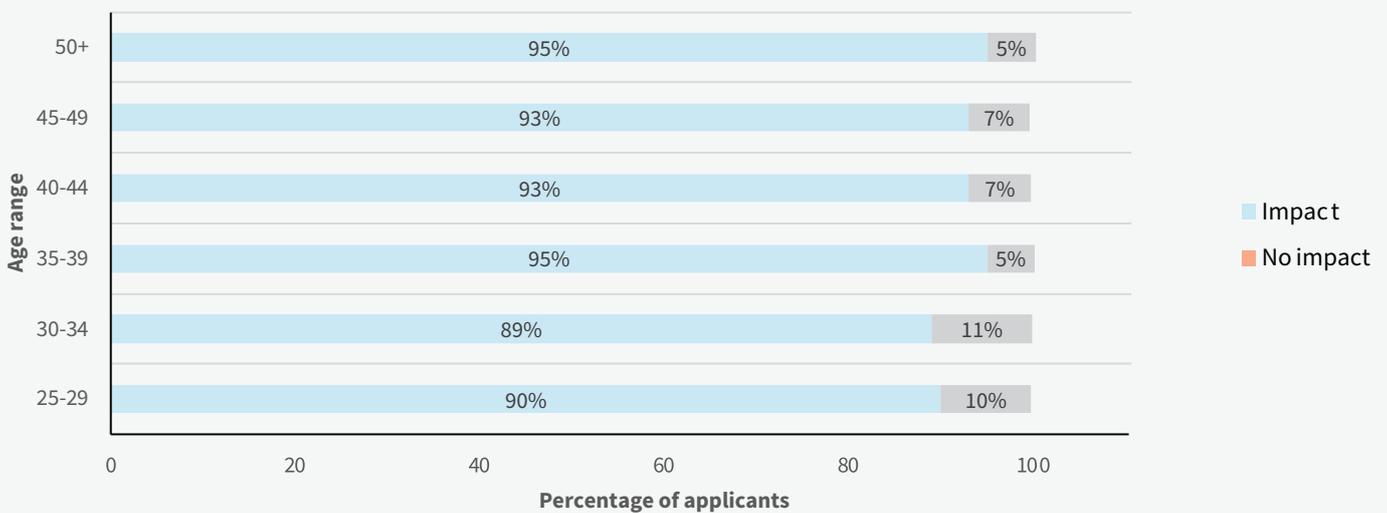
Figure 14b. Impact from struggling to collaborate with other researchers, by age.

This trend noted above in Figure 14b is attributed to increased professional isolation as women progress in their careers, arising from restricted opportunities for networking, funding, limited access to mentorship, and potential biases in academic and research environments. Research funding and resources are often critical for collaboration, yet women in the 35-50+ age groups may face challenges in securing funding due to biases in grant review processes, as they are often perceived as less competitive compared to younger researchers. This isolation can hinder their ability to form and maintain collaborative relationships with other researchers. Younger researchers, on the other hand, are generally more adept at using modern communication and collaboration technologies, which can facilitate remote and virtual collaboration, while women in the 35-50+ age groups may not be as comfortable or proficient with these technologies, making it more challenging for them to engage in collaborative research activities that rely on digital platforms. Women in the 35-50+ age groups may also face greater societal pressure to prioritise family and caregiving responsibilities over professional development. This also limits their mobility, which in turn limits their ability to engage in in-person and virtual collaborative activities.

Impact of Unsupportive Supervisors

The growth for students by expanding their opportunities or capabilities through the supervision process not only creates the knowledge that workers need to strengthen the knowledge economy but also aids in shaping empowered citizens able to engage critically with the production of relevant and reflective knowledge (Walker 2010b). In contrast, the lack of a supportive supervisor has a dramatic impact on the student's progress and success (Loots et al., 2016). Therefore, it is the importance accorded to colleagues that assist a student's scholarly journey such as peers, departmental colleagues, and supervisors (Boud & Lee, 2005). Supervisors have been noted to have a great impact on a student's PhD journey affecting their emotions, academic persistence (Sverdlik et al., 2018), and their overall dissatisfaction with the programme of study (Gardner, 2009). A study by Fisher et al. (2020) on gender and student performance in Sub-Saharan Africa noted that having an outstanding supervisor who offered consistent professional guidance and moral support - reported by approximately 20% of surveyed men and women PhD alumni - was linked to a 200% boost in publication output for men but only a minimal (6%) effect on women's publication output.

The researchers cited a plausible explanation is that supervisors encourage men to publish more compared to their women counterparts, especially if they subscribe to the stereotype that women are less capable in scientific fields. It is therefore not surprising that having a woman supervisor was found to reduce the PhD completion time by 18% for women (Fisher et al., 2020). This highlights the significant impact that gender representation and mentorship can have on academic success. Women supervisors may provide more relatable role models, offer tailored guidance, and create a more supportive and inclusive environment for women PhD students. This can lead to increased motivation, confidence, and efficiency in completing their doctoral studies. Additionally, the presence of women supervisors can help address and mitigate gender biases and barriers that women may face in academia, further contributing to their timely completion of PhD programmes. This shows that women supervisors can play a crucial role as role models for women students, challenging pervasive stereotypes in academia.

Our findings suggest that while the perceived impact of unsupportive supervisors varies slightly across regions, such impact is surprisingly low. According to this study, over half (52%) of African women were not impacted by unsupportive supervisor(s) across the age range, suggesting that such challenges do not drastically affect their ability to pursue their PhDs (Figure 14c).
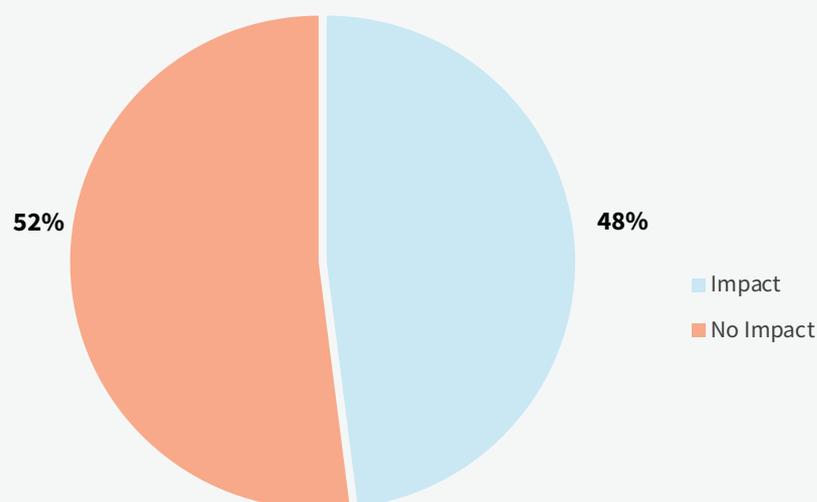

Figure 14c. Impact of unsupportive supervisor on applicants' research work.

The low impact of unsupportive supervisors might be because many African women rely on support systems outside of their academic environment, including family, friends, and community networks. These support systems provide emotional and sometimes financial support, which can mitigate the negative impact of unsupportive supervisors. Mentorship programmes also provide guidance from experienced individuals in their field, helping to counterbalance any lack of support from their direct supervisors. Some African universities and international partner institutions have implemented gender-sensitive codes of practice in the support and supervision of women scholars (Bentil et al., 2021; Llorens et al., 2021). These practices ensure that women PhD students receive the necessary support to perform to their highest potential. Studies have also shown that high levels of academic self-efficacy and intrinsic motivation can help African women to persevere in their PhD programmes despite unsupportive supervisors. Their belief in their own abilities and commitment to their research goals can mitigate the negative impact of unsupportive behaviour (Car-Michael, 2024). The rise of online communities and resources has provided African women with additional support and information. Online forums, social media groups, and academic websites offer platforms for sharing experiences, seeking advice, and finding solutions to common problems faced during their PhD journey.

