



Towards Gender-Inclusive Statistical Leadership: A Case Study of the ‘Women into Leadership’ Training Programme in Africa’s National Statistical Offices

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KEYWORDS

Leadership,
Training
Effectiveness,
Statistical
Offices, Gender-
inclusiveness

ABSTRACT

Numerous studies confirm the effectiveness of leadership training. However, there is limited evidence of the transfer occurrence especially in women in Africa. The study investigates how pre-engagement with participants informs training design, delivery and affects the impact of seven ‘Women into Leadership’ (WiL) training sessions delivered by the Office for National Statistics of the United Kingdom (ONS-UK) to female leaders in National Statistical Offices in Africa. Findings from thematic and descriptive content analyses reveal that pre-training expectations link to post training reactions as well as likelihood of training application. Key sentiments about the training include; laying foundations for stronger character, courage and assertiveness while providing knowledge and impetus for organisational change to trainees. The study also revealed country level variations whereby West Africans were more captivated by personal development and coaching, while East and Southern Africans leaned more towards leadership and management dynamics. Trainees also offered vital inputs for improvement which points to the importance of their engagement in all stages of the of training. An integrated framework for statistical leadership development and diffusion that guides further suggested trainings like the role of technology, AI and innovation in leadership, advanced strategic thinking, communication and emotional intelligence is also generated.

1. Introduction

National Statistical Offices (NSOs) are foundational to evidence-based governance, policy formulation, and monitoring of development goals (UNECE; 2025, PARIS21 & STATAFRIC; 2025). NSOs have played a crucial role in informing society and public debate, grounded in principles of transparency, trust, and integrity, the cornerstones of trustworthiness. This history and role mean that NSOs are uniquely well placed to respond to the significant challenges and opportunities being created in this age of increasingly rapid social and technological change. More importantly, the operational challenges for NSOs are beyond technological. Their work has evolved, pioneering the use of data and technology in government, and leading on developments in statistical methodology and new data sources.

In the current rapidly evolving data and technology environment, NSOs must adapt quickly to maintain their role as the leading and most trusted providers of independent and impartial statistical information. To achieve this, NSOs must be more flexible, open, and transparent, strengthen collaboration with other sectors, promote the use of statistical standards and codes of practice, expand methodological expertise, and build internal capacity to take advantage of technological innovations. This comes with a steep learning curve for much of the current human capital in NSOs, especially the leadership. Leading such tremendous change is not feasible without strong, strategic leadership and as part of operational changes; NSOs will require evolving leadership skill sets and areas of expertise (UNECE; 2025; ESCAP et al; 2024)

Leadership challenges have become increasingly complex globally due to rapid technological change, economic uncertainty, and persistent inequalities in access to leadership opportunities. Evidence from the World Economic Forum (2024) shows that although women now make up a substantial share of the workforce globally, they remain significantly underrepresented in senior leadership positions, accounting for only about one-third of senior leaders worldwide, with progress slowing or even reversing in recent years. Similarly, the McKinsey & Company “Women in the Workplace” -2024 report highlights the persistence of structural barriers such as the “broken rung” at the first step to management, where fewer women than men are promoted, limiting their progression into senior leadership roles (Krivkovich et al., 2024).

These global trends are particularly pronounced in developing regions, where leadership pathways are further constrained by institutional capacity gaps, gender norms, and limited access to leadership development opportunities. In Sub-Saharan Africa (SSA), the gender leadership gap is reinforced not only by organizational barriers but also by socio-cultural expectations and unequal access to professional networks, which collectively restrict women's advancement into decision-making positions. Recent global analyses also warn that economic shocks and digital transformation may further widen this gap if deliberate efforts are not made to support women's leadership development. A pre-print article by Morris et al. (2026) reviewed women leadership development programmes across 33 countries and found an equity paradox as programmes predominantly engaged already-privileged women, white, university-educated, mid-career professionals from high-income countries, recruited through competitive nomination processes. Consequently, the issue of leadership challenges globally increasingly converges on the need to understand the specific experiences of women leaders, (Kalbarczyk et al; 2025, Gardiner et al; 2023); particularly in Africa, where the intersection of gender inequality, institutional constraints, and socio-cultural expectations creates a unique set of leadership barriers that require targeted research and policy responses (Mathetha and Dhanpat; 2025)

Many NSOs in Africa face challenges such as underrepresentation of women in leadership positions. In fact, recent global reports show that Africa has one of the lowest shares of NSOs led by women; about 16 % in 2021 (UN Women Data Hub, 2021). This underrepresentation, coupled with known barriers to women's advancement like socio-cultural expectations, limited networking and mentorship suggests that women's leadership training may be an important lever for enhancing both gender equity and institutional sustainability, but empirical evidence on the effectiveness of training interventions is limited (Education Sub-Saharan Africa, 2021). Although leadership training programmes targeting women have been implemented in various sectors across Africa to strengthen strategic thinking, organisational leadership, and empowerment (Uongozi, 2023), there is still a gap in systematic research on the effectiveness of such training in terms of how such training affects the performance of NSOs, specifically in relation to changes in leadership competencies.

Training effectiveness is a key agenda in human resource development due to the substantial costs of training that organisations incur and the elusiveness of measuring whether the investment in

capacity building has paid off and in what ways. Thus, several frameworks have been developed to guide its study including the Kirkpatrick model, Learning Transfer Evaluation model and the Baldwin and Ford Transfer of learning model. A review of 137 articles on the impact of women's global leadership in the health sector by Kalbarczyk et al. (2025) found that studies reflected women leaders' positive influence on various operations including financial performance, innovation, engagement with ethical initiatives, and influence on other women's careers and aspirations particularly when there were interactions with other factors such as education, experience, and networking opportunities. Gardiner et al. (2023) used an updated Kirkpatrick typology with seven categories to classify leadership training evaluation outcomes and found promotion to a leadership position as the sole objective outcome addressed while methodological limitations made it impossible to link between programs and women's career advancement.

