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PERCEIVED 'GLASS CEILING' DIMENSIONS OF WOMEN'S CAREER ADVANCEMENT AT HIGHER EDUCATION INSTITUTIONS: A CONFIRMATORY FACTOR ANALYSIS

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Over the last few decades, the Indian higher education sector is witnessing a significant rise in the number of women in faculty positions. However, their career progression in the academic hierarchy appears to be slow. They tend to remain concentrated toward entry-level positions. The present study aims to identify the perceived 'Glass Ceiling' barriers hindering the career advancement of women faculty members at higher education institutions (HEIs). Secondly, this study attempts to find the impact of perceived 'Glass Ceiling' barriers on the career advancement of women faculty members at HEIs. Using a purposive sampling method, responses from 252 women faculty members designated as assistant professors, associate professors, and professors at HEIs of Jaipur City (Rajasthan, India) were collected through a structured questionnaire. Exploratory factor analysis has been applied to identify the 'Glass Ceiling' barriers, followed by a structural equation model using AMOS to study the impact of the barriers on career advancement. The findings of the study exhibit barriers recognized as gender stereotypes, attitudinal aversions, family and organizational

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factors which create a 'glass ceiling' effect for women and restrict them to rise in their career progression. The identification of multiple barriers offers a substantial contribution to the policymakers of Indian HEIs.

KEYWORDS: Factor Analysis, Faculty Members, Glass Ceiling, Higher Education Institutions, Women Career Advancement.

INTRODUCTION

Higher education has always been viewed as a significant mechanism of the economic development of a country and considered as a societal stimulant for change. It is well documented that women have been keen on opting for teaching as a likable profession (Banker & Banker, 2017). Globally, the presence of women in primary and secondary-level teaching jobs is over represented, yet the situation is different when it comes to higher education (UNESCO IESALC, 2021). It has been observed that women's career progression in the academic hierarchy is slow and they tend to occupy more entry-level positions (Rosenfeld & Jones, 1987).

Indian higher education system has seen a remarkable journey in its post-independence era. At the time of independence, there were only a handful of twenty universities all over the country with mere five hundred colleges (MHRD, 2017). Today, the Indian higher education sector comprises around one thousand universities and forty thousand colleges along with the home of the world's 2nd largest number of English speakers after the United States of America (India's higher education set for global leap- The New Indian Express, 2021). Here, it is needed to be mentioned that seventeen universities in the country are exclusively for women students. Although in the last few years, the representation of female candidates has seen a rise among both, students as well as in terms of faculty across various disciplines. AISHE (2020) report mentioned that enrolment of female students at higher education institutions in India has been estimated to be 49 percent of the total enrolment. At the doctoral level and research-centric courses like M.Phil. and Ph.D., the enrolment status of female candidates is more than 40 percent.

During the last few decades, the growing inclination of female students toward post-graduate and research-centric degrees exhibits their interest to work at HEIs. Eventually, there has been a significant rise in the number of women faculty members in HEIs (Banker & Banker, 2017; Zinovyeva & Bagues, 2011). AISHE (2020) report presents a startling fact that out of the total number of present teachers in HEIs in India, female teachers proportion comes to only 42.5 percent, in which the maximum presence of women faculty members can

be seen at the entry-level positions such as demonstrators and assistant professors and lowest at professor level. It is quite visible that the presence of women in the academic sector has risen from 35.7 percent in the year 2013 (Morley & Crossouard, 2015) to 42.5 percent in the year 2020 but the trend of women in senior-level positions is nearly the same in the last ten years statistics. It is evident that there is a visible women workforce at higher education institutions (Zinovyeva & Bagues, 2011); still, there is a stagnancy for women in senior-level positions at HEIs (Airini et al., 2011; Banker & Banker, 2017; Mahapatra & Gupta, 2013; Wesarat & Mathew, 2017).