Despite the study showing that 52% of the African women PhD candidates surveyed were not impacted by unsupportive supervisors(s), the impact of those who are affected is extremely consequential. A Mawazo Alumna who holds a PhD in Computer Science describes the harrowing experience of completing a 4 year PhD but not graduating:
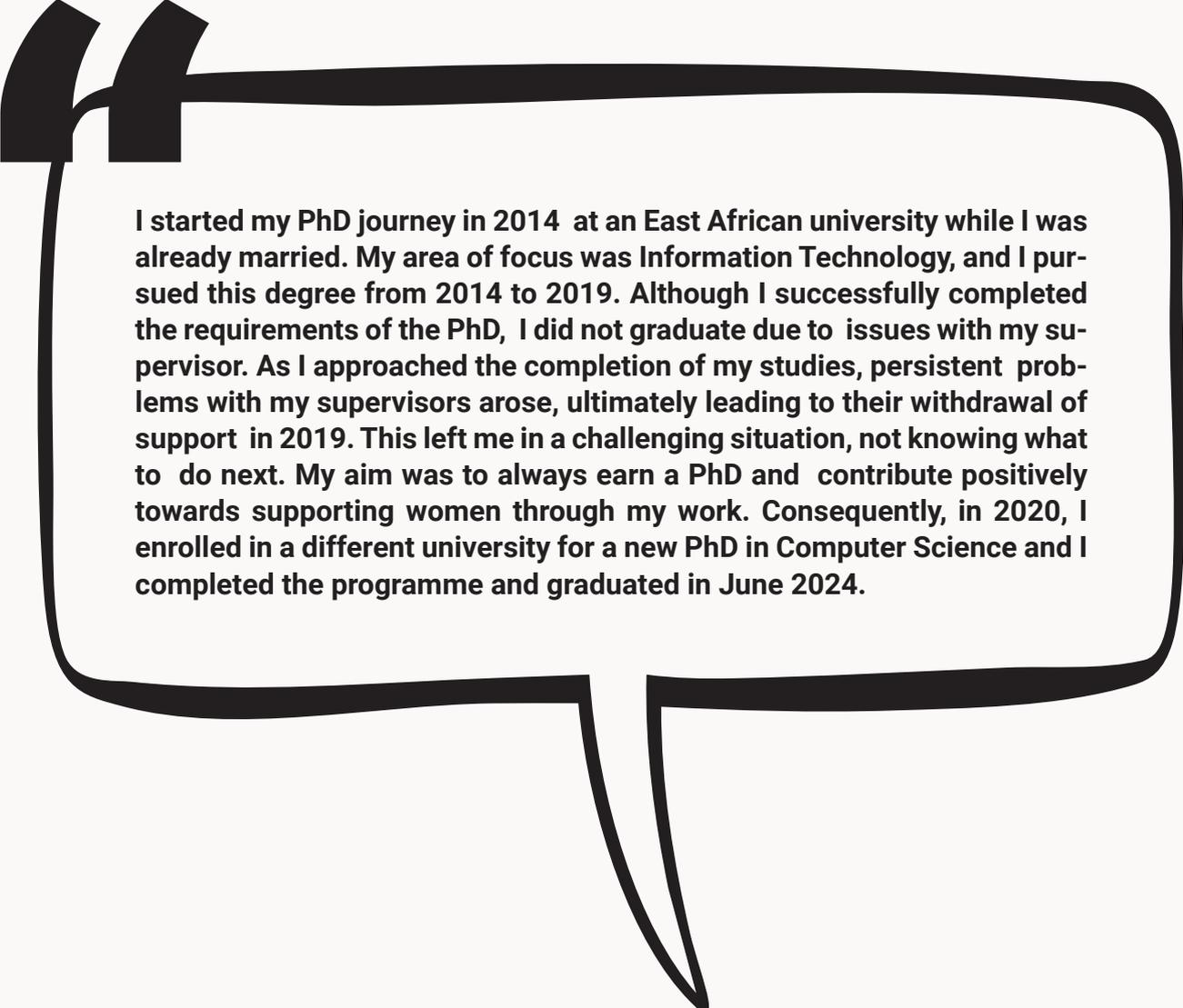
> **I started my PhD journey in 2014 at an East African university while I was already married. My area of focus was Information Technology, and I pursued this degree from 2014 to 2019. Although I successfully completed the requirements of the PhD, I did not graduate due to issues with my supervisor. As I approached the completion of my studies, persistent problems with my supervisors arose, ultimately leading to their withdrawal of support in 2019. This left me in a challenging situation, not knowing what to do next. My aim was to always earn a PhD and contribute positively towards supporting women through my work. Consequently, in 2020, I enrolled in a different university for a new PhD in Computer Science and I completed the programme and graduated in June 2024.**

According to Mbogo et al.'s (2020) study on supervision challenges and delays in the completion of PhD programmes in Kenyan public and private universities, cited the delay in completion of PhDs is due to the conflicts and challenges of supervision experienced by PhD students as they work with their supervisors on their theses and dissertations. One of the crucial issues is the quality and frequency of feedback from supervisors. Studies from South African universities have shown that students often complain that their supervisors took too long with their work without giving the appropriate feedback in the stipulated time. This is exacerbated as some universities do not have internal mechanisms to deal with such delays, and in the event they do, they are not enforced (Wadesango & Machingambi, 2011). A second challenge identified is the shortage of qualified and experienced supervisors. A number of universities across the continent lack sufficient staff members with PhDs to support and supervise doctoral students (Mbogo et al., 2020). Additionally, some supervisors lack motivation and do not commit themselves to their students due to poor pay, compelling supervisors to look for part-time work to supplement their income, ultimately limiting their capacities to be fully present and provide effective student supervision (Manderson et al., 2017). For those who have more than one supervisor, there is a back-and-forth between supervisors and supervisees, which may prolong the time taken by students to complete their work, particularly when supervisors give unclear and conflicting feedback leading to multiple corrections, derailing their progress and taking them back to issues that should have been previously concluded (Ali et al., 2016). The other challenge that is experienced is poor interpersonal relations between the supervisor and their student, where students do not get on with their supervisors due to differences in personality or ideologies (Mbogo et al., 2020).

All these challenges are further amplified due to the function of gender in supervision relationships. A South African study on the role of gender and race in student-advisor composition in PhD publication productivity showed that female students performed better when coupled with female supervisors. It is observed that the scarcity of women supervisors (a trait not just unique to the South African context, but the continent) can create a negative feedback effect for women PhD students where the fewer women supervisors are present, the less women students are motivated and productive. This has longstanding future ramifications, implying that fewer women are promoted in academia and the circumstances are perpetuated in which women students cannot find women supervisors (Rossello et al., 2024). The prolonged time it takes to complete a PhD has psychological, social, familial and financial implications for

women doctorate students, where study delay has been viewed as a waste of time and finances, damaging to their self-esteem, and an obstacle to potential employment opportunities (Fetene & Tamrat, 2021).

Impact From Lack of Mentorship Access and Career Guidance

Mentorship plays a crucial role in the career development and academic success of students by providing guidance, support, and opportunities for networking, which are essential for navigating the complexities of academic and professional environments. The absence of mentorship can lead to feelings of isolation, lack of direction, and missed opportunities for career advancement (Hill et al., 2022). Overall, lack of access to mentorship and career guidance has a profound impact on African women undertaking their PhDs, with 94% reporting an impact and only 6% reporting no impact (Figure 14d). These figures indicate that a significant majority of applicants face substantial challenges due to a lack of mentorship and career guidance.
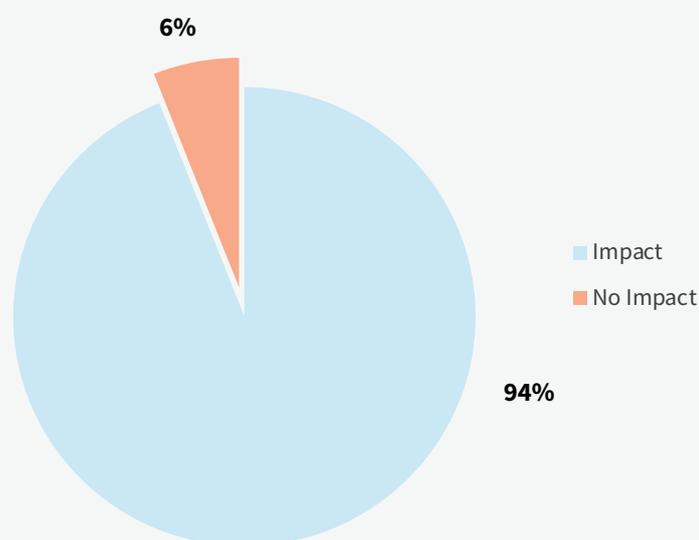
Figure 14d. Impact of lacking mentorship on applicants' research work.

The underrepresentation of African women in higher education, particularly in STEM fields, contributes greatly to a lack of role models and mentors who share similar backgrounds and experiences. This lack of diversity in mentorship can hinder the ability of African women PhD students to find mentors who understand their unique challenges and can provide culturally-relevant guidance. Research has shown that mentorship is positively correlated with career advancement, particularly for women in academia. It provides opportunities for professional development, leadership training, and career guidance, which are critical for achieving career goals (Mcilongo & Strydom, 2021). Furthermore, mentorship has been shown to positively impact academic performance and retention rates among students. Effective mentorship can provide the support and encouragement needed to overcome academic challenges and persist in the face of adversity. Lack of mentorship therefore contributes to higher dropout rates and lower academic performance among African women PhD students (Markle et al., 2022).

Professional
Growth

Impact of lacking access to training for research and academic skills

In the recent past, African scholars were known to receive their training abroad (Jowi, 2021; Tettey, 2009). Some African universities however, have begun to provide equivalent levels of PhD training, and while the accessibility and opportunities have grown enormously, they still remain far from adequate, with circumstances varying from country to country (Jowi, 2021; Oyewole, 2010). Writing is highlighted as one important academic skill that significantly impacts both students' successful completion of their training and their chances of embarking on an academic career path (Archer, 2010). According to our study, the quality of past academic writing and publishing training largely stood at 47%, reflecting medium quality. This was followed by a significant drop on either side of the range, with 16% reporting high quality, and on the other side, 21% reporting low quality and 17% reporting that they received no training (Figure 15a).

