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Abstract

The present study identified the factors that contributed to authorities' decisions on women's leadership roles and explored the perceptions of women in science departments at Baku State University about their progress to leadership positions. The study also discovered barriers that women faced when seeking leadership positions.

The research on barriers causing the underrepresentation of women at higher levels of the academic hierarchy in science in Azerbaijan is almost non-existent. In this regard, this study may be a valuable source for future researchers in the field of science, social sciences, and education who are interested in investigating female leadership.

The sample size consisted of three female leaders, three male leaders, and four female leaders to be. The data were collected via semi-structured interviews and document analysis.

The data analysis started with sorting, organizing, and then coding. After coding, labeling was applied to identify different themes and their relationships that assisted in managing the data efficiently.

Ensuring the legitimacy and internal validity of the research findings, the data obtained from interviews and document analysis were triangulated. To verify the research findings' accuracy and avoid misunderstanding of what respondents stated or intended and uncover researcher biases and misconceptions, member checks were applied. Peer review employed benefited ensuring the reliability of the research findings.

Respondents' privacy and rights were respected and protected via a consent form. To secure the research participants' anonymity, their names were changed, and responses were not divulged to anybody or discussed with others. Besides, the recorded data, transcripts, consent papers, and audiotapes were kept in a safe place to be deleted later.

The limitation of the study was a small size, a convenience sampling to recruit participants who were in leadership positions at BSU and the language of the study. Since this study was limited to one university and three departments of it, the findings lacked generalization.

Keywords: women underrepresentation in science, female leadership in science, the gender gap

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Chapter I: Introduction

Women and men work together in all areas of science (Beura, 2017; Huang et al, 2020; Writters, 2021). The research shows that the number of women working in higher education institutions (HEIs) in the fields of science such as physics (Pollack, 2013; Allen, 2018), chemistry (Pollack, 2013; Day et al, 2020), mathematics (Fryer& Levitt, 2010), biology (Pollack, 2013; Huang et al, 2020), technology (Beura, 2017; Prives, 2019), engineering (Prives, 2019) is significantly lower than the number of men. Paradoxically, the proportion of female students in science has increased in recent decades (Friend & Bursuck, 2011; Mbano & Nolan, 2017; Huang et al, 2020) and, in some cases, even surpassed the number of male students (Hango, 2013, Writters, 2021).

Regarding academic careers, the gender gap in the science sector has not been eliminated yet (McCullough, 2020; Bird & Rhoton, 2021). According to a United Nations report for February 2022, only one out of three researchers in science and engineering is a woman. (Mcdevitt, 2022). Gender imbalance is more pronounced, especially at the top level of the academic hierarchy (Rosa & Clavero, 2021; Writters, 2021). The women's challenges in advancing their academic careers and reaching decision-making positions are among the most pressing issues even in developed countries (Profeta, 2017; Yousaf & Schmiede, 2017). Women are encountering obstacles and barriers in advancing to influencing positions, and they prevent female scientists from reaching those top levels (Messaoud & Dajani, 2021).

Botella et al. (2019) conclude that the lack of mentors and female role models, gender bias, and unequal growth opportunities have been essential barriers preventing women from advancing in academic careers. Several studies reveal that the work climate is somehow impacting women’s representation in academia (Maranto & Griffin, 2011; Britton, 2017; Miner, 2019), and the related metaphor "chilly climate" used by researchers prove the ambiguous or inadequate attitudes toward women in higher education institutions (HEIs) or scientific organizations (Miner et al., 2019). The reasons mentioned earlier lead to the fact that women, even highly qualified specialists, cannot advance in their academic careers and reach the top level (Lühe, 2014).

Since women's underrepresentation at the top levels in science is a global issue, investigating the situation in higher education institutions in Azerbaijan also remains the case. The fact that only four of the thirty-eight universities' rectors are women supports the above claim (İltifatqızı, 2014). For instance, Baku State University (BSU) which takes first place in the ranking among Azerbaijani universities (CSIC, 2022), has never had a female rector since 1919 (BSU, 2022). Five vice-rectors of BSU are also men. Furthermore, only eighteen out of eighty-three scientific council members are women (BSU, 2022).

Notably, only the dean of the Biology department of natural sciences is a woman. During the 103-year history of the Chemistry department, only once it has been led by a female dean. Since 1919, the Department of Physics has never been headed by a woman (BSU, 2022).

Considering the gender imbalance at the top level of the scientific society of Baku State University, the present study aimed to identify the barriers women working in science departments encountered and facilitating factors contributing to their progress to a leadership position.

Statement of the Problem

Gender inequality is a global phenomenon (Peters, 2013; Powel et al., 2006). This discrepancy exists in all regions and classes, not just in terms of opportunity and resources but also in terms of rewards. In the realm of education, there is also gender inequality. Almost every step of a woman's career involves some form of gender discrimination. Women have to pursue successful jobs at the cost of their personal lives. According to a large body of data on women's underrepresentation in leadership positions, discrepancies in promotion rates are not explained by women's lack of ambition to progress in their careers (Hays, 1996; Zikmund, 2003; Ellemers, 2012). Males are more likely to hold leadership roles because they have more decision-making power and more opportunities for social networking (Koening, 2011).

Almost everywhere in the world, women's participation in research follows a similar pattern. Gender inequality is also evident in the field of science, and male scientists outnumber female scientists (Bank, 2012; Huyer, 2015). Even though women make up half of the workforce in

Azerbaijan, multiple reports suggest that 82 percent of employed women work in low-wage industries such as agriculture, trade, education, health care, and food processing. Only one-fifth of all firms are registered with a female owner, and women are underrepresented in government and leadership roles (ADB, 2019). Furthermore, the number of women decreases as one progresses up the research ladder. This decrease in the number of women represented in leadership positions in science is also observed in Azerbaijan (Huyer, 2015).

The small number of women in scientific careers can be attributed to a variety of factors, including barriers to motherhood, a lack of support for leadership positions, subconscious sexual discrimination, and other invisible barriers. For that reason, women evade stereotypically male occupations because of societal gender bias, so they pick professional options that do not demand leadership qualities (Hays, 1996).

The Purpose of the Study

The purpose of this study was to identify the factors that contributed to authorities' decisions on women's leadership roles and explore the perceptions of women in science about their progress to a leadership position. This study also aimed at discovering barriers that women faced when seeking leadership positions in science.

Research Questions

This study was guided by three research questions:

1. What is the perception of women in science about their progress to a leadership position?
2. What factors facilitate authorities' decisions concerning leadership positions?
3. What barriers do women in science face when they seek leadership positions?

Significance of the Study

Research demonstrated that although the number of women studying and working in science was increasing, females were still vastly underrepresented in leadership positions in this area (Eccles, 2005; Eagly & Carli, 2007; Stoet & Geary, 2018). There also was no consensus in the

literature on the barriers and facilitating factors that prevented women from reaching leadership positions in science (Eagly & Johannesen-Schmidt, 2001; Herbst, 2020; Schmitt et al., 2021).

In the context of Azerbaijan, this topic had not been studied at all. In this regard, studying the factors contributing to authorities' decisions on women's leadership roles, exploring the perceptions of women about the issue, and discovering barriers that they faced when seeking leadership positions in science departments at Baku State University, was significant in several aspects:

Society

This study may have established understanding and raised awareness in Azerbaijani society on what kind of barriers women could face when seeking a leadership position in science.

Future researchers

The results of this study could be used as reference data by researchers working in the field of science, social sciences, and education who are interested in investigating female leadership.

Women in science

The workshop, which would be based on the results of this study, may have enlightened female students and women who strived to advance to leadership positions in science.

Chapter 2: Literature Review

Leadership

Northouse (2007) defines leadership as a process whereby an individual influences a group of individuals to achieve a common goal (p. 3). Two types of leadership are distinguished: formal and informal (Pielstick, 2000; Vilkmas & Cartan, 2015; Pielstick, 2003). Formal leadership means when an individual is the officially recognized head of a group or organization (Ahlquist & Levi, 2011). Informal leaders do not officially take a leadership position but are recognized as leaders (Pielstick, 2003).

Leadership in Science

According to Parker and Welch (2011), leadership in science includes accountability for various activities aimed at facilitating and enabling science production. The production of science is formally done in specific entities called scientific organizations (Powell & Dusdal, 2017). The scientific organizations comprise several categories: a lab, a centre, a department, a university, and a discipline. Consequently, three alternative sorts of scientific leadership positions are proposed in the scientific organizations:

1. Center Leadership - Individuals having formal roles (e.g., directors) at university labs, research centres, or institutes are known as centre research leaders.
2. University Administrative Leadership - Deans, department heads and chairs, provosts, and other formal administrative roles are examples of university executive leaders.
3. Discipline Leadership - Disciplinary leaders include positions in professional science associations and regulatory organizations (Parker & Welch, 2011).

Women Leadership in Science: Global Perspective

Numerous studies highlight that in high educational institutions, women are significantly less represented than men in the fields of natural sciences such as physics and chemistry, mathematics as well as engineering, and technology (Kessel, 2014; Beekman & Ober, 2015; Sarseke, 2017; Varma, 2018; Celletti & Kanas, 2020). Women's underrepresentation in natural sciences, technology,

engineering, and math (STEM) fields in higher education institutions also remains the case in countries with higher gender equality (Stoet & Geary, 2018). For instance, according to the Bureau of Labor Statistics (2021), there are no women among computer and information research scientists in the United States (U.S.). Women respectively make up 41.2 percent of Physical Scientists and 32.1 percent of Chemists and Materials Scientists (U.S. Bureau of Labor Statistics, 2022). Similarly, women are underrepresented in the fields of natural sciences and engineering, and technology in the European Union (European Commission, 2021). Only Greece, Poland, Romania, and Slovakia have 40-60% female researchers in the fields of natural sciences, engineering, and technology among European nations. This percentage is less than 40% in all other European countries (European Commission, Directorate-General for Research and Innovation, She figures 2021).

Women's underrepresentation in higher education institutions (HEIs) exists in Russia (Kennan Institute, 2020; Antoshchuk, 2021), Turkey (Ciftci et al., 2020), Georgia and Armenia (Tembon, 2019)

Since women are underrepresented in STEM at HEIs, the gender gap in leadership positions in this area is even more pronounced (McCullough 2020). Research reports that women are less represented in science than men in all types of leadership – center leadership, university administrative, and discipline leadership positions (Parker & Welch, 2011). Two of the three leadership positions in the STEM field introduced above have been more extensively investigated in the literature about gender inequality.

Many authors spotlight the gender gap in STEM center leadership, and they highlight male leaders as preferred candidates for management in national research centers and laboratories. Given the gender gap in STEM center leadership, only 3 out of 20 directors of National Laboratories in America are women (McCullough, 2019). Likewise, Bonder (2015) indicates that women make up 16% of directors and vice-directors of national research centers in Argentina. The statistics prove the existence of a gender gap in center leadership in STEM.

Equally, the women's underrepresentation in STEM administrative leadership is apparent. McCullough (2011), based on data provided by the Association of American Universities, asserts only 2.5% of engineering department chairs are female. 5.5 % of chairs in the Physics and Mathematics departments are women. Hence, women were less represented than their male counterparts as chairs or department heads and deans in STEM at the Academies in the United States (McCullough, 2019).

