

# Exploring the Perceptions of Lab-Based STEM Women Regarding Challenges Facing Female Leaders in an Institution of Higher Learning

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## Abstract

In this 21st century, there has been a massive transformation in the workplace demographics. The global population observed many women entering the workplace, some occupying managerial positions. However, drawing from several studies, women continue to face challenges that hinder their performance in executive positions. This research study aims to comprehensively uncover and elucidate the multifaceted challenges confronting women leaders in higher education while implementing organisational strategies that promote their increased advancement. A qualitative research design using a non-probability convenience sampling addressed the study's objectives. Twenty-seven (n=27) women working at a university in South Africa answered the open-ended questionnaire.

The findings reveal that most leaders struggle with gender norms and workplace balance. Furthermore, since management positions are frequently temporary, it is possible to return to a research position. Therefore, managers typically need to balance their roles as leaders and researchers. In this regard, the organisation should initiate effective strategies to support women leaders, such as training, mentorship and organisational support. In conclusion, the current study emphasises the challenges of work-family balance in the careers of women scientists in university and the organisational participation in supporting them.

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# **1. Introduction**

## **1.1. Background**

For the first time in history, around 10% of Fortune 500 companies will be headed by a woman CEO in 2023. Undoubtedly, this marks a significant turning point. But it also emphasises the need for more women in leadership positions at all levels (Kruse, 2023). Gender equality allows more women to join the workforce, expanding the labour force and possibly boosting economic growth. Women now make up most of the workforce in the tertiary sector, reflecting the dramatic increase in women's participation in organisations over the past 50 years. Universities have historically been hierarchical, white, and dominated by men (O'Connor, 2020). Women in leadership positions and women working in STEM (science, technology, engineering, and mathematics) fields have been the subject of extensive research.

However, women in leadership in STEM is uncharted territory (McCullough, 2019). In South Africa, the percentage of women pursuing STEM careers is lower than the global average of 30%. The nation still leads Sub-Saharan Africa in this regard (Stats SA, 2022). Women scientists play a critical role in scientific leadership as well as the growth and transformation of Africa. However, they continue to be significantly under-represented in STEM fields and higher education, with only 30% of Women in higher education pursuing careers in STEM (Babalola, 2021). Women in management positions encounter difficulties. More than men, women can experience intense conflict over leaving their kids when they go to work. Caregiving was cited as the root cause of every work-life balance issue by female leaders who had difficulties (Cho et al., 2018).

The Vietnamese government is working to increase opportunities for women and lower Vietnam's 70% Gender Gap Index score. According to the study, social networking, personal factors, work-life imbalance, and perceptions of women leaders by subordinates are the main obstacles to women's career advancement. Continuous family and mentor support, a shift in the mind-set of employers, and the potential leadership skills of women leaders were the factors that drove women leaders to advance in their career paths (Maheshwari & Nayak, 2022). According to Brue (2019), participants' professional and personal lives named informational and emotional support as crucial to their leadership roles. Certain organisational cultures and policies, including those governing hiring, professional advancement, and promotion practices, are discriminatory. As a result, women lack opportunities for growth, support, and trust (Eghlidi & Karimi, 2020). In this study, we identified the challenges women face in leadership positions. In addition, we investigate what the organisation can do to support women leaders.

## **1.2. Problem Statement**

Globally, gender equality has been the focus of many conversations. We have observed an increased number of women leaders occupying management positions in the last decades. Despite their empowerment, women still struggle to portray themselves as capable of handling male-dominated leadership positions in the workplace. Male-dominated work cultures, discrimination and the glass ceiling, gender stereotypes, and the difficulty juggling work and family obligations were the main perceived challenges or barriers

(Coleman, 2020). The results show that stereotypes present a hurdle for women seeking leadership positions (Gandhi & Sen, 2021). Because these traits go against feminine amiability, people dislike socially dominant, aggressive, and competitive women. Lack of mentorship increased psychological disempowerment and job stress, restricted networking opportunities for women, and decreased job satisfaction by fostering feelings of loneliness, dissatisfaction, and discouragement (Cross et al., 2019).

### **1.3. Research objectives**

The following objectives were set in alignment to address the study's problem:

- To investigate the perceptions of lab-based STEM women about the challenges faced by females who hold management roles.
- To determine what the organisation can do to support lab-based STEM women in management roles.