Empirical evidence on women's leadership training in Africa remains sparse, with the existing literature drawn predominantly from South Africa and several other country contexts. Literature is largely absent from the statistical sector specifically. Within South Africa, Dzingwa and Terblanche (2024) examined the role of leadership coaching in supporting women in leadership positions, with particular attention to work-life balance, while Mathetha and Dhanpat (2025) explored the experiences of senior women leaders, focusing on how they navigate institutional barriers, access mentorship and support systems, and develop their leadership identities over time. Genga and Babalola (2024) drew on evidence from both South Africa and Kenya to investigate how women in the banking sector navigate leadership roles, the barriers they encounter, and the relationship between leadership style and organisational outcomes. Furthermore, in East Africa, Mwachi (2022) documented how a structured leadership development programme for women in Uganda contributed to skills building and capacity strengthening, while Khamis (2023) examined the influence of gender socialisation on women's representation in leadership within Tanzania's health sector. Although none of these studies are situated within national statistical offices, collectively they illuminate the effects of leadership training and coaching interventions for women in public sector and organisational settings across the continent. This points to a significant gap in the literature and underscores the importance of understanding how effective leadership training programmes have been specifically within the context of NSOs in Africa.

1.1 Context and Background

The ‘Women into Leadership’ (WiL) Statistical Leadership Programme is a formal initiative developed by UNECA and ONS-UK since 2021 in response to the need for strong statistical leadership to achieve the goals of African Union Agenda 2063 and the 2030 Agenda for Sustainable Development by offering training in leadership, communication, negotiation and related skills designed to promote statistical modernization within NSOs. It is tailored for women with senior leadership potential in NSOs thus it speaks to the unique experiences and challenges faced by these leaders (ONS-UK and UNECA n.d.).

Practice suggests that women’s leadership training may be an important lever for enhancing both gender equity and institutional sustainability, but empirical evidence on effectiveness of training in NSOs is limited. A review of the literature reveals that there are few studies on leadership training, particularly within the context of NSOs. To date, longitudinal or outcome-based evaluations that assess the impact of such programmes on NSOs performance are rare. Furthermore, existing studies are largely descriptive reports of training events, rather than rigorous evaluation. Therefore, this study explores the design and delivery of seven cohorts of a women’s’ leadership training program and describes its outcomes in terms of strengthening women leaders and NSOs.

1.2. Objectives

1.2.1 Main Objective:

To explore the lived experiences and perceptions of participants regarding the factors that shape the effectiveness of women's leadership training programmes African NSOs.

1.2.2 Research questions:

RQ1: What pre-training needs and expectation variation do women leaders in African NSOs hold?

RQ2: How is the ‘Women into Leadership’ training design tailored and delivered according to the various group expectations?

RQ3: What effect does tailor-made training delivery have on post training reactions? (Affective and utility)

RQ4: What leadership competencies have women gained from the ‘Women into Leadership’ training programme in African NSOs?

RQ5: What follow-up and improvement is suggested from the implemented training sessions?

2. Methodology

2.1 Study design

The study adopted a cross-country qualitative case study design to examine the development, implementation, and outcomes of the Women into Leadership Training Programme implemented in selected countries in Sub-Saharan Africa between 2022 and 2025. The case study approach was considered appropriate because the study sought to understand a complex training intervention within its real-life context rather than to measure relationships between variables (Yin, 2018). The programme under investigation was implemented across multiple institutional and national contexts, making it necessary to adopt a design capable of capturing both shared programme features and context-specific variations.

The use of multiple countries strengthened the analytical depth of the study by enabling cross-case comparison. Rather than treating the programme as a single homogeneous intervention, the study examined how the training design was adapted in different settings and how these adaptations influenced participant experiences and outcomes. This was particularly important given the emphasis of the study on training needs analysis and post-training evaluation. A cross-country approach allowed the researcher to examine whether the identification of training needs differed across countries and how follow-up evaluation processes influenced training transfer in different institutional environments.

Furthermore, the cross-country design enhanced the transferability of the findings. By examining the programme in more than one national context, the study provides insights that are more broadly applicable to leadership development initiatives in Sub-Saharan Africa. Rather than producing

findings limited to a single institutional setting, the study generates knowledge that may be relevant to similar programmes implemented across the region. This strengthens the contribution of the study to both research and practice in leadership development and capacity-building programmes in Africa.

The qualitative approach was also appropriate because the study aimed to capture participants lived experiences, perceptions of the training, and reflections on how the programme influenced their leadership roles. Such insights cannot be adequately captured using quantitative methods alone. Semi-structured interviews, programme documents, and training evaluation reports were therefore used to generate rich, contextualized data that enabled a deeper understanding of the programme's design and impact.

In addition, the researchers used a bounded theory approach that confined the case study in terms of time (five years- 2021 to 2025) and space (Africa) and programme type (Development partner co-funded- ONS/ ECA and NSO). The case was defined as the Women in Leadership Training Programme implemented between 2022 and 2025, while the sub-cases consisted of the participating countries and institutions. This clear definition of the case strengthens the methodological rigor of the study and aligns with established qualitative case study procedures (Yin, 2018).

Overall, the cross-country qualitative case study design provided a robust methodological framework for examining how the programme was designed, adapted, implemented, and evaluated across different contexts. It enabled the study to capture both common programme elements and country-specific variations, thereby producing findings that are analytically rich and relevant to leadership development initiatives in Sub-Saharan Africa.

2.2 Study area and Sample:

The study was conducted in Sub-Saharan Africa 'Women into Leadership' training programmes for NSOs in several African countries by the ONS-UK in collaboration with the African Centre for Statistics (ACS) at the United Nations Economic Commission for Africa (UNECA) since the launch of the programme in 2021. Table 1 provides the sampling frame for the study and respondents.