To summarize, there is a gender gap in the representation of women in management and decision-making positions in science (McCullough, 2019). Female scientists, specifically, face a two-fold challenge in gaining access to additional positions in the workplace: as females and as women in science. Many structural and individual barriers (Rosenfeld, 1979) and facilitating factors (Carducci, 2009; Dawson,2014; Baker et al., 2015) have been recognized as contributing to women's lack of representation in senior managerial roles in their science careers and the following paragraphs, some of them are discussed in a detailed way.

Barriers

Gender inequality has generated the term "glass ceiling" in the literature, which means the invisible systemic barrier women face as they advance to leadership positions (Klenke, 2017). According to Baretto (2008), despite efforts to establish workplace parity, professional women confront obstacles to becoming acknowledged leaders. Although a few women have risen to positions of power, there are still significant disparities in the representation of women in senior positions (Acker, 2006; Collinson & Hearn, 1996; Ferguson, 1984; Kanter, 1977). When the media and cultural references emphasize women's advancements, it creates the misleading impression that current conditions are ideal (Baretto, 2008, p. 56).

What are the barriers to female leadership, and how can professional women overcome them? Professional women may tenaciously push ahead and create equal work settings where they thrive by harnessing their abilities and tapping into the proper resources.

Balancing work and family life can be difficult for professional women (Toffoletti, 2016). Their family commitments may hamper their capacity to pursue leadership roles. Although working full-time, they frequently shoulder the majority of domestic chores, such as caring for children, sick, or elderly family members (Deborah, 2013). Even though professional women with children at home spend more time on household chores than fathers, they may not always have access to paid family leave or job flexibility. This disparity impacts professional women's progress and income because it may necessitate personal sacrifices (Mitra & Knottnerus, 2008).

Social norms consider it more appropriate for women to take time away from their employment to care for children or aging parents than for males to do the same. Furthermore, women are encouraged to work in departments that offer fewer prospects for growth or do not lead to senior positions (Guerrero, 2011; Browerman, 1972; Heilman, 1983). According to Broughton and Miller, women in management are more likely to come from non-business backgrounds which reduce their chances of success because they lack business leadership experience (Broughton & Miller, 2009).

On the other hand, women can compensate for their lack of expertise by acquiring specialized knowledge through higher education degrees. Furthermore, the "glass border" concept implies that women do not advance because of their lack of international business expertise, which is often the result of organizations prioritizing opportunities to travel to male employees (Broughto and Miller, 2009).

Moreover, Vakkayil concludes that gender stereotyping operates against professional women's aspirations for leadership (2011). Employers typically regard men's assertive behavior as strong, demanding, and direct; however, when women exhibit the same assertiveness, their employers frequently perceive them as aggressive, pushy, and strident. If a female professional's behavior deviates from gender expectations, she often encounters blowback. However, suppose her behavior conforms to traditional gender stereotypes, such as being accommodating or putting

others' needs before their own needs. In that case, she may appear less competitive than her male peers (Vakkayil, 2011).

Women's capacity to succeed in management may be hampered by past perceptions of leadership qualities, competency, and assertiveness. Many businesses correlate masculine traits with success and achievement. Assertiveness, aggression, and task-oriented leadership abilities are examples (Jogulu & Wood, 2006). Other stereotypes about women include being modest, quiet, selfless, and nurturing (Eagly & Carli, 2003). These specific qualities may be regarded as non-executive material. Entities want a leader who will execute, accept criticism, and always do what is best for the organization (Nelson & Levesque, 2007).

Moreover, women's increased acceptance in soft areas of corporate governance maintains stereotypes about gender-based employment (Eagly & Sczesny, 2009). Organizational structures can obstruct and stifle female advancement. Organizational networks are frequently homogeneous and long-standing. They are difficult for women to enter because women are generally uncomfortable networking in the social environment of these settings and are also unable to commit the extra time outside of work hours owing to family obligations (Broughto & Miller, 2009). As a result of these circumstances, the support network for women at higher levels of leadership is limited and ineffective.

Research findings indicate that women’s increasing knowledge of balancing life and work makes it easier for them to climb to the top while still raising a family (Deborah, 2013; Mitra & Knottnerus, 2008; Toffoletti, 2016).

Facilitating factors

Studies show that even in countries with a high level of women's equality, such as Finland, Norway, and Sweden, there is a significant gap in the representation of women as leaders in science and technology (Stoet & Geary, 2018). In addition to the sharp barriers that prevent women's representation as leaders in the science sector, several factors facilitate their under-representation. Although these factors are often not obvious, they affect women's career progress in science and

achievement in decision-making positions. In research from Ritzdorf, M. S (2015), these factors are divided into external and internal. It should also be noted that some authors classify these factors as structural and individual (Rosenfeld, 1979).

Internal Factors

One of the main internal factors influencing women's leadership in science is their perception of personal abilities and capabilities (Herbst, 2020). According to Carducci (2009), an individual's self-assessment of his/her ability to be successful at a particular task is called self-confidence. Researchers investigated those females, especially in the early stages of their academic careers, are more likely than males to adhere to low self-confidence in leadership (Isaac et al., 2012). Lack of self-confidence, which negatively affects women's ability to reach leadership positions, is based on accepted social stereotypes - the belief that a man's ability to manage is superior to a woman's (Hoyt, 2010). Leadership traits such as self-confidence, assertiveness, power, and control are often referred to as "agentic" qualities and are more likely to appear in men from a gender perspective. In contrast, the "communal" aspect of leadership is characteristic of women (Eagly & Johannesen-Schmidt, 2001).

Several authors discuss self-confidence and motivation factors in parallel assessing their role in female underrepresentation as leaders. The authors acknowledge that internal and external motivation play a role in the representation of women in leadership positions (Schmitt et al., 2021). According to studies, it became clear that the intrinsic motivation of females decreases with age (Hashiguchi et al., 2020). O'Neil & Bilimoria (2005), studying women's career progress, concluded that personally when women are aging, they tend to focus on a stable career rather than looking for new opportunities. Unlike internal motivation, which is shaped by self-determination, external motivation is regulated by the norms set by the environment for the future leader (Schmitt et al., 2021). These norms are not always supportive of women's career progress, and they sometimes become "deskilled", as Walton and Spencer mentioned (2009).

External Factors

Organizational support for women's advancement and leadership in science is more crucial than family support (Odle-Dusseau et al., 2016). Contrary to accepted stereotypes, the number of educated, highly skilled, and qualified women in the field of fundamental sciences is increasing day by day (Dawson, 2014). It also means that the number of potential female leaders represented in decision-making positions in science is growing. The crucial point is that women do not always have the same opportunities as men for the same position (Casad et al., 2020). Research demonstrates that the academic climate for women in science is chilly (Casad & Bryant, 2016). The fact that women work below their level of competence is a widespread problem, and in the literature, it is the "Paula Principle" (Stuart, 2018). The main reason for this discrimination is that, for an organization, the concept of efficiency appears to be centered primarily around male patterns of work (Callister, 2006). Therefore, it is crucial to support women in such an unwelcoming environment. One of the main factors in the inability of women to reach leadership positions in a science-related field is the lack of perceived organizational support (POS). Adequate administrative support for female scientists ensures their work and life balance, access to all opportunities, resources, programs, promotions, and well-being (Chen et al., 2020). Some researchers argue that women who work with a man-manager experience less organizational support than those who work with women (Yang & Konrad, 2010). However, there is a term in the literature called "queen bee syndrome", which describes the attempts of female supervisors to hinder the career development of their co-genders (Ellemers et al., 2004). The existence of many "women-only" professorships and programs also proves that women need external support to advance and reach leadership occupations in their careers (Peterson, 2019). Also, the lack of a supportive atmosphere in the work environment is one of the reasons for women's failure in a science-related career (Chawla & Cushing, 2007).

In addition, everyone needs mentoring at critical times in their careers (Anafarta & Apaydin, 2016). Mentoring, both formal and informal, is an essential resource for professional development and is therefore used as a tool for career management.

However, as in many other fields, women in science possess little opportunity to find persons to commit to being their mentors (Rockinson-Szapkiw & Wendt, 2020). One of the main challenges related to academic mentoring for women who go to high positions is the lack of enough female role models (Baker et al., 2015). Research on improving women's leadership in science-related fields highlights the need for role models and mentors (Flower, 2006). McCullough (2011) makes this clear in his article, "It's hard to envision yourself as a president or chief officer when you've never seen someone who looks like you in that position" (p.4).

Another interesting aspect of mentoring appears when both women- and men-leaders express the same idea. In most cases, it seems that women's voices are completely ignored, and a brilliant idea is considered the brain's production of the male leader. In this case, female leaders need an advocate - a supportive colleague in their work environment (McCullough, 2011).

The Theoretical Framework of the Study

Eagly's social role theory and gender norms highlight those women and men hold different occupations based on gender-stereotypical views. Both at the workplace and at home, men tend to have high positions in the hierarchy. As a result, the stereotypical position of the husband wields the most control and strategic decision power in family matters. A wife's general function, on the other hand, is to care for children and handle household tasks, which have lower prestige. This separation within the family is carried over to the workplace. As a result, males are more likely than females to have higher positions, promotions, influence, and power. The unequal distribution of, access to, and progression to leadership and power positions are perpetuated by these genders: stereotypic roles of women and men (Eagly, 1978).

Through her collaborative work with Karau, Eagly's social role theory emerged from role congruity theory (Eagly & Karau, 2002). However, according to Eagly and Karau (2002), role

congruity theory went beyond social role theory incongruity between executive positions and gender stereotypes to include bias against women. They claimed that due to the inconsistency between the expected leadership position and female gender roles, female executives experience two sorts of discrimination. The first sort of bias is associated with the perception that aspiring female leaders are less capable than males due to conventional gender roles in which masculine-stereotypical features personify the leadership role. The next category happens when actual female leaders are evaluated to see if they are more effective in taking out their leadership roles due to the incongruity between their leadership function and anticipated gender role. These two types of discrimination against women, according to Eagly and Karau (2002), generated a culture in which women had less access to leadership posts and had more challenges to overcome to thrive in leadership roles.

Chapter 3: Methodology

Philosophical Assumptions

According to Quinlan (2011), "every research project is underpinned by a philosophical framework that evidences the worldview within which the research is situated and can be seen in every step of the research process". The selection of an appropriate philosophical context relies on "the assumptions about reality that we bring to our work and consequently to our theoretical perspective" (p. 95).

Because of the exploratory nature of the study, the interpretive approach advocates that the researcher should be able to differentiate humans according to their roles as social actors (Saunders et al., 2012, p. 137). In other words, we, as interpretive research practitioners, had to be engaged in the perceptions of the world from subjective reasons and meanings that our research participants hold (Kaplan & Maxwell, 1994). We assumed that access to reality could be socially constructed only through "shared meanings and instruments" (Myers, 2008, p. 38). Hence, the rationale behind a small sample size was to investigate gender issues and leadership positions in science career trajectory in-depth (Saunders et al., 2012).

Research Design

A methodological strategy in research is essential since it is "a plan of action to achieve a goal" (Saunders et al., 2012, p. 173) and "the methodological link between our philosophy and subsequent choice of methods to collect and analyze data" (Denzin & Lincoln, 2005, p. 183). Given the choice of methods, the nature of our study was exploratory. As the name implies, the analysis of qualitative data allowed us to explore the phenomenon and expand our knowledge about it. We shed light on a problem that had not been studied before in a detailed way (Merriam, 1998; Patton, 2002; Yin, 2018; Zikmund, 2003).