High quality — 16%
Medium quality — 47%
Low quality — 21%
No Training received — 17%

Percentage of applicants
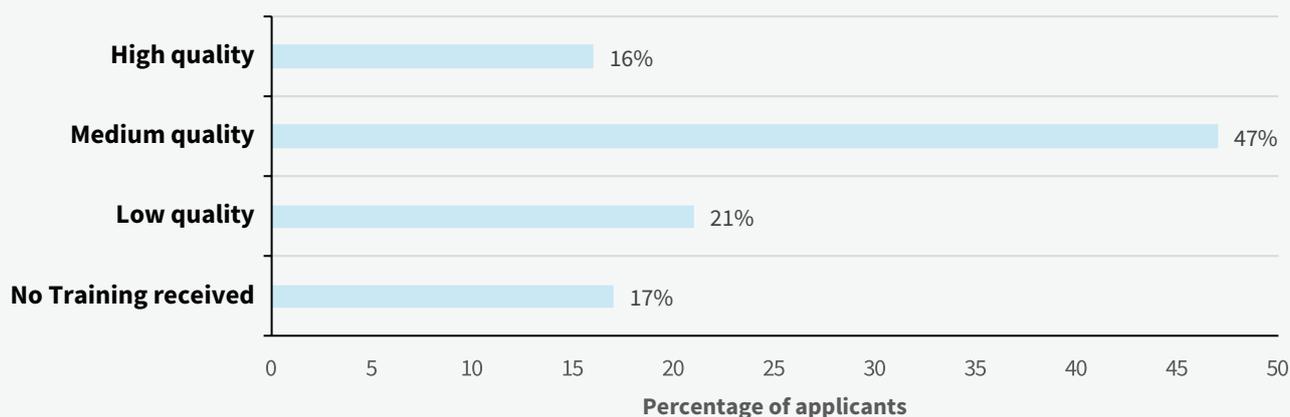
Figure 15a. Quality of past academic writing and publishing training, by region.

Furthermore, 94% of applicants responded that they experienced an impact from lack of access to training for research and academic skills, while 6% reported no impact (Figure 15b). This suggests that access to such training is a critical need for many individuals. This is because individuals from low socioeconomic status backgrounds often have limited access to educational resources and opportunities, including training and experience in research and academic skills, which can hinder their academic development and perpetuate educational inequalities. Continuous access to training and professional development is crucial for maintaining and updating skills. The lack of such opportunities can lead to outdated knowledge and skills, impacting individuals' ability to perform effectively in academic and research settings (Mlambo et al., 2021).

6%

■ Impact
■ No Impact

94%
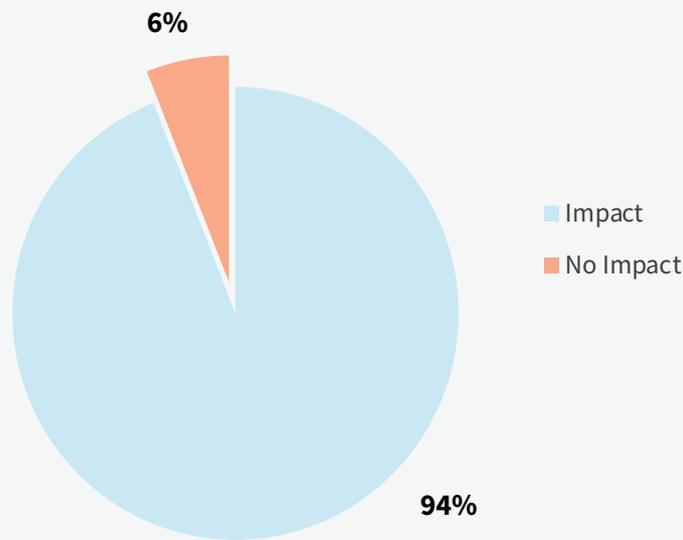
Figure 15b. Impact of lacking access to training for research and academic skills.

The importance of training for research and academic skills cannot be overstated. Such training is essential for developing critical thinking, problem-solving, and analytical skills, which are fundamental for academic success and professional growth. Research indicates that cognitive training can lead to immediate and far-reaching improvements in academic skills. Moreover, social and emotional learning programmes, which include components of academic skills training, have been found to yield positive outcomes in students' academic performance and overall well-being. These programmes help develop essential life skills, further underscoring the importance of comprehensive training in academic settings. The benefits of such training extend beyond immediate academic achievements, as they also prepare individuals for lifelong learning and adaptability in various professional contexts both within and beyond the academy (Van Pham, 2024).

The struggles of preparing a paper for publication

Preparing a paper for publication is a critical step for PhD students and is often a requirement for graduation. Having published papers can significantly enhance the academic credentials for PhD students, making them more competitive for postdoctoral positions, faculty roles, and research grants. It is often perceived as a demonstration of their ability to conduct rigorous research, communicate findings effectively, and contribute to scholarly discourse. By sharing their research, PhD students can connect with other scholars working in similar areas, leading to potential collaborations, joint projects, and the exchange of ideas. This is particularly beneficial in Africa, where building strong research networks can help overcome resource limitations and promote knowledge sharing. By disseminating their findings through publications, scholars can influence policy, inform practice, and contribute to evidence-based solutions that benefit their communities and countries (Asongu & Nwachukwu, 2018).

However, African women researchers face a myriad of challenges that can impede their progress. With many journals becoming open access and requiring authors to pay APCs (Article Processing Charges) to cover the costs of publishing, researchers from low-income countries or those without sufficient funding often struggle to find the right journals to publish their work (Jain et al., 2021). Limited access to research training programmes and workshops for African women also hinders the development of essential skills for preparing and publishing research papers. For this analysis, the overall impact of the struggle to prepare a research paper for publication was high, cited by 93% of applicants. Only 7% of the women indicated that they experienced no impact on preparing a research paper for publication (Figure 15c).
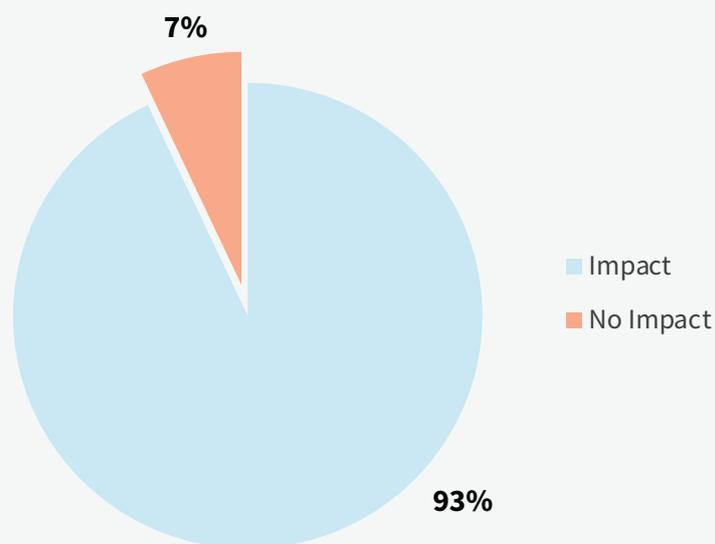
Figure 15c. Impact of struggling to prepare a research paper for publication.

The high overall impact of the struggle to prepare a research paper for publication by African women researchers can be attributed to financial constraints, which severely limit their ability to conduct research, access necessary resources, and cover APCs. Many African institutions lack the necessary infrastructure and resources, such as advanced laboratory equipment, research databases, and academic journals, which hampers the ability of women researchers to produce high-quality publishable studies. Language barriers also pose a significant challenge, as many academic journals require submissions in English, which may not be the first language of many African women researchers. The complexity of the publication process, including understanding journal guidelines and navigating the peer review process, adds to these difficulties.
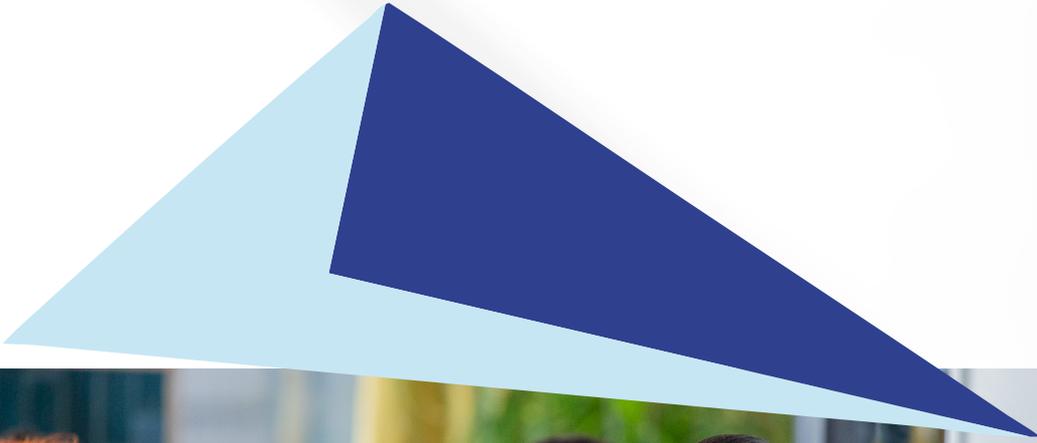
Gendered Experience of African
Women Researchers

In this section, we focus our understanding on the embodied experiences of African women undertaking a PhD on the continent. We dissect the impact of gendered responsibilities, sexism and misogyny on their PhD trajectories. Thereafter, we investigate the limitations brought about by gendered ageism and disabilities. The section concludes with personal narratives and reflections on what African women make of their experiences as they strive to achieve a PhD. While fewer women are enrolled in doctoral programmes globally, African women are the least represented in numbers and other forms of institutional support (Tsephe and Potgieter, 2022). Family responsibilities, community and cultural obligations including Black tax[4], lack of gender equality and social inclusion, and patriarchal forms of abuse cause African women academics to be under enormous pressure. Phaswana-Mafuya (2023) observes that this leads to underrepresentation in training/doctorate studies, professorships, fellowships, STEM disciplines, panel composition, peer reviews, university leadership and administration. In addition, African women PhD candidates often take longer to complete their doctoral studies and are the most likely demographic to drop out. This is determined by several factors, including the lack of funding, unsupportive advisory relationships, and a lack of childcare for student mothers, among other reasons (Attom, 2019; Tsephe, 2021). Furthermore, research on gender disparities in academia has often lumped all women together, or rather, universalised the experiences of white women within academia at the expense of racialised women (Mangolothi, 2023; Snyder, 2014). The choice to ignore race, geographical positioning, sexuality, disability, social class, and other critical intersecting identities creates and reproduces structural inaccuracies, impedes academic freedom and sustains the structural marginalisation of Black women academics (Phaswana-Mafuya, 2023; Tamale and Onyango, 1997).