Table 1: Women into Leadership Programmes and Sample

Date	Country	Attendees	Respondents
May 2021	Sierra Leone #	11	No report - virtual
February 2022	International Group*	18	x
February 2022	Kenya	19	x
June 2022	Jordan	16	x
December 2022	Tanzania	19	x
October 2022	Kenya	25	4
November 2022	Ghana	15	14
January 2024	Botswana	14	11
February 2024	Rwanda	19	11
October 2024	Malawi	13	13
November 2024	Madagascar	17	14
April 2025	Nigeria	20	20
TOTAL	12	206	87

Of the twelve programmes, five were dropped for various reasons: One had no data since it was virtual (Sierra Leone-11 participants), and the other was not in Africa (Jordan-16 participants), Others had no data (Tanzania and Kenya- February, 2022). Therefore, seven training programmes formed the final sample of 87. These were cleaned to obtain viable reports and a final respondent list.

2.3 Data Sources

Researchers drew upon multiple sources of data namely, an in-depth qualitative interview with the facilitator from ONS-UK to explore experiences, perceived impacts, barriers, enablers from the trainer’s perspective and training evaluation documents with secondary data from the ONS-UK database of training evaluations of the seven programmes with pre, during and post training data.

2.4 Trustworthiness of the Study

In this study, which examined the design, implementation, and outcomes of a Women in Leadership Training Programme implemented in selected Sub-Saharan African countries between 2022 and 2025, trustworthiness was established using the four criteria proposed by Lincoln and Guba (1985): credibility, transferability, dependability, and confirmability. These criteria guided both the design of the study and the procedures used during data collection and analysis.

2.4.1 Credibility

Credibility refers to the extent to which the findings accurately represent participants' experiences and perceptions (Creswell & Poth, 2018). In this study, credibility was enhanced through several strategies. First, data were collected from multiple stakeholders involved in the women's leadership programme, including programme documents, trainers and participants. This enabled triangulation of perspectives and strengthened confidence in the findings.

Second, the study incorporated data from multiple sources, including a semi-structured interview, programme documents and training evaluation reports. The use of multiple sources allowed the researchers to compare participants' experiences with documented programme outcomes, particularly in relation to training needs analysis and post-training evaluation practices.

Third, member checking was conducted by sharing interview summaries and preliminary interpretations with selected participants to confirm the accuracy of the interpretations. This ensured that the findings reflected participants' intended meanings rather than the researcher's assumptions. In addition, prolonged engagement with the programme over the 2022–2025 period enabled a deeper understanding of how the programme evolved across different countries.

2.4.2 Transferability

Transferability refers to the extent to which the findings can be applied to similar contexts (Lincoln & Guba, 1985). Since the study focused on a regional women's leadership programme implemented across several Sub-Saharan African countries, transferability was enhanced through the use of thick description. Detailed information was provided about the programme context,

including the institutional settings in which the training was delivered, the characteristics of participants, the structure of the training modules, and the country-specific adaptations of the programme. Particular attention was given to differences in implementation across countries, as well as the role of training needs analysis in shaping programme design. By presenting detailed contextual information, the study enables determination of the extent to which the findings may be applicable to similar training initiatives in other regions.

2.4.3 Dependability

Dependability refers to the consistency and transparency of the research process (Shenton, 2004). In this study, dependability was ensured through the development of a clear and systematic research design. The procedures used in sampling participants, developing interview guides, conducting interviews, and analysing data were carefully documented. An audit trail was maintained throughout the research process, including records of interview schedules, field notes, coding procedures, and analytical decisions. The use of a consistent thematic analysis approach further enhanced dependability by ensuring that the same procedures were applied across all data sources. In addition, the research process was aligned with the case study methodology, with clearly defined case boundaries (the Women in Leadership Training Programme implemented between 2022 and 2025). This clarity contributed to the stability and coherence of the study.

2.4.4 Confirmability

Confirmability refers to the extent to which the findings are grounded in the data rather than in the researcher's personal assumptions (Lincoln & Guba, 1985). In this study, confirmability was enhanced through reflexivity and transparency in data analysis. The researchers maintained a reflexive journal throughout the study to document methodological decisions, personal reflections, and potential sources of bias. This helped ensure that interpretations were based on participants' experiences rather than the researcher's preconceived ideas about leadership development programmes. Furthermore, the findings were supported by direct quotations from participants, including trainees, and trainers. These quotations provided clear evidence that the themes; particularly those related to training needs analysis, programme adaptation across countries, and post-training evaluation; emerged directly from the data.

Overall, the study ensured trustworthiness through the use of triangulation, member checking, thick description, audit trails, and reflexive practice. As a result, the study provides reliable and meaningful insights into the design and effectiveness of women's leadership training programmes in Sub-Saharan Africa.

2.5 Ethical Considerations:

Several ethical principles were observed, including informed consent, confidentiality, voluntary participation, anonymity, and responsible data management, in accordance with established qualitative research ethics guidelines. All data was anonymised, and special attention was paid to rights of the stakeholders in the research.

3. Analysis and discussion of findings

3.1 Introduction

After collecting the data, the researchers analysed it to identify prominent themes. Qualitative thematic analysis of the interview with the training facilitator and case studies transcripts was done to unpack pre and post perceptions, linked by tailored delivery. It was also used to explore barriers and enablers from the trainer and trainees' perspectives. Triangulation was used at the analysis stage in order to validate findings. Data was analysed using MAXQDA Software version through explanation building aiming to develop causal explanations linking Design → Delivery → Outcomes. There was also Cross-Case Synthesis to understand the country variations in training needs and likelihood of transfer.

3.2 Pre-training needs and expectations

RQ1: What pre-training needs and expectation variation do women leaders in African NSOs hold?

Pre-training needs are sought from participants 2-3 months prior to training in order to ensure thorough and adaptive preparation for the particular cohort. Figure 1 presents the participant needs before the programme development and figure 2 presents their expectations of learning to be gained after a programme was developed and circulated.