Considering the exploratory nature of our study, we conducted it using qualitative methods. Because we aimed to explore the perceptions of the participants about the barriers and facilitating factors that contributed to the progress of the females to leadership positions (Merriam & Tisdell, 2015). Another rationale behind our choice was that it permitted us to view the participants in their

real settings and consider context-sensitive elements of inequality in females' progression to leadership positions (Denzin & Lincoln, 2018).

Ten participants - three *female leaders,* three *male leaders,* and four *female leaders to be* from the Science faculties at Baku State University were interviewed.

Table 1

Basic information of the interview participants

Participant	Gender	Age	Position
1	female	The 30s	leader to be
2	female	The 20s	leader to be
3	female	The 20s	leader to be
4	female	The 30s	leader to be
5	female	The 50s	leader
6	female	The 50s	leader
7	female	The 60s	leader
8	male	The 30s	leader
9	male	The 60s	leader
10	male	The 40s	leader

Data Collection Procedures

This research applied two methods, interview, and document analysis, to collect qualitative data. Taking into consideration the purpose of the exploratory investigation, the less structured nature of data collection seemed more relevant (Remler & Ryzin, 2015). Therefore, we had chosen semi-structured interviews since they enabled interviewees to easily share their thoughts (Anderson, 2011).

Furthermore, semi-structured interviews could guide the association of two themes, leadership and gender, and provide rich views for discussion. Only through the use of semi-structured

interviews, we could collect data of a 'rich' quality that may have allowed our respondents to express information about their experiences, feelings, and motives. In this case, we had the advantage to direct the course of the discussion (Brinkmann, 2018), which was useful for distinguishing and improving the essential points that the participants mentioned, though Anderson (2011) suggested considering the disadvantages of this method for being a time-consuming rather complicated process when the researcher met interviewees, recorded and transcribed the interviews later, and analyzed data.

Nevertheless, the advantages of the process override the aforementioned drawbacks. Creswell (2007) emphasized that document analysis was a useful way of data collection due to several reasons. Initially, as written evidence, it was time-saving because it did not require transcribing interviews. Secondly, it was accessible for our Capstone team at a suitable time. Besides, Bowen (2009) concluded that including words and images registered beyond a researcher's interference could diminish positional bias.

In our case, gathered documents provided us with historical insights regarding the issue (Bowen, 2009). In addition, the documents that we collected from the study sites supported a better analysis of the participants' beliefs and views regarding women's leadership trajectory.

Data Recording Procedures

Planning data recording procedures before getting into the field was a helpful technique (Creswell, 2014). Hence, interview protocols were developed, which incorporated the following components: a heading; instructions for the interviewer; assisting in-depth discussion questions; space for notes between questions; and a closure (Creswell, 2007; Jacob & Furgerson, 2012).

We recorded information from participants by audiotaping. Even though the interviews were tape-recorded, we also took hand-written notes to avoid possible data loss (Creswell, 2014).

Data Analysis Procedures

To generate findings that could transform raw data into new knowledge, as qualitative researchers, we had to engage in active and demanding analytic processes throughout all phases of

the research. Data analysis was an important aspect of our qualitative research not only for conducting but also for reading, understanding, and interpreting it (Thorne, 2000).

Kiger et al. (2020) describe data analysis as a process of transformation and interpretation. The data analysis process involved a few steps, such as finding answers to the research questions, searching codes, and creating themes and categories (Merriam & Tisdell, 2015). The first step in our data analysis was data sorting and organizing, and then coding. While coding, we labeled the collected data to identify different themes and their relationships (Jackson & Mazzei, 2009). The data divided into themes or patterns assisted us in sense-making. Thus, starting coding from the beginning of the data collection process contributed to efficiently managing the data (Saldana, 2016).

The interview transcripts were thematically coded (Strauss & Corbin, 1998). Our interview questions helped us make sense of the collected data and build the generated codes into bigger categories. As one of the most prevalent types of qualitative research analysis, the thematic analysis also aided us to focus on detecting, analyzing, and interpreting meaningful patterns in the data (Saldana, 2016). The codes were categorized, and from categories, more encompassing themes were developed to describe and summarize while retaining the original data's richness, depth, and context.

The data collecting language was another key aspect of this study (Birbili, 2000). The data was collected in Azerbaijani, the interviewees' native language. Therefore, before beginning to code, the data was transcribed in Azerbaijani. Likewise, the coding was done on the original transcripts in Azerbaijani to avoid misinterpretation and data loss. The units were then translated into English (Birbili, 2000). The transcribing process was time-consuming, but it facilitated the data analysis process.

Strategies for Validating Findings

According to Creswell (2014), procedural perspective research proposals should define and discuss one or more procedures for verifying the findings' validity. Validity strategies were actively

incorporated by our capstone project team into the research proposal. Multiple tactics were used in our study to improve our capacity to assess the correctness of findings as well as persuade the audience of that validity.

Triangulation

Our capstone team has employed triangulation as a method for ensuring the legitimacy and internal validity of their findings. Denzin (1978) hypothesized four kinds of triangulation: various methodologies, multiple data sources, numerous investigators, and multiple ideas. Nevertheless, the last type of triangulation in qualitative research was less typical (Merriam & Tisdell, 2015). The major types of triangulations employed in this qualitative research were triangulation using numerous data sources and methodologies (Guba & Lincoln, 1985). Data gathering tactics such as interviewing, data analysis, and memoing were among the triangulation of many approaches (Merriam & Tisdell, 2015). Data gathered through interviews, for instance, was compared to data gathered through document analysis. We have compared the results to the data gathered from the documents after coding the interview data. The data sources were triangulated by comparing data acquired at various stages of the data collection process and conducting second segment conversations with research respondents.

Member checks

According to Maxwell (2013), member checks are the most significant method for avoiding misunderstanding of what respondents stated or intended and uncovering researcher biases and misconceptions. We sent transcripts of recorded interviews to the participants to confirm their accuracy given the member checks method. In addition, we emailed a summary of the study findings to the participants to verify that the findings accurately reflected their viewpoints (Merriam & Tisdell, 2015).

Peer review

Another approach employed to ensure the reliability of the research findings in this study was peer debriefing. Peer review, according to Morse (2018), is the practice of sharing

intermediate findings with colleagues and getting comments. While doing peer review, each member of the capstone project team scrutinized the research findings and provided criticism (Merriam & Tisdell, 2015).

Ethical Procedures

Respondents' privacy and rights should be respected when collecting data (Creswell, 2012). Participants of the study were informed how their privacy would be protected and what would happen to the data once the study was completed. Likewise, Wiles (2012) emphasizes that privacy ensures the obtained data will not be released without participants' consent; respondents' privacy has been respected, particularly if any of them refuses to take part in the study. For that reason, we agreed to delete the information when any participant decided to withdraw from the study. To avoid being mistakenly discovered, we kept any recorded data, transcripts, consent papers, and audiotapes, except the deleted information mentioned previously, in a safe place (Seidman, 2006). We coded the identities of research respondents to secure their anonymity, and neither their names nor their responses were divulged to anybody or discussed with others.

Limitations and Gaps of the Study

The limitation of the study was the small sample size of participants. Furthermore, convenience sampling was used to recruit participants for interviews, which was challenging to involve the ones who were in leadership positions at BSU. As we conducted the interviews in Azerbaijani, we anticipated that transcribing and translating from Azerbaijani into English would take longer than expected. We also assumed that we might lose some significant parts of the content during the translation process. Furthermore, we believed that we were likely to be biased. We felt this was because we were inexperienced researchers in this field. Finally, since this study was limited to one university and three departments of it, the findings would lack generalization.

Chapter 4: Findings

The purpose of this study was to identify the factors that contributed to authorities' decisions on women's leadership roles and explore the perceptions of women in science about their progress to a leadership position. This study also aimed at discovering barriers that women faced when seeking leadership positions in science.

This chapter was designed to answer the following research questions:

1. What is the perception of women in science about their progress to a leadership position?
2. What factors facilitate authorities' decisions concerning leadership positions?
3. What barriers do women in science face when they seek leadership positions?

Before the study, we assumed that the fact that the majority of senior staff in Baku State University's Science faculties were male was linked to workplace gender discrimination. However, the majority of respondents noted that everyone has equal opportunities in advancing on the career ladder.

Another interesting point was the difference between the opinions of women in leadership positions and those who desired to be leaders on the progress to leadership positions. However, the discrepancy between the opinions of male and female participants was apparent.

Research Question 1: What is the perception of women in science about their progress to a leadership position?

The first research question sought to learn about women's perceptions of their progress to leadership positions in science. All four female *leaders to be* believed that the opportunities for career advancement were equally distributed among the genders. Participant 2, the *female leader to be* stated:

> *...deyə bilərəm ki, bizim mühitdə gender məsələsi vəzifəyə getmək istəyənlər qarşısında problem kimi dayanmır.*
> [*...I can say that gender is not an issue for individuals who aspire to higher positions in our society.*]

All ten participants, including Participant 2, *the female leader to be* did not consider gender a problem for those striving to get higher positions in their workplaces.

Another major finding was those *female leaders were* ascertained to have supportive relationships in the workplace, and the family was important for career advancement. When emphasizing supportive relationships, all four participants, f*emale to be,* referred to mentoring. Accordingly, Participant 1, *the female to be* reported:

> *Mənə dəstək olan, məndə potensialı görüb işə götürən adam olub. Bu adam professor, kafedra müdiri, ... və bununla yanaşı kifayət qədər uğurlu elmi tədqiqat mərkəzi yaradan biri olub. O, mənim elmi rəhbərim olub, məndə müəyyən potensialı görərək işə götürülməyimdə dəstək olub.*
> *[There was someone who supported me, who saw my potential and hired me. This man was a professor, head of the department, ... and at the same time, one of the founders of a fairly successful research centre. He was my supervisor and saw my potential, and helped me get hired.]*

As the quote above clearly stated, mentoring was done by a doctoral advisor informally.

Regarding family support, Participant 3, *the female leader to be* asserted:

> *Mənim ən böyük dəstəyim ailəm, xüsusən də, anam olub. Mən həmişə onun dəstəyinə arxalanmışam. Özümü gücsüz hiss etdiyim anlar o həmişə məni dəstəkləyib, ürək-dirək verib, həvəsləndirib.*
> *[My biggest support is my family, especially my mother. I have always relied on her support. When I felt powerless, she always supported and encouraged me.]*

Thus, women in science believed that the work environment was productive enough for them, but at certain points, they needed support from a family member or a mentor to advance in their careers.

Research Question 2: What factors facilitate authorities' decisions concerning leadership positions?

The second research question targeted discovering the factors that helped authorities make decisions about leadership positions for women. Analysis of responses to the interview questions indicated that all three decision-makers concurred that the leading candidate's mind should not be preoccupied with family issues. In other words, those who strived to advance in their careers should balance work and family life. Participant 8, *the male leader*, stated:

> *...qadın və ya kişi fərq etməz. Əsas odur ki, ailə məsələləri gündəmə gəlməsin. Ay uşağı həkimə aparmalıyam, ay yoldaşımı işdən götürməliyəm.*
> *[... it doesn't matter if it's a man or a woman. The main thing is not to raise family issues such as I have to take the baby to the doctor or I have to pick up my spouse, etc.]*

Authorities' decisions in choosing candidates for leadership positions were not directly informed by gender rather than not bringing family problems to the workplace and not reaching a balance between work and family life.