Impact of Gendered Responsibilities

Most women researchers expressed a conflict between domestic and family duties, with 82% recording that family commitments had an impact on their research time, while 18% stated that they experienced no impact on their academic research time (Figure 16a).
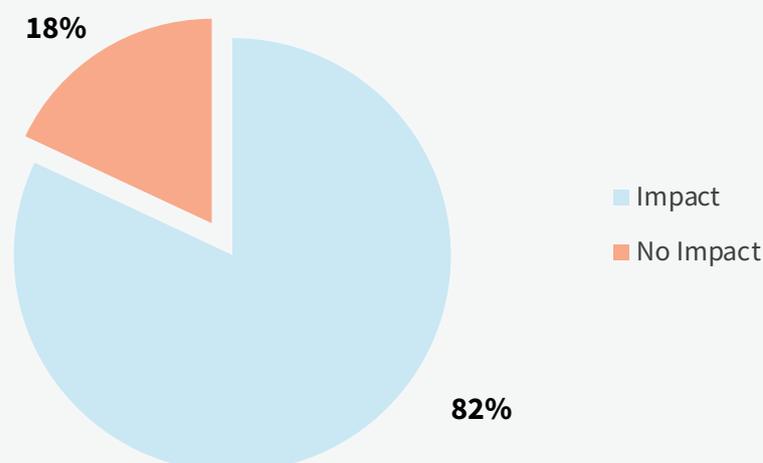

Figure 16a. Impact of struggling to find time for research due to family commitments.

One of the primary reasons for the conflict between family commitments and research time for women researchers is rooted in societal expectations and traditional gender roles. Historically, women were expected to take on the majority of domestic responsibilities, including childcare, household chores, and caregiving for elderly family members. Despite progress in gender equality, these expectations persist and often place a disproportionate burden on women. In fact, caregiving is widely recognised as a chronic stressor that can lead to significant physical and psychological strain over extended periods. This role often involves unpredictability, uncontrollability, and high levels of vigilance, contributing to caregiver burnout (Vitaliano, 2003). Research indicates that women, particularly those in professional and academic settings, are disproportionately affected by the stresses associated with caregiving. A study focusing on healthcare professionals found that women experience higher levels of occupational stress and burnout compared to their male counterparts (Thébaud et al., 2024). Similarly, during the COVID-19 pandemic, women faculty members reported increased stress due to heightened caregiving responsibilities, adversely impacting their well-being and perceptions of institutional support (Calarco, 2023). The dual demands of professional duties and caregiving can lead to significant mental health challenges for women. For instance, individuals caring for both children and ageing relatives, also known as "sandwich carers", experience prolonged mental and physical health declines, with women comprising a substantial portion of this group. This dual burden often results in increased distress, depression, and anxiety. In academia, the imbalance between professional responsibilities and caregiving duties has been linked to higher rates of burnout among educators. Prolonged stress in such environments exacerbates mental health issues, underscoring the need for supportive measures to alleviate the pressures faced by women balancing these dual roles (O'Meara, 2024).

Academic research often requires long hours, including evenings and weekends, to conduct experiments, analyse data, and write papers. For women researchers with family commitments, finding the time and energy to meet both professional and personal responsibilities can be overwhelming. According to a study by Hochschild and Machung (2012), women continue to perform a "second shift" of domestic labour after their professional workday ends, which significantly impacts their available time for research and academic pursuits. Many academic institutions lack adequate support systems to help researchers balance their work and family commitments. This includes insufficient parental leave policies, limited access to affordable childcare, and a lack of flexible working arrangements. Without these supports, women researchers may find it difficult to dedicate the necessary time to their research. A study by Mason et al. (2019) found that women in academia are more likely than their male counterparts to experience work-family conflict. O'Laughlin and Bischoff (2005) highlight that work-family conflict is a significant predictor of stress and burnout among women in academia. An example of gendered responsibilities was shared by an East African Mawazo Alumna who undertook her PhD in East Africa:
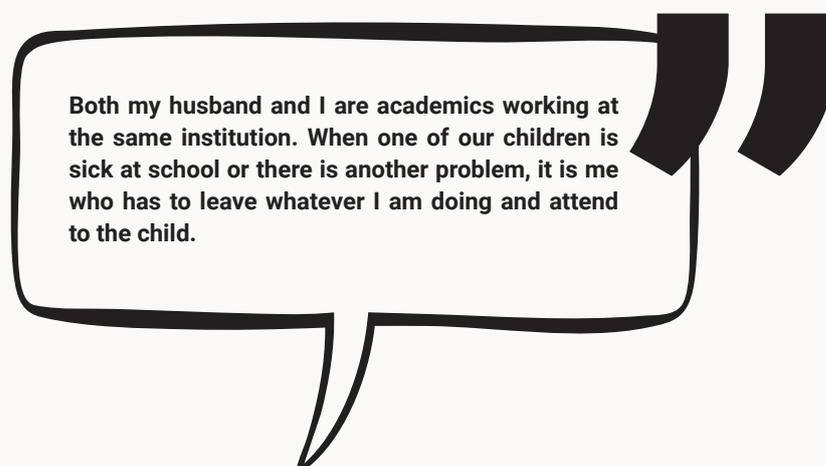
> **Both my husband and I are academics working at the same institution. When one of our children is sick at school or there is another problem, it is me who has to leave whatever I am doing and attend to the child.**

4 Black tax can be described as the act of supporting one's immediate and/or extended family, friends and the wider community, including those known and unknown to the individual, primarily through financial means but may also include unpaid care work.

The 18% of women researchers who report no impact on their academic research time may have access to supportive environments, both at home and at work. Ward and Wolf-Wendel (2012) emphasise the importance of institutional support and the role of mentors in helping women navigate the challenges of balancing family and academic responsibilities. These women may have partners who share domestic responsibilities equally, access to reliable childcare, or work in institutions that offer flexible working arrangements and robust support systems. Some of them might not have children yet and/or are not primary caregivers.

Figure 16b below shows how caregiver status influences the impact of struggling to find time for research. Among those who are caregivers, 87% reported an impact, while only 67% of non-caregivers reported experiencing an impact on their ability to find time to conduct research as a consequence of their family commitments. 33% of non-caregivers reported no impact at all (Figure 16b), compared to a low 13% of caregivers (Figure 16b). The data underscores the significant disparity between caregivers and non-caregivers in managing research time, with caregivers facing considerably greater challenges in ensuring their physical, emotional and mental well-being.
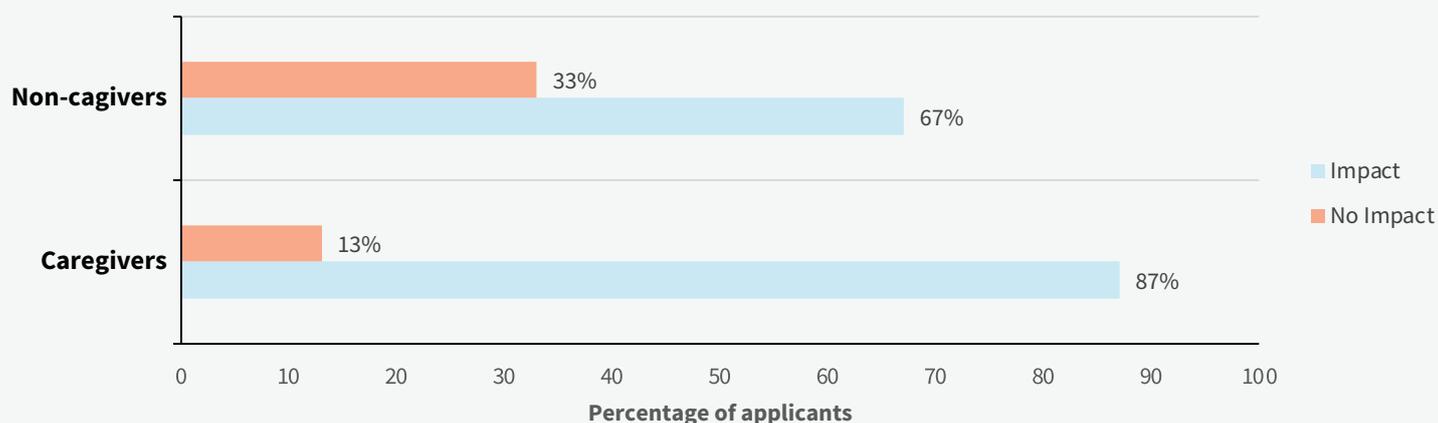
Figure 16b. Impact of struggling to find time for research due to family commitments, by caregiver status.

