

Breaking through the glass ceiling: The three-dimensional model (Macro, Meso and Micro) towards promoting women participation in an academic context: Insights from a mixed-methods approach

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ABSTRACT

This study aimed at bridging this gap and proposed a Three-Dimensional Model (Macro, Meso, and Micro). It also attempted to gain a deeper understanding of the nature of the glass ceiling, which limits women's participation in higher decision-making positions and determined how to overcome these barriers. The study adopted a mixed-methods approach. Three exploratory workshops involving 65 academic women leaders were conducted at three Saudi universities. This was followed by a field survey of the overall population involving 213 female leaders. Then six interviews of 35 female leaders were conducted. The results of the field survey illustrated the barriers preventing women from career development. According to the participants, the most challenging barriers at the institutional level were related to administrative and organizational aspects. They were followed by the barriers related to institutional culture. The social and personal barriers were ranked the last. The results of the interviews also revealed a set of ideas, which proposed methods to support women's progress to senior positions. They included political authority, policy development, open-door policy, adherence to the standards for selecting leaders based on competence, continuous evaluation, and professional development. The important role of the academic woman leader in the development of her career requires her to take responsibility for her professional growth and meet the requirements of the leadership role. The study recommends a comprehensive and profound treatment of the glass ceiling phenomenon. The study recommends a comprehensive training plan to support the skills, experiences, and capabilities of qualified women to occupy academic leadership. Benefiting from international expertise regarding this issue is highly recommended. There must be continuous monitoring and analysis of some quantitative and qualitative indicators based on an accurate database related to the academic empowerment of Saudi women.

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1. Introduction

The expansion of knowledge and incredible advances in information and communications technology have resulted in a paradigm shift in numerous social institutions which is unprecedented in human history. This shift involves a transformation in structures, systems, professions,

plans, and future trends resulting in an increased demand to further mobilize all energies and invest in various forces and human resources. The belief about the importance of women's roles and the impact they can make has increased globally, and there has recently been a lot of interest in investing their talent and increasing their opportunities for participation in various sectors.

This belief was translated into practical programs at local and global levels after the declaration of the final document 'Transforming Our World: The Sustainable Development Objectives 2030', which is considered as an integrated framework for the development goals of the member states of the United Nations. Women received special attention in the declaration, which emphasized the importance of

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promoting gender equality and providing opportunities and resources to women. It urged member states to transform the women empowerment laws into practices at all levels. The Ministerial Declaration of the High-level Political Forum on Sustainable Development, held at the United Nations Headquarters in New York in 2016, also included the statement “Ensuring That No State Is Left Behind”, emphasizing the importance of empowering all women and achieving gender equality, as well as their participation in all sectors. The declaration recognized a number of rights, including equal access to better education for women, equal opportunities for employment, leadership, and decision-making at all levels. The declaration pledged to follow up this at the regional, national, and global levels (UNESCO, 2016).

The term ‘glass ceiling’, which symbolizes the barriers to the advancement of women's careers, is almost absent from the literature on women's participation in the leadership of the institutions. Glass Ceiling is a global issue. Even in developed countries, this issue is still a topic of discussion (Gazzaz, 2017; Lyness and Grotto, 2018; Estoque, 2020). In other parts of the world, the situation is far more serious (Gazzaz, 2017), as World Economic Forum indicates that women hold only 7% to 34% of management positions (WEF, 2018).

Estoque (2020) asserted that based on strong empirical evidence it is certain that high levels of social inequality not only raise complex issues of social justice but also have negative impacts on economic aspects. This reduces the long-term economic growth which threatens the achievement of the entire 2030 Sustainable Development Plan.

Despite the historical development in institutional leadership which women achieve, they are still dominated by men (Lyness and Grotto, 2018). Gazzaz (2017) observed that there is a lot of opposition and dissatisfaction with women's leadership in an official organizational context.

Higher education institutions have gradually become profit-driven organizations with productivity objectives in order to meet the demands and needs of modern society. Women, in general, and leading academic elites, in particular, are important for the economy as they are the key drivers of various production lines. Their presence in leadership roles is an essential tool for economic growth and sustainability as they can contribute to the development with a different perspective thus making a positive impact (Johns, 2013; Awang-Hashim et al., 2016). It is believed that the presence of women cadres is likely to have a significant impact on the institutions and the scope of research as well as the fact that they will be role models and counselors for other women (Awang-Hashim et al., 2016).

Women's development towards leadership positions in higher education is regarded as a complex process (Awang-Hashim et al., 2016). Recently, there has been an increase in women's participation in the global labor market

(Balasubramanian and Lathabhavan, 2017). However, the gap between women and men remains significant, and the continued decline in women's representation in leadership positions remains a major global concern (Saleem et al., 2017) as their competencies continue to be underinvested. Aydin (2016) highlighted male dominance in the sector by highlighting ‘two myths’. The first myth relates to the neutrality of organizations in granting women higher positions and the second revolves around unquestionable women's access. It emphasizes the small number of women in senior management positions at universities describing them as strangers and deprived. This may be due to the lack of implementation of gender equality policies. There are a few females in some middle positions at the university, however, the data illustrates that they are absent from leadership positions (Dandan and Marques, 2017; Jamjoom, 2020).

Thus, it is obvious that there is an urgent need for a change in the economic growth patterns, which perpetuate deprivation and create inequality. The transition to the long-term sustainable development of the country especially requires a positive and conscious investment of human energies (Estoque, 2020).

The glass ceiling phenomenon has been extensively studied globally but in developing countries, it requires more attention as the global library lacks qualitative data in this field (Abalkhail, 2017; Varshney, 2019).

The current study attempts to contribute in terms of highlighting the glass ceiling issues in the Saudi academic context. It specifically seeks to uncover the most prominent factors which make up the glass ceilings faced by the academic female leaders in Saudi universities. It also aims at developing our understanding of ways to break through these ceilings, enhance women leaders' participation in senior positions in Saudi universities and make them more capable and empowered. This study is important since higher education is an arena to formulate the key policies, knowledge, skills, and experience necessary for the comprehensive and sustainable development of a country.