## **2. Literature Review**

### **2.1. Women in STEM**

Gender equality refers to the equal rights, responsibilities and opportunities of women and men and girls and boys (García-Holgado & García-Peñalvo). This means that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female (OSAGI, 2021). It is goal 5 in the 2030 Agenda for Sustainable Development, but gender equality cuts across all 17 Sustainable Development Goals (SDG) and is reflected in 45 targets and 54 indicators for the SDGs (Dugarova, 2019; Inter-Agency and Expert Group on SDG Indicators, 2017; Pradhan et al., 2017). Women are persistently underrepresented in science, technology, engineering, and mathematics (STEM) (Directorate-General for Research and Innovation Horizon, 2020; OECD, 2015; Tomassini, 2021; UNESCO, 2007; UNESCO Institute for Statistics, 2018).

In South Africa, women remain underrepresented in permanent academic staff, comprising only 43% of the total complement in public higher education institutions. This inequity becomes more glaring in senior academic positions, with only 18.5% of women as professors and 29.8% as associate professors (Riordan & Louw-Potgieter, 2011, p. 157). Although the number has risen from 18% in 2002 to 29% in 2011 of the National Research Foundation (NRF) rated researchers who are women, men still publish more journal articles, with women only authoring 14-37% of the published papers with this 23% spread determined by the discipline in question (John, 2012).

Mazibuko (2006) suggest that endogenous factors such as perception of the changing processes in higher education, self-perception, mentorship, and networking can act as transformative agencies for women succeeding in higher education. Sader, Odendaal, and Searle (2005) concur with the sentiment by stating that not enough attention is given to leadership attitudes, performance and development needs of women, holding leadership positions in university as well as the key challenges of doing one's work efficiently while simultaneously fulfilling a mother's responsibilities. An explanation for the lack of progress towards gender

parity in STEM is negative and pervasive gender stereotypes, which may facilitate hiring discrimination and reduce opportunities for women's career advancement (Casad et al., 2020). Women in STEM also have lower social capital (e.g., support networks), limiting women's opportunities to earn tenure and learn about grant funding mechanisms. Women faculty in STEM may also perceive their academic climate as unwelcoming and threatening and report hostility and uncomfortable tensions in their work environments, such as sexual harassment and discrimination. The mere presence of gender-biased cues in physical spaces targeted toward men can foster a sense of not belonging in STEM (Casad et al., 2020). Based on the observation from above, the sections that follow will cover possible challenges faced by females in leadership positions, namely, leadership style, work-life balance, patriarchal societies, cultural norms, family/spouse support, unequal pay and the role that universities can play to support females in leadership positions.

## **2.2. Women's leadership style**

This is a controversial topic, as mentioned in this section's introduction. To reiterate, studies on leadership have traditionally concentrated on the behaviours of male leaders. Gender did not traditionally play a role in leadership because only men held positions of authority. However, as more female leaders emerged and became more prevalent, gender started to be considered in leadership studies. Several researchers are working to understand the differences between men's and women's leadership styles (Zulu, 2007; Chamorro-Premuzic, 2019). According to research studies, women are emotional, sensitive, task-oriented, democratic, people- and relationship-focused, whereas men are objective, focused, analytical, impersonal, paternalistic, and task-oriented. According to Mercer-Prowse (2022), a male comes to mind when someone thinks of a manager. The variable "Male" and the leader have a strong and immediate connection. The stereotypical notions of what makes a good leader are like men's. So, even though shared decision-making is a tried-and-true leadership strategy, people still think a good leader is assertive, determined, and decisive. Female executives are sensitive to sexist expectations. However, a study of female leaders revealed that stereotype activation did not affect a woman's ability to lead. Gender issues were sensitive to women. However, increased exposure to gender expectations did not disparage a woman's leadership abilities (Lavaysse et al., 2019).

