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Glass Ceiling Beliefs: Kazakh Women in Higher Education

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Research Article

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Abstract

Background/purpose. This study represents the first comprehensive study investigating the beliefs about the glass ceiling (GCB) of women working in Kazakh universities. It aims to examine the theoretical validity of the multidimensional structure of GCB in Kazakhstan's higher education context.

Materials/methods. The study evaluated the glass ceiling beliefs of female employees working in higher education institutions in Kazakhstan using the Career Paths Survey (CPS). Data were collected from 150 female employees. The first- and second-order confirmatory factor analysis findings conducted with CPS were determined using covariance-based structural equation modeling (CB-SEM).

Results. The present study's findings corroborate the existence of the glass ceiling phenomenon and its associated beliefs within the context of higher education in Kazakhstan. Additionally, the findings suggest that gender-based barriers impede women university staff from attaining senior positions.

Conclusion. The underrepresentation of women in leadership roles in higher education institutions is a pervasive phenomenon observed across the globe. It is important to understand the factors that impede women's access to leadership roles in higher education, particularly in light of Kazakhstan's prevailing social, political, and economic circumstances. Although the proportion of female administrators in Kazakhstani higher education is relatively high compared to other countries, it is evident that it does not align with the desired level. It can be posited that structural impediments, such as the glass ceiling phenomenon constrain the accessibility of women to tertiary education in Kazakhstan.

1. Introduction

The studies conducted on the disadvantages that women experience in the 21st century investigated both these disadvantages and the factors that scale hierarchies (Galsanjigmed & Sekiguchi, 2023; Sobaih & Abu Elnasr, 2024). Although the hierarchical roles assigned to women have evolved, the emphasis on the primary social responsibilities of women as wives and mothers remains valid (Iida, 2023; Singh et al., 2023). Female social roles play a key part in determining women's career models and social relations (Hentschel et al., 2019; McGinn & Oh, 2017). The Industrial Revolution introduced significant transformations in female roles (Hegarty & Pratto, 2010). In social, economic, and technological domains, these transformations fortified the presence of women in the business world and inevitably allowed them to be employed in managerial positions (Sima et al., 2020; Tunyi et al., 2023).

The new "Jobs Gap" indicator, developed by the International Labor Organization, demonstrates that women's access to employment, working conditions, and gender wage discrepancies have improved only slightly over the last two decades (ILO, 2023). The indicator paints a pessimistic picture of women in the workforce compared to the more common unemployment rate indicator. Globally, 15% of working-age women want to work but cannot find a job; the same rate is 10.5% among men. This gender gap has remained virtually unchanged over the last two decades (2005-2022). The jobs gap is particularly acute in developing nations. In low-income countries, the rate of women who cannot find a job is 24.9%, while the rate for men is 16.6% (ILO, 2023, 2024).

Notwithstanding the increased female employment in the workforce, female employment in senior management positions has remained relatively stable (Galsanjigmed & Sekiguchi, 2023; Tunyi et al., 2023). Despite social and economic developments, men continue to advance in managerial positions, while women still experience certain disadvantages in their advancement to leadership positions (Galsanjigmed & Sekiguchi, 2023). Gender barriers in developed societies have also characterized this issue (Hoobler et al., 2010). Significant debate exists about the conditions and consequences for women in leadership positions (Haslam et al., 2010).

Due to sexist policies, several women endure double standards in their careers (Bareket & Fiske, 2023). These sexist standards have been called the glass ceiling constructed historically by society and men (Babic & Hansez, 2021). The term “glass ceiling,” initially coined to denote the invisible barriers that women confront in their professional careers, has come to represent the metaphorical ceiling that impedes advancement in organizations, regardless of the specific circumstances (Kansal, 2022; Moral de Blas et al., 2020). The concept refers to the presence of invisible and intangible barriers (Sunaryo et al., 2024). It can be described as “invisible organizational and perceptual barriers that prevent women and various minority groups from vertical advancement in the career ladder in business life” (Weyer, 2007).