2. Theoretical framework

2.1. Glass ceiling concept

The concept of ‘glass ceiling’ appeared concomitantly with the Women Workers' Alliance (Jackson et al., 2014). It has existed in both academic and non-academic areas since 1978. The term was first used in 1986 when the Wall Street Journal published a report on businesswomen indicating the barriers they faced (Balasubramanian and Lathabhavan, 2017; Jackson et al., 2014; Wilson 2014). The concept of the glass ceiling refers to a hidden and transparent barrier, which prevents women from being promoted to the higher executive and senior positions in the hierarchy of the organizations or exercising and activating their

leadership roles (Jackson et al., 2014). It also indicates the invisible barriers, which women face to become leaders within their organizations (Powell, 2012). The International Labor Organization also defined it as a description of the artificial barriers generated by personal and institutional preconceived ideas, which exclude women from senior executive positions (Denisi and Griffin, 2005).

A few believe that the metaphor of the "glass ceiling" is not sufficient anymore to describe the institutional barriers that women and minorities face. Instead, they propose a new metaphor 'firewall' to describe these barriers.

This explains the fact that these barriers hinder higher progression. Moreover, they are everywhere: They surround the entire structure of organizations, their basic rules, and walls. The term "firewall" better captures the details and hidden forces of discrimination in the workplace both vertically and horizontally (Jackson et al., 2014). Further, some others have called this phenomenon the 'leaky pipeline' and 'adhesive floors' (Rauhaus and Carr, 2020).

2.2. The three-model (Macro, Meso, and Micro)

Social issues are as complex as the ones experienced by women in their careers, which are characterized by interference and dynamic interaction between different social stereotypes (culture, systems, and individuals). However, reviewing the previous literature reveals its limited focus on addressing regulatory barriers (Lyness and Grotto, 2018). Hence, there is an urgent need to develop fundamental solutions, which combine depth and inclusiveness, operating at the three analytical levels: Overall, medium, and partial (Jaspal et al., 2016). Therefore, a one-dimensional perspective cannot rely on. If the isolated solutions are quick and immediate, they may lead to incomplete and possibly less effective solutions (Boeren, 2016). It requires a deep study, analysis, and treatment from multiple dimensions. These issues must be considered from various angles including the personality of the individual and the culture of the society as they may be at the root of the issue and offer key solutions.

There is a trend that rejects the sole vision of explaining the social phenomena of the nature of the relationship between action and structure or pattern. As actions are seen to be influenced by the structural characteristics of the surrounding society, it reshapes those properties (Giddens, 1984). Social scientific research in understanding human interaction is based on three possible levels of analysis: Micro, Meso, and Macro. The micro-level represents the smallest levels of "self-centered" interaction. It may include analyses of individual interactions in the smaller environment (family and friends) if there is an interest in how a person is affected by their social context. Then, there is a medium level (Meso) in a larger circle such as workplaces or sports clubs. The overall level

examines large-scale social institutions (Hardcastle et al., 2005). The discussion and analysis of social phenomena from a social perspective focuses on those divisions, which show interactions between the overall level of society and culture, the medium level of organizations and groups, and the partial level of individual identity (Hartmann, 2017).

This explains the interest of many sociologists associated with macro and partial fields in studying how elements related to individuals and groups interact at different levels of analysis and influence each other in various fields and sciences such as education, sociology, psychology, medicine, management, and economics (Boeren, 2016; Jaspal et al., 2016; Serpa and Ferreira, 2019; Bodolica et al., 2016; Hardcastle et al., 2005).

The phenomenon of the glass ceiling is associated with different barriers, including the culture of society, the institution (its policies and its organizational culture), and the problems related to the women themselves. Thus, the government, academic institutions, and women themselves are the key players in breaking the barriers related to women's development (Johns, 2013).

2.3. Factors that form the glass ceiling

Negative perceptions are regarded amongst the most dominant cultural factors contributing to the formation of the glass ceiling. Stereotypes and prejudices such as 'men managers, women nurses' hinder the idea that women may be suitable for senior positions (Karakiliç, 2019). These cultural concepts contradict the global trend towards empowering individuals and maximizing their self-value by providing equal opportunities in terms of resources, participation, decision-making, implementation, evaluation, professional development, and teamwork to contribute towards the development of society. Institutional policies and practices can create a hidden system of discrimination in the selection and promotion of female candidates thus leading to the representation of fewer women on boards of directors, training, and development (Saleem et al., 2017). The decisions, which the organizational structure takes create barriers for the promotion of women employees because men do not want to see women in senior positions or are not satisfied with receiving orders from them. This is what might be called Queen Bee Syndrome when women in high positions attempt to maintain their power and pose a threat to their female colleagues who struggle to promote to a higher institutional position (Karakiliç, 2019).

The practices of inequality and lack of justice often tend to become entrenched through the efforts of the people at the top to secure and sustain their positions (Estoque, 2020). One of these channels is the informal communication network, which women employees are not always able to access (Aydin, 2016; Karakiliç, 2019). The importance of informal networks lies in the fact that they are important pipelines for promotion. Women often lack a sponsor

who promotes their competence to others to help them climb up the organizational ladder. Women often either underestimate or fail to establish the role of care in career mobility. Women's negative perceptions of this type of relationship lead to the reluctance of both women and senior men to have a caring relationship because they are often misunderstood as sexual interest (Johns, 2013). The glass ceiling may be broken through by personal factors such as self-competence and women's self-belief (Balasubramanian and Lathabhavan, 2017). One of the personal factors preventing women from promotion to senior positions is their low ambitions and expectations as they often lack self-confidence. Due to the lack of self-confidence, they make more cautious career choices, where they lag behind men with higher job prospects (Johns, 2013). The multiplicity of roles and responsibilities they have can prevent them from acquiring senior positions as they can often find themselves forced to choose between family and professional life (Karakilic, 2019).

Perhaps, these personal factors are shaped by cultural factors at the level of the institution or society. People are more judgmental about the capabilities of women than that of men. Women leaders are judged more critically than their male counterparts. Stereotypes and differences in gender communication remain a dilemma as the stereotypical communication method of women, for example, is warmer, more interesting, and less oriented than that of men, which may lead the employer to underestimate women's capabilities. If a woman shows a lot of firmness contradicting her stereotype, her capability to gain admiration may decrease (Johns, 2013).