## **2.3. Work-life balance**

Work-life balance refers to how your obligations and professional obligations interact for the rest of your life. To balance the demands of the home and the workplace, policies and practices are referred to as having a "work-life balance" (Vigneshwaran et al., 2021). For a career-driven person, one usually needs to work overtime. Women can feel profoundly conflicted, more so than men, about leaving their children when they go to work. Female leaders experiencing work-life issues reported that all their balance issues were related to caregiving (Cho et al., 2018). Eighty-nine per cent of American workers said work-life balance is a problem (Sweat, 2020; Muasya, 2021). According to the study, social networking, personal factors, work-life imbalance, and perceptions of women leaders by subordinates are the main obstacles to women's career advancement. Continuous family and mentor support, shifting employer attitudes, and women leaders'

potential for leadership competency were the factors that drove women leaders to advance in their career paths (Maheshwari & Nayak, 2022). A deeply ingrained African culture makes it difficult for working women to find a work-life balance relative to men, even though there are patriarchal tendencies in the amend, with men engaging in problem-solving efforts, such as abuse of women and justice and fairness in the workplace (Nehemia & Lenkoe, 2023). Most South African families follow a patriarchal tradition. Men are regarded as the household's leaders. It is expected that women and children will submit to male authority. Women are expected to move in with their husband's family after leaving their own. The belief that respecting men as the patriarchs of families and as social leaders is a virtue underlies these behaviours (Sikweyiya et al., 2020).

#### **2.4. Women in a patriarchal society**

Men and women should interact and behave under a set of cultural norms known as patriarchy. It is predicated on the notion that men have an unalienable right to rule and that women should serve as caregivers in a submissive and selfless manner. Institutionalising male dominance over females emphasises preserving gender roles, attitudes, and social stereotypes (Muasya, 2021). Compared to men, women are considered less competent and more emotional leaders. It causes some women to see self-care as selfish or expressing their true voice, one that stands up for what they truly believe, as aggressive. Following an in-depth interview, Bui et al. (2018) conducted a study on 25 female Kazakh leaders and found that patriarchal expectations exist in the country.

On the other hand, gender roles have a long history in culture. In masculine cultures, there is a strong emphasis on independence, power, and taking risks, well-known qualities frequently expected of a leader (Alam & Badshah 2022). In these cultures, women are excluded commonly from higher levels of policymaking and decision-making. Women may be perceived as weak and incompetent in leadership positions due to these culturally defined but widely accepted gender norms in a patriarchal society. Women may internalise others' doubts due to these perceptions, casting doubt on their capacity for leadership. Women who doubt their ability to perform tasks outside of their gender norms are likely to lack confidence because leadership is perceived as being outside of traditionally female gender norms (Shinbrot et al., 2019).

#### **2.5. Cultural norm**

Cultural norms govern our way of life. They are the accepted norms and guidelines that direct behaviours within social groups. Cultural norms are taught and reinforced as one grows up by family, friends, teachers, and other adults. Tight cultural norms may prevent female leaders from dictating behaviours. In the past, men have traditionally held more leadership positions. Unless those norms support equal opportunity for both sexes, nations with stricter cultural norms are less likely to promote women as leaders (Muasya, 2021). It has been noted that the world's developing African nations are where this discrimination against women is most pronounced. Patriarchal attitudes influenced women's workplace behaviours in Nigerian organisations, according to Adisa and colleagues' research from 2019. The South African organisational culture embraces the idea of a more male-oriented, highly subservient, supportive, and submissive culture.

Men are expected to be assertive, tough, and focused on material success, while women are expected to be more modest, tender, and concerned with the quality of life. This is an example of a biased and out-of-date culture. Women managers are challenged by and concerned by the masculine management traits expressed in management language and ideas, such as aggression and competition. Men and women are expected to be sensitive, modest, and concerned with the quality of life in South Africa's democracy (Chiloane-Tsoka, 2012).

## **2.6. Family/spouse support**

Because they unite individuals from different backgrounds with different priorities, value systems, and preferences, marriages are rife with common conflicts. It is obvious that women's perspectives have evolved and that they now enjoy higher social status. However, sexist stereotypes like "good wife and good mother," "male outside, female inside," and "women's incompetence is a virtue" still have an impact on how people view and value women. People also think it is improper for women to be direct, assertive, and stronger than men. Recognising that her husband is the head of their household and submitting to his authority is all that is required to be submissive to her husband. Female leaders and traditional female roles clash (Cho et al., 2018).