Figure 1: Pre-training needs



Figure 2: Training expectations of learning

Training needs in the word cloud strongly point to the need for personal development and this was most evident in Ghana and Nigeria. Other topics like communication, navigating management challenges and emotional intelligence were needed. After viewing the standardised programme that incorporated the trainee needs, leadership skills emerged as the most required topic with personal development, communication; especially assertiveness and listening; emotional intelligence and management challenges. There is similarity between the needs and expected learning gains. Figure 3 presents the country variation of the learning expectations

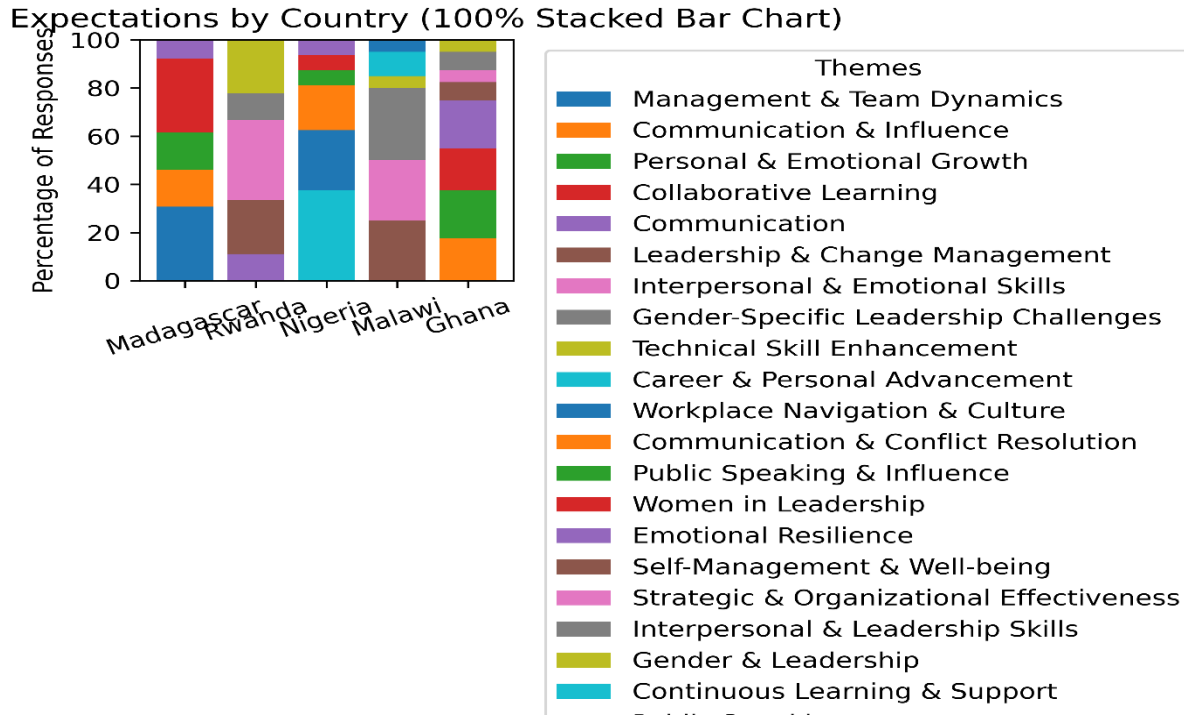


Figure 3: Country variation of learning expectations

Ghana has the highest total number of coded expectations, especially in leadership, communication, and career growth. Malawi shows a strong spread across three major areas: interpersonal/leadership skills, strategic effectiveness, and self-management. Nigeria is dominated by career and personal advancement, with additional emphasis on workplace culture. Madagascar is more concentrated around management/team dynamics and collaborative learning. Rwanda has a smaller but more focused distribution, particularly around interpersonal/emotional skills, gender in leadership and technical skills. Botswana also had most strong spread across three major areas: interpersonal/leadership skills, strategic effectiveness, and self-management.

RQ2: How is ‘Women into Leadership’ training design tailored and delivered according to the various group expectations?

The training prospectus informs that the programme aims to equip leaders of national statistical offices with the skills required to lead their organisations on a programme of statistical modernisation. It focuses on upskilling statistical leaders to deal effectively with the range of challenges faced by statistical organisations. It is designed to inspire positive change at

the senior- and middle-management level. The programme is offered to an organisation's whole leadership team. The heart of the programme is a focused five-day face-to-face classroom-based workshop delivered by an experienced leadership trainer, supported by a current senior government statistician. It is designed and delivered by the ONS-UK in collaboration with the ACS at the UNECA) (ONS-UK and UNECA n.d.).

The programme is specifically tailored to individual NSOs. It speaks to the unique experiences and challenges faced by today's statistical leaders. Before delivering the programme, the course tutor holds extensive conversations with the statistical office to understand the challenges and important factors at play during the programme. Individual conversations with participants look at uncovering current challenges they face and would like to address during the classroom course. Training is co-delivered by an experienced leadership facilitator and a senior statistician, who bring an in-depth understanding of the technical challenges faced by participants. Further unique contribution is brought to the course from an invited guest speaker – a well-respected leader in the world of statistics, economics, or government with experience of leading through change. The programme is pragmatic and designed to enable participants to apply the skills learnt on the course to their workplace challenges to have a positive impact on their organisation. It uses real workplace challenges from participants to link theory to practice. (ONS-UK and UNECA n.d.).

Furthermore, the training facilitator from the ONS-UK reveals that the programme is practical and pragmatic, designed to help and support leaders in national statistics offices. The focus of the programme is the participants and what they need. Each course is different as each group of participants will have different needs and challenges. The idea is to apply the theoretical learning to the practical challenges participants bring to the programme. The programme is adapted for the audience – from executive level leaders who may need more on strategic leadership to junior leaders who may need more hands-on experience in managing and leading their teams. Or women leaders who will have particular challenges. (Interview transcript; 2026)

There are core elements of the programme that are be common to all levels. However, depending on the conversations and the needs of participants each programme will be different. (Ibid; 2026) The training schedules for the programmes were reviewed and clearly revealed the variations indicated by the facilitator. For example, the Ghanaian schedule placed more emphasis on personal

development and leadership and management while in Malawi and Rwanda there was a dedicated session on career development, and in Madagascar, there was one on strategic leadership.