2.4. Ways to penetrate glass ceilings

High-level national strategies can be implemented to help aspiring women break through the glass ceiling. These strategies can help to bring about real transitions in culture and structures (McKimm et al., 2015) at the social, university, and individual levels. There is a need to build more positive cultural ideologies to promote the practices of equal access to education, training, resources, and employment opportunities for women.

The government has many tools to address the barriers to women's development. It can act as a motivator to promote gender equality practices by raising awareness and demonstrating the positive impact of equal opportunities, and the negative effects of its absence on women, children, families, and then the societies as a whole (Johns, 2013). It has become crucial to discuss the invisible challenges that women face from within the institutions and recognize the fact that they face unique barriers, which may prevent them from achieving equal success (Rauhaus and Carr, 2020). Discriminatory practices and artificial barriers must be prevented by emphasizing accountability, implementing strict laws against gender

discrimination, and ensuring that labor leaders are also proactive in their commitment to implement them.

The commitment of senior management to support policies of gender diversity is not sufficient and there is a need to ensure that they implement these policies. Instead of taking weak initiatives, the institutions need to detect and address the hidden biases of men and women and change their attitudes and encourage them to be a part of the culture of the institution (Johns, 2013).

The government can also guide educational institutions to play a key role in shaping tomorrow's leaders by adopting leadership development programs, which include issues of gender diversity and transformative leadership to change the ideas and the preconceived assumptions of the people (Johns, 2013). This will also require political interventions in the public and private sectors helping to strengthen consistency between them, coordinate sustainable development policies, share valuable practices across regions and cities, and learn from each other by participating in city networks, and form coalitions and other initiatives to transform social stereotype and lifestyles (Estoque, 2020).

Scientific research is one of the key elements in eliminating the issue of gender inequality and integrating women into the leadership positions of higher education institutions (Rauhaus and Carr, 2020). It can be done by adopting a focused research agenda capable of leading all other initiatives, which encourages a systematic collection of data on the leadership roles of higher education in the region. Monitoring and interpreting growth stereotypes explore the factors which systematically facilitate or hinder women's participation and create a framework based on theory and experimental bases (Awang-Hashim et al., 2016).

Academic institutions need to adopt comprehensive programs meant to break down structural, organizational, and cultural barriers (Johns, 2013). These logical steps can help to develop policies and, more importantly, transform them into practices (Rauhaus and Carr, 2020). It also includes determining the objectives for women's representation on boards, executive committees, and senior management and monitoring women's representation at all levels to break the structural barriers. Employers need to develop flexible working arrangements and work-life balance policies (Johns, 2013).

Leadership development programs remain an effective strategy as building and supporting women's capabilities, implanting trust, increasing morale, and developing leadership skills and competencies in the early stages of their academic careers are important to prepare them for higher management levels.

These programs become more effective by using a variety of methods based on real-life problem-solving exercises, designing a case study to manage specific issues, and supporting them with advisory

programs to expand women's capability to achieve leadership roles (Awang-Hashim et al., 2016).

On the personal level, women's access to leadership positions in higher education requires creating their social capital by developing support networks to increase their self-efficiency in order to help them climb up the leadership ladder. These networks will contribute to developing skills and competencies to make wise decisions, share their personal experiences, and learn strategies to better balance their personal and professional lives (Johns, 2013; Awang-Hashim et al., 2016). In addition, the academic woman leader needs to focus on her professional growth by identifying her needs and enrolling in effective programs not only to develop critical leadership skills but also to increase her self-confidence and take advantage of her strengths (Johns, 2013).

2.5. Academic woman leader in the Saudi context

The Kingdom of Saudi Arabia has witnessed significant transitions over the past few decades. Women have greatly benefited from economic resources and the availability of free education, which have helped in creating more job opportunities in the public and private sectors. As a result, women's participation in the workforce has significantly changed their social roles (Abalkhail, 2017). They are now allowed to occupy senior positions and assume, relatively more, public responsibilities (Omair et al., 2020; Alsubaie and Jones, 2017; Hodges, 2017; Thompson, 2015). According to the Pew Research Report, the ratio of women's participation in the Kingdom of Saudi Arabia's workforce is the fastest-growing among the 20 countries (Mulligan, 2019). The World Bank's report, 'Women, Business and Law 2020' confirms that Saudi Arabia is the world's largest country, which has implemented historic reforms to promote women's economic participation in the year preceding the report (Trumbic, 2020).

Despite the growing interests at the local and international levels in raising the proportion of women in decision-making centers, the development in Saudi Arabia remains below expectations with a number of researchers emphasizing the limited opportunities women get (Abalkhail, 2017; Alghofaily, 2019; Al-Moamary et al., 2020; Alotaibi, 2020; Gazzaz, 2017; Hodges, 2017; Al-Asfour et al., 2017). The World Economic Forum has ranked Saudi Arabia among the four countries (Egypt, Pakistan, Saudi Arabia, and Yemen) which are at the bottom in this context (WEF, 2018), indicating that the implementation of such reforms faces significant barriers.

Although the education sector is regarded as the largest employer for Saudi women, the proportion of women leaders in higher education is still low as compared to the high proportion of women in the educational staff. (Alsubaie and Jones, 2017; Alghofaily, 2019). They get fewer opportunities to acquire positions in leadership positions as

compared to their male counterparts and the opportunities offered to them are often limited to the middle level of management (e.g., deans' deputies) rather than senior management (Deans, Presidents, and Vice Presidents) (Al-Moamary et al., 2020; Gazzaz, 2017). A recent study revealed a huge gap in terms of gender in senior positions where females occupy only 14% in the public sector and 10% in the private sector (Omair et al., 2020). This low level of women's representation in leadership positions in higher education (Alotaibi, 2020) reflects the extent of the glass ceilings phenomena in the Saudi context.