The issue of women's career advancement toward senior positions is not a new point of discussion. Over time, many reports, research, and studies have tried to bring out the importance of gender diversity and gender inclusion in senior decision-making roles in the organization. But the academic sector has less been the area of debate. As there is always the visibility of women employees in the education sector, the infliction of sticking to entry-level positions came much later (Airini et al., 2011). Not only the female talent has been underutilized, global studies have also proved that men have outnumbered women in senior-level positions in the academic sector (Harris & Leberman, 2012). Earlier, due to a lesser number of female doctorates, the absence of women academicians in senior positions was not felt but, as more women attained Ph.D. and research-centric degrees, the underrepresentation of women faculty members in senior academic positions is however disappointing (Zinovyeva & Bagues, 2011). Although studies have tried to bring out the issue of women being underrepresented in senior and leadership positions in the academic sector (Airini et al., 2011; Banker & Banker, 2017; Mahapatra & Gupta, 2013; Wesarat & Mathew, 2017) more insights are required to highlight the underlying challenges which act as a roadblock for women academicians to rise along the hierarchical levels towards senior-level faculty positions.

Studies have reported the career progression barriers as a 'Glass Ceiling' which creates obstruction and prevents women at work to move upward in their career ladder (Bierema, 1998). Studies predict that the glass ceiling effect will continue to be a impeding factor for women in their career advancement for the next half a decade, thus this area demands more in-depth research to figure out the gender bias factors (Smith et al., 2012). The present study attempts to uncover the crucial factors which hinder the career advancement of women at faculty positions in Indian higher education institutions; and to identify the shortfalls that exist personally, socially, and institutionally, so that these challenges may be addressed at the enterprise level.

REVIEW OF LITERATURE

'Glass Ceiling' barrier

The history of the 'Glass Ceiling' phenomenon goes back to the eighties, roughly three decades ago when this term was first published by the editor of 'Working Woman' magazine and simultaneously by the 'Wall Street Journal', explaining the metaphor as the invisible and artificial hindrances faced by women which confines them to rise up to senior level positions at their workplaces (Boyd, 2012; Jackson, 2001; Jain & Mukherji, 2010). The metaphor grabbed attention after the formation of the US 'Federal Glass Ceiling Commission' by 'The Civil Rights Act' of 1991 which surveyed the opportunities and obstacles for the career progression of competent individuals, especially working women and minorities (Federal Glass Ceiling Commission, 1995). This report stated the presence of the 'Glass Ceiling' effect acting as a barrier to the career development of women and minorities in US Corporates.

Eventually, researchers took a deep dig into this issue, and henceforth challenges to women in the workplace have been reported in several studies with various factors influencing their career progression.

Socio-Cultural and Family-Centric Factors

It is a much-known fact that women have struggled hard to come out of the patriarchal dominance that visibly or invisibly still prevails in our society (Lathabhavan & Balasubramanian, 2017). For ages, women have always been portrayed as the caretaker of the house and considered to deal only with homely chores. Social stereotypes and traditional patriarchal culture still hold dominance which persuades women to be dependent on their husbands or male family members for the decisions related to their careers (Meral & Otlu, 2016; Pillai et al., 2011). Today, the presence of women in the workplace can't be neglected but still, the burden of dual responsibility of home and work hinders women to reach for promotional opportunities (Chinchilla et al., 2006; Yusuff, 2014). Work-life balance and work-life conflicts have become an inevitable part of a working women's life (Afza & Newaz, 2008). Even maternity breaks and childcare responsibilities have been reported as one of significant factors hindering women for their chances of career progression (Jackson, 2001; Lathabhavan & Balasubramanian, 2017). Although there are studies that reported the family barriers as the least effectual on the career advancement of women (Bombuwela & De Alwis, 2013).