The programme has also evolved since 2019 when there was a leadership workshop day facilitated by the Training lead for the heads of National Statistical Offices within the Commonwealth. The outcome from this day was the identification of 5 key principles that should be incorporated in a leadership programme –Strategic thinking, Integrity, Communication, People Leadership, and Knowledge. With these elements in mind a 5-day programme was designed in consultation with leaders, facilitators, subject experts within ONS-UK and across the wider leadership and education community. The Facilitator’s key insights are as outlined below:

“As we have delivered the programme, and received feedback we have added new elements, taken out elements as we have learnt more specifically what participants need. We have built a bank of topics and different areas that can be used flexibly to meet the needs of all participants” (Facilitator interview transcript; 2026).

3.3 WiL Program Design

The WiL programme is essentially the same as the mainstream Statistical Leadership Programme (SLP) – it looks at developing the skills for all participants to meet the needs of their organisations and the challenges that leaders face. What the WiL programme does is to look at these challenges from the perspective of aspiring women leaders – what are the barriers, what special challenges do women face in a traditionally male dominated workplace. The programme is offered to women who have been selected for their potential to develop as leaders within their organisations.

3.3 Feedback and Adaptation Mechanisms

There are a variety of levels of feedback for the WiL –There are discussions with the senior leaders of the Organisation to be trained 2 – 3 months before the programme to ensure clarity about the wants and needs of the organisations and ability to meet them. There is a pre-course questionnaire for participants to complete before the programme asking about their levels of knowledge, skills and expectations of the course. During the course each morning trainers gather feedback from

attendees as the review the previous day's learning. Immediately after the programme attendees are sent a post course evaluation programme asking them to assess various elements of the course and assess the usefulness. 3 to 6 months after the course there are face to face, where possible, interviews with attendees asking for feedback on the programme, how their action plans are progressing, what barriers they have faced. All this feedback is used to adjust the programme.

3.4 Outcomes and Impact of the WiL

RQ3: What effect does tailor-made training delivery have on post training reactions (Affective and utility leadership practices)

Tailoring the programme has yielded strong post-training transfer intentions across most cohorts. As shown in Table 2, the combined “fairly likely,” “very likely,” and “extremely likely” categories account for 98% of responses in most countries. Although notable variation exists; for example, Madagascar recorded 20% of participants as “fairly unlikely” to apply the learning, point out the importance of context-specific needs analysis. This can be tied to utility and affective reactions of trainees which make the training stick and enhance the desire to change in trainees. Analysis of the utility and affective reactions revealed that trainees experienced both after the training as presented in the concept map in figure 4.

For affective reactions perceptions of ‘awesomeness, excellence, and interesting’ were prominent, while for utility reactions sentiments that the programme was ‘educative, informative, enlightening, relevant and impactful’ were abundant. This ties to the large percentage of likelihood of training use by the trainees. There were contextual variations as well which emphasise the importance of thorough needs analysis. For example, in Botswana several trainees were impressed by the well organised nature of the training while in Ghana and Malawi several felt it was ‘logical’. Clearly these sentiments link to the fact that these are Statisticians and to them logic and organisation permeates all spheres of their lives.

Table 1: Participant likelihood of using learned materials (in %)

Country								Grand
	Botswana	Ghana	Kenya	Madagascar	Malawi	Nigeria	Rwanda	Total
Fairly unlikely	0.00	0.00	0.00	20.00	0.00	0.00	0.00	1.49
Fairly likely	18.18	58.33	50.00	20.00	12.50	10.00	57.14	28.36
Very likely	54.55	25.00	50.00	40.00	50.00	65.00	14.29	46.27
Extremely likely	27.27	16.67	0.00	20.00	37.50	25.00	28.57	23.88
Grand Total	100	100	100	100	100	100	100	100

RQ4: What leadership competencies have women gained from the ‘Women into Leadership’ training programme in African NSOs.

Women have been equipped with vital skills to guide them as African statistical system leaders to become transformative leaders who can steer the modernisation of national statistical offices, develop and communicate clear strategies, lead and inspire change, and delegate work appropriately. Strengthened statistical leadership is required to fulfil the visions of the African Union Agenda 2063 and the 2030 Agenda for Sustainable Development. The concept Map in figure 4 shows the major areas that the trainees gained. Personal development topped the list followed by emotional intelligence. The most resounding comment was “*understanding myself*” and “*understanding others*” better. The trainees also gained knowledge of all the topics which reinforces that trainings’ importance

The trainees also identified four major areas that they would transfer to life and the workplace. These areas were in line with the main areas they expressed as needs and expectations from training showing how preparing and delivering training according to trainee needs and expectations. These areas were; leadership and management skills especially ‘*seeing things differently*’ which essentially is strategic leadership and leading change. The fact that trainees perceived leadership skills as a key competency gained reflects the crucial need for Leadership knowledge in NSOs. This may rise from the technical nature of the Statistics profession which side-lines soft skills in the long training programmes, leaving a gap in their managerial and leadership skills. This in turn

translates to operational challenges in NSOs when the vision, mission and objectives lack clear planning, organisation, coordination and control. (UNECE, 2025).

Personal development was also high on the transfer list, whereby Malawi and Nigeria largely referred to ‘*work-life balance*’ and ‘*loving themselves more*’ as women leaders. Communication skills like assertiveness and listening were mentioned as key competencies together with the ability to negotiate and handle difficult conversations. Mostly Nigeria and Ghana Trainees specially felt that they would ‘*coach and mentor*’ subordinates in order to spread what they had learned.