Similar to other domains, the debate on gender inequality continues in higher education (Lima et al., 2024). The glass ceiling reflects gender inequality in this domain (Wirth, 2001). Gender inequality in today’s higher education system continues to exist as a global problem (Lazarević Moravčević et al., 2023). One of the main reasons for this is that female representation in the field of education is still at a low level (Basantia & Devi, 2022). Gender determines institutional approaches and attitudes in higher education (Saadat et al., 2022). Despite the presence of opportunities for women to advance in higher education, gender inequality persists in leadership positions (Galsanjigmed & Sekiguchi, 2023), and women experience structural challenges such as prejudice (Galsanjigmed & Sekiguchi, 2023) and inequality in promotions (Meza-Mejia et al., 2023). The barriers mentioned above (Yousaf & Schmiede, 2017) that female academics encounter in their careers result in their inability to participate in decision-making mechanisms within the academic realm (Winchester & Browning, 2015).

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The present study was conducted to determine the GCB of women in Kazakh higher education (HE) based on the "Career Pathways Survey" developed by Smith, Caputi, et al. (2012). The aim was to provide a current perspective on the general situation of female HEI employees. The glass ceiling syndrome has been investigated in the literature to demonstrate the conditions female HEI employees face in Kazakhstan. The GCB of women has been studied comprehensively. The present study aimed to fill a specific gap by addressing the GCB of female employees in Kazakhstan HE for the first time.

2. Literature Review

The glass ceiling was initially introduced in the 1970s in the United States to describe discrimination in business (Wirth, 2001). In their 1986 Wall Street Journal article, Hymowitz and Schellhardt described the glass ceiling as the barriers that women must overcome to ascend to higher positions within government agencies, corporations, educational institutions, and non-governmental organizations (Weyer, 2007). Since the conceptualization of the glass ceiling, it has been increasingly discussed in social discourse and practice (Coleman, 2010; Jackson & O'Callaghan, 2009; Pandurangan & Arumugam, 2024; Sardana & Sharma, 2021; Taparia et al., 2024; Toscano-Hernández et al., 2024; Yıldız & Vural, 2019). Invisible artificial barriers created by attitudinal and institutional bias have prevented women from reaching senior management positions (Johns, 2013). The metaphorical glass ceiling represents the vertical discrimination against women in the workplace (Babic & Hansez, 2021). These obstacles and barriers have been established to keep qualified women in lower positions due to sexist hierarchical discrimination in institutions (Babic & Hansez, 2021; Baxter & Wright, 2000; Jackson & O'Callaghan, 2009; Morrison & von Glinow, 1990).

The term "glass ceiling syndrome" has been used to describe women's access to almost all areas traditionally occupied by men, yet never or only symbolically to prestigious elite leadership positions (Carnes et al., 2008). The "glass" metaphor in the concept is associated with the barriers that women face in their careers (Hoobler et al., 2010). According to Davidson & Cooper (1992), the biggest barrier for women in management is male attitude. Negative attitudes of managers towards women are quite common in the corporate world (Baldner et al., 2022). In 2013, Johns employed the metaphor of the "glass ceiling" to describe the invisible and artificial barriers that prevent the appointment of women and minorities to managerial or executive positions in corporations. The term "glass ceiling" is also used to describe the inequality and invisible barriers that impede women's advancement to executive positions (Baxter & Wright, 2000; Naguib & Madeeha, 2023). The glass ceiling remains one of the most troubling phenomena in the labor market, impeding the advancement of women (Galsanjigmed & Sekiguchi, 2023). The demographic profiles of most organizations indicate that women encounter a range of discriminatory practices, including the glass ceiling, which results in unequal opportunities (Babic & Hansez, 2021; Seo et al., 2017).

Historically, higher education institutions have significantly contributed to the discourse surrounding gender and racial inequality (Quadlin et al., 2023). Issues such as workforce diversity, workplace discrimination, and employment inequality have been directly or indirectly investigated in the literature (Jackson et al., 2014; Taparia et al., 2024). The increased number of women in higher education has led to significant gender equality and diversity problems (Hou, 2023). Institutional structures and attitudes in higher education have been shaped by gender (Dilli & Westerhuis, 2018; O'Connor, 2023). Academia is one of the sectors where the glass ceiling syndrome is pronounced, and female academics have been disadvantaged compared to their male counterparts (D. A. Williams, 2014). However, the lack of women in senior positions remains an ongoing issue and a topic of academic debate (Galsanjigmed & Sekiguchi, 2023). Although certain statistical data indicate that the recruitment of women has increased in academia (Araneda-Guirriman et al., 2023), one cannot claim gender equality. Despite the presence of certain opportunities for women to advance in higher education, gender inequality persists in leadership positions (Alshdiefat et al., 2024). Women also

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face additional challenges, such as balancing their careers, parenting, and domestic responsibilities (Chauhan et al., 2022). Several women with qualifications for promotion in academia encounter significant social and cultural barriers (Padilla-Gonzalez et al., 2011).