Personal Preferences

Some studies accentuate the significance of personality traits held by women

employees such as the ability to self-control, self-improvement, ambition for career development, and shouldering the responsibility for challenging tasks (Hakim, 2006; Jain & Mukherji, 2010; Virakul, 2000). These studies reveal the attitudinal challenges faced by women employees causing hindrances to their careers. However, few studies deny the existence of barriers associated with personality traits and competency skills (Kiaye & Singh, 2013). Hernández & Morales (1999) clearly explained the term career advancement as a process that is different for each and every individual and it is formed based on attitudinal traits, based on hereditary and a person's environment. Several pieces of literature have indicated the power of networking which plays a crucial role in the career progression of women employees and help in achieving upward mobility in one's career (Ismail & Rasdi, 2007; Wang, 2009). Also, these studies fetch out the issue of differences in networking abilities between male and female working professionals. It manifests the less involvement of women employees in creating professional networking ties with male counterparts which in turn reduces their chances of career advancement. Networking provides huge exposure to women in the workplace and well-built professional networking may help women to rise toward senior-level positions in the workplace (Schulz & Enslin, 2014).

Organizational Factors

Working women confront several visible and invisible obstacles in their professional field that block their career development path. Several studies have reported the issue of biased hiring and unfair promotional policies at the organizational level (Bombuwela & De Alwis, 2013; Schulz & Enslin, 2014). Women are excluded from male-dominated networks which results in a dearth of career promotions. The lack of opportunities for women at the professional level is due to the absence of visible working projects which are opposite in the case of male employees (Kiaye & Singh, 2013; Wang, 2009). Companies that aim to empower their female workforce ultimately create a gender-equitable working environment (Kiaye & Singh, 2013). Simultaneously, studies have mentioned mentoring as an alleviating tool for women to overcome their career hindrances. Women mentored by senior women employees often find it easier to get a role model and a guiding light in their professional Odessey (Schulz & Enslin, 2014; Tessens et al., 2011).

Based on extant literature, the following conceptual framework of the study has been developed.

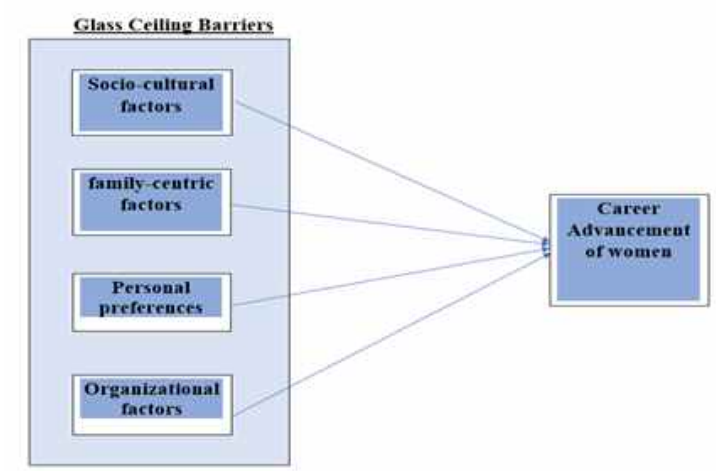

Figure 1. Conceptual Framework of the Study

OBJECTIVES OF THE STUDY

Following are the objectives of the study:

1. To identify the perceived factors hindering the career advancement of women faculty members at higher education institutions (HEIs).
2. To confirm the structure of the factors hindering the career advancement of women faculty members at higher education institutions (HEIs), with the help of confirmatory factor analysis.

RESEARCH METHODOLOGY

Data Collection and Sampling

The study is based on an exploratory research design, both primary and secondary data have been used. Secondary data in form of published reports, magazine articles, journal articles, and primary data in the form of a sample of 252 women faculty members from the higher education institutions of Jaipur city, Rajasthan through a purposive sampling method.

Measurement Instrument

As the questions were gender-specific and related to the personality attributes, family, societal, and organizational challenges; not all women faculty members were comfortable taking part in the survey. So, the authors selected only those women faculty members from higher education institutions who were willing

to take part in the survey. A five-point Likert scale-based questionnaire was developed with the help of extant literature pertinent to the objective of the study by taking the various challenging and hindering factors into consideration which act as a roadblock for the women faculty members towards their career advancement at HEIs. The respondents were urged to select their level of agreement or disagreement with the series of statements using a five-point Likert scale ranging from "strongly disagree" to strongly agree". The questionnaire comprises three parts; the first part covers the demographic information of the respondents, the second part consists of 24 items to identify the perceived glass ceiling factors, and the third part included 10 items related to the pre-requisite for the career advancement of women.