In addition, findings showed that individual characteristics were more important for those seeking career advancement rather than gender. Participant 9, *the male leader* noted:

> *... öncə bunu fikirləşməliyik ki, bu işi yerinə yetirə biləcək, ya yox. Bele deyim də, bacarıq, bilik əhəmiyyətlidir"*
> *[... first, we have to think about whether we can do it or not. That is to say, skill and knowledge are important]*

As the quote revealed, authorities did not suppose gender as a construct to be an obstacle in the hiring process, but individual characteristics remained more important than it.

Overall, in the process of selecting candidates for senior positions, gender did not matter while balancing family and work life, and the individual characteristics of the nominees, such as knowledge and skills, are critical.

Research Question 3: What barriers do women in science face when they seek leadership positions?

The third research question sought to identify barriers that women in science encounter while seeking leadership positions. All seven women interviewed agreed that gender-stereotypical roles of women and men in society were major barriers to access or progress to leadership positions. Participant 1, *the female leader to be* underlined:

> *...ideal ana olmaq istəyən, bu məqsədi güdən qadın işləməməlidir.*
> *[...a woman who aims to be an ideal mother should not work.]*

Participant 1, *the leader to be* strongly believed that women who preferred motherhood and taking care of their families should not desire to advance in their careers.

One of the main barriers that women faced when advancing to higher positions in science was (un)conscious biases. Women in leadership positions acknowledged that although the work environment created equal opportunities for genders, they (women) were treated differently. Participant 7, *the female leader*, noted:

> *Dəfələrlə keçmiş dekana iclasdan əvvəl yaxınlaşıb deyirdim ki, məsələn, hansısa konkret problemi rəhbərlik qarşısında səsləndirmək lazımdır, siz demirsizsə mənə söz verin, iclasda mən onu deyim. Mənə söz vermirdilər. Bir dəfə özüm əlimi qaldırdım sözümü dedim. İclasdan sonra öz kafedramın qocaman müəllimlərindən biri (adını çəkir) mənə yaxınlaşıb dedi ki, sənin bu işlərlə nə işin var "xanım kimi" gəl əyləş iclasda, get.*
> *[I have repeatedly approached the former dean before the meeting and said, for example, that a specific problem should be voiced to the leadership; if you do not say, promise me, I will say it at the meeting. They did not promise me. Once I raised my hand and said my word. After the meeting, one of the old teachers of our department (she mentions his name) approached me and said, "What do you have to do with this?"]*

Referring to Participant 7, *the female leader*, male leaders did not hear women in high positions, who faced discrimination in some sense.

What we found confirmed that even in productive work environments when women took leadership positions, societal expectations remained impassable barriers for them. Such preconceptions about the roles and positions of women seemed to be rooted in the attitudes of people and their (un)conscious biases (See Table 1.).

Table 2

Research Questions and Findings

What is the perception of women in science about their progress to a leadership position?	Although the work environment was productive enough for women, at certain points, they needed support from a family member or a mentor to advance in their careers.
What factors facilitate authorities' decisions concerning leadership positions?	Gender did not matter in the process of candidate selection for senior positions while balancing family and work life, and the individual characteristics of the nominees, such as knowledge and skills, are critical.

What barriers do women in science face when they seek leadership positions?	Even in the productive work environments when women took leadership positions, societal expectations remained impassable barriers for them. Such preconceptions about the roles and positions of women seemed to be rooted in the attitudes of people and their (un)conscious biases.

Figure 1

Barriers

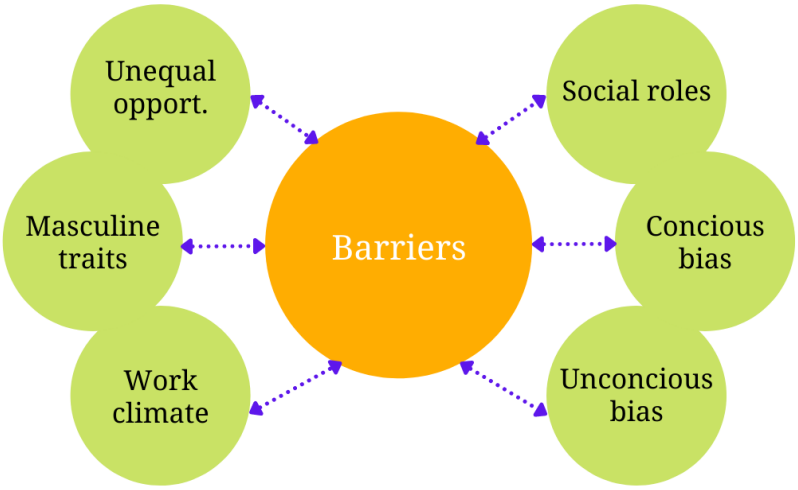
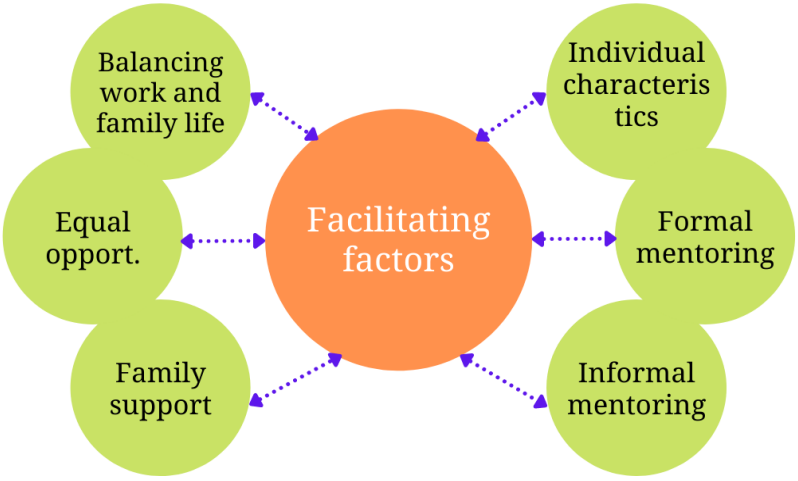


Figure 2

Facilitating factors

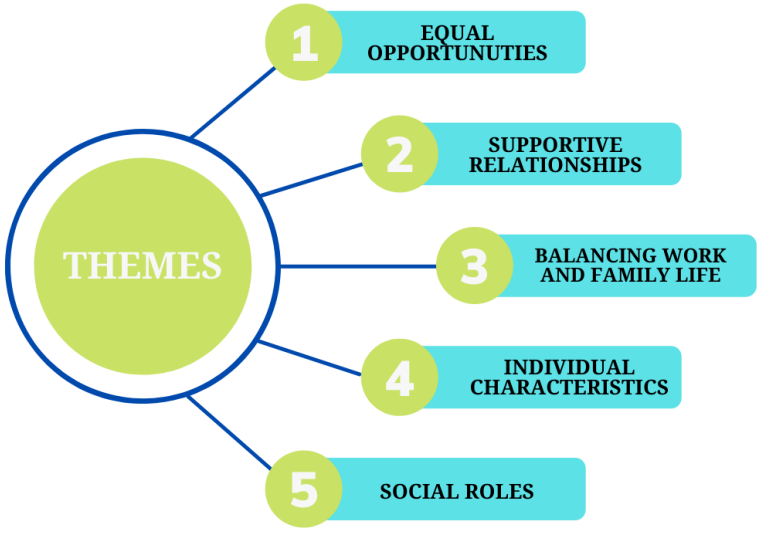


Overall, triangulation of analyzed data obtained from interview transcripts, field notes, and document reviews emerged into five themes: equal opportunities, supportive relationships,

balancing work and family life, individual characteristics, and social roles (See Figure 3.). Those five themes are further discussed separately, combining barriers women encounter while advancing to leadership positions and facilitating factors to it.

Figure 3

Themes



Theme 1: Equal opportunities

During the study, we asked participants to reflect on gender equality in the workplace related to their career progress. All of the respondents agreed that men and women should have equal opportunities for promotion in their careers and did not confirm the existence of gender inequality in their departments. Participant 4, *the female leader to be* mentioned:

> *Əslində gender müstəvisindən baxsaq heç bir ayrı seçkilik ilə rastlaşmamışam. Hətta onu qeyd etmək istərdim ki, mən işə götürüldüyüm il, həmin kafedrada laborant vəzifəsindən Nano Araşdırmalar Elmi Mərkəzində elmi işçi vəzifəsinə bir neçə nəfər namizədliyini irəli sürmüşdü, onların arasında kişilər də var idi. Müsahibədən mən keçə bildim. Başqa sözlə, sırf qadın olduğuma görə heç bir baryer görməmişəm.*
> *[, from a gender perspective, I have not encountered any discrimination. I would even like to note that the year I was hired, several people were nominated from the position of a laboratory assistant in the same department to the position of a researcher at the Scientific Nano Research Center, including men. I was able to pass the interview. In other words, I didn't see any barriers just because I was a woman.]*

Based on Participant 4, *the female leader to be' s* quoted, that during the nominee selection process for a research assistant position, which was more reputable, she had not experienced gender

inequality, meaning candidates who desired to advance their careers were not judged because of gender and opportunities offered were equally distributed across genders in their department.

Likewise, Participant 10, *the male leader,* noted (the interview was conducted in English) that not only in his workplace but also in other institutions, women and men have the same opportunities.

> *I would say, to bring all the opportunities and basically… to one standard woman and men have the same opportunities. I would say in our organization and the organization beyond our universities. I think that opportunities are equal.*

The interviewees seemed to be convinced that opportunities for women and men seeking promotion may have been the same not only in the academic environment but also in other organizations.

The document analysis (data was obtained from BSU's official webpage) revealed that the number of women employees in science was higher than the number of men in three departments and the Nano Research Lab (See Table 2.). However, the number of women employees may have not been interpreted as equal opportunities to rise to leadership positions for all genders. Although there was a large proportion of female employees, they may have only represented a small number of decision-maker level roles (See Figure 4.).