Academic studies on the glass ceiling phenomenon have revealed how it is shaped in different contexts and under various socio-cultural, political, and economic conditions. Luke (2001) argued that women's perceptions of the glass ceiling in Malaysia are influenced by local dynamics tied to the colonial past, resulting in a different character compared to the Western concept of the glass ceiling. Jackson & O'Callaghan (2009) noted that research on the glass ceiling in higher education has concentrated on individual career experiences, indicating that further investigation is necessary.

Various international studies have outlined the effects of the glass ceiling and the factors that mitigate these impacts. Jahangirov (2012) found that in Turkey, the perception of the glass ceiling is linked to power distance, with women exhibiting a higher perception of power distance than men. In the Swedish context, Peterson (2014) argued that promoting women to managerial positions has been accompanied by increased workload and decreased prestige, while D. A. Williams (2014) highlighted dynamics such as discrimination and racism that reinforce the glass ceiling.

Factors hindering female academic advancement have been examined across various cultural and institutional contexts. Abbas et al. (2021) reported that discrimination and a male-dominant culture reinforce the glass ceiling. Lahiri et al. (2023) demonstrated that gender stereotypes and structural issues within institutions in India limit women's careers. Similarly, Najim (2023) highlighted the social, political, and cultural barriers faced by female leaders in Palestine. D'sa et al. (2023) emphasized the influence of organizational and cultural dynamics on the glass ceiling in Oman.

Previous studies conducted in Turkey detailed how perceptions of the glass ceiling hinder women's advancement, particularly in academia. Can et al. (2018) found a strong positive correlation between power distance and the glass ceiling, with no differences in these perceptions based on gender. Tahtalıoğlu & Özgür (2020) demonstrated that negative views regarding institutional culture and policies amplify perception of the glass ceiling, using a scale developed to measure these perceptions. Sel & Bozan (2024) emphasized that the challenges faced by female academics represent a critical barrier to accessing administrative positions.

International studies have also revealed the effects of the glass ceiling and suggested possible solutions. Hernández (2024) linked the gender pay gap in Spanish universities to the glass ceiling. Falco et al. (2023) found that Italian women faced low social mobility. Xiao et al. (2023) retrospectively examined the progress in gender and ethnic diversity within the higher education system in England and Wales.

Studies on the effects of gender equality policies show that structural discrimination remains a significant issue. Titili et al. (2024) noted that, despite the importance of strategies to promote gender equality in Albania, horizontal discrimination continues. Alshdiefat et al. (2024) highlighted the factors that restrict women's access to leadership roles in Jordanian academia.

The literature review revealed that academia was one of the industries where the glass ceiling syndrome was quite predominant (Bülbül, 2021; Jackson & O'Callaghan, 2009; Morley, 1994; Singh et al., 2023; Taparia et al., 2024; J. C. Williams, 2005), and female academics were disadvantaged when compared to men (Horta & Tang, 2023). This evidence demonstrated the existence of gender inequality and prejudice against women (Pardhan, 2018; Singh et al., 2023).

3. The Kazakh Context

After the declaration of independence, Kazakhstan initiated a rapid process of national identity development. The revival of the national sentiment and the emphasis on traditional cultural values

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effectively restructured gender roles (Khairullayeva et al., 2022). Kazakhstan signed several international agreements to adopt gender equality policies and work to improve national norms. Kazakhstan signed the "United Nations Convention on the Elimination of All Forms of Discrimination Against Women (1982) – CEDAW" in 1998. Furthermore, it established the "National Commission on Women's Affairs, Family and Demographic Policies" to implement the principles of gender equality in social areas. The concept of "gender" was approved by resolution No. 1190 on November 27, 2003. Then, a gender strategy was developed in Kazakhstan, which included economic independence and development of women, equal rights and responsibilities in the family, and equal economic opportunities and resources for both sexes (Republic of Kazakhstan, 2005). The Kazakh government recognized the significance of increasing female participation in leadership. The Conception for Family and Gender Policy for 2017-2030 envisaged the progress of women leaders in social and political life as one of its main priorities and aimed for 30% participation of women in leadership roles by the end of 2030 (Kuzhabekova, 2021). Furthermore, it was argued that the people of Kazakhstan generally had a positive approach to gender equality (Sarseke, 2022).