All the items were adopted from various works of literature in the field of 'glass ceiling' phenomenon and women's career barriers. The items have been modified in accordance with the research objectives. Five statements have been considered (Hakim, 2006; Jain & Mukherji, 2010; Meral & Otlu, 2016; Rishani et al., 2015) to measure the attitudinal traits of women influencing their career advancement. Six statements were adapted from (Chinchilla et al., 2006; Posholi et al., 2012; Subramaniam et al., 2013) to measure the dimension influenced by family factors. Eight and five statements were identified and modified to measure the constructs of societal stereotypes and organizational factors respectively (Chanana, 2003; Chinchilla et al., 2006; Elacqua et al., 2009; Hoobler et al., 2011; Jain & Mukherji, 2010; Kirai & Mukulu, 2012; Posholi et al., 2012; Saadin et al., 2016). The construct of career advancement of women (WCA) has been considered as the dependent variable which is measured by ten statements derived and modified from (Abdalla, 2015; Chinchilla et al., 2006; Kiaye & Singh, 2013; Lun et al., 2012).

Data Analysis and Results

The data analysis part has been completed with the help of IBM SPSS Statistics, a statistical software package. Cronbach Alpha score has been calculated for the reliability testing of the measurement scale, followed by Principal component analysis to extract the challenging factors, and lastly, the calculation of mean and standard deviation of the extracted factors. Confirmatory factor analysis has been carried out by using AMOS 24 to establish a factor structure. Thus, the data analysis moves along in two steps. Firstly, exploratory factor analysis was carried out to identify the crucial factors influencing the career advancement of women faculty members working at HEIs. Next, confirmatory factor analysis was applied to establish the structure of the factors influencing the career progression of women, and model fitness was evaluated. The demographic statistics are shown in Table 1 below:

Table 1
Demographic Profile of the Respondents.

Age	• Less than 35 years (43.3 percent) • 35 to 55 years (50.4 percent) • >55 years (6.3 percent)
Marital Status	• Married (86.1 percent) • Unmarried (13.9 percent)
Dependent Children	• Yes (63.5 percent) • None (36.5 percent)
Highest Education Qualification	• Bachelors' Degree (1.6 percent) • Master's Degree (47.2 percent) • Ph.D. (51.2 percent)
Type of Academic Institution	• Government/Aided (10.7 percent) • Private Institution Affiliated to Govt. • University (57.5 percent) • Institution Affiliated to deemed or Private University (31.7 percent)
Total Work Experience	• Less than 10 years (50 percent) • 10 to 20 years (40.5 percent) • 21 to 30 years (7.1 percent) • >30 years (2.4 percent)
Current Designation	• Assistant professor (78.6 percent) • Associate Professor (13.9 percent) • Professor (7.5 percent)

Reliability Testing and Exploratory Factor Analysis

The reliability testing of the measurement scale was done by calculating the Cronbach Alpha score, followed by Principal Component Analysis for extracting the critical dimensions of the perceived "Glass Ceiling" barriers including the mean and standard deviation values of the extracted factors. The values for the Kaiser-Meyer-Olkin measure of sampling adequacy & Barlett's test of sphericity support the assumption of carrying out factor analysis as shown in Table 2. The descriptive statistics of the twenty-four items include the Mean and Standard Deviation values shown in Table 3.

Table 2
KMO and Barlett's Test.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.899
Bartlett's Test of Sphericity	Approx. Chi-Square	2848.452
	df	276
	Sig.	0.000

Table 3
Descriptive Statistics.