Table 3

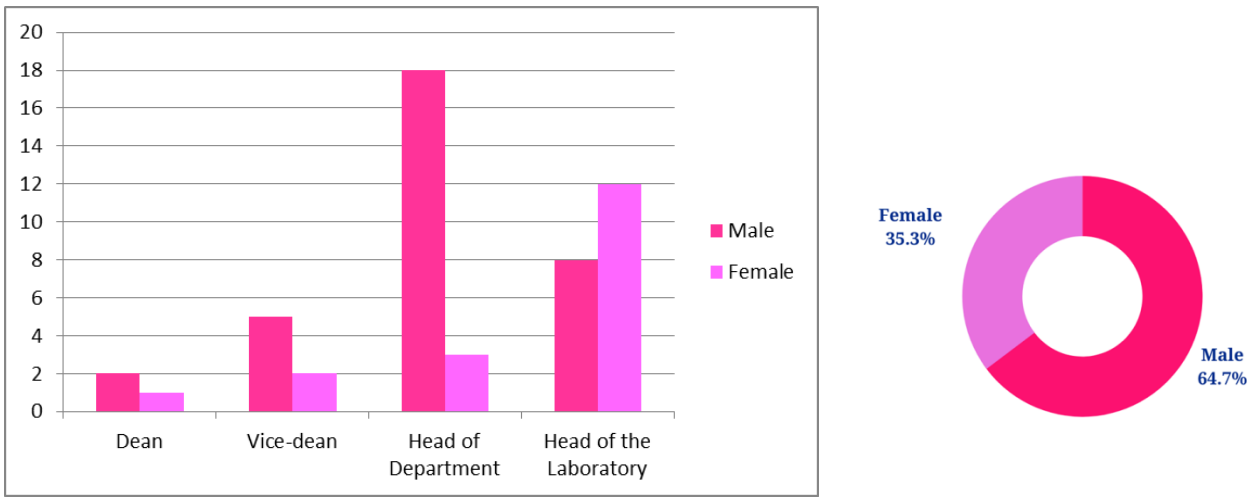
Science Faculties at BSU

Position	Faculties							
	Physics		**Chemistry**		**Biology**		Sum	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Dean	1	-	1	-	-	1	2	1
Vice-dean	2	1	3	-	1	2	7	2

Secretary	-	1	-	1	-	1	-	3
Tutor	1	5	-	5	-	5	1	15
Head of Department	7	2	7	-	4	1	18	3
Faculty	47	22	33	33	23	48	103	103
Head of the Laboratory	4	3	2	3	2	6	8	12
Laboratory Assistant	3	28	1	41	3	21	7	90

Figure 4

The proportion of female and male employees working in senior positions



The study found that the concept of "equal opportunities" was mainly elucidated as equality of numbers for women and men in the workplace by interview participants. On the other hand, genuinely equal opportunities were a broader concept and could also comprise factors such as promotion, childcare, and family responsibilities that were not discriminatory.

Theme 2: Supportive Relationships

According to the data analysis, supportive relationships, in particular (in)formal mentoring and family support were helpful for women when advancing along a career ladder. All female

participants noted that the crucial support they received from their supervisors was informal.

Participant 1, *the female leader to be* indicated:

> *...O, mənim elmi rəhbərim olub. O, məndə müəyyən potensialı görərək işə götürülməyimdə dəstək olub.*
> *[... He was my supervisor. He saw a certain potential in me and supported me in getting hired.]*

The similar opinion was expressed by Participant 3, *the female leader to be*:

> *...Hər ikisindən də (elmi rəhbərləri nəzərdə tutur) həmişə yalnız dəstək görmüşəm. Elə olub ki, mənə çox çətin olub, hesab etmişəm ki, buraya qədərdir... Həmin anlarda mənə çox dəstək olublar.*
> *[... I have always received only support from both (meaning supervisors). It was very difficult for me, I thought that was it... I was very supported in those moments.]*

Besides, Participant 4, *the female leader to be*, also said that she received great support from her supervisor:

> *Mənim belə demək mümkünsə bəxtim əsasən elə onda gətirib ki, elmi rəhbərlərimdən həmişə böyük dəstək görmüşəm.*
> *[I can say that my luck is mainly because I have always received great support from my supervisors.]*

Summing up all the above, women *leaders to be* in the workplace were supported informally by their supervisors. Their statuses and scientific research were reflecting that support.

All women in senior positions, unlike women who were *leaders to be*, did not share any opinion related to mentoring and its impact on their career advancement. Mentoring, whether formal or informal, appeared not to be part of the career advancement process of those *female leaders*. This kind of support was only at the early stages of their careers.

However, all the women interviewed reported that support to move up the career ladder was always provided by family. Participant 7, *the female leader emphasized family support*:

> *Anam uşaqlara baxırdı... Atam bütün günü uşaqları məşğul edirdi. Şahmata aparırdı, oradan üzgüçülüyə və s. Bütün gün uşaqlar nə iləsə məşğul olurdular ki, mən işləyə bilim. Ailənin dəstəyi çox vacibdir.*
> *[My mother looked after the children ... My father took care of the children all day. He took him to chess, from there to swimming and so on. All day the children were doing something so that I could work. Family support is very important.]*

Similarly, Participant 6, *the female leader*, noted that she received the most support from family members.

> *My father! …as a person, as a father, as a man, as everything. I got great support through his knowledge, through his lifeway, mentality, culture, everything.*

Supportive and encouraging parents were mentioned to play an important role when advancing in their careers by all-female respondents.

Success in professional life may have been a guarantee of a happy and comfortable life. But for many women, the family and family members came first in terms of gender-stereotypic roles. If women received support from family members, it could help them succeed in their careers. Correspondingly, our data analysis uncovered family support as a major facilitating factor for advancing the professional lives of all women interviewed.

Theme 3: Balancing Work and Family Life

The findings of the study manifested that the authorities believed the inability to establish a balance between work and family life to be the main problem for those who desired to advance in their careers. Participant 8, *the male leader* mentioned:

> *...Bir xanım ailə həyatı qurdu, ana oldu. İşə gəlməklə bağlı problemləri oldu, çox zaman yerində olmadı və işdən çıxarıldı.*
> *[... Mrs. X. got married and became a mother. She had problems coming to work, and was often absent, and fired.]*

While sharing his experience, Participant 8, *the male leader*, supported the idea of balancing women's work and personal lives as a significant impact on females' career advancement.

Not surprisingly, all of the female participants in the leadership position had adult children. Female participants who strived to move up the career ladder had children in the 3-16 age range. Participant 1, *the female leader to be* commented that being a working parent of the little children made it harder for her to proceed with work:

> *...mənim azyaşlı uşaqlarım var və iş həyatı ilə ailə həyatını yanaşı aparmaq olduqca çətindir. Mən, baxmayaraq ki, öz işimdə daha qabağa getmək istəyirəm, amma buna iddia edə bilmirəm. ... mənim, belə deyək, işdə tapşıraqlarım çoxdur. ...belə iş bölgüsü düzgündürmü?! ... mənim işim universitetdə kifayət qədər çoxdur. İşlədiyim qurumun rəhbərindən çoxlu sayda tapşırıqlar alıram. Çox hallarda işdəki tapşırıqları, hətta, evə də gətirirəm.*
> *[... I have young children and it is very difficult to combine work and family life. Although I want to go further in my work, I cannot claim it. ... I have, so to speak, a lot of work to do. ... is such a division of labor correct?! ... I have a lot of work at the university. I get a lot of assignments from the head of the organization where I work. In many cases, I even bring work home.]*

Her response could also attest that lower balance may have led to lower self-confidence and job satisfaction, which might play a demotivating role in career advancement.

Clearly, for women with young children, making a balance between family responsibilities and advancing in a career was rather challenging. One of the reasons why women in leadership positions could avoid glass ceilings was that they were able to strike a balance between work and family life.

Theme 4: Individual Characteristics

Having transcribed all the interviews, we concluded that individual characteristics such as motivation and self-esteem as the major facilitating factors remained important when advancing in a career. When asked about their motivation, it became evident that all the women participants in the study were internally motivated towards their careers. Participant 3, *the female leader to be* mentioned:

> *Mənim üçün hədəf kafedra müdirliyidir. ...İstədyim isə odur ki, öz komandam olsun, elmi istiqamətimiz üzrə çalışaq, kitablar dərs vəsaitləri hazırlayaq, kadr hazırlığı ilə məşğul olaq.*
> *[My goal is to be the head of the department. ... What I want is to have my own team, to work in our scientific direction, to prepare books and textbooks, to be engaged in staff training.]*

She described her desire to be a leader as the achievement of her aims in the future. Also, the interviewees claimed to be brave and confident, and accepting challenges were crucial to career advancement. For instance, accepting difficulties as Participant 5, *the female leader* did and stated:

> *Mən bugünkü gün X olmaq üçün qarşıma çıxan heç bir çətinlikdən qorxmayıb, əksinə, üstünə getmişəm. Çox çətin insanlarla işləmişəm, amma, geri heç çəkilməmişəm.Mən özümə də, bacarığıma da hər zaman güvənmişəm.*
> *[I was not afraid of any difficulties to be X today, on the contrary, I went to it. I have worked with very difficult people, but I have never backed down. I have always relied on myself and my skills.]*

The quote showed that she could jump outside of her comfort zone, resulting in success in the long term. Having self-esteem could remove barriers to progress in the workplace. Participant 4, *the female leader to be* mentioned:

> *Mən orta məktəbdə oxuyarkən də, ali məktəbdə təhsil alarkən də hər zaman aktiv olmuşam. Ona görə də hesab eləmirəm ki, elə bir vəzifə ola bilər ki, mən onun öhdəsindən gəlməyim.*
> *[I have always been active in high school and university. Therefore, I do not think that there will be a task that I will not be able to cope with.]*

Being self-confident could empower women, and they were able to overcome the barriers to leadership roles in their careers.

Unexpectedly, two participants, the female to be expressed unjustified and non-generalizable insight that is to take leadership roles, was not appreciated by women themselves. Accordingly, Participant 2, *the female leader to be*, conveyed her message as follows:

> *Mən deyərdim ki, qadınlar özləri bu işə gəlmir. Onlara lazım deyil bu. Qadın üçün əsas nədir?! İki-üç saatlıq işimi görüm, ... və gəlim rahat evimə. Qadına əlavə başağrısı, əlavə məsuliyyət lazım deyil. Qadın üçün dəyərlər kişilər üçün olan dəyərlərdən adətən fərqlənir. Qadın üçün karyerası ilə bağlı mübarizə aparmaq, baryerləri aşmaq, irəliyə doğru addımlamaq, rəqabət aparmaq ön sırada dayanmır. Bütün bunlar qadından müəyyən qurbanlar tələb edir. Qadın belə qurbanlar verməyə çox hallarda hazır olmur, daha doğrusu, istəyində olmur.*
> *[I would say that women do not come to this work themselves. They do not need it. What is the main thing for a woman?! Let me work for two or three hours, ... and come home comfortably. Women do not need additional headaches,or responsibilities. Values for women are usually different from those for men. For women, the struggle for their careers, overcoming barriers, moving forward, and is not at the forefront. All this requires certain sacrifices from women. In many cases, the woman is not ready to make such sacrifices, or rather, she does not want to.]*

Taking into account the above-shared quote, women may have tended to be less motivated to take leadership roles due to their social statuses.

Thus, women's individual characteristics such as self-confidence and motivation played a very important role in their career advancement. The lack of such personal traits may have elucidated the fact that women were relatively few in senior positions. Because of that, leadership was associated with personal attributes such as high self-confidence and motivation, and their absence could make it almost impossible to advance along a career ladder.

Theme 5: Social Roles

Women and men holding senior positions in various professions may have depended on gender stereotypes. Traditionally, men tended to occupy a high position in the family as well as in the hierarchy at work. The role of the husband in family affairs was mainly characterized by power

and decision-making. In contrast, the wife's overall role was to care for the children and to do the housework. Participant 8, *the male leader* mentioned, "*Qadının uşaqlarının yanında olma kimi məcburiyyəti var. Kişilərdə bu yoxdur." [A woman has an obligation to be with her children. Men don't have that.]* The same opinion was expressed by another Participant 9, *the male leader*:

> *Yenə deyirəm, hərə öz yerində yaxşıdır, ailə vəziyyətindən asılı olaraq. Məsələn, bizdə uşaqların əziyyətini həyat yoldaşım çəkib.*
> *["I repeat, everyone is fine in their place, depending on the family situation. For example, my wife takes care of our children.]*

Male participants believed that men's and women's roles essentially differed.