Impact of Sexism and Misogyny on African Women Researchers

Higher education institutions are intrinsically gendered organisations that systematically reproduce social and cultural processes that generate inequality within the academy (Acker, 1990; Johnson, 2014). Access to opportunities are not distributed evenly, and mechanisms to ensure equitable access are elusive for women (Healy et al., 2011). In turn, women are relegated to care work or feminised work (administrative, secretarial or student support) that is considered to be of little educational or scholarly value to the institution and exploits women's internalised perceptions of low self-entitlement and worth (Lynch, 2010; Valian, 2005). For the few women who do make it into senior positions traditionally held by men, race, ethnicity and social class intersect with gender and have negative ramifications on the quality of work, career experience and upward mobility of women in higher education (Healy et al., 2011). Furthermore, younger women academics, who are often viewed as an uncomfortable outlier in an academic culture that highly regards age as an indicator of experience and wisdom, are often exposed to severe and blatant sexism from both their peers and male students (Mose, 2019). A Mawazo Fellow recounts her experience as a Muslim woman in an East African university, of her colleagues attempting to unveil her:

> **"In this university, there are many challenges. As a Muslim woman, there have been instances where people have tried to remove my veil to see, touch my hair, and to check its length. I often say 'no, please respect me as someone's wife'. As an academic, I assert my rights, and as a woman, I uphold my dignity. I should be treated with the respect I deserve.**

She further elaborates how her male colleagues continuously tried to dissuade her from pursuing her PhD:

> **... I think most men think that women cannot do anything to benefit or be perfect for society, especially in research. Most people were rubbishing my research, starting from the head of department. They were telling me 'Your research will not go anywhere. You will not get funding. You will never make it. You will never get a PhD.' and they also told me if I did not agree with their comments, or what they told me, I would never make it. So I had to believe in myself and build walls with other women, with women academicians, who believed in me and in my work.**

Misogyny in the academy is undeniable, despite its different shades, ranging from the overt to the subtle. By definition, misogyny is the dislike of or prejudice against women or girls, and it often relegates women to lower social status than men, with Black women experiencing a unique version of prejudice known as misogynoir. Scholars have documented experiences where higher education environments have been described as a "chilly climate", referring to the freezing out of undesired and marginalised groups that disrupt the masculine culture that has been enshrined (Gaidzanwa, 2010; Masvawure, 2010; Mkhize, 2022).

This restrictive environment stems from sexism and manifests through gendered discrimination, sexist language, harassment and sexual violence (Kanyemba, 2018). Such environments not only marginalise women but also contribute to a pervasive culture that excuses and normalises harmful behaviours. Sexism and misogyny are often downplayed and dismissed, labelled as "culture", but as Ongera (2016) observes, misogyny has lasting consequences for victims. For example, women students engage less in Kenyan law schools due to the teaching model that entrenches a hyper-masculinised culture of aggressiveness, emotional detachment and extreme competitiveness. It also reinforces stereotypes such as "women are bad at science", which results in fewer women in STEM disciplines (Wilkins-Yel, 2023). Such attitudes and cultures tend to foster toxicity and, in some instances, normalise sexual harassment and abuse within academia (Tamale and Onyango, 1997; Idahosa and Mkhize, 2021).

The Academic Needs survey revealed that 43% of the women researchers did not experience sexism or misogyny. However, about 57% of the sampled women researchers admitted to experiencing an impact of misogyny and sexism in the academy (Figure 17).
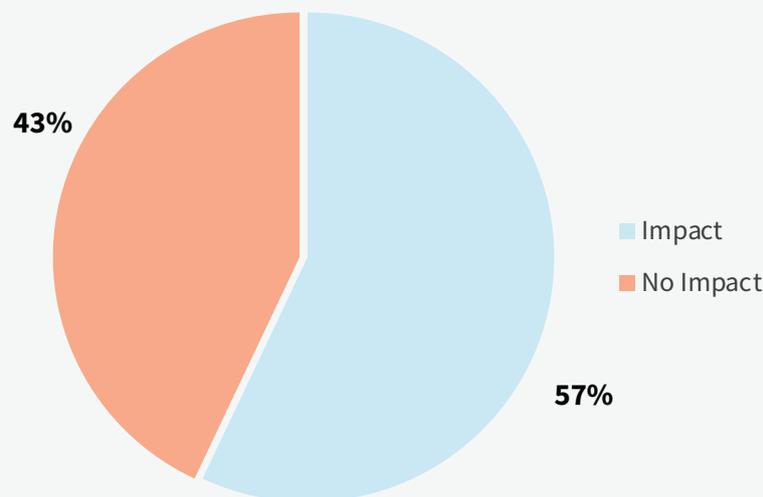

Figure 17. Impact of sexism and misogyny.

The trend observed in Figure 17 is due to institutional barriers such as unequal pay, lack of mentorship opportunities, and limited access to research funding, which disproportionately affect women. These barriers can create an environment where women feel undervalued and unsupported, contributing to the perception and reality of sexism and misogyny. Also, microaggressions, which are subtle, often unintentional, discriminatory comments or behaviours, are prevalent in academic settings. These can include questioning a woman's expertise, interrupting her during meetings, or making assumptions about her career ambitions based on gender. Over time, these microaggressions accumulate, leading to a significant impact on women's professional experiences and mental health.

The pervasive masculine culture in Africa's higher education institutions combined with the added stress on women within these institutions has devastating effects, including stress-induced miscarriages, an experience firsthand for some women in Mawazo's network of African women researchers. Women often do not have the privilege of time to process the loss, and the unresolved grief can lead to prolonged emotional distress, including depression, anxiety, and post-traumatic stress disorder (PTSD) (Farren et al., 2021).

Marginalised Identities of African Women Researchers

Gendered Ageism

Around the world, there is rising recognition of the underrepresentation of women in academia (Browning et al., 2022). This gap is particularly pronounced for older women, who often face marginalisation due to the combined effects of ageism and sexism. Ageism in higher education, a subtle yet pervasive problem, intersects with gender bias, creating significant challenges. There is a long-standing belief that PhD candidates are typically young, single, and male students dedicated solely to their studies. Academic institutions have historically upheld structures of colonialism, racism, masculinity, heteronormativity, and ableism, reluctantly accommodating those who fall outside these norms and creating environments that favour a select few (Brabazon et al., 2023). Older women pursuing PhDs encounter unique forms of marginalisation rooted in cultural stereotypes that perceive them as physically and intellectually fragile.

"Older women" in academia, particularly in the African context, can be defined as women beyond childbearing age or aged 50 and above. Gendered ageism fosters biased views on this demographic, portraying older women PhD candidates as less adaptable, technologically inept, and less productive in academic settings. These prejudices create barriers to academic access, affordability, and support. Additionally, family responsibilities, financial constraints, and the scarcity of scholarships or grants specifically for older students further complicate the pursuit of educational opportunities for older women.

Mawazo's Fellowship Application data (Figure 18a) revealed further insights into the issue of gendered ageism in the academy. For example, 56% of the applicants, the biggest number by far, fell into the 30-40 age group, followed by the 40-50 age group at 29%, 20-30 age group at 9%, and the 50+ age group at 6%. The data shows a concentration of applications from women aged 30–40 years, reflecting what Granleese and Sayer (2006) term the "golden decade". Women younger than 35 and older than 45 experience unique challenges in their doctoral journey. For those who are younger, the implication is that they are expected to work longer hours for relatively lower pay based on their academic progression. More so, due to these institutional pressures on women PhD students in their 30s, the age thresholds for academic recruitment often impel them to delay childbirth and familial responsibilities (Horta and Li, 2024). On the other hand, higher education institutions also strategically condition those that are older to believe that by the age of 45, their value and need depreciate in an academic environment (Johnson, 2021). This subtle discrimination can be seen in areas of PhD enrolment, tenure allotment, administrative positions and grants given for research.
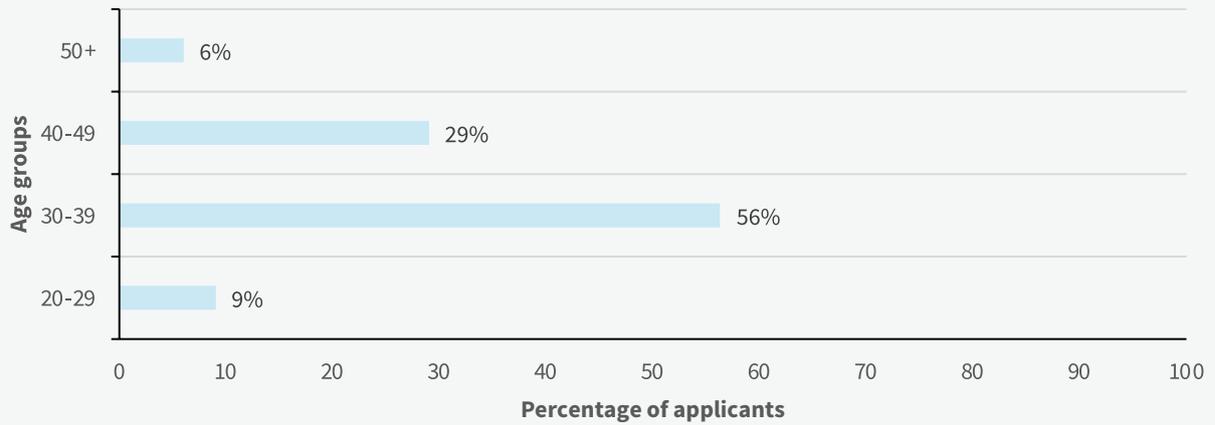
Figure 18a. Overall Mawazo Fellowship applications by age group.