Additionally, in Tanzania, powerful women leaders threaten their husbands because they think they will rule over them if they hold positions of authority (Mbepera, 2015). A descriptive study of the impact of religion and marriage on women's leadership in Ghana's Ashanti region was conducted using a qualitative research design. The main finding was that women either follow marriage and religious doctrines that designate men as leaders and women as. This suggests that marriage and religion may be able to prevent women from holding leadership positions. The conclusion was that radical feminists who view men as their enemies and call for emancipation as a solution are likely to fail because religion and marriage cultures force women to accept that men must lead them in all aspects of life (Simon, 2022). To keep a good relationship and promote a harmonious family phenomenon, female leaders should be skilled at defending the husband's image or status, sharing work difficulties with the husband, and seeking his advice (Zheng, 2019).

## **2.7. Unequal Compensation**

When two employees in the same organisation perform comparable work with the same level of qualification but are not paid equally, wage inequality occurs. The average wage difference between working men and women is the gender pay gap. Women are more likely than men to put in fewer hours at work, which increases the likelihood of being placed in lower-paying positions (World Bank, 2018). Although women have professional skills, education, and experience, in-depth studies on women's leadership have so far identified the wage gap as a significant barrier (Mariscal, 2019; Jennings et al., 2022). Glass ceilings or the segregation of women in certain "female-dominated" professions, positions, or organisations are frequently blamed for pay disparities. This presents a significant challenge for women in management positions (Muasya, 2021). Differences in human capital variables can also contribute to pay disparities. The human capital theory explains differences in tenure, promotion, and wages due to individual

productivity (Kaufman & Colyar, 2022). According to some academics, the human capital theory fails to explain differences in the structure of academic rewards (Wijesingha & Ramos, 2017). According to Kaufman & Colyar (2022), women leaders encounter unprecedented difficulties in earning the respect of their male subordinates and co-workers and proving their leadership abilities. The study also showed a pay gap between men and women across all disciplines, particularly among female academics in STEM fields and faculty positions.

## **2.8. Organisation's role in women's leadership**

Organisations ought to be able to operate at times and places convenient for family caregivers. While mentoring programs have advantages, sponsorship involves a trade-off in respectability and standing. Women should look for mentoring to support the success of female managers and professionals (Mirza & Jabeen, 2020). Organisations must concentrate their efforts and resources on training and developing programs to empower women. Large organisations and professional firms must develop and expand women's opportunities. Blind resume review and other anti-bias policies and initiatives can help to reduce bias in important areas of the hiring process. Policies and recommendations that institutional structures be changed to promote equality and specific measures should be used to address gender imbalances in "rights, resources, and voice" (Gupta et al., 2019). Women's development of self-worth, assertive leadership styles, and non-traditional attitudes toward women and the workplace must be supported by the mentoring experience. A potent tool for encouraging more productive work practices is mentoring current and future leaders (Maseko, 2013). Certain organisational cultures and policies, including those governing hiring, professional advancement, and promotion practices, are discriminatory. As a result, women lack opportunities for growth, support, and trust (Eghlidi & Karimi 2020). According to a growing body of evidence, organisational culture is a barrier that prevents qualified women from moving to senior leadership and management positions (Edirisinghe, 2018; Tiwari et al., 2019; Salahuddin et al., 2022). The organisation's strategic plan for developing female leaders weighs heavily on organisational factors. Female leaders are less likely to receive formal training, mentoring, and networking opportunities (Fazal et al., 2020).

## **3. Research Methodology**

In this current study, we have used a qualitative approach with a cross-sectional design, using open-ended questions. Respondents had to answer two questions: What are the perceived challenges females face in leadership positions? What can universities do to enhance female representation in leadership positions? Data collection was collected from November 2022 to December 2022. We used non-probability convenience sampling in the current study. STEM women who work as laboratory bench workers in higher education institutions make up the target population of this study. They are regarded as laboratory-based employees because they perform most of their work and research in a laboratory setting. Laboratories employees, such as professors or researchers, lab technicians, lab assistants, and postdoctoral researchers, were among our participants. Inclusion criteria consist of STEM women who conduct lab-based research.