2.6. Cultural barriers

The social and cultural barriers which affect women's career progress form an important focus for this study. In the Saudi context, Islam and the family are key factors guiding Saudi culture to shape women's professional life. Islam rejects any kind of discrimination and confirms gender equality. It has been declared that women are like men, having the right to own and inherit property and search for education and work opportunities (Abalkhail, 2017). However, it is society that has affected the way women think of themselves as weak, sensitive, and incapable to deal with complex tasks (Abalkhail, 2017). This is due to the thinking pattern that leadership is a male field and that men are more competent in decision-making and the misconceptions, created by society, about women as being less effective and sometimes inappropriate for administrative positions. Furthermore, it is not an easy road for those who struggle to become leaders (Hodges, 2017). There is another misconception that women can only occupy and maintain a leadership position when they embody men's characteristics (Alsubhi et al., 2018). The stereotype and gender discrimination prevail on a larger scale (Varshney, 2019) and many believe that women must be relationship-oriented, lovely, friendly, and in charge of children. This perspective does not consider that women have the skills and capabilities for leading roles in many cases (Alsubhi et al., 2018). These stereotypes had an impact on women making them more careful about accessing leadership positions due to reputation fear drives (Hodges, 2017).

2.7. Institutional barriers

The organizational level within the academic institutions has been influenced by the culture of Saudi society. This is because macro factors related to the culture of the society often constitute the organizational procedures and practices related to women's access to leadership positions (Abalkhail, 2017; Al-Asfour et al., 2017). Regulatory practices remain a major barrier to the leadership opportunities for Saudi women. Several studies found that Saudi women are not as involved as the men in formulating strategies and participating in higher discussions as the authority is often assigned to men (Varshney, 2019). In addition, these studies

revealed that women were discriminated and they were offered fewer opportunities to be selected and promoted for leadership roles (Hodges, 2017; Alsubhi et al., 2018; Al-Asfour et al., 2017).

A number of studies have called for the need to enforce intra-institutional neutrality laws and adopt fair recruitment, selection, promotion, and evaluation based on competence and not on gender (Al-Asfour et al., 2017). They also recommended that there should be an appropriate monitoring mechanism to ensure appropriate performance (Varshney, 2019). The lack of women leaders makes it more difficult for those women who reach the highest levels, as scarcity places them under the microscope, which leads them to risk aversion (Gazzaz, 2017). It also affects them being accepted as leaders. Furthermore, the frustrating and uncooperative behaviors of the colleagues are among the most challenging barriers faced by Saudi women leaders (Alsubhi et al., 2018).

In addition to all these barriers, the lack of education, qualification, and vocational training for women leaders in Saudi Arabia is a great problem. It was noticed that women needed more support and training to deal with the role effectively, which meant that the women were not brought up, educated, and trained to be qualified for a senior position from the beginning (Gazzaz, 2017; Hodges, 2017; Alsubhi et al., 2018). There is also an urgent need to enact laws guaranteeing equal gender opportunities in training and development (Al-Asfour et al., 2017). The absence of policies that promote women's roles in society is one of the most dominant barriers. This describes the Saudi regulatory environment as being unfriendly towards women (Alsubhi et al., 2018) and inconsistent with the importance Saudi society otherwise attaches to the role of women as mothers.

In order to ensure that women are given equal opportunities, the job model in the workplace must be developed to take into consideration the working women's specificities in the Saudi context. This can be done by updating policies and procedures to create a female-friendly working environment, with more flexible working hours such as part-time work, remote work, and daycare facilities. Empowering women to balance between their work and personal life can also increase their self-esteem and health, giving them greater control over their personal and professional lives. This can increase their overall productivity and empower them to contribute more effectively to national development (Al-Asfour et al., 2017).

One of the barriers facing Saudi women leaders is the lack of access to basic resources, appropriate facilities, and inadequate financial allocations (Gazzaz, 2017; Alsubhi et al., 2018). This barrier hinders their achievements, harms their mentality, and does not provide them with a sense of appreciation or belonging to their organizations (Gazzaz, 2017). The progression of women's careers requires regulatory authorities to pay more attention to create an attractive and friendlier

working environment, which promotes women's success (Al-Asfour et al., 2017; Varshney, 2019).

2.8. Personal barriers

Another barrier faced by many women in the Kingdom of Saudi Arabia is that they are not qualified enough (Gazzaz, 2017). They face difficulties in performing their duties and dealing with different situations because of their lack of experience (Alsubhi et al., 2018). This may lead to a lack of confidence, and sometimes they show physiological and psychological incapability to perform their duties (Gazzaz, 2017; Alsubhi et al., 2018). Domestic obligations are also a barrier to their career progress, as they are obliged to perform domestic responsibilities such as looking after the children, husbands, and other family members. This creates a barrier along with the lack of appropriate skills, experience, and their incapability to balance between family and work (Gazzaz, 2017; Alsubhi et al., 2018). Such responsibilities, particularly during pregnancy increase their workload (Al-Asfour et al., 2017). Working under immense pressure generates internal conflict (Alsubhi et al., 2018). Among the personal barriers they face is their lack of social networking as compared to men, which negatively affects their career development. They often tend to rely on their families for carrier support and success in organizations (Abalkhail, 2017).

2.9. Limitations of the study

The limitations of the study include temporal, spatial, human, and design limitations. This study was conducted during the academic year 2020/2021. Further, it was conducted in Al-Kharj Governate, KSA. The study was also limited in terms of studying academic leaders from only three public Saudi universities. This research included a design of a three-dimensional model which contained the determination of three basic fields (social, institutional, and personal) which can have an effective role in a deep understanding of the glass ceilings (fragile thinking) which eliminate the women's participation in the highest levels of decision-making in the academic environment.

3. Research methodology

The study relied on the three-dimensional approach through a multi-level lens of macro, medium, and partial perspectives to provide deeper and more comprehensive interpretations of the glass ceiling phenomenon. This allows combining indications and personal practices, focusing on relationships and interactions between different systems and competent authorities, structures, and practices, and thinking about different barriers and empowering factors in the formation of or breaking through the glass ceiling on a larger scale.