Of the 927 applicants, only 6% were 50 years and above, and only 2.5% of these applicants were successful (Figure 18b), despite their experience and academic backgrounds. Three of these applicants had already exceeded their PhD deadlines by more than a year. The oldest applicant in this age group has spent a total of 13 years in their PhD programme, highlighting substantial delays. On average, older applicants are taking approximately double the time to complete their PhDs, indicating that age is a factor influencing their academic pursuits. In analysing older age groups, it was found that half of the applicants expressed difficulty with hearing and challenges with memory retention or concentration, potentially impacting their academic performance.
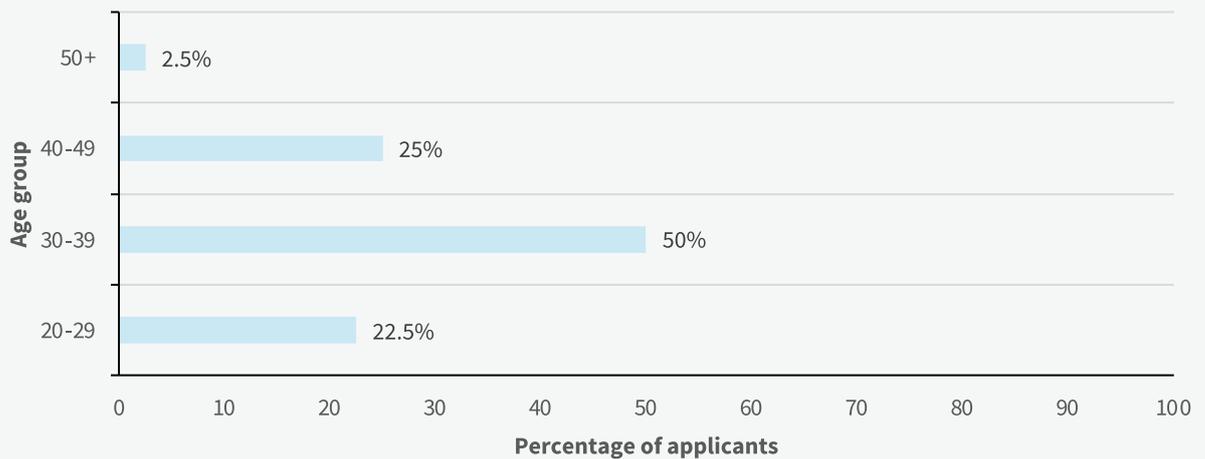
Figure 18b. 2023 Mawazo Fellowship successful applications by age group.

Despite the challenges they face, all the applicants in this age category have received an award, scholarship or honours during the course of their PhDs. Nonetheless, older women are defying negative stereotypes and graduating from doctoral studies, thereby shifting the dominant discourse on ageing. Yet, doctoral programmes and procedures often do not consider the skills, educational and career achievements, and personal and family life experiences that older adults bring to their learning (Kamenitz, 2021). Therefore, it is imperative to integrate older women into academic communities by acknowledging diverse educational needs that exist throughout an individual's life and ensuring PhD programmes and institutions meet and support those needs. Addressing the systemic challenges faced by older women in academia demands a multifaceted approach. Beyond the mere recognition of their unique challenges, concerted efforts are needed to dismantle ageist and sexist barriers that are entrenched within higher education institutions.

Inclusivity and Diversity

The university as an institution is designed to cater to and support able-bodied individuals, thus segregating disabled scholars in all spheres of academic life. Disabled scholars exist under a constant threat to their career sustainability, due to the excessively competitive and hierarchical landscape. For example, disabled scholars often require more time and are not temporally accommodated. No adjustments are made to the evaluation metrics of productivity compared to able-bodied scholars. This highlights the argument that excessive workloads required to succeed in academia place marginalised and disabled scholars at a significant disadvantage (Donald, 2024). Additionally, the attendance of in-person events such as conferences, meetings and training sessions involves engagements with organisers who lack sufficient knowledge of diversity, equity and inclusion legislation. Disability adjustments are seldom offered proactively, and request approvals are often contingent on providing extensive medical histories that are invasive (Donald, 2024). The circumstances are particularly dire for academics with invisible disabilities or those without formal diagnosis, who often receive even more limited support, causing them to take longer in their academic pursuits (Madikizela-Madiya and Mkhwanazi, 2024). A Mawazo Fellow from Eastern Africa describes the absence of disabled scholars across various faculties and the challenges this presents her as one of the few sign language interpreters across the institution:
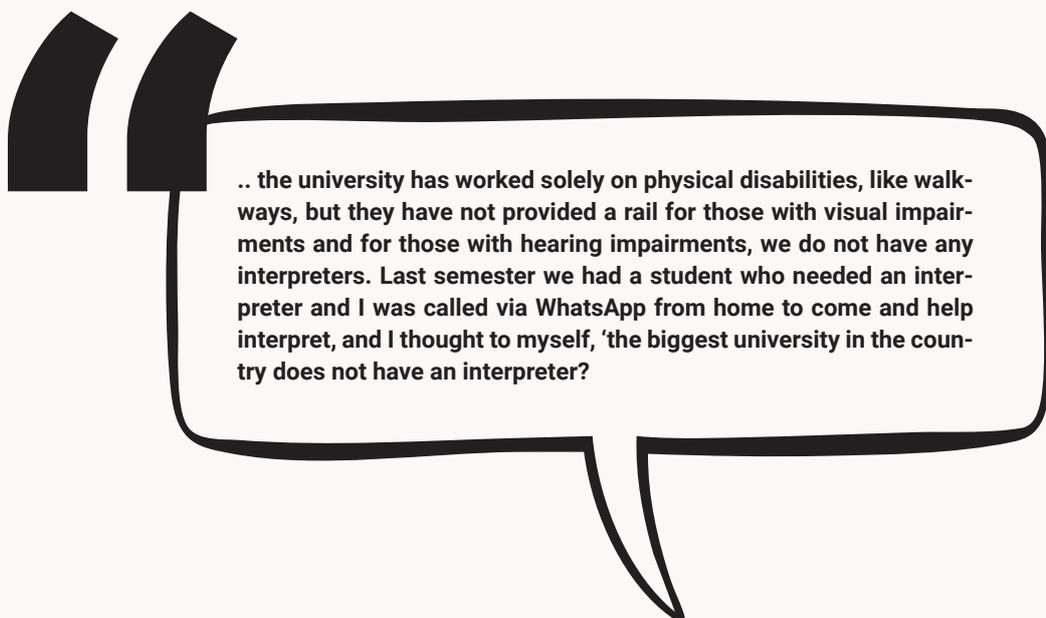
> .. the university has worked solely on physical disabilities, like walkways, but they have not provided a rail for those with visual impairments and for those with hearing impairments, we do not have any interpreters. Last semester we had a student who needed an interpreter and I was called via WhatsApp from home to come and help interpret, and I thought to myself, 'the biggest university in the country does not have an interpreter?

Scholars of disability justice have decried the ableist foundations of academia. In "Hybridised Identity: Negotiating Disability within Academia's Discourse of Ableism", Kuwaiti-Palestinian academic Dr. Shahd Alshammari describes their struggles with multiple sclerosis (MS) and the pain of watching their bodies deteriorate. They learnt to navigate academia in a paradoxical existence of either showing this disability or hiding it so as to satisfy the demands of the white, patriarchal and ableist institution that is academia (Kerschbaum et al., 2017). Whereas African women academics occupy gendered, racialised and colonised positions within academia, the struggle of disabled women scholars is even more layered. Madikizela-Madiya and Mkhwanazi, (2024) observe that while employability chances are overly low for academics with disabilities, for those who are lucky enough to enter academia, barriers like the lack of social and physical access to various spaces poses material consequences for their epistemic and professional advancement. Gender Equality and Social Inclusion (GESI) is a critical tool for highlighting the perspectives and experiences of the most marginalised people in society, thus facilitating full inclusion. From Mawazo's 2023 Fellowship Application data, it was revealed that approximately 17% of the applicants listed themselves as having challenges and/or disabilities that affect their overall well-being. Visual impairment was the most common reason cited by the applicants at 7.7% (Figure 19a). Of the 40 accepted applicants, 7 reported having challenges and/or disabilities (Figure 19b). The persistent ableist structure of academic institutions significantly marginalises disabled scholars, compounding the struggles faced by women. As Donald (2024) elaborates, academia often perpetuates an exclusionary rather than sustainable career ecosystem, where other actors across the academic spectrum play a crucial role in supporting disabled scholars. It is essential to engage directly with disabled scholars to understand their needs, stressing the necessity for workplace environments to cultivate inclusivity rather than erect barriers.
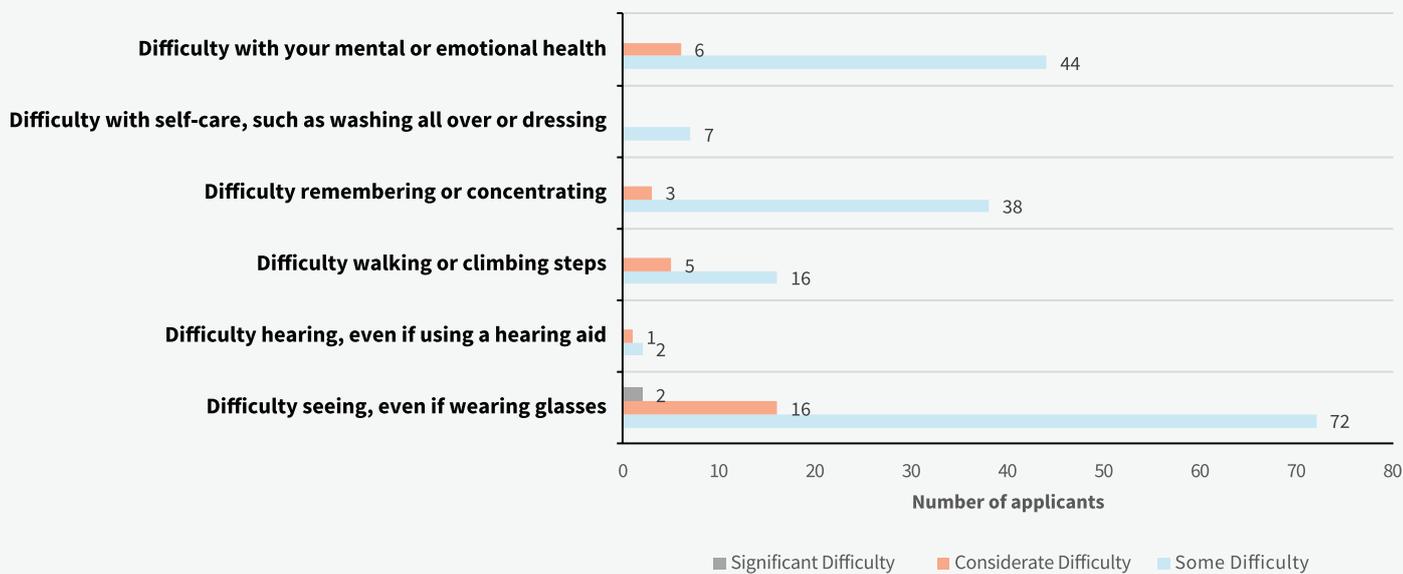