The training facilitator cemented the trainee perception as shown in the following excerpt from the interview:

*We receive a lot of positive feedback about the individuals. **Many, many individuals believe they have made significant positive changes as a result of the programme. Occasionally these are tangible outcomes – promotions, a different job etc. Often, they just believe they have changed for the better.** We also get feedback, quite often from the longer-term feedback exercise, about the effect the training has had on participants teams. Occasionally there is a change to a part of the organisation. This is difficult to measure but can have considerable impact. In one instance the problem around sexual harassment in the office was identified and measure put in place with the support of the Director General.*

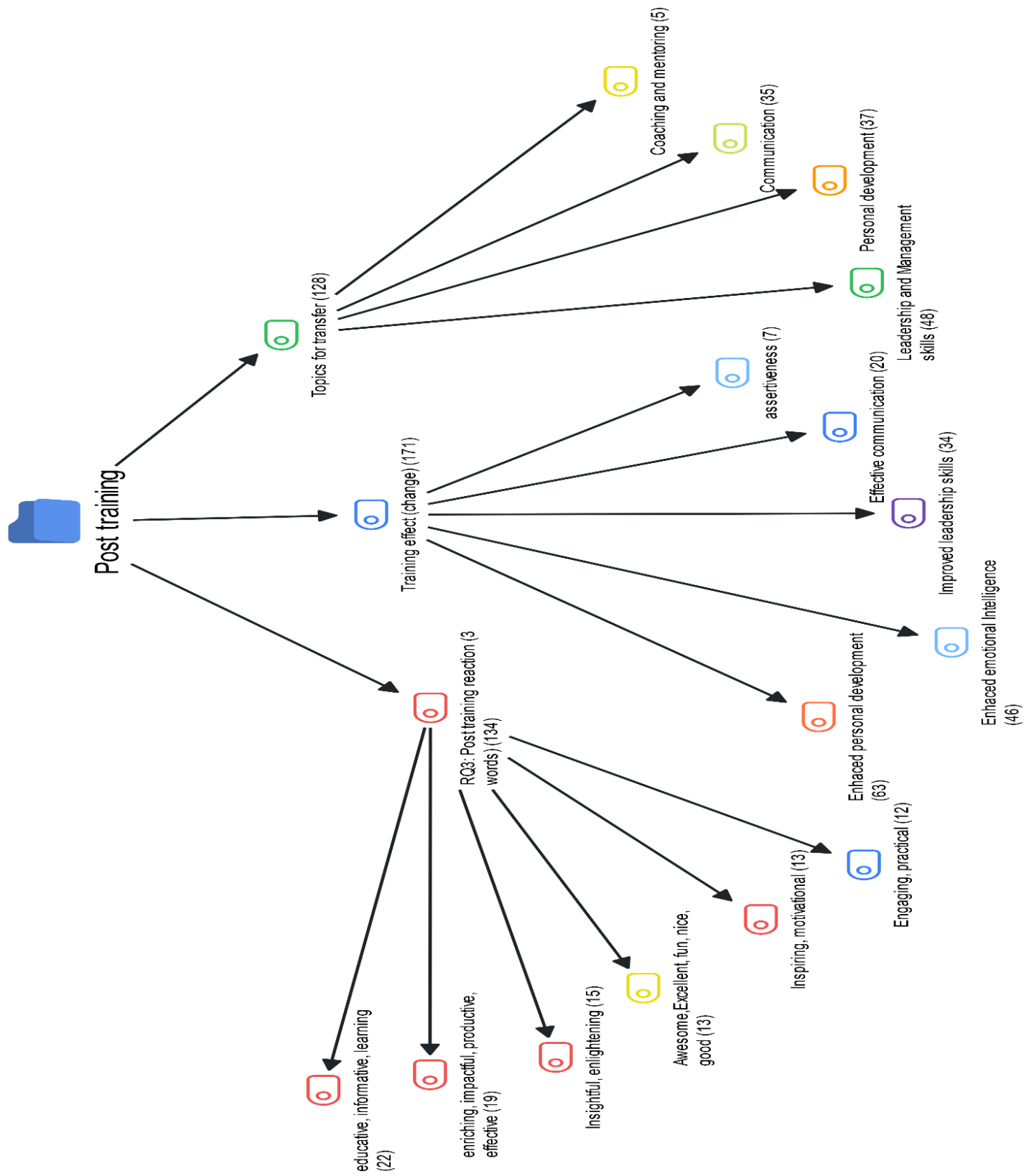


Figure 4: Post training Concept Map

3.5 Challenges and Constraints

Participant constraints were mainly implicitly voiced for instance; the distractions of on-site training, gaining permission to attend, and logistics. The facilitator on provided three challenges faced namely; COVID 19, the gender gap in NSOs which creates scarcity of females to train and the resource limitations stating that: *“The demand for the programme has always outstripped supply. With only 1 trainer delivering the programme we have had to limit the number of programmes delivered.”*

3.6 Lessons Learned

Insights form the training are that women gain positive change from the WiL. Apart from knowledge and skills, women gain much needed personal growth in terms of *“stronger character, boldness, courage, work-life balance, self-love and resilience”* that is much needed in a male dominated world. The facilitator believes there is tremendous scope for the programme. There is a real need for leadership training in NSOs across Africa. He maintains that *“If ONS had the resources we could have delivered twice as much training.”*

RQ5: What follow-up and improvement arises from the implemented training sessions?

The study explored the proposed areas for improvement suggested by the trainees and facilitator which guide future directions for the programme. These areas arose into two main categories of modality and training content as presented in Figures five and six.