	Variables	Mean	SD
1	Self Confidence	2.08	1.090
2	Importance to career growth	2.58	1.261
3	Ambitious	2.14	1.068
4	Professionally capable of decision-making positions	1.69	0.782
5	Enthusiasm in taking up challenging opportunities at the workplace	1.87	1.031
6	Psychologically dependent on husband/family for taking career-related decisions	3.26	1.205
7	Networking	2.25	1.054
8	Commitment to fulfilling family responsibilities	3.46	1.182
9	Balancing family affairs and job assignments	3.53	1.155
10	Support from husband/family members	3.45	1.218
11	Physical stress of managing both, job and home tasks	3.52	1.069
12	Female as decision-makers	2.27	1.198
13	Considering females for managerial positions	2.28	1.159
14	Male dominance in senior positions	3.12	1.335
15	Male discomfort to work under female head	3.33	1.200
16	Lack of gender equality policies at HEIs	3.12	1.215
17	Unequal pay structure	3.20	1.306
18	Sexual harassment at the workplace	3.27	1.240
19	Avoiding female representation at the top	3.22	1.230
20	Female doing part-time job reduces chances of promotion	3.73	1.047
21	Allocation of visible and challenging work projects to female employees	2.63	1.120
22	Organization's perception of a female performing in senior positions	2.79	1.241
23	Expenditure on female employee's training and development by the institution	2.67	1.139
24	Female employees are not easily promoted from middle level positions to senior positions	2.99	1.193

Table 4 exhibits that four factors were extracted from 24 items loaded appropriately on the factors, the reliability of the factors was calculated with the help of Cronbach Alpha of value equal to or greater than 0.7 has been considered acceptable for the analysis (Hair et al., 1998). The analysis indicates satisfactory values of internal consistency, thus proving the factors reliable.

Table 4
Rotated Factor Matrix for 'Glass Ceiling' Barriers.

Factors	Measurement items	Factor Loadings	Cronbach's Alpha
Gender Stereotypes (GS)	Male discomfort to work under female head	0.824	0.859
	Avoiding female representation at the top	0.740	
	Lack of gender equality policies at HEIs	0.698	
	Male dominance in senior positions	0.677	
	Female doing part -time job reduces chances of promotion	0.563	
	Allocation of visible and challenging work projects to female employees	0.497	
	Sexual harassment at the workplace	0.471	
	Unequal pay structure	0.468	
Family Factors (FF)	Support from husband/family members	0.726	0.836
	Balancing family affairs and job assignments	0.708	
	Commitment to fulfilling family responsibilities	0.664	
	Physical stress of managing both, job and home tasks	0.647	
	Psychologically dependent on their husband/family for taking career decisions	0.603	
	Importance to career growth	0.601	
Attitudinal Aversions (AA)	Professionally capable of decision-making positions	0.737	0.754
	Enthusiasm in taking up new/challenging opportunities at the workplace	0.728	
	Ambitious	0.698	
	Networking	0.613	
	Self-confidence	0.430	
Organizational Factors (OF)	Expenditure on female employee's training and development by the institution	0.709	0.809
	Female as decision-makers	0.657	
	Not easily promoted from middle -level positions to senior positions	0.565	
	Organization's perception of females performing in senior positions	0.535	
	Considering females for managerial positions	0.512	

Confirmatory Factor Analysis

After recognizing four comprehensible factors using exploratory factor analysis, the next step is to apply confirmatory factor analysis using Structural Equation Modelling with the help of AMOS 24. This step confirms the factors which were identified prior and supports establishing a factor structure as shown in Figure 2.

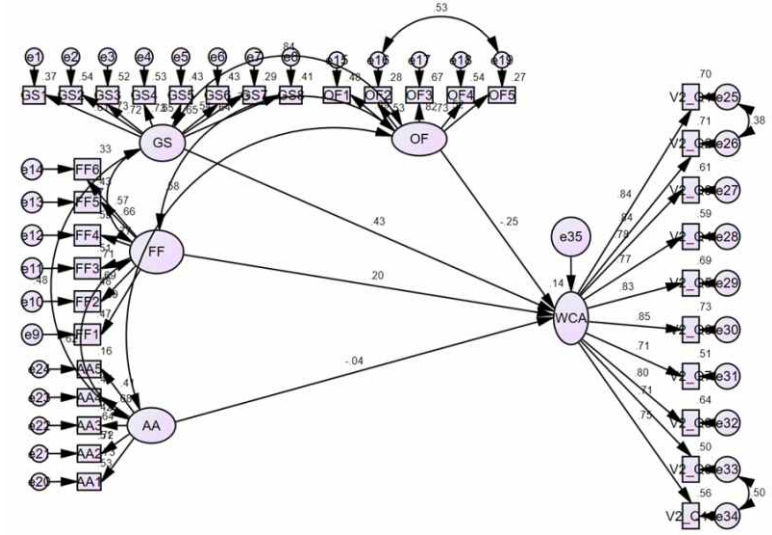

Figure 2. Structural Equation Model.