In Kazakhstan, men and women are afforded equal educational rights, which has led scholars to characterize the country as a "gender paradox" (Pocstar, 2022). Despite this progress, however, women continue to face significant challenges in various areas, including economic, political, social, and domestic (Durrani et al., 2022). These factors are reflected in women's careers (Almukhambetova & Kuzhabekova, 2021; Pocstar, 2022).

The recent policies of the Kazakh government have evidenced a robust commitment to advancing gender equality in the workplace, as evidenced by the findings of Meurs et al. (2021). Consequently, Kazakhstan is the foremost nation in Central Asia in terms of gender equality. Due to these developments, Kazakhstan improved its overall ranking by 18 places, reaching the 62nd rank in the Global Gender Gap Index 2023. This survey, conducted globally and measures gender equality in 146 nations, was published by the "Agency for Strategic Planning and Reforms of the Republic of Kazakhstan in 2024".

As of June 2024, Kazakhstan's population was 20.139.914, and women constituted 51% of the population. In general, women in Kazakhstan have access to education. There were 592.7 thousand students, of whom 53% were women. Similarly, female participation in the labor force is relatively high. According to the Kazakh National Bureau of Statistics report dated March 6, 2024, 48.3% of the total employment in Kazakhstan was women (Bureau, 2024).

Current Kazakh demographics are summarized in the present study. The economic activities of the 16-63 years old male population is 85.3%, and that of the 16-58 years old female population is 78.7%. The gender wage gap is 21.7%. The average monthly nominal salary is 281,239 tenge for men and 220,160 Tenge for women. 54.5% of expert researchers are women. 21% of all executive college employees are female, and 79% are male. 9079 women and 8427 men have an MS degree, 1928 women and 3121 men have a PhD in sciences. 56.7% of secondary, technical, and vocational school principals are women. The number of female rectors of higher education institutions is 25, where 94 are men. Women manage 28 businesses. 40.8% of managers, 52.4% of judges, 53% of Supreme Court judges, 15.6% of police officers, 30.6% of regional and municipal council (Maslikhat) members, and 26.9% of the Parliament are women (Bureau, 2024).

4. Research Methodology

4.1. Sample and Data Collection

The present study aimed to identify the GCB of women employed in higher education institutions in Kazakhstan. Thus, the study population included female employees in Kazakh universities. The study data were collected through an online survey of volunteer participants between December

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2023 and January 2024. WhatsApp groups are a common communication method for university employees in Kazakhstan, and the study was announced in these groups. Two hundred ten individuals participated in the online survey, and after incomplete and missing data were excluded, the data collected from 150 participants were used in the analysis.

4.2. Data collection instrument

The survey included sections. The first included sociodemographic data, and the second included the items in the Career Path Survey developed by Smith, Crittenden, et al. (2012) and aimed to measure GCB. CPS includes the denial (10 items), resilience (11 items), resignation (10 items), and acceptance (7 items) dimensions (Lathabhavan, 2020). Sample items are as follows: 'Women and men have to overcome the same problems at the workplace' (denial), 'Women have the strength to overcome discrimination' (resilience), 'Women believe they should make too many compromises to access highly paid positions' (resignation), and 'Motherhood is more important to most women than career development' (acceptance). The scale is a five-point Likert-type scale, with scores ranging from one (indicating strong disagreement) to five (indicating strong agreement).

Given the multilingual structure of Kazakh higher education, all items in the "Glass Ceiling Beliefs Scale" were translated into Kazakh and Russian. The conventional approach was utilized in the translation of the scale. The scale was translated from the source language to the target languages, then translated back to the source language, and finally, the similarity between the initial and final translations was evaluated by individuals who were fluent in these languages (Kazakh 20; Russian 20).