An open-ended questionnaire was used in the present study. Data were coded, sorted, and organised. Qualitative data were collected through open-ended questionnaires, and they were read and reread by the researchers to fully immerse themselves in the data to become acquainted with the content and to identify patterns, recurring themes, and intriguing insights. Researchers conducted a manual thematic analysis to identify overarching themes and patterns that had emerged from the coded data. Themes were derived from recurring concepts and substantiated by data evidence. After organising the data into themes, researchers interpret the findings in the context of the research question. They provide explanations and insights based on the patterns and themes identified in the data. The Research Ethics Committee at NWU approved the ethical application, and I was issued an ethical clearance certificate with the number NWU-01844-22-A4.

This study, which included a total of 27 participants, examined the obstacles that prevent women from pursuing managerial positions and what universities can do to enhance their chances of success in leadership positions. Table 1 summarises the demographics of the sample that showed women between the ages of 21 and 29 made up the majority (40.7%) of participants, while women between the ages of 60 and 65 made up the minority (3.7%). The lowest percentage of participants 48%, have 6 to 11 years of experience, while the highest percentage have less than five years. Regarding education, roughly 44.4% of the participants hold bachelor's degrees, while 25.9% hold doctoral (PhD) degrees. Furthermore, 18.5% have master's degrees. In this study, no person has a diploma or lower.

**Table 1: Demographic profile of the participants**

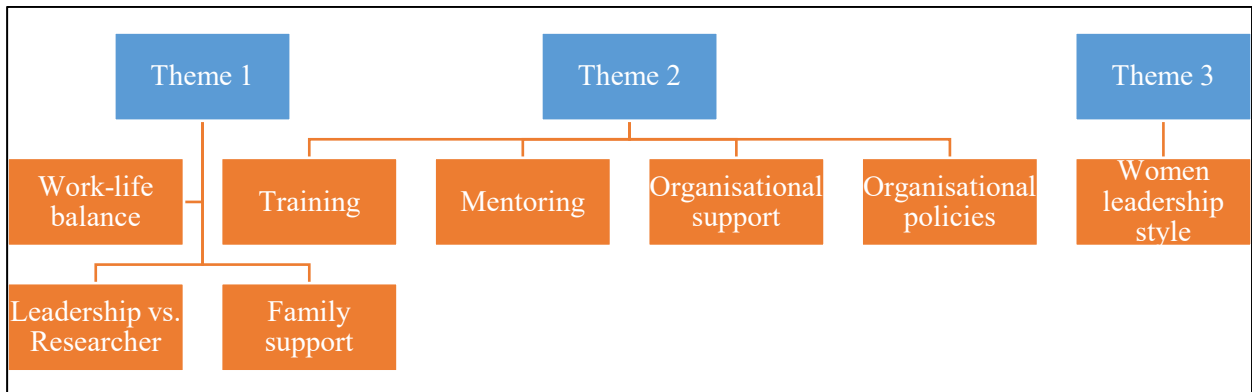
Biographical element	Sub-groups	Frequency	Percentage (%)
<b>Age</b>	21 – 29	11	40.7%
	30 – 39	6	22.2%
	40 – 49	4	14.8%
	50 - 59	5	18.5%
	60 – 65	1	3.7%
<b>Qualifications</b>	Bachelor's Degree	12	44.4%
	Bachelor's Degree with honours	3	11.1%
	Master's Degree	5	18.5%
	Doctor of Philosophy (PhD)	7	25.9%
<b>Current position</b>	Postgraduate student	6	22.2%
	Lab assistant	4	14.8%
	Lab technician	6	22.2%
	Lecturer	6	22.2%
	Senior Lecturer	1	3.7%
	Associate Professor	2	7.4%
	Full Professor	2	7.4%
<b>Employment Experience</b>	Less than 5yrs	13	48.1%
	6 –10 yrs.	3	11.1%
	11–15 yrs.	5	18.5%
	Above 16 yrs.	6	22.2%

Most participants were between the ages of 21 and 29, held a bachelor's degree, and were PhD students with less than 5 years experience.



## 4. Results and Findings

In the current study, Figure 1 and Table 1 summarises the themes and subtheme. Theme 1 occurs 11 times, Theme 2 arises 12 times, and Theme 3 appears 4 times.



**Figure 1: Overall themes and subthemes of the current study**

Source: Theme Frequency and Association Diagram. Authors' own construction.