The study used both quantitative and qualitative approaches (Creswell and Guetterman, 2019). It used different methods like Frequencies and Measures of Central Tendency including Mean, Median, and Mode. It also used Measures of Dispersion or Variation like Range, Variance, and Standard Deviation. There were three phases in which the three following tools were used:

- Three exploratory workshops were conducted which aimed at uncovering the most prominent obstacles faced by academic women leaders at three levels (personal, institutional, and social). Sixty-five academic women leaders participated from three Saudi universities. According to the classification of the ministry, they were from the old government (31), emerging government (19), and private (15) universities.
- A field survey based on a review of the literature and the results of exploratory workshops was used to determine the degree of barriers faced by the academic women leaders in Saudi universities. The questionnaire included three dimensions: personal (personal barriers), institutional (administrative barriers and institutional culture), and social (cultural barriers). The survey used a five-point Likert scale (strongly agree, agree, slightly agree, disagree, and strongly disagree). The survey covered the entire study population and was officially distributed to all Saudi universities via email containing a link to the e-survey. Despite continuous follow-ups, the final sample was 213 academic women leaders, most of whom were from emerging universities (70.9%), followed by 22.5% from prestigious universities and only 6.6% from private universities. Table 1 summarizes the descriptive results of sample demographic variables.

Table 1: Description of the characteristics of the study sample according to demographic variables

University Type	No.	Percentage
Public prestigious	48	22.5%
Public emerging	151	70.9%
Private	14	6.6%
Total	213	100.0%

The data were analyzed using SPSS software. It calculated the repetitions, percentages, arithmetic average, standard deviation, the Cronbach Alpha coefficient to measure the reliability of the survey, and the Pearson's correlation coefficient for the validity of the internal consistency of the survey to determine the length of cells (minimum and upper limits). The mean (5-1=4) was calculated, and then divided by the number of cells of the scale to obtain the correct cell length (5/4=0.80). This value was then added to the lowest value in the scale to determine the upper limit of this cell. The length of the cells is described in Table 2.

- Focus group interviews of women leaders nominated by their universities were conducted. The detail of interview 1 and 2 is given in Table 3.

Table 2: Distribution of categories according to the five-gradients used in the questionnaire

Categories	Athematic mean	Description
The first	4.20-5.00	Very high
The second	3.40-4.19	High
The third	2.60 - 3.39	Medium
The fourth	1.80 - 2.59	Low
The fifth	1.00-1.79	Very low

Table 3: Sample study in focus group interviews

University type	1 st interview	2 nd interview
Public prestigious	6	7
Public emerging	5	6
Private	6	5
Total	35 women leaders	

The interviews aimed at revealing the ways to break through the glass ceiling and to encourage the participation of women leaders and activate their leadership roles. Each interview lasted from 2 to 3 hours and was conducted via E-platform because of the barriers posed by the COVID-19 pandemic.

4. Results and discussions

4.1. Exploratory workshops

The exploratory workshops revealed a number of barriers faced by academic women leaders. The main among them is the disparity in career opportunities for women as compared to their male counterparts, which increases as we move towards the higher levels of leadership. Their awareness of different barriers and the multiplicity of their sources were evident. This reinforced the idea to adopt the Three-Dimensional Model of the phenomenon to analyze and study its different dimensions including its effects and interactions.

The results of the workshops illustrated the barriers related to the management of the universities and the nature of the dominant institutional culture. The most prominent among them are the poor acceptance of women by men as their leaders, the resistance from some women to accept their leadership, and the lack of equal opportunities in terms of getting appointed at senior management positions and acquiring representation in committee membership. These barriers also include weak incentives, lack of financial support, lack of professional development, lack of human resources for women-led sectors, and marginalization of authority in their leadership positions. The results also revealed the barriers related to the culture of the society: The poor belief of the society in women's capabilities and the refusal to accept them as a leader. Other barriers pertaining to women's personal characteristics, circumstances, and skills were also highlighted. The results contributed to building the questionnaire which covered the entire population of the study.

The aims of the pilot workshops are the following. They aimed at:

- 1) Identifying the research problem, its aims, the sample nature, its size, and the places where the study sample was applied.
- 2) Identifying the tools which will be used to achieve the research aims.
- 3) Answering the questions of the stakeholders about everything related to the research and its procedures.
- 4) Identifying the nature and types of the obstacles which confront the female academic leaders' empowerment in the Saudi Universities from the female leaders' point of view.

The following is the elaboration of the results which were found after the completion of the workshops:

- 1) Identification of the obstacles that prevent maximizing the added value of empowering the female academic leaders in Saudi universities. The most important of these include the obstacles related to the nature of the prevailing institutional culture involving men's reluctance to accept women as their leaders, in addition to the resistance of some women to their leadership, the lack of equal opportunities with male counterparts, the weak representation in committee membership, and the small number of appointees to high administrative careers. Organizational obstacles cover weak incentives, low volume of support, lack of professional development, low level of material and human resources for the sectors led by women, and the marginalization of authority in their leadership positions.
- 2) These results from workshops answer the first research question regarding the identification of

the obstacles to empowering female academic leaders, as the results of these workshops confirmed the existence of a large agreement between what was obtained from the results of the workshops and what was achieved from the pilot study results after analyzing the study data that was collected by the tools: questionnaire and the opinion polls.

- 3) Familiarity with the relevant stakeholders of the research with its main aims, as well as familiarization with the sample size and type, the mechanisms of applying other tools, and the extent of benefiting from them.
- 4) The sample members get acquainted with the data collection tools, the most important of which are questionnaires–opinion polls–focus group interviews.

Answering the questions of the sample members concerning the research methodology and the method of processing the primary data, as well as identifying the design of the questionnaire, its main sections, and the mechanism for dealing with it optimally.

4.2. Field survey

The questionnaire results revealed that there are barriers of a medium degree faced by academic women leaders in Saudi universities. The most significant, according to the perspective of the academic women leaders, was the institutional barriers of both types. The administrative and organizational aspects were ranked first, followed by the institutional culture. The institutional barriers were followed by social barriers, while personal barriers were ranked the last as shown in [Table 4](#).

Table 4: Arithmetic means, standard deviations, and ranks based on the study sample evaluation of barriers

Barriers	Arithmetic Mean	St. Deviations	Rank	Degree
At the institutional level (administrative)	2.88	1.22	1	Medium
At the institutional level (cultural)	2.77	1.16	2	Medium
At the social level	2.70	1.13	3	Medium
At the personal level	2.41	1.02	4	Low
Overall arithmetic mean of the axis	2.69	1.13	-	Medium

[Table 4](#) illustrates that many participants believed that organizational aspects were obstructive and not in the interest of women leaders. [Table 5](#) shows arithmetic Means, Standard Deviations, and ranks based on the study sample evaluation of barriers due to the institutional (administrative) level.