4.3. Data analysis

The present study used a quantitative research methodology to identify GCB among women employed in Kazakh universities. It examined the intricate relationships between latent variables through the lens of CB-SEM, a structural equation modeling approach. CB-SEM is a statistical approach employed to estimate SEM (Hair et al., 2019). It is a multivariate method to estimate the relationships between endogenous and exogenous latent variables (Dash & Paul, 2021). Smart PLS 4.0 was employed in the modeling phase of the analysis.

5. Results and Analysis

5.1. Demographic data analysis

The study sample that investigated GCB in Kazakhstani higher education included 150 participants. Participant demographics are shown in Table 1, and all participants were female. 15% were 20-29 years old, 31% were 30-39, 33% were 40-49, and 21% were 50 or older. 11% of the participants were high school graduates, 12% had a bachelor's degree, 55% has a master's degree, and 23% had PhD degree. 26% were single, 65% were married, and 9% were separated, divorced, or widowed. 3% were senior managers, 11% were middle-level managers, 27% were low-level managers, and 59% were not managers. The seniority of 7% was 0-5 years, 19% was 6-10 years, 43% was 11-15 years, 23% was 16-20 years, and 9% was longer than 20 years.

The sample allowed a comprehensive analysis of the GCB in the Kazakh higher education industry. The participants' comprehensive age range and different educational levels allowed an in-depth analysis of gender equality and career advancement.

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Table 1. Information of participants

Variable	Frequency	Percentage
Gender		
Female	150	1.00
Age		
20- 29	23	0.15
30- 39	46	0.31
40- 49	50	0.33
50 or older	31	0.21
Education Level		
High school	16	0.11
Undergraduate	18	0.12
Master's	82	0.55
PhD	34	0.23
Marital status		
Single	39	0.26
Married	97	0.65
Separated, divorced, or widowed	14	0.09
Managerial position		
Senior manager	5	0.03
Mid-level manager	16	0.11
Low-level manager	40	0.27
N/A	89	0.59
Academic experience		
0-5 years	10	0.07
6-10 years	28	0.19
11-15 years	64	0.43
16-20 years	35	0.23
Over 20 years	13	0.09

5.2. Measurement model

Confirmatory factor analysis (CFA) allows the analysis of the correlations between observed and latent variables (Byrne, 2013; Gefen et al., 2000). It has been frequently used in scale development and predetermined verification. CB-SEM was employed to determine whether the measurement model had a good statistical fit. First, first-order CFA was conducted to investigate the theoretical structure of the scale. Reliability and validity were assessed in the analysis. The first step was to examine the standardized factor loadings of all the items in the scale (Dash & Paul, 2021). It was reported that loadings of all items under a latent variable greater than 0.60 would provide good convergent validity (Dash & Paul, 2021; Hair et al., 2019). The reliability of the factors was determined through the application of three statistical measures: Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE). All three results demonstrated the reliability of the measurement model. To ensure the reliability of the scale, both the Cronbach's alpha (CA) and composite reliability (CR) values must exceed 0.70 (Gefen et al., 2000; Nunnally, 1978), while the average variance extracted (AVE) should exceed 0.50 (Dash & Paul, 2021).

The first-order CFA findings demonstrated that the standardized factor loads of the items in each dimension were above 0.60 (Table 1). The CA and CR for all factors were above 0.70, and the AVE was above 0.50. Convergent validity analysis demonstrated that the reliability and validity of the measurement tool met the statistical requirements. Furthermore, the goodness-of-fit indices of the

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measurement model were χ^2/df = 1.253, RMSEA = 0.041, GFI = 0.794, NFI = 0.90; CFI = 0.957 and TLI = 0.957, indicating a good fit between the data and the measurement model (Sarstedt et al., 2021). The results in Table 2 demonstrate the accuracy and consistency of the measurement model.