**Table 2: Frequency of themes and sub-themes**

Themes	Subthemes	Frequency
<b>Challenges are facing women in management roles</b>		<b>11</b>
	Work-life balance	5
	Leadership vs Researcher	3
	Family support	3
<b>Organisation's role in women leadership</b>		<b>12</b>
	Training	2
	Mentorship	4
	Organisational support	3
	Organisational policies	5
<b>Women leadership style</b>		<b>4</b>

*Frequency describes the number of observations.*

### **THEME 1: Challenges faced by women in leadership role.**

#### **Sub-theme 1a: Work-life balance**

Participants also mentioned work life balance as one of the challenges women face in leadership. It is well known that more women than men face the challenge of balancing between family and career. Our findings also shown that.

*"My own personal problems including family and other stuff." (Participant 2)*

*"Juggling between being a wife, mother and a manager." (Participant 10)*

*"They have much on their plate some have families to take care of them." (Participant 11)*

*"I will not be able to balance my work." (Participant 17)*

*"In my point of view that is the day you will never experience peace in your life" (Participant 6)*

### **Sub-theme 1b: Leadership vs Researcher**

*"No, I am researcher and a teacher, those are what I love doing, I have no interest in being a manager." (Participant 3)*

*"One day in the far future. I am currently focused on building a good academic profile. Occupying a managerial position would slow me down academically as a researcher." (Participant 4)*

*"My interests are in research more than in any leadership role." (Participant 7)*

### **Sub-theme 1c: Family support**

*"My own personal problems, including family and other stuff." (Participant 2)*

**Participant 5** indicated *"Family responsibilities."*

*"Support from the family" (Participant 5)*

*"They have much on their plate. Some have families to take care of them." (Participant 1)*

## **THEME 2: Organisation's role in women's leadership**

### **Sub-theme 2a: Training**

A total of 51.9% answered no to the question. Have you attended any training this year in your current position regarding career development?

Participant 9 was asked how you overcame professional obstacles in your career advancement. "Through training" was the answer.

*"Project management, time management, mentorship and coaching, Higher Education Leadership and Management courses." (Participant 9)*

*"some extra training outside the organisation" (Participant 22)*

### **Sub-theme 2b: Mentorship**

A total of 55.6% answered no to the question, do you have a mentor in your career development?

*"Mentorship and coaching" (Participant 9)*

*"Resilience, accept that I have made mistakes, that I do not know everything, listening to others" (Participant 10)*

*"Finding a female mentor also helped me overcome the obstacles." (Participant 17)*

*"Still acquiring them through keeping a mentor in my field and learning as much about the laboratory as I can." (Participant 23)*

### **Sub-theme 2c: Organisational support**

Organisations must accept women by providing support and encouragement, as well as training and development opportunities, flexible working schedules, and challenging work and acknowledgement. Participants share these sentiments in this study.

*"There isn't adequate support from the powers in being." (Participant 2)*

*"lack of support from females." (Participant 13)*

*"Not being recognised" (Participant 22)*

#### **Sub-theme 2d: Organisational policies**

*"None, promotion at a University platform requires your part like study further especially if you have a Master's degree, publish on peer-reviewed journals, empower yourself with other things that are being done in the University." (Participant 8)*

How many opportunities for promotion in your job have you had in the past five years in your current institution? *"No opportunities" (Participant 9)*

*"they do provide bursaries to study but that does not guarantee a promotion" (Participant 21)*

*"Lack of information regarding managerial leadership" (Participant 23)*

*"Lack of time" (Participant 27)*

#### **THEME 3: Women leadership style**

**Participant 1** answered *"No, I don't. I am a blunt person, so I will step on toes."*

*"The fear of people taking me for granted in my leadership capacity" (Participant 7)*

*"No, I believe leaders are born, not made, even with a PhD, if you do not have self-awareness, a focus on relationship-building, a biasness for action, possess humility, a zeal to empower others, willingness to learn from others, authentic, lack consistency, a respect for other people's input, then you would not be a great leader." (Participant 8)*

*"Other female sabotaging fellow women" (Participant 14)*

In contrast, another participant declared:

**(Participant 15)** *"Yes, I do. I do believe women can make great leaders, and I do possess the qualities to become a manager."*

### **5. Discussion**

Many women still have difficulty choosing between a career and a family and worry about finding a work-life balance. Work-life balance is a significant challenge for women in managerial roles, as I've previously reported; this is corroborated by the countless studies listed below. According to Schueller-Weidekamm & Kautzky-Willer (2012), obstacles to career development include understatement in women, time-

consuming childcare, family responsibilities, and career advancement. Work-family enrichment promotes a healthy work-life balance with a positive knock-on effect that spreads good vibes.