According to Participant 1, *the female leader to be, such* a gender-stereotype related to women's caregiving roles was one of the biggest barriers to their career advancement. She professed:

> *Analıq müəyyən mənada karyeramda inkişafımı ləngidib. ... Proyekt yazmaq bacarıqlarını, xarici dil imkanlarımı inkişaf etdirmək kimi məsələlərdə geridə qaldım. [In a sense, motherhood has slowed my career development. ... I was left behind in terms of developing my project writing skills and foreign language skills.]*

The quote confirmed that the female participants themselves ascertained that their social role remained a major barrier to their career development.

Even unmarried and childless Participant 2, *the female leader to be,* claimed that married women with children would advance the career ladder slowly.

> *Ailə, uşaqla birgə iş həyatımı istədiyim kimi apara bilməyəcəm. Özüm üçün müəyyən etdiyim məqsədlərim var. Onlara nail olduqdan sonra mən artıq ailə barədə düşünmək istərdim.*
> *[I will not be able to work as I wish if I have my own family and children. I have set goals for myself. After achieving them, I would like to think about the family.]*

She seemed to gain some stability in her professional life before getting married being a wife or mother. The same opinion was expressed by Participant 4, *the female leader to be*:

> *Buna baxmayaraq elmlər doktoru dərəcəsinin alınması və ümumiyyətlə proses özü mənə çox ağır gəldi. Hesab edirəm ki, mənim övladım olsaydı bu işin öhdəsindən gələ bilməzdim. Bu baxımdan da bir qayda olaraq universitetdə qadınlar fəlsəfə doktoru elmi dərəcəsi alıb, uzağı dosent adı aldıqdan sonra aktiv fəaliyyəti dayandırıblar. Nəticədə də yüksək vəzifələrə təyin olunarkən onların namizədliklərinə baxılmayıb. Yəni kişi professorların fonunda qadınlar kölgədə qalıb.*
> *[Nevertheless, obtaining a doctorate and the process, in general, was very difficult for me. I think if I had a child, I would not be able to cope with this. From this point of view, as a rule, women at the university received the degree of Doctor of Philosophy,*

> *and after receiving the title of associate professor, they stopped their active work. As a result, their candidacies were not considered when appointed to senior positions. In other words, women are overshadowed by male professors.]*

The interviewees' responses elucidated that a married woman with children might be a limited resource for authorities while promoting their subordinates into leadership positions.

Unlike male leaders, the female participants in the leadership positions attributed a large number of men in management to the varying social attitudes towards women in society rather than the inability of women to lead due to gender-based roles. Participant 7, *the female leader* shared her experience related to the point:

> *Bir ara rəhbərlik kafedralar üzərinə kommersləşmə tələbi qoymuşdu. Kafedralar müxtəlif şirkətlərə gedib öz profillərinə uyğun investorları cəlb etməli idi. Mən də bir neçə şirkətə, fabrika getdim. Nə qədər danışıqlar apardım. ...O mənada mənə çətin oldu ki, məni görən kimi, qadın gəlib nə isə elmdən danışır, deyirdilər ki, nəyəsə ehtiyacınız varsa, deyin, biz sizə elm adamları kimi kömək edək. Kontakta çox girmirdilər. Hə yəqin ki, kişi olsaydım daha asan olardı qarşı tərəfi inandırmaq.*
> *[For a while, the management demanded the departments be commercialized. The departments had to go to different companies and attract investors according to their profiles. I also went to several companies and factories. How many negotiations did I have? ... In that sense, it was difficult for me that as soon as she saw me, a woman came and talked about science, they said, if you need anything, tell us, we will help you as scientists. They did not make much contact. Probably, if I were a man, it would be easier to convince the other side.]*

The basis of such a different attitude regarding gender may have stemmed from participants' expectations to act by their 'roles' in society.

Another important point was the demonstration of gender bias by male participants when answering interview questions, which was exemplified by negative stereotypes concerning scientific ability and talent. Participant 9, *the male leader* claimed:

> *Elmin tarixinə baxsaq həmişə görərik ki, kişilər texniki sahələrdə daha böyük uğur qazanıb, istər riyaziyyat, fizika. əsas nominantlar kişilərdir, qadınların xətrinə dəyməsin. Yəqin, Allah təallah yaradanda hər birinə üstünlük verib, kişilərin üstün olduğu sahələrdə qadın üstün ola bilməz.*
> *[If we look at the history of science, we always see that men have achieved greater success in technical fields, whether in mathematics or physics. The main nominees are men, not to the detriment of women. Probably, God gave priority to everyone when He created them, and a woman cannot be superior in areas where men are superior.]*

His gender bias may have benefited the underrepresentation of women in leadership positions in their science center. Similarly, Participant 8, *the male leader* asserted:

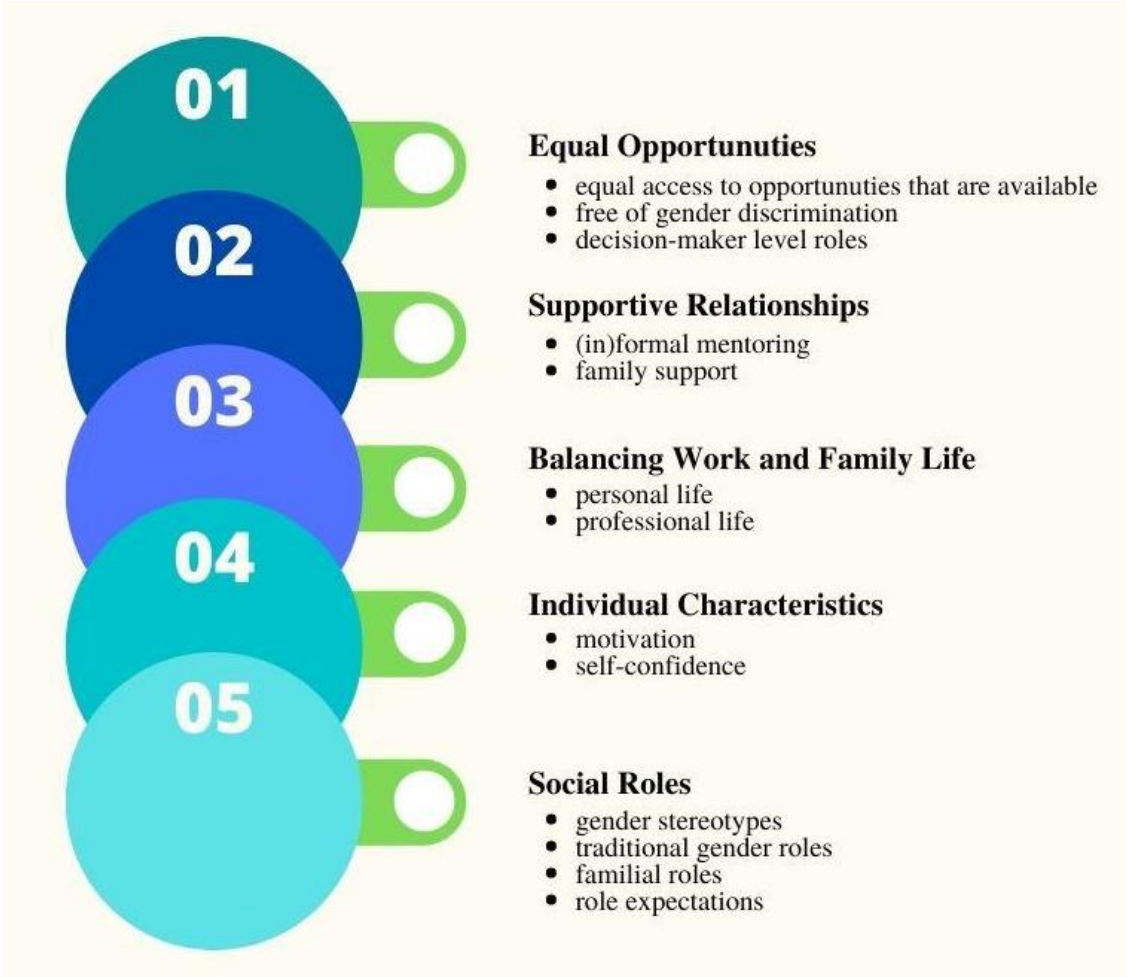
> *...qadınların vəzifəyə getməyi ilə bağlı problemləri yoxdur, amma onlar vəzifədə olarkən problemlər var. ...işin təşkil olunmasını, aparılmasını kişilər daha yaxşı bacarır deyə, vəzifəyə də onlar gedir.*
> *[... women do not have problems with advancing to a leadership position, but they do have problems when they are in a position. ... Men manage and execute work better when they are in position.]*

According to Participant 8, *the male leader*, top positions were linked with men's work management and execution skills.

Thus, traditional gender roles were found to be still alive and strong. Even those who attempted to avoid falling for stereotyping often happened to act according to their "role", at some level, regardless of being at work or home. The participants were affected by the dominant gender roles throughout their lives and social roles particularly had an effect not only on their career advancement but also on their minds.

Figure 5

Findings



Chapter 5: Final Product

WORKSHOP ON WOMEN'S LEADERSHIP IN SCIENCE

ADA UNIVERSITY
MASTER OF ARTS IN TEACHING AND LEARNING
TRAINERS:
SANAN HUSEYNOV
AYNURA KARIMOVA
HABIBA SHIRINOVA
ALMARA RAHIMLI

10:00	Welcome Speech and Introduction
10:5	Activity1 Getting to know each other and finding out the views on the topic of the workshop
10:15	Activity2 To Define the workplace gender equality phenomenon from different perspectives
10:45	Activity3 Increase awareness of participants about the underrepresentation of women in higher positions in science
10:55	Activity4 To identify possible barriers and facilitating factors contributing to women's progress in the leadership positions in science
11:20	Coffee Break
11:35	Activity5 Conducting a discussion on establishing the proper balance between work and family life, guided by a professional psychologist
11:25	Activity6 To invite a role model female leader to motivate participants to advance to leadership positions
11:45	Questions and Answers
12:55	Closing

OVERVIEW

The workshop may enlighten female leaders and women who strive to advance to leadership positions in science. The topics such as low representation of women in higher positions in the science departments of BSU and in other higher education institutions (HEIs), barriers and facilitating factors contributing to women's progress in the leadership positions in science, and possible solutions to overcome barriers will be emphasized and discussed during the workshop. The workshop will be interactive and employ individual, peer and group tasks and discussions.

THE FOLLOWING TOPICS WILL BE DISCUSSED DURING THE WORKSHOP:

WOMEN IN SCIENCE IN HEIS

MAIN BARRIERS

FACILITATING FACTORS

POSSIBLE SOLUTIONS

WORKSHOP GOALS

-TO RAISE AWARENESS OF THE LOW REPRESENTATION OF WOMEN WHEN THEY SEEK HIGHER POSITIONS IN THE SCIENCE DEPARTMENTS OF BSU AND REASONS BEHIND THAT ISSUE

-TO IDENTIFY POSSIBLE BARRIERS AND FACILITATING FACTORS CONTRIBUTING TO WOMEN'S PROGRESS IN THE LEADERSHIP POSITIONS IN SCIENCE

WORKSHOP OBJECTIVES

After completing the workshop, participants will be able to:

-predict possible barriers and facilitating factors that contribute to the career progress of women in the science departments in higher education institutions (HEIs);

-identify the possible solutions to overcoming barriers women face while progressing in the leadership positions in the science departments in HEIs

WORKSHOP TARGET AUDIENCE

The workshop will be open to public and the ones who are interested in advancing to the leadership positions.