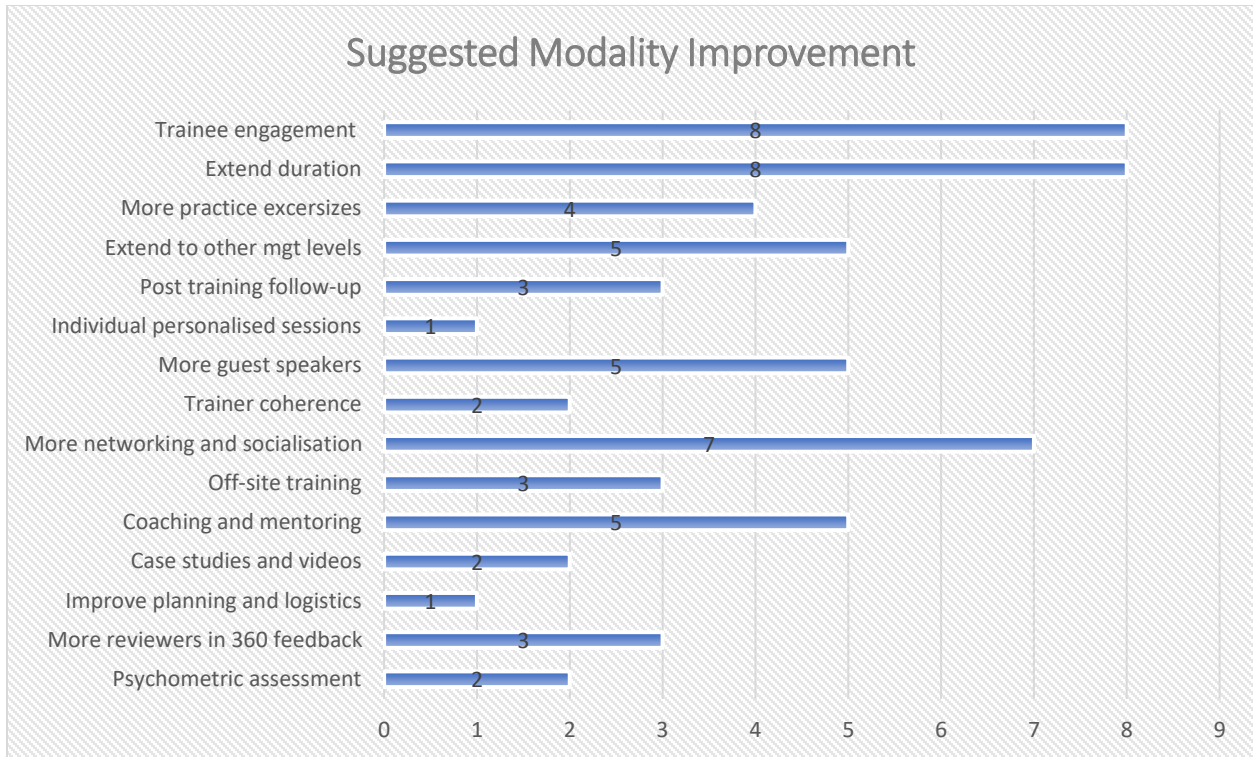


Figure 5: Suggested modality for improvement

Variation in trainee engagement techniques was suggested in terms of group discussion modalities whereby trainees thought it would be more engaging and rapport building to have rotation of group membership. Extended training duration was also proposed since a large number who responded to the question felt that the content needed more time to be clearly understood. They also felt that sharing of the peer review form different groups would be more beneficial. Other trainees thought that ice breakers would ‘energise the room’. Another key area is that of socialising and networking where they proposed outings and tours or games to help them know each other better while offsite training was proposed since on-site training was seen as a ‘distraction’ to the training attendance. The trainees also proposed that the training should extend to all management levels whether lower or higher in order to have more buy-in and clear vision for the whole organisation.

3.7 Suggested Topics for Future courses

Leadership and Management, Communication, and personal development are the three broad areas that arose as mainly requiring follow-up and or programme enrichment to enhance WiL effectiveness. All leadership and Management functions were suggested while specific areas

within this category like relationship management, coordination, and Technology in Leadership received significant mentions. Further, performance management issues were mentioned which exposed the emerging need for monitoring and evaluation upskilling for Statistical offices. Emotional intelligence was the largest suggestion for Personal development while all communication skills, assertiveness and negotiation were seen as requiring further training. Figure 6 shows the three broad areas suggested for follow-up programmes:



Figure 6 : Suggested broad areas for future training

4. Conclusion

This study set out to explore the effectiveness of the Women into Leadership (WiL) programme implemented across seven African NSOs between 2022 and 2025. It examined how pre-training needs analysis, tailored programme design, and participant-centred delivery shape training outcomes for women statistical leaders on the continent. The findings confirm that the programme's adaptive design, grounded in pre-training consultation and responsive content modification, was central to its effectiveness. The trainings generated strong positive affective and utility reactions among participants and high intentions to apply acquired competencies in the workplace. Country-level variation in training expectations and outcomes underscores that effective leadership development in Africa cannot follow a one-size-fits-all approach but must remain contextually sensitive and institutionally grounded. Key competencies gained reflect critical gaps in the professional formation of women in statistically-oriented institutions, where technical expertise has historically overshadowed soft and leadership skills.

Findings also build on and extend several established frameworks. They deepen Baldwin and Ford's (1988) Training Transfer Model by arguing that needs-assessment is not merely a good practice but the mechanistic condition for transfer convergence. It extends Kirkpatrick's Four-Level Evaluation Model by replacing its linear input-output logic with a concentric, relational diffusion logic better suited to measuring soft and cultural outcomes. It draws on Bass's Transformational Leadership Theory while contextualising it within the specific institutional ecology of African NSOs and it anticipates Ibarra's (2015) leadership identity transition work by embedding identity reconstruction as the engine of the transfer mechanism rather than treating it as a separate phenomenon. What is genuinely new in this model is the argument that in technical professions operating within development mandates, leadership development is not merely a human resource function but a governance and development strategy; one whose impact, properly understood, reaches from the inner world of an individual woman's self-concept all the way to a continent's capacity to measure and achieve its own aspirations. The framework integrates three dynamic propositions: A Technical Displacement Effect explains *why* the intervention is necessary. A Needs-Assessment Mechanism explains *how* the intervention works and a Concentric Diffusion Effect explains *what* the intervention ultimately produces. The three propositions interact dynamically, forming a closed explanatory loop as shown in figure 7.