Our research shows that participants prioritised family responsibilities, needed family support, and desired a work-life balance. This backs up Sritanyarat and McLean's (2017) research, which found that family support plays a key role in women's advancement to leadership positions. On the other hand, women's expected family responsibilities and social perceptions of women's traits present difficulties for female leaders. Fifty female leaders were interviewed for a qualitative study in South Korea using a purposeful snowball sampling technique. As a result, I discovered that a gendered workplace is largely to blame for the difficulties women leaders have maintaining a work-life balance and developing their leadership skills. The gendered workplace compelled them to forgo their personal lives, put in long hours and create their work-life balance plans.

According to Boyko and Jones (2010), managers are usually the top researchers in their schools and departments and are also engaged in scientific research. Managers in higher education have become interested in time management techniques to balance administrative duties and research (Lou et al., 2018). Deans and chairs allegedly reported feeling overworked daily in a study on job satisfaction in higher education (Morris & Laipple 2015). Because the faculty's career paths were established during their years of scientific research, these researchers believed this overwhelming feeling was caused by a lack of thorough preparation for administrative roles (Amundsen & Martinsen 2014). According to Aksnes et al. (2011), female scientists in Norway tend to have fewer publications and are cited less frequently than their male counterparts. Therefore, this double role is a massive challenge for women in leadership roles.

This study indicates that the participants lacked mentorship and training to hone their skills. The outcome suggests that the company has few to no training programs and even fewer mentorship programs. Lack of female role models, inadequate training, ineffective networks and sponsors, and the persistence of gender stereotypes regarding leadership qualities and workplace structures that may be harmful to women have all hindered women's advancement to top leadership positions (Tomizawa, 2019; Chin, 2020; Galea et al., 2020). Empowerment is a cycle of development that improves a person's capacity to make decisions and translate those decisions into desired results. According to Lawner et al. (2019), a woman is considered fully empowered if she has access to sufficient resources, equal employment opportunities, political participation, legal rights, health care, and a good education. Education is essential for acquiring women's empowerment, skills, competencies, capacities, abilities, and expertise.

Leadership development may be connected to work-related practices and the provision of professional training and tools to resolve problems that are likely to arise during managerial positions (Khalid et al., 2021; Embassey, 2023; Majumder, 2023). Women's leadership training programs allow organisations to value women leaders as organisational resources. Organisational programs support women by allowing them to engage in transformative learning in a safe environment, learn from a majority perspective, and maximise their learning styles of collaboration while creating networks of mentors, role models, and allies

(Brue & Brue, 2016). With proper training, women leaders may effectively manage the authenticity and balance of being true to themselves with their style.

## **6. Managerial Implications**

Organisations are encouraged to reconstruct their company's policies, procedures, culture, environment, or a woman's ambition to influence the organisation and how the organisational environment affects women leaders. For instance, if the organisation's policy has created a lot of support for women leaders to overcome, prevent or avoid their challenges, more women will excel as leaders in the workplace. This might be accomplished by building a strong leadership pipeline with the appropriate professional growth and networking opportunities. Several supports have been identified as improving women's professional leadership. These include revamped hiring procedures, organisational diversity, equity, and inclusion analyses, training, mentoring programs, role models, senior leaders' support, women's groups, and peer assistance. Supportive spouse and family are a critical component in the success of women leaders. Training and therapy are effective strategies to encourage understanding between women leaders and family members.

One perceived challenge is that women in leadership roles often struggle to maintain a work-life balance due to the demands of their positions. It is recommended that organisations should implement flexible work arrangements, promote time management skills, and provide resources for work-life balance, such as childcare facilities or family support programs. Another perceived challenge raised by respondents suggests that balancing leadership responsibilities with research commitments can be overwhelming for women in academia. In this regard, institutions should acknowledge and support the dual roles of women leaders by allocating time and resources for research, offering reduced teaching loads, and creating clear role expectations. Family support was another perceived challenge. This suggests that the support of spouses and family members is critical for the success of women leaders. Therefore, organisations should recognise the importance of family support and consider offering family-friendly policies, such as parental leave, to ensure women leaders can fulfil their roles effectively.