The lack of equal opportunities for women in terms of in the university, the unfair distribution of the work tasks between men and women in symmetrical leadership positions, and the lack of leadership programs for women leaders were clearly demonstrated. The study conformed to the results of the previous studies that considered the lack of financial resources and infrastructure to be the major barrier. The previous studies described the barriers faced by women leaders in the Kingdom of Saudi Arabia as lack of access to important and

essential resources, lack of adequate facilities, and inadequate financial allocations ([Gazzaz, 2017; Alsubhi et al., 2018](#)). The lack of women leaders' qualifications and training has also been a barrier to deal effectively with the job of being a leader, possibly because from the beginning, women have not been brought up and educated to be qualified for leadership positions. This reveals the urgent need to adopt high-level professional development programs to fill this gap ([Gazzaz, 2017; Hodges, 2017; Alsubhi et al., 2018](#)). These barriers are believed to have negative impacts on women's authority and influence and thus their achievements, which in turn limit their capabilities to reach senior positions in the university. [Table 6](#) illustrates the sample's evaluation of the barriers related to the culture of the institution.

Table 6 illustrates a medium degree of acceptance regarding low transparency in CEO's dealings with academic women leaders, poor satisfaction with their decisions, lack of men's encouragement for

decisions to support them, poor representation of academic women leaders in different committees and meetings, and lack of support from fellow women leaders.

Table 5: Arithmetic Means, Standard Deviations and ranks based on the study sample evaluation of barriers due to the institutional (administrative) level

Barriers at institutional level (Administrative)	Arithmetic Mean	St. Deviations	Rank	Degree
The lack of equal opportunities in financial resources in women's sectors.	3.04	1.26	1	Medium
The women's sectors in the university lack equal opportunities in infrastructure.	3.04	1.30	2	Medium
Lack of fair distribution of work tasks between men and women in symmetrical leadership positions	3.03	1.23	3	Medium
Lack of leadership qualification programs	3.03	1.23	4	Medium
Dual responsibilities resulting from the integration of organizational structures between the two parts of students (male-female).	3.00	1.30	5	Medium
Poor facilities provided to the academic woman leader compared to men in the same position.	2.95	1.20	6	Medium
Women's sectors in the university lack equal opportunities in human resources.	2.94	1.13	7	Medium
Low level of participation of academic women leaders in strategic planning.	2.83	1.18	8	Medium
Poor representation of academic women in some leadership positions	2.79	1.15	9	Medium
Weak channels of communication with men leaders.	2.53	1.16	10	Medium
Discrimination in financial incentives between women and men.	2.50	1.25	11	Medium
Overall arithmetic mean of the axis	2.88	1.22	-	Medium

Table 6: Arithmetic means, Standard Deviations, and ranks based on the study sample's evaluation of barriers to the institution (culture) level

Barriers at institutional level (Culture)	Arithmetic Mean	St. Deviations	Rank	Degree
Low level of transparency in CEOs' dealings with an academic woman leader	2.88	1.20	1	Medium
Weak satisfaction in the decisions of academic women leaders	2.80	1.15	2	Medium
Men's poor encouragement of decisions in support of academic women leaders	2.75	1.13	3	Medium
Poor representation of academic women leaders on different committees.	2.74	1.20	4	Medium
Poor representation of academic women leaders in university-level meetings	2.73	1.16	5	Medium
Lack of support from fellow academic women leaders.	2.72	1.12	6	Medium
Overall arithmetic mean of the axis	2.77	1.16		Medium

This may be due to the impact of beliefs, processes, and practices within universities on macro factors related to the social culture where women are being discriminated against (Abalkhail, 2017; Al-Asfour et al., 2017). Regulatory practices influenced by cultural concepts and stereotypes have remained a major barrier for Saudi women, as they

result in the misbelief that women cannot handle leadership positions (Alsubhi et al., 2018). Saudi women do not have the opportunity to participate in the formulation of strategies and decision-making, as the authority is often entrusted to men (Varshney, 2019). Table 7 shows the evaluation of barriers on the social level.

Table 7: Arithmetic means, standard deviations and ranks based on the study sample evaluation of social level barriers

Barriers at social level	Arithmetic Mean	St. Deviations	Rank	Degree
Lack of curriculum to create the mental picture of women's leadership roles affecting the society development	3.03	1.24	1	Medium
The belief that the academic woman leader is emotional with emotional decisions.	2.89	1.25	2	Medium
Social culture relates administrative competence to men	2.82	1.19	3	Medium
The role of social media in exaggerating the problems of women-led labor sectors	2.80	1.11	4	Medium
The pressures faced by the academic woman leader of different social commitments	2.67	1.11	5	Medium
Poor support from the academic leader from the family.	2.00	0.88	6	Low
Overall arithmetic mean of the axis	2.70	1.13		Medium

The results confirmed that some barriers have an impact on the formation of glass ceilings at the social level (Macro), most notably the lack of curriculum to create the mental image of the roles of women leaders contributing to social development. Furthermore, the main belief is that the academic woman leader is emotional and makes emotional decisions due to which administrative tasks are entrusted to the men. Another belief is that men alone can make important decisions which they do in the family. These beliefs reflect the impact of society and its negative concepts on women (Karakiliç, 2019). Table 8 indicates the study sample's assessment of barriers at the personal level.

Although personal barriers received a low degree of acceptance in the participants' evaluation, there was acceptance with a medium degree that fear of being held accountable, the formative nature of the academic woman leader (physical, psychological) affecting the leadership role and the difficulty of traveling and mobility to meet the work requirements are among the most dominant personal barriers affecting the glass ceiling formation. This has contributed to the creation of previous stereotypes and thoughts (Karakiliç, 2019). It may be due to a lack of confidence, qualification, and experience or difficulties in performing their duties and dealing with different situations (Gazzaz,

2017; Alsubhi et al., 2018). These problems limit the capabilities of the woman leaders to break through

the glass ceiling and to acquire senior positions.