Participation in a highly interactive workshop will raise attendees' awareness of the low representation of women in higher positions in science and reasons behind that issue and identify barriers that prevent the female leader candidates from advancing in their careers.

WORKSHOP DETAILS

DATE: 15th June, 2022

TIME: 10 a.m. – 01:00 p.m.

DURATION: 3 hours

VENUE: Conference Hall, BSU

ACTIVITIES

ACTIVITY 1: ICEBREAKER EXERCISE: 10 MIN. (INDIVIDUAL TASK)

Aim:

- To introduce themselves and get to know one another
- To share their thoughts about *leadership in science*

ACTIVITY 2: 30 MIN. (INDIVIDUAL TASK)

Aim: To define the workplace gender equality phenomenon from different perspectives

Resources:
A3 sheets, pencils, whiteboard, markers

Participants will be divided into three groups:
Group 1 - *Leaders to be*
Group 2 - *Female Leaders*
Group 3 - *Male Leaders*

In groups, participants will brainstorm and write definitions of gender equality in the workplace from the perspective of *leaders to be, female leaders and male leaders*, respectively **(10 min).**

A representative of each group will write down their definition on the whiteboard **(5min).**

Definitions will be discussed-whole group discussion **(10 min).**

Generalized definition of gender equality in the workplace will be developed and posted on the whiteboard **(5 min).**

ACTIVITY 3: 10 MIN.
(Individual and Whole Group Task)

Aim:

- To increase awareness of participants about the underrepresentation of women in higher positions in science

Resources: monitor, worksheets and pencils

1. A ten-question test will be distributed to participants.
2. Five minutes will be allocated to complete the test.
3. The correct answers will be displayed on the monitor
4. Participants will share their opinions about women's underrepresentation at top level of academic hierarchy.

1. How many women have been deans of the Faculty of Physics since 1919?
A) 1 B) 3 C) 0
2. How many women rectors of Baku State University have been in 103 years?
A) 0 B) 5 C) 1
3. How many women chairmen are there in the Faculty of Chemistry?
A) 7 B)2 C)0
4. How many female department heads are there in the Faculty of Chemistry?
A) 7 B)2 C)0
5. How many male department heads are there in the Faculty of Chemistry?
A) 7 B)2 C)0
6. How many male department heads are there in the physics faculty?
A) 7 B)2 C)0
7. What is the ratio of female laboratory assistants to men in the Faculty of Biology?
A) 21/3 B)28/3 C)41/1
8. What is the ratio of female laboratory assistants to men in the Faculty of Physics?
A) 21/3 B)28/3 C)41/1
9. What is the ratio of female laboratory assistants to men in the Faculty of Chemistry?
A) 21/3 B)28/3 C)41/1
10. What is the ratio of female tutors to men in general in the faculties of Physics, Chemistry and Biology?
A) 15/1 B) 15/7 C)15/15

Activity 4: 25 min. (Group Work)

Aim:

- Participants will identify possible barriers and facilitating factors contributing to women's progress in the leadership positions in science

Resources: monitor, A3 sheets, markers

The trainers will distribute A3 sheets and markers.

In groups of four, participants will brainstorm and make a list of barriers and facilitating factors contributing to women's progress in the leadership positions in science.

A representative of each group will present the list of barriers and facilitating factors.

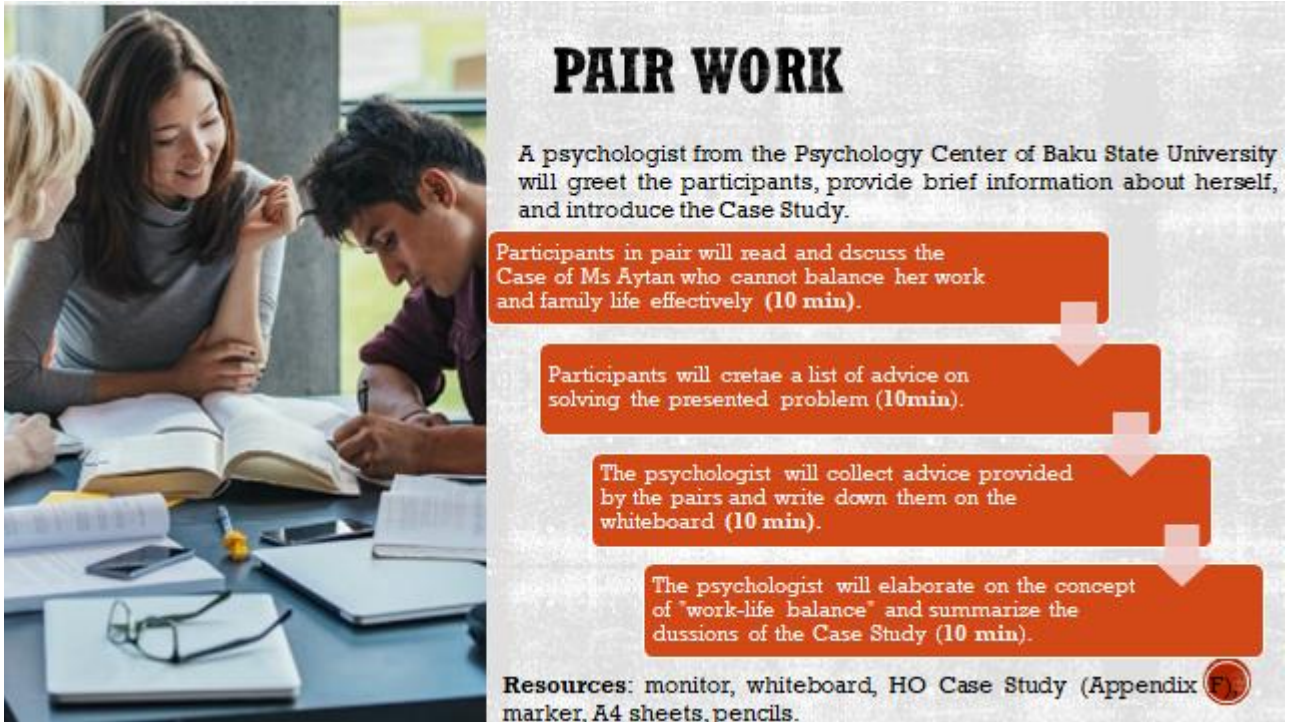
The trainers will present the findings of Capstone Project, and participants will compare and contrast the lists with study results.

Participants will discuss and summarize main barriers and facilitating factors contributing to women's progress in the leadership positions in science.


01
02
03
04
05
Equal Opportunuties
equal access to opportunuties that are available
free of gender discrimination
decision-maker level roles
Supportive Relationships
(in)formal mentoring
family support
Balancing Work and Family Life
personal life
professional life
Individual Characteristics
motivation
self-confidence
Social Roles
gender stereotypes
traditional gender roles
familial roles
role expectations


COFFEE BREAK: -15 MIN


TASK 5: 50 MIN
(PAIR WORK)
Aim:
To conduct a discussion on establishing the proper balance between work and family life, guided by a professional psychologist.


PAIR WORK
A psychologist from the Psychology Center of Baku State University will greet the participants, provide brief information about herself, and introduce the Case Study.
Participants in pair will read and dscuss the Case of Ms Aytan who cannot balance her work and family life effectively (10 min).
Participants will cretae a list of advice on solving the presented problem (10min).
The psychologist will collect advice provided by the pairs and write down them on the whiteboard (10 min).
The psychologist will elaborate on the concept of "work-life balance" and summarize the dussions of the Case Study (10 min).
Resources: monitor, whiteboard, HO Case Study (Appendix F), marker, A4 sheets, pencils.

Case Study

Ms Aytan is a 37-year-old woman. She works as a senior researcher in one of Baku State University's research laboratories. In addition to research activities, she is also engaged in teaching.

Also, she supervises the research work of one master's student and one bachelor's student. Ms Aytan is married and the mother of two children, ages three and eight. Although Ms Aytan loves her job, she always complains about not delivering her tasks on time. She becomes demotivated as a result of her dissatisfaction. Ms Aytan says she is unproductive at work, which prevents her from being a good researcher. Although her main goals are to participate in various projects and research works and prepare articles and textbooks, she does not have time for this work. Thus, housework and dealing with children are her other "main" job. She understands her responsibility for her children's future and does her best to cope with it.

However, the desire to assert herself as a mother prevents Ms Aytan from growing up in her favourite job and achieving success.

Activity 6: 20min.

Guest speech and Q&A

Aim:
- to invite a role model female leader to motivate participants to advance to leadership positions

QUESTIONS AND ANSWERS (10 MIN)

The psychologist, a role model female leader and trainers will answer participants' questions related to the topic, and insights will be summarized at the end.


CLOSING: 5 MIN.

Chapter 6: Conclusion

The purpose of this study was to identify the factors that contributed to authorities' decisions on women's leadership roles and explore the perceptions of women in science about their progress to a leadership position. This study also aimed at discovering barriers that women faced when seeking leadership positions in science. For that purpose, ten participants - three *female leaders*, three *male leaders*, and four *female leaders to be* from the Science faculties at Baku State University were interviewed. The qualitative research method used contributed to exploring the phenomenon more freely within its natural context and receiving a more in-depth understanding. Besides, the interpretative analysis helped to examine the data as it fits well to embrace a view of reality through participants' perceptions.

The majority of the study findings have been consistent with scientific literature. Thus, literature analysis revealed that women in science were underrepresented in leadership positions (Parker & Welch, 2011) and the findings of this study followed this trend (See Figure 4). Even though the number of females exceeds the number of males in the science departments, men dominated in managerial positions.

Balancing work and family life could be accepted as one of the main barriers females encountered in their professional career development (Toffoletti, 2016). This research found similar results. According to the findings, the participants believed that the inability to establish a balance between work and family life was the main problem for those who desired to advance to leadership positions.

Personal characteristics such as self-confidence and internal motivation based on the data analysis may have had some impact on women's career advancement in Baku State University's science departments. Furthermore, the participants in this study consistently reported that having family support had allowed them to focus on their profession. Having a supportive relationship in the family and informal mentoring in the workplace helped women to combine work and family life, which assisted them in advancing to leadership positions. These results, in other words, proved

that individual characteristics and (in)formal mentoring were the main facilitating factors in women's advancement to leadership positions (Hoyt, 2010; Isaac et al., 2012; McCullough, 2011; O'Neil & Bilimoria, 2005; Schmitt et al., 2021).

All female participants considered social roles as one of the most significant barriers they faced, which were embedded in the study's theoretical framework. Another barrier for women in their advancement to leadership positions was unconscious bias, which may have originated from participants' assumptions about their social roles. Gender bias may have been one of the fundamental causes for the high drop in the number of women in leadership positions, which may have been built into the system and operated even though more women than males were present in the workplace (Eagly, 1978; Eagly & Karau, 2002).