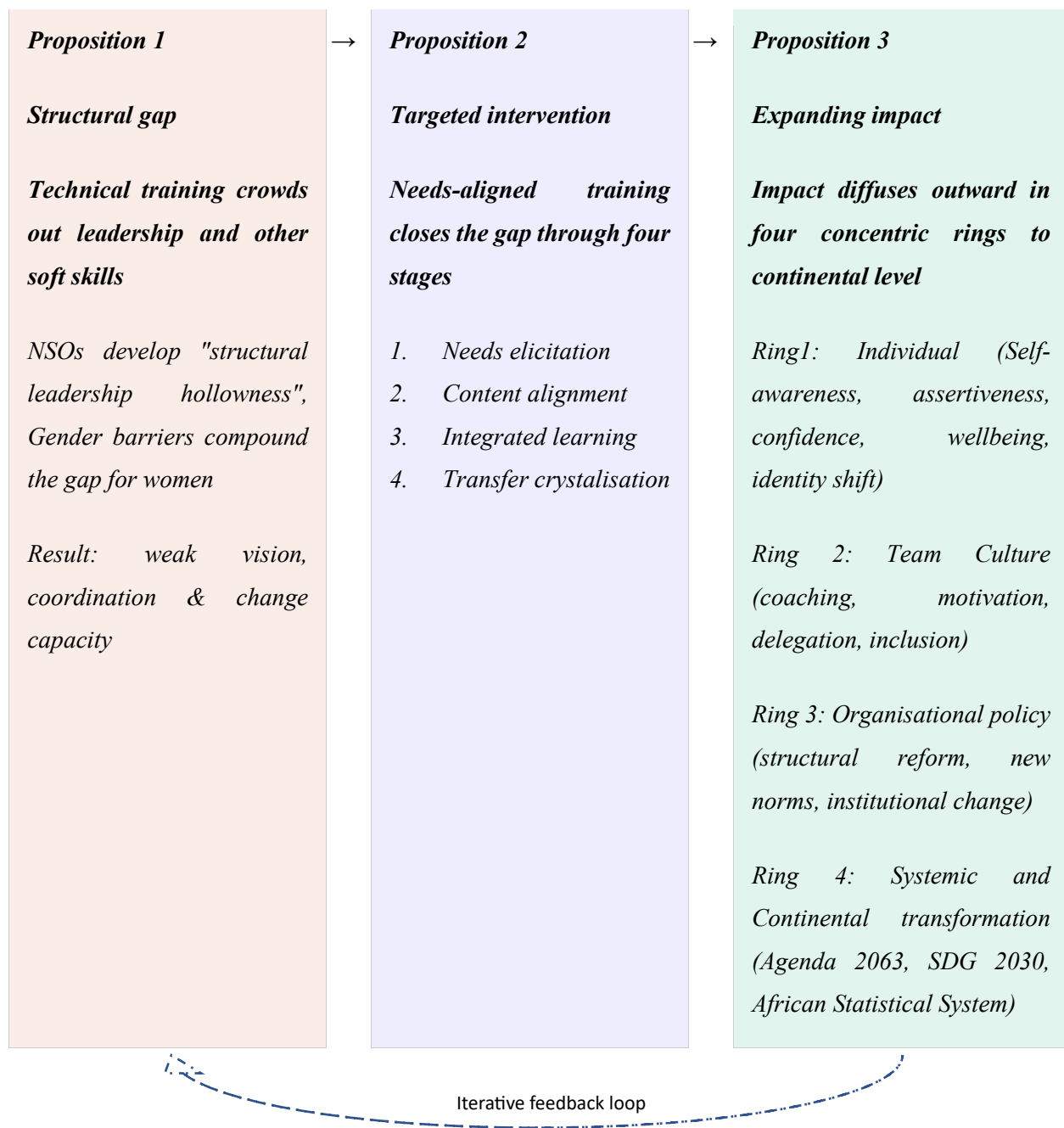


Figure 7: Integrated framework for Statistical leadership development and diffusion

These three propositions are connected by an **iterative feedback** loop that reveals new gaps and informs the next cycle of intervention. This cyclical relationship means the integrated framework is not a static model but a developmental spiral whereby each cohort of trained leaders generates organisational learning that reshapes the next iteration of the programme, while the diffusion of impact across NSOs gradually raises the baseline from which future participants begin.

5. Implications and Recommendations

Findings from the study provide practical recommendations for NSOs, governments, donors, and capacity development agencies on designing, funding, and supporting women's leadership training specifically for statistical institutions. The impactful nature of the programme is a call for all stakeholders to support and patronise leadership capacitation efforts because the success of the African statistical sector begins by excellent training. The study has provided empirical evidence on how women's leadership training contributes to sustainability of NSOs in Africa. It has also helped to identify key leadership competencies and training features that are most strongly associated with training effectiveness for women and theoretically builds on and extends several established frameworks while introducing genuinely new theoretical contributions. This means that it is crucial to continue training women leaders in the statistical system as the programme represents a meaningful, evidence-based contribution to strengthening gender-inclusive statistical leadership across the African continent, with practical lessons for NSOs, development partners, and capacity-building agencies seeking to invest in the next generation of women leaders in statistics.

6. Areas for Further Research

Several avenues for future research emerge from this study. First, longitudinal studies that track WiL participants over 12 to 24 months post-training are needed to determine whether the strong intentions to apply learning translate into sustained behavioural change and measurable improvements in NSO performance. Second, future research should incorporate perspectives from line managers, directors-general, and institutional peers to provide an independent organisational account of whether and how leadership development manifests in day-to-day institutional practice. Third, comparative studies that evaluate the WiL programme against other women's leadership development initiatives in Africa, including those in the health, education, and public administration sectors, would strengthen understanding of what makes leadership training specifically effective within the statistical domain.

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