Figure 19a. Total 2023 Mawazo Fellowship applicants with declared challenges and/or disabilities.
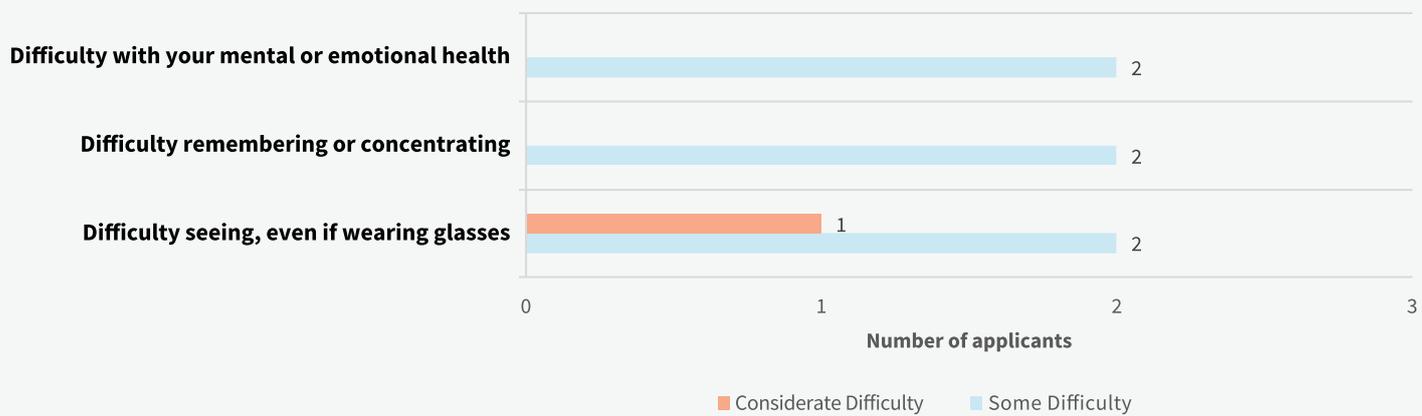
Figure 19b. Successful 2023 Mawazo Fellowship applicants who have challenges and/or disabilities.

Personal Narratives and the Effects of Gendered Responsibilities

African women doctoral students are a diverse group, their experiences mediated by race, gender, class, and religion, amongst other identities. However, there are commonalities, including a common experience of being "gendered" by culture, transformations in gender roles both within the family and in wider society that affect women's quality of life and access to social opportunities and the historical, social and cultural factors that often give men an advantage over women in higher education (Kandiyoti, 2010; Okeke-Ijehirika et al., 2020). While these broad patterns highlight the systemic challenges faced by African women undertaking their PhDs, the personal motivations driving their pursuit of higher education reveal the nuanced impact of these gendered and socio-economic dynamics.

Fellowship Application data shows that for some women who shared additional details in their application to the Mawazo Fellowship, the primary motivation for applying to the Mawazo Fellowship was a lack of funding. In certain cases, the concept of Black tax also played a role in their decision to apply. These applicants cited financial constraints related to gendered family responsibilities, such as raising children in a single-parent household, caring for children living with disabilities, and assuming guardianship for children within kin networks. This is reflected in the case of an applicant, who is a single mother of two and the sole guardian of her late brother's child. In addition to incurring his living and education costs, she also provides financial support to her parents. Another Mawazo Fellow from Eastern Africa shares her sentiments about the lack of support from her husband and the other societal expectations that almost hindered her progress, yet she managed. She elaborates:
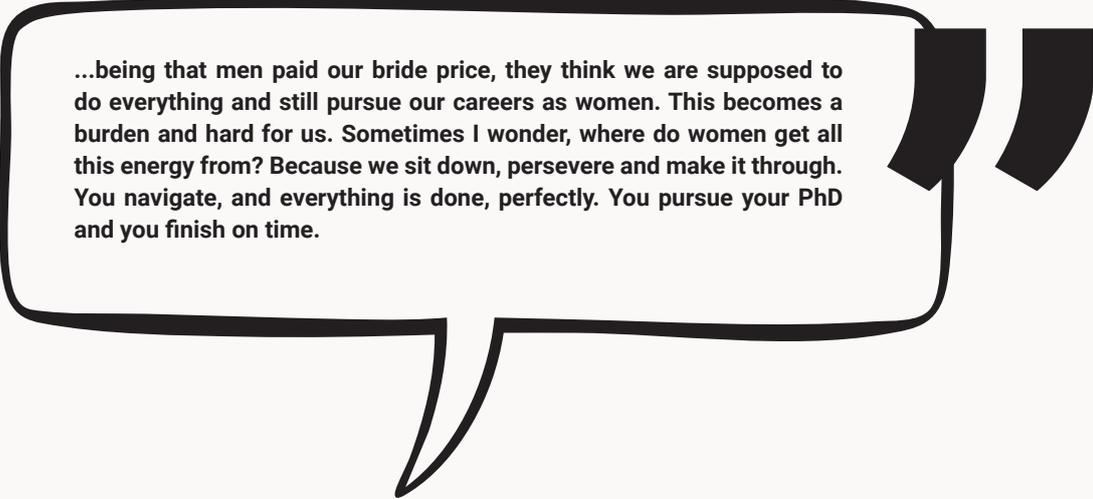
> **...being that men paid our bride price, they think we are supposed to do everything and still pursue our careers as women. This becomes a burden and hard for us. Sometimes I wonder, where do women get all this energy from? Because we sit down, persevere and make it through. You navigate, and everything is done, perfectly. You pursue your PhD and you finish on time.**

According to Johnson (2021), the social and cultural gender expectations of women often stress women's academic ambitions, as women are expected to be caretakers, wives, and mothers, all roles honoured by society, yet do not receive mutual or equal support for women's multiple identities. These experiences are represented in Figure 20 below, which highlights the effects of gendered responsibilities on women PhD applicants and the long-term impact on their education and economic status. Nonetheless, women continuously circumnavigate these gendered expectations and their individual attributes of self-determination, self-motivation, independence and high levels of commitment play a critical role in retaining, sustaining and advancing their academic endeavours.

ECONOMIC EFFECT OF
GENDERED RESPONSIBILITIES

EDUCATION EFFECT
OF GENDERED
RESPONSIBILITIES

MICRO-EFFECTS
OF GENDERED
RESPONSIBILITIES

Economic Effect of Gendered Responsibilities
- Mental, emotional and time input linked to unpaid gendered responsibilities disproportionately shouldered by women.
- Expectations of women to contribute to domestic family finances, particularly children maintenance and upkeep (food, school fees, etc.)
- Women impacted by Black tax with requirements to take care of immediate family and kin networks.

Education Effect of Gendered Responsibilities
- Mental, emotional and time input spent on unpaid gendered responsibilities.
- Women's PhD journeys are affected by gendered responsibilities, leading to interruptions, extended pauses, and longer completion times.
- Compromised PhD and career goals to meet gendered responsibilities, relinquishing of opportunities.
- Societal challenges to achieving PhD goals, including gendered barriers, patriarchal environments and unsupportive domestic life.

Micro-effects of Gendered Responsibilities
- Motherhood: mental, emotional, time and energy input for PhD candidates due to family responsibilities, particularly those with small children and/or single mothers.
- Additional responsibility for women who are primary care-givers to family members such as parents, siblings and children and to family members living with disabilities.
- Personal tragedies, such as the loss of a spouse, can create financial difficulties, increase family responsibilities, and potentially disrupt the PhD journey.
- Intellectual space and emotional labour linked to domestic responsibilities disproportionately fall on women.

Figure 20. The effects of gendered responsibilities on African women PhD candidates.