The inconsistency exists between the literature review and study findings. Female scientists face a two-fold challenge in gaining access to leadership positions in the workplace both as females and as women in science. Not only do male dominate in science but also leadership phenomena itself is associated with masculine-stereotypical traits (Eagly & Karau, 2002; Jogulu & Wood, 2006). However, our study results did not support previous findings. The data analysis revealed that the challenges women encountered while progressing to a leadership position was not related to the "masculinized culture" of science and leadership.

Contrary to our expectations, attitudes of the *female leaders* and *female leaders to be differ* regarding their path to a leadership position. F*emale leaders to be* ascertained that barriers to the advancement to a leadership position were not gender-based. On the other hand, *female leaders* supported the notion that gender challenges existed at some points when they progressed to leadership positions.

The study's topic was complicated; thus, more investigation may have been required. This qualitative research only focused on the most critical aspects that would be investigated by applying a mixed approach to increase the validity and reliability of the findings.

The practical implication of the study findings could serve as a basis for increasing awareness of male authorities about female leadership in science. Given that the authorities in Baku State University and other higher educational institutions of Azerbaijan may use our research findings to formulate and implement policies regarding the advancement of female candidates to leadership positions.

APPENDICES

Appendix A: Informed Consent

Date:

Name of Participant:

Study Name: Women in Science: Barriers and Facilitating Factors Contributing to Their Progress to a Leadership Position at BSU

Researchers: Habiba Shirinova: shirinova13834@ada.edu.az

Almara Rahimli: arahimli@ada.edu.az

Aynura Karimova: akarimova13824@ada.edu.az

Sanan Huseynov: shuseynov12968@ada.edu.az

Purpose of the Research:

Participants' responsibilities: The respondents will be requested to attend a 45-60 minute semi-structured interview and respond to the researcher's questions.

Research Benefits: The researcher assumes that identifying barriers and facilitating factors that contribute to the career advancement of women working in the science department of Baku State University and aspiring to be leaders in this sector is enlightening for both these women and society as a whole.

Withdrawal from the Study: You have the right to disengage from the research at any moment as a participant and for any reason. It will not affect your connection with the researcher if you decide to quit participating or not answer a certain question. All information will be removed.

Confidentiality: Only with your permission will the researcher record the interviews. Your personal information will be kept private, and all answers will remain anonymous. Only the researcher will have access to the research data.

Questions About the Research? Please contact us via e-mail if you have any queries concerning the study.

hshirinova13834@ada.edu.az

akarimova13824@ada.edu.az

shuseynov12968@ada.edu.az

arahimli@ada.edu.az

Legal Rights and Signatures:

I, *(fill in your name here)*, consent to participate in (insert study name here) conducted by *(Habiba, Aynura, Almara, and Sanan)*. I have understood the purpose of this project and want to participate. By signing below, I indicate my consent.

Signature_____ Date_____

Participant_____

Principal Investigator, (fill in your name here), agree to allow video and/or [digital images or photographs] in which I appear to be used in teaching, scientific presentations, and/or publications with the understanding that I will not be identified by name. I am aware that I may withdraw this consent at any time without penalty

Signature_____ Date_____

Participant_____

Appendix B: Interview Guide *(Male Leaders)*

Interviewee (Title and Name): _____

Interviewer: _____

To facilitate our notetaking, we would like to audiotape our conversations today. Please sign the release form. For your information, only researchers on the project will be privy to the tapes which will eventually be destroyed after they are transcribed. We would like to draw your attention to the following steps that will not harm you in any case.

1. *all information will be held confidential,*
2. *your participation is voluntary, and you can terminate the interview at any time if you feel uncomfortable, and*
3. *we do not intend to inflict any harm.*

Thank you for agreeing to participate.

We have planned for this interview to last no longer than one hour. During this time, we have several questions that we would like you to answer. If time begins to run short, it may be necessary to interrupt you to push ahead and complete this line of questioning.

Introduction

You have been selected to converse with us today as the one who has a great deal to share about your experience. Our research project focuses on identifying factors that contribute to authorities' decisions on women's leadership roles, perceptions of women in science about their progress to a leadership position, and barriers that women face when seeking leadership positions in science. Our study aim is to try to learn more about this issue and hopefully implement some research about the organizational situation that will help to analyze the current circumstances. At this point, we would like to ask you a question: Do you have any questions?

If the answer is no, let us start with the first question:

A. Interviewee Background

1. Please, briefly introduce yourself.
2. How long have you been in your present position?

B. Perception and stereotyping

3. What has been your motivation to become a leader?
4. Can you describe a female and a male leader? What differences do you notice? Please, provide a few differences.
5. What barriers or challenges have you faced to get where you are now? Please, name some of them.

C. Mentoring

6. Who or what have been the most important supporters of your career? How?

7. Do you think having a mentor to grow as a leader is important? If so, please elaborate on the importance of the mentors.
8. Have you ever had a mentor? If yes, how did s/he help you when pursuing a career? Provide a few examples.

D. Corporate climate

9. Have you faced any discrimination in the recruitment process or at work in general? If yes, please, be specific and provide at least three examples.
10. Do you think gender matters when pursuing a career? If yes, in what ways, be specific and elaborate on it.
11. Do you think women and men have equal advancement opportunities to the highest positions in your organization? If yes, what are these opportunities? Be specific and name a few. If not, please, elaborate on this issue.
12. May female leaders have any challenges while being in position? If yes, what challenges may female leaders face at work?

E. The impact of the family and society

13. How have you combined your work and free time? (family, hobbies, friends) Please, elaborate on this issue in-depth.
14. Do you feel that the duties at home reduce your time to be effective at work or to advance in your career? If yes, in what ways?

F. To conclude

15. Can you sum up, what have been the biggest drivers or factors that have helped you to reach the position you are now?

Appendix C: Interview Guide *(Female Leaders)*

Interviewee (Title and Name): _____

Interviewer: _____

To facilitate our notetaking, we would like to audiotape our conversations today. Please sign the release form. For your information, only researchers on the project will be privy to the tapes which will eventually be destroyed after they are transcribed. We would like to draw your attention to the following steps that will not harm you in any case.

1. *all information will be held confidential,*
2. *your participation is voluntary, and you can terminate the interview at any time if you feel uncomfortable, and*
3. *we do not intend to inflict any harm.*

Thank you for agreeing to participate.

We have planned for this interview to last no longer than one hour. During this time, we have several questions that we would like you to answer. If time begins to run short, it may be necessary to interrupt you to push ahead and complete this line of questioning.

Introduction

You have been selected to converse with us today as the one who has a great deal to share about your experience. Our research project focuses on identifying factors that contribute to authorities' decisions on women's leadership roles, perceptions of women in science about their progress to a leadership position, and barriers that women face when seeking leadership positions in science. Our study aim is to try to learn more about this issue and hopefully implement some research about the organizational situation that will help to analyze the current circumstances. At this point, we would like to ask you a question: Do you have any questions?

If the answer is no, let us start with the first question:

A. Interviewee Background

1. Please, briefly introduce yourself.
2. How long have you been in your present position?

B. Perception and stereotyping

3. What has been your motivation to become a leader?
4. Can you describe a female and a male leader? What differences do you notice? Please, provide a few differences.
5. What barriers or challenges have you faced to get where you are now? Please, name some of them.

C. Mentoring

6. Who or what have been the most important supporters of your career? How?

7. Do you think having a mentor to grow as a leader is important? If so, please elaborate on the importance of the mentors?
8. Have you ever had a mentor? If yes, how did s/he help you when pursuing a career? Provide a few examples.

D. Corporate climate

9. Have you faced any discrimination in the recruitment process or at work in general? If yes, please, be specific and provide at least three examples.
10. How do you think your gender matters when pursuing a career?
11. Do you think women and men have equal advancement opportunities to the highest positions in your organization? If yes, what are these opportunities? Be specific and name a few. If not, please, elaborate on this issue?
12. May female leaders have any challenges while being in position? If yes, what challenges may female leaders face at work?

E. The impact of the family and society

13. How have you combined your work and free time? (family, hobbies, friends) Please, elaborate on this issue in-depth.
14. Do you feel that the duties at home reduce your time to be effective at work or to advance in your career? If yes, in what ways?
15. Do you use household services such as cleaning, childcare, or any other? If yes, why? If not, why?

Additional questions if the interviewee has children:

- How has motherhood contributed to your career?
- What does it take to be a mother and a manager?
- Have you faced any challenges at work at the time you were pregnant or when your children were little? If yes, what challenges were they? Please, name at least a few of them.

F. To conclude

16. Can you sum up, what have been the biggest drivers or factors that have helped you to reach the position you are now?

Appendix D: Interview Guide *(Female Leaders to be)*

Interviewee (Title and Name): _____

Interviewer: _____

To facilitate our notetaking, we would like to audiotape our conversations today. Please sign the release form. For your information, only researchers on the project will be privy to the tapes which will eventually be destroyed after they are transcribed. We would like to draw your attention to the following steps that will not harm you in any case.

1. *all information will be held confidential,*
2. *your participation is voluntary, and you can terminate the interview at any time if you feel uncomfortable, and*
3. *we do not intend to inflict any harm.*

Thank you for agreeing to participate.

We have planned for this interview to last no longer than one hour. During this time, we have several questions that we would like you to answer. If time begins to run short, it may be necessary to interrupt you to push ahead and complete this line of questioning.

Introduction

You have been selected to converse with us today as the one who has a great deal to share about your experience. Our research project focuses on identifying factors that contribute to authorities' decisions on women's leadership roles, perceptions of women in science about their progress to a leadership position, and barriers that women face when seeking leadership positions in science. Our study aim is to try to learn more about this issue and hopefully implement some research about the organizational situation that will help to analyze the current circumstances. At this point, we would like to ask you a question: Do you have any questions?

If the answer is no, let us start with the first question:

A. Interviewee Background

1. Please introduce yourself shortly
2. How long have you been in your present position?

B. Perception and stereotyping

3. Why do you want to become a leader?
4. Can you describe a female and a male leader? What differences do you notice? Please, provide a few differences.
5. What barriers or challenges have you faced to get where you are now? Please, name some of them.

C. Mentoring

6. Who or what have been the most important supporters of your career? How?

7. Do you think having a mentor to grow as a leader is important? If so, please elaborate on the importance of the mentors?
8. Have you ever had a mentor? If yes, how did s/he help you when pursuing a career? Provide a few examples.

D. Corporate climate

9. Have you faced any discrimination in the recruitment process or at work in general? If yes, please, be specific and provide at least three examples.
10. How do you think your gender matters when pursuing a career?
11. Do you think women and men have equal advancement opportunities to the highest positions in your organization? If yes, what are these opportunities? Be specific and name a few. If not, please, elaborate on this issue?
12. How has your department leader supported you in career development?

E. The impact of the family and society

13. How have you combined your work and free time? (family, hobbies, friends) Please, elaborate on this issue in-depth.
14. Do you feel that the duties at home reduce your time to be effective at work or to advance in your career? If yes, in what ways?
15. Do you use household services such as cleaning, childcare, or any other? If yes, why? If not, why?

Additional questions if the interviewee has children:

- How has motherhood contributed to your career?
- Have you faced any challenges at work at the time you were pregnant or when your children were little? If yes, what challenges were they? Please, name at least a few of them.

F. To conclude

16. Can you sum up, what have been the biggest drivers or factors that have helped you to reach the position you are now?

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