Table 8: Arithmetic means, standard deviations and ranks based on the study sample evaluation of personal level barriers

Barriers at personal level	Arithmetic Mean	St. Deviations	Rank	Degree
Fear of being held accountable	2.85	1.13	1	Medium
The formative nature of the academic woman leader (physical, psychological ... etc.) affecting the leadership role.	2.77	1.16	2	Medium
Difficulty travelling and mobilizing to meet work requirements.	2.51	1.06	3	Medium
Inability to influence and convince.	2.25	0.94	4	Low
Lack of skills to manage time and prioritize.	2.24	0.94	5	Low
Lack of basic skills to play a leadership role (e.g., planning, organization, follow-up, and evaluation).	2.18	0.99	6	Low
Poor effective communication skills	2.10	0.95	7	Low
Overall arithmetic mean of the axis	2.41	1.02		Low

4.3. Focus group interviews

The results of focus group interviews revealed a range of perceptions and visions suggesting ways to break through glass ceilings and support opportunities for women to be promoted to senior positions. The results of the six focus group interviews with academic women leaders at universities revealed the extent of their high awareness of glass ceiling issues. They showed remarkable enthusiasm as they present ways and procedures, which can directly or indirectly be used in the short and long run in breaking through glass ceilings. Interestingly, the participants not only considered the role of universities in helping to break through the glass ceiling but also included the state political authority and social institutions outside the university walls. There was also a focus on the woman leader's own role in overcoming the barriers and breaking through glass ceilings.

The female participants expressed their happiness with the remarkable and rapid transformation in the Kingdom, which reflects the political determination, the objectives, and the initiatives of Vision 2030. However, the female participants expressed their belief that the most important role in supporting them to break through the glass ceiling was that of the political authority as it had the capability to drive various institutions (including universities and other social institutions) towards achieving the objectives.

The participants gave great importance to socialization institutions, especially schools which they found responsible not only for correcting women's image in the curriculum but also for addressing negative perceptions, concepts, and practices, which occur due to some members of the society as a result of their social inheritance (Abalkhail, 2017; Hodges, 2017; Alsubhi et al., 2018; Karakiliç, 2019). Female participants suggested that the curriculum should include women leaders as role models as they believed that this would play a major role in eliminating cultural negative thoughts and contribute to change false perceptions and create an appropriate mental image.

To ensure continuous efforts and development in universities to increase the proportion of women leaders in senior positions, some female participants

demanded that there should be a unit of the Office of Vision Achievement at each university working according to systematic plans. Other female participants proposed to coordinate with the Women's Empowerment Agency in the Ministry of Human Resources.

The results revealed the importance that female participants attach to increasing the targeted proportions of women's representation in leadership positions, councils, and committees; monitoring and following up the performance of universities through field visits and self-independent, periodic reports to address women's low proportion in higher education leadership which does not line up with the remarkable rise in the proportion of the women in teaching staff (Alghofaily, 2019; Alsubaie and Jones, 2017). The results also stressed the importance of conducting surveys and research studies to monitor the barriers and glass ceilings within universities and the best practices to break through them.

At the institutional level within the university, female participants shared their valuable and deep perceptions of the ways to break through the glass ceiling. Several participants stressed the need to develop policies for women to ensure their rights to participate in decision-making and to have the same authority and tasks as men. These policies can lead to justice and equal opportunities quantitatively and qualitatively (Gazzaz, 2017; Alsubhi et al., 2018; Al-Asfour et al., 2017; Varshney, 2019). The participants emphasized equal opportunities regarding incentives such as rewards and allowances, accommodation, participation in high committees, representation, and external participation. The female participants described that the imbalance in any of them is not only negative as it deprives women of their rights but also has moral implications on women themselves as they lose their self-confidence. Women's empowerment means they have the resources and the capability to benefit from them and manage them aiming at making achievements (Huis et al., 2017).

Participants indicated the need to make the work environment more suitable for success and stressed the importance of including career development programs. These programs should address cultural barriers such as changing the mental image of the woman leader in front of all university staff and

creating a positive working environment based on teamwork and peer advocacy, through which women truly feel engaged and their work is recognized. They also called for the need to strengthen flexible and friendly working environments by considering facilities and services, which can help women overcome the pressures of multi-role between family and professional life, as overcoming such barriers is an important factor for women's career progression.

The participants attached great importance to the open-door policy and invite senior officials to adopt it by encouraging direct (individual) communication with the women leaders and conducting regular meetings.

They emphasized the need to develop mechanisms for selecting leaders based on their competence and not on their gender. One of them drew attention to the fact that the selection of incompetent figures for senior leadership positions reinforced the stereotype of women in general and questioned their capabilities. This idea was supported by other female participants and led to a discussion of the need to avoid what might be called 'Burning Stages', which indicates a lack of career development that may harm and embarrass the woman leader. This may contribute to the consolidation of negative beliefs. The findings of the study endorse the proposals of several studies (Gazzaz, 2017; Hodges, 2017; Alsubhi et al., 2018). Female participants pay special attention to career development programs due to their limited experience as academic leaders. The fact that their career progression requires early qualification even before being appointed to the leadership position and giving them more opportunities for professional practices. In addition, their mistakes should be tolerated, especially those of newly recruited women. People should be patient in judging their performance. Further, they called for the development of high-level professional programs and for giving them opportunities to contact their counterparts locally and internationally as it would help them develop.

Female participants, as in many studies (Gazzaz, 2017; Alsubhi et al., 2018), have emphasized the important roles which an academic woman leader should play in promoting the career progression that requires her to take responsibility for her career growth. They must take dual responsibilities by focusing on some important issues such as managing their time well, sharing some details of their career, and educating those at home about the dimensions of their role and their importance to society.

They are also required to educate themselves, expand their human rights awareness, get a good understanding of the system, develop their knowledge of the requirements of the leadership roles, and take the initiative to engage in leadership work even before acquiring leadership responsibilities. It empowers them to understand their roles and encourages them to participate effectively in decision-making and shaping the future directions of the university, which in turn reflects

their self-confidence, sense of self-esteem, and a decent mental image.