These personal experiences influenced the research motivations of certain applicants. For example, an applicant from Eastern Africa who is a mother to an autistic child has dedicated her PhD to inclusive education and human rights. The title of her research, "Assessing the educational support systems for learners with autism in inclusive education settings", stems from this personal connection. A considerable number of applicants expressed that their journey towards a PhD was inspired by witnessing certain limitations faced by women in their immediate surroundings, particularly those who were uneducated. Many of the applicants are the first to achieve higher education in their families, and they aspire to dismantle barriers while serving as role models for other women in their communities.

The experiences of women PhD scholars in this study underscore their marginalised status in higher education as students, scholars, and decision-makers. Their observations about their experiences reveal the various levels of vulnerability they endure due to the limited or nonexistent support systems addressing challenges specific to being African women. The low priority given to these support systems is not merely a result of resource scarcity. Issues related to childcare or gender power dynamics can significantly affect African women's ability to pursue and succeed in achieving their PhDs. Ignoring these concerns highlights the lower social value placed on women as academics compared to their male peers.

Conclusion

The Status of African Women in Research report set out to describe the major findings of the Mawazo Institute 2023 Fellowship Applications and the accompanying Academic Needs Survey. The report sought to identify and understand the status of women researchers on the continent and specifically women researchers undertaking their doctoral studies across accredited universities in Africa. Additionally, the report acknowledges the resilience and potential of women researchers in Africa, advocating for strategic interventions to promote gender equality and empower women in research across the continent. It sheds light on the unique challenges faced by African women researchers in their pursuit of doctoral studies.

The report highlights the significant financial burden that many African women researchers bear, with a majority relying on personal savings or limited institutional support. Caregivers, in particular, face even greater financial challenges. Additionally, regional disparities exist in terms of disciplinary focus and access to funding sources. Furthermore, there emerges an emphasis on the impact of cultural norms, family responsibilities, and limited funding opportunities on women's mobility, both within and outside the continent. This hampers their ability to gain diverse experiences, engage in international collaborations, and enhance their research skills.

The findings of this report emphasise the crucial role that access to training for research and academic skills plays in the professional growth and success of African women scholars. While opportunities for PhD training have grown within the continent, the quality and availability of such resources still vary significantly across countries. The data indicates that a majority of applicants experienced a notable impact due to lacking access to training for research and academic skills. This highlights the critical need for continuous access to professional development opportunities to maintain and update essential skills. The absence of such resources can lead to outdated knowledge and a reduced ability to perform effectively in academic and research settings.

Key areas of concern include academic writing and publishing, which have a direct impact on both the completion of training and future career prospects. Publishing research is considered a critical aspect of academic success, as it demonstrates a scholar's ability to conduct high-quality research and effectively communicate findings. This not only enhances their credentials for future opportunities but also allows them to build strong research networks and influence policy and practice within their communities. The challenges faced by African women researchers in preparing papers for publication can therefore significantly impact their academic careers and hinder their contributions to scholarly discourse as they are often mandated to publish their research as a requirement to obtain their PhD degree. Financial constraints, limited access to research training programmes, and institutional resource limitations all contribute to this deficiency. The high overall impact of these challenges, reported by 93% of applicants, underscores the urgent need for targeted interventions and policies to address these disparities.

The impact of gendered responsibilities on women researchers' ability to balance family commitments and research time cannot be overstated. With a majority of respondents indicating that family commitments have a significant impact on their research time, it is evident that societal expectations and traditional gender roles continue to pose barriers to women's professional growth in academia. Academic institutions must play a critical role in addressing these disparities by implementing supportive policies and initiatives. This includes reviewing parental leave policies, providing access to affordable childcare, and offering flexible working arrangements. By doing so, institutions can create an environment that empowers and trusts women researchers to balance their professional and personal responsibilities effectively.

The experiences of the 18% of women researchers who reported no impact on their research time offer valuable insights into the importance of supportive environments both at home and at work. These researchers may benefit from equal partnerships in domestic responsibilities, reliable childcare options, and institutional support systems that ensure their physical, emotional and mental well-being. With a significantly higher proportion of caregivers experiencing an impact on their research time, it is crucial to develop tailored support mechanisms to alleviate the burdens faced by this demographic.

The experiences shared by these applicants shed light on the pervasive nature of gender-based discrimination, harassment, and the damaging effects they have on women's professional growth and emotional well-being. While it is encouraging to note that 43% of respondents did not experience sexism or misogyny, the fact remains that a substantial proportion (57%) reported facing such prejudice. This highlights the urgent need for systemic changes within academic institutions to foster a culture of respect, inclusivity, and support for women researchers. The chilling effect of sexism and misogyny in academia cannot be ignored because these harmful behaviours not only marginalise women but also perpetuate a culture of exclusion and normalise toxic attitudes. Institutions must activate robust policies and practices that address gender-based discrimination and provide safe, inclusive environments for all researchers.

The Academic Needs survey, alongside the personal experiences shared in this report by some of our fellows and alumni, acutely signals the marginalised status of African women in academia. This provides insights into the occurrences of the various institutions and portrays the degrees of vulnerability they have to live with, given the limited or complete absence of support systems that could address the unique challenges that being an African woman presents.

Clearly, the plight of African women PhD scholars requires more attention from policymakers and academic institutions. It is particularly important to bring African women PhD scholars into debates as critical actors in creating sustainable policies, for putting their perspectives at the centre has the potential to spur the radical transformation that all stakeholders seek.

If we have one takeaway from the two years we spent engaging with African women researchers on the continent, it is their remarkable determination, ambition, and the wealth of innovative ideas. Despite facing significant professional and personal setbacks while navigating difficult environments, their grittiness, creativity and ability to form deep connections with others keeps them going in pursuit of contributing to meaningful and lasting change on the continent through research. Working with limited resources yet producing groundbreaking research that addresses some of the most pressing issues facing Africa today, these women exemplify agency, resilience and innovation. Their commitment to their fields is unwavering, and their passion for making a difference is palpable. They are not only advancing knowledge but also mentoring the next generation of researchers, fostering a culture of excellence and empowerment. Their stories of perseverance and success serve as an inspiration for many.

Recommendations for
the Way Forward

African women researchers face numerous challenges as they navigate higher education and pursue their career paths. These barriers include inadequate funding opportunities, hurdles in research mobility, familial responsibilities, and a lack of mentorship and institutional support, among others. We urge all stakeholders to actively engage with gender-disaggregated data, keenly listen to the stories and experiences of African women researchers, and collaboratively address these systemic challenges.

To enable African women to successfully complete their PhDs, it's imperative to sustain meaningful conversations at every level regarding their experiences within the research ecosystem, higher education institutions and universities, the media and funding bodies. The following recommendations are derived from this report:

African women in the research and higher education ecosystem must prioritise and foster a strong network of support, mentorship, and guidance amongst themselves.

- Creating spaces for solidarity—such as forums, mentorship programmes, and collaborative platforms—will enable women to share experiences, offer advice, and lift one another.
- **We encourage** African women (and men) in research to define mentorship on their own terms, engaging in both short-term mentorship (structured within a defined timeframe) and long-term mentorship (unstructured and evolving over years) to support the new generation of African women in research.

Higher education institutions and universities must implement policies that establish and promote continuity mechanisms for women and girls. These initiatives should provide opportunities for them to advance into leadership roles and become thought leaders in their respective fields.

- **We urge** higher education institutions and universities to fully adapt their gender-sensitive policies, making a concerted effort to increase the representation of women academics. It is also important to create a conducive environment that allows for African women researchers to thrive.

Publishers should prioritise the promotion of women to leadership positions within academic journals. Research has shown that women in these roles are more likely to recommend other women as editors and reviewers thereby fostering a more inclusive editorial environment.

- Publishers should proactively invite and encourage women, particularly those from marginalised regions and ethnic backgrounds. This includes providing accessible and affordable avenues for publication which can help bridge the gap for underrepresented voices in academia.
- There should also be continued consideration for fee waivers and/or abolition of hefty publication fees, especially for open-source journals, to enable more women from marginalised spaces to submit papers for publication. High publishing fees remain a key barrier to publication in general, and especially for women researchers who as this study shows have less access to funding in the first place.

- **We urge** publishers to require more citations from African women researchers in the papers and books they publish, recognising their contributions and enhancing their visibility in the academic community. It is important to facilitate skill development opportunities for these researchers. Pairing early-career scholars with established published academics through structured mentorship programmes can significantly enhance their professional growth and integration into the field.

Concerning the African Union, government institutions, and the appropriate authorities, we acknowledge the existing policies and frameworks designed to promote the advancement of African women in research.

- Governing bodies must ensure that universities actively promote diversity and inclusion by increasing the representation of women, individuals with physical, visible, and psychological disabilities, as well as those from marginalised or underprivileged backgrounds.
- **We advocate** for the initiation and strengthening of implementation plans aimed at enhancing and supporting policy enforcement within African Union Member States.

The Media has a critical responsibility to assess reporting on gender equity and equality, ensuring accuracy and accountability in presenting data on gender parity across the continent.

- To encourage coverage of gender equity in research, media outlets should allocate more resources for gender-focused departments.
- **We urge** these outlets to establish dedicated programmes or sections that consistently highlight the work and experiences of African women researchers.

Finally, funders must play a crucial role in developing inclusive funding programmes that are mindful of the unique challenges and circumstances facing African women in research.

- Create equitable partnerships that ensure collaborative research is designed with an understanding of these specific challenges.
- **We call** on funders to engage in inclusive funding programmes/initiatives that go beyond mere financial support. This should include capacity building efforts such as training, grant writing, budgeting, and public and policy engagement.

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