Training was identified as a perceived challenge regarding the organisation's role in women's leadership. This suggests that women leaders may face skill gaps or confidence issues. It is recommended that organisations should provide training opportunities tailored to women's leadership needs, including leadership development programs and workshops on negotiation, communication, and strategic thinking. The absence of mentors can hinder women's career progression. It is recommended that universities establish formal mentorship programs pairing women leaders with experienced mentors, fostering networking opportunities, and offering guidance on career advancement. Respondents also mentioned that lack of organisational support can impede women's leadership aspirations. It is recommended that universities should create support networks, such as women's affinity groups, where women leaders can share experiences and provide mutual support.

Additionally, senior leaders should actively advocate for and sponsor women's career development. In addition, it seems like inadequate policies can perpetuate gender disparities. It is recommended that Organisations should review and revise policies to promote gender equity, diversity, and inclusion. This includes addressing issues like pay equity, promotions, and family-friendly policies. Lastly, the data suggest that information about women's leadership styles is not provided explicitly. It therefore seems essential to explore and understand women's leadership styles, as this knowledge can inform leadership development programs and foster more inclusive leadership practices within organisations.

In conclusion, organisations can address the challenges faced by women in leadership roles by implementing a range of strategies and policies. This includes promoting work-life balance, supporting women's dual roles, and providing opportunities for training, mentorship, and organisational support. Understanding and acknowledging women's unique leadership styles can further enhance their contributions to leadership positions.

## **7. Conclusions, Limitations and Future Research**

According to the body of evidence, women are frequently underestimated (Duan et al., 2023; Hastie et al., 2023; Taufiqurrahman et al., 2023; Babalola et al., 2021; Rogers & Rose, 2019) and face several challenges in managerial roles (Majumder, 2023; Fiantis, 2022; Filho et al., 2020; Reis & Grady, 2019. Sritanyarat & McLean, 2017; Boyko & Jones, 2010). This article aimed to highlight the perceived challenges faced by STEM women leaders and to determine the organisation's role in this regard. Our findings show that women participants face work-life balance, leadership vs. researcher and family support as significant challenges. Choge (2015) supports our findings. It was determined that motherhood obligations, career immobility due to relocation because of family obligations, lack of mentorship and lack of network are challenges women leaders face. Work-life balance is a problem, according to 89% of American workers (Sweat, 2020; Muasya, 2021). According to Shinbrot et al. (2019), all challenges and obstacles should be removed to unlock women's sustainability leadership potential. Therefore, organisations have a significant role to play in eliminating the challenges. From this study, should participants require training, mentorship, organisational support, and policy adjustments, which is a mandate of the organisation. Salas-Lopez et al. (2011) agreed that organisations should aid in skills development, mentorship and network programs, and organisational culture and support. In addition, family responsibilities and work-life balance are the key factors in the success of women's leadership. Moreover, the organisations have the capabilities to clear the pathway into the optimisation of women's leadership. Leadership training will shape the leadership styles and provide a professional approach while remaining authentic to themselves. Despite this, our study contributes to the literature on women's leadership and their challenges.

In conclusion, identifying the challenges women leaders face is the first step. Implementation of effective strategies by organisations is a necessity to overcome, remove or prevent the challenges. This is the next progressive step for women leaders to perform optimally in a conducive workplace.

The main disadvantage of qualitative approaches is that their findings cannot easily be extended to wider populations without substantiating the results. This is because the research findings are untested to discover whether they are statistically significant or due to chance. The study also used convenience sampling, which is not representative, and female respondents are black from the same area. As qualitative research is mostly open-ended, the participants have more control over the content of the data collected. So, the researcher cannot verify the results objectively against the scenarios stated by the respondents. Another limitation is that ambiguities inherent in human language can be recognised in the analysis. For example, the word "red" could signify the colour red or as a political categorisation (e.g., socialism or communism) (Atieno, 2009:17).

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