Model Fit

The measurement model stated an acceptable model fit of the data ($\chi 2$ = 1168.98, df = 514, $\chi 2/df$ = 2.27 (< 5); CFI = 0.87, GFI = 0.79, (S)RMR = 0.0628 and RMSEA = 0.07 (Anderson & Gerbing, 1988). Further, all the items of observed variables loaded significantly on the latent constructs. The model confirms to the four-factor structure of the "glass ceiling" barriers influencing the career advancement instrument.

Discussion and Conclusion

The identification of career barrier dimensions from the perspective of women faculty members at higher education institutions makes a significant input to the existing literature on the "glass ceiling" phenomenon. These dimensions will pave the roadmap for all the stakeholders of the higher education sector; especially for the policymakers to understand the issues and challenges perceived by women faculty members while moving upward in their career pathways. The factors of 'glass ceiling' barriers identified in this research paper should be viewed as the anchors of the 'glass ceiling' effect perceived by women faculty members at HEIs. However, there are certain other moderating factors that the authors have not taken into consideration while pursuing this study. The dimensions of perceived 'glass ceiling' barriers identified in this study evidence two distinct sets – the first group

(with two dimensions) is associated with the personal aspect of women faculty members (Bierema, 1998; Bombuwela & De Alwis, 2013; Hakim, 2006; Kholis, 2017; Lama, 2019; Luke, 2001; Nath, 2000; Yousaf & Schmiede, 2017). This group of dimensions reflects the individual preferences, personality traits, and household challenges related to domestic chores and family care. The second group (with two dimensions) is associated with the socio-organizational structure which reflects gender discrimination, patriarchal mindset, old boy's network, and the stereotyped culture rooted in the society (Afza & Newaz, 2008; Bombuwela & De Alwis, 2013; Elacqua et al., 2009; Hoobler et al., 2011; Janet Cooper Jackson, 2001; Özkanli et al., 2009; Pai & Vaidya, 2009; Sharma et al., 2011; Tlaiss & Kauser, 2010; Yousaf & Schmiede, 2017).

Among the personal aspect-related dimensions, one has been labelled as "attitudinal aversion" as it consists of the indicators related to the personality and individual preferences of the women faculty members regarding their career progression. The second dimension in this group has been marked as "family factors" as it includes the items related to family-centric challenges faced by women such as dual-workload and lack of support from family members for career-related decisions. The socio-organizational aspect, one of the dimensions has been labelled as a "gender stereotype" as it consists of the indicators related to the gender bias and patriarchal mindset prevailing in society. The fourth dimension has been named "Organizational factors" and it comprises items focussing on the issues and challenges which women faculty members perceived at their workplaces.

The identification of these dimensions situates a positive impact in the process of eliminating the 'glass ceiling' barriers perceived by women faculty members at HEIs. This will also play a significant contribution in framing the guidelines and regulations by academic policymakers. The findings of the current study require a fair understanding of all the hindering factors which may further help all the stakeholders to address the issue of career advancement for women.

LIMITATION AND MANAGERIAL IMPLICATIONS

The study of 'glass ceiling' phenomenon concerning women employees has grown over the years. Many of the challenges have been addressed and simultaneously many more got added to the list over time. The current study is an attempt to address the perceived factors that act as career barriers for women faculty members at HEIs. However, this research can further be addressed by exploring the influence of demographic factors such as

education, family structure, etc. Furthermore, the perceived barriers identified in this study cannot be generalized because this research is limited to a small geographical area, so a future scope of research with large data set and in other unexplored sectors may add new dimensions to the existing study.

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