Interestingly, female participants indicated the importance of "self-marketing" in changing the traditional perception of women, thus encouraging women leaders to market for themselves, their skills and capabilities through social participation, volunteering, and using all available channels on social media, various media platforms and open meetings of civil society institutions. They felt that Saudi women were mostly excluded from formal and informal networks in their careers. This made them lose their opportunities for promotion (Alsubhi et al., 2018). They stressed the need to form social networks and build supportive relationships because good communication is important to overcome imaginary barriers and false perceptions.

4.4. The three-dimensional model to penetrate the glass ceiling

While the previous literature focused on medium-level interventions in the workplace to empower women leaders, the current study is interested in addressing the dimensions of the issue not only from the organizational aspects but the lens has even expanded to include the overall aspects of social culture with a focus on the personal aspects of the woman leader. There are barriers for women leaders at the personal and middle level within the university and college at the social level as shown in the matrix of levels given in Fig. 1.

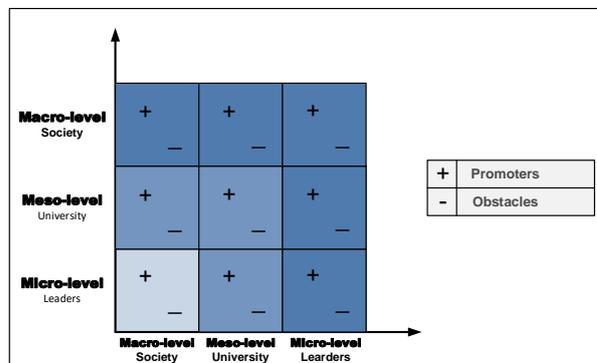


Fig. 1: Barriers and empowering women leaders at the personal and middle level within the university and college at the social level

The holistic vision of the results of the study confirms the interaction between the three dimensions (Fig. 2). What happens outside the university walls has implications for the beliefs and practices in the corridors of the university, on the woman leader's character, her belief in her capabilities, and her willingness to prove herself and present herself appropriately.

Cultural factors at both macro and middle levels are among the most important factors influencing the formation of the glass ceiling, and the creation of barriers and challenges. They are responsible for the limited presence of women in the decision-making positions quantitatively and qualitatively. Women's

mental image and lack of faith in their capabilities as women leaders in different work environments

affect women's self-perception.

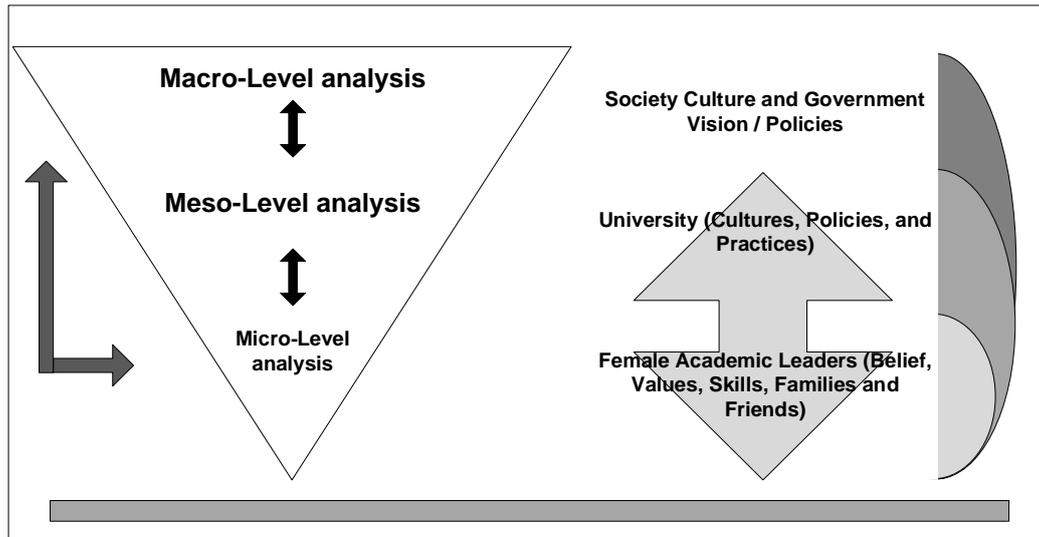


Fig. 2: Model of relationships between macro-level factors (society) and medium (university) partial (leader)

The social and cultural mobility of Saudi society and the ambitious goals of Vision 2030 aimed at empowering women, and the initiatives adopted by the project to maximize their roles in achieving sustainable development (such as raising the proportion of women in senior leadership positions) must be reflected in the organizational culture and practices in all sectors, including academic environments. To achieve this, it is important to ensure that the efforts of the institutions and the society (such as schools, families, mosques, and the media) are consistent with the directions given by the state. Raising social awareness about the importance of women's participation in the foremost method to emphasize women's participation in the male-dominated society. It is important not only to fulfill the rights but also in terms of investing such competence in the development of the country.

To achieve the highest efficiency and effectiveness, fundamental changes should be made by assessing their respective impacts. This can be done by using knowledge more efficiently, relying on evidence and indicators to highlight the priorities for improvement, and drawing attention to key focus areas. Efforts should be made to overcome all kinds of barriers at the three levels to stimulate breaking through glass ceilings, continue implementation of stated government policies and ensure that women leaders in ministries and universities are already committed to what is stated in their plans (walk their talk). Without making changes at the macro level, results at the lower levels will be significantly limited in their effectiveness.

5. Conclusion

This study provides a systematic analysis of the phenomenon of glass ceilings by adopting the triangulation method. It used multiple tools and combined quantitative and qualitative data to

understand the phenomenon of glass ceilings in Saudi universities from the perspective of academic leaders across three levels: Social, institutional (university), and partial (woman leader) levels.

This made the analysis of the results a complex and challenging task. It was not easy to isolate the factors and forces related to the culture from those related to the organizational and personal aspects. However, this level of analysis provides a more comprehensive and in-depth insight into the phenomenon yielding effective results.

The findings of the study contribute to understand the interaction and interconnection between the three levels and draw a framework to address different barriers. In addition, they provide a basis for the development of procedures that can overcome the barriers to enhance opportunities for women leaders for progression in senior positions in an academic environment. The findings support the presence of more women in decision-making centers and thus contribute to attracting more young women leaders to the field.

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Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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