Table 2. Factors, items, factor loads (FL), t-statistics, CA, CR, and AVE

Factor/Item	*FL*	*t - statistics*	*CA*	*CR*	*AVE*
Denial			0.960	0.960	0.702
DL1	0.835	34.884			
DL2	0.824	28.558			
DL3	0.877	42.929			
DL4	0.795	24.496			
DL5	0.841	32.662			
DL6	0.806	26.212			
DL7	0.849	37.653			
DL8	0.815	25.481			
DL9	0.856	39.397			
DL10	0.879	48.740			
Resilience			0.944	0.942	0.622
RES1	0.810	24.901			
RES2	0.776	20.943			
RES3	0.813	27.723			
RES4	0.780	21.695			
RES5	0.770	20.570			
RES6	0.764	18.615			
RES7	0.779	26.268			
RES8	0.771	22.466			
RES9	0.821	30.184			
RES10	0.799	22.384			
Resignation			0.939	0.940	0.585
RSN1	0.816	23.804			
RSN2	0.766	19.906			
RSN3	0.793	23.894			
RSN4	0.704	15.063			
RSN5	0.780	23.001			
RSN6	0.704	14.840			
RSN7	0.755	17.935			
RSN8	0.791	22.674			
RSN9	0.777	21.476			
RSN19	0.727	15.912			
RSN11	0.793	22.735			
Acceptance			0.882	0.883	0.519
ACP1	0.728	16.183			
ACP2	0.731	19.202			
ACP3	0.724	16.319			
ACP4	0.695	15.378			
ACP5	0.693	14.096			
ACP6	0.797	22.174			
ACP7	0.668	12.904			

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Following the reliability analysis, the discriminant validity of the model was demonstrated. The concept of discriminant validity pertains to the assurance that items included in a scale exhibit a robust loading on the factor to which they are related while exhibiting minimal loading on other factors (Hair et al., 2022). To ascertain the discriminant validity of the variables under investigation, the Heterotrait-Monotrait Ratio (HTMT) and the Fornell-Larcker Criteria (FLC) were employed (Hair et al., 2022; Henseler et al., 2015). Discriminant validity between two factors can be statistically inferred if the HTMT between them falls below 0.90 (Henseler et al., 2015). In order to ascertain discriminant validity, the Fornell-Larcker Criterion (FLC) compares the square root of the AVE of each factor with the correlations between other factors. Consequently, it can be deduced that the AVE of a latent factor should exceed its correlations with the remaining factors (Dash & Paul, 2021; Fornell & Larcker, 1981). The HTMT and FLC findings are presented in Tables 3 and 4, demonstrating that each latent factor exhibited discriminant validity.

Table 3. Discriminant validity: HTMT Ratio

	Acceptance	Denial	Resignation	Resilience
Acceptance				
Denial	0.297			
Resignation	0.166	0.448		
Resilience	0.235	0.554	0.472	

Table 4. Discriminant Validity: FLC

	Acceptance	Denial	Resignation	Resilience
Acceptance	0.720			
Denial	0.248	0.838		
Resignation	0.210	0.422	0.765	
Resilience	0.166	0.540	0.451	0.788

Whether the four latent variables in the construct confirmed by the first-order factor analysis explained the variation in GCB was analyzed. Second-order CFA is effective when testing constructs with more than one dimension. The method reveals the presence of a higher factor structure with sub-dimensions and explains the correlated factors (Chen et al., 2006). The model determined in the second-order CFA conducted with CBS-SEM is presented in Figure 1. It was determined that there was a good fit between the data and the second-order model (χ^2/df = 1.248, RMSEA = 0.041, GFI = 0.795, NFI = 0.90, CFI = 0.960, TLI = 0.958). The weighted loads of the standardized path coefficients between the latent variables in the second-order model and GCB are presented in Table 5, and it was determined that all loads were statistically significant (Zhang et al., 2021). The findings demonstrated that GCB loaded well on the three sub-constructs. The factor loads of GCB for the denial, resilience, resignation, and acceptance dimensions were 0.755, 0.738, 0.610, and 0.351, respectively. Furthermore, the 〖R〗^2 of all latent variables was as follows: Denial (0.570), Resilience (0.544), and Resignation (0.372), and Acceptance (0.123). In other words, the hypothesis that GCB included and were explained by the four sub-constructs was confirmed.

Table 5. Path coefficients

Hypothesis	*std. load*	*stdev*	***t*-statistics**	***p*-values**	*Decision*
GCB -> Denial	0.755	0.066	7.526	0.000	Supported
GCB -> Resilience	0.738	0.068	7.275	0.000	Supported
GCB -> Resignation	0.610	0.066	6.294	0.000	Supported
GCB -> Acceptance	0.351	0.056	3.443	0.001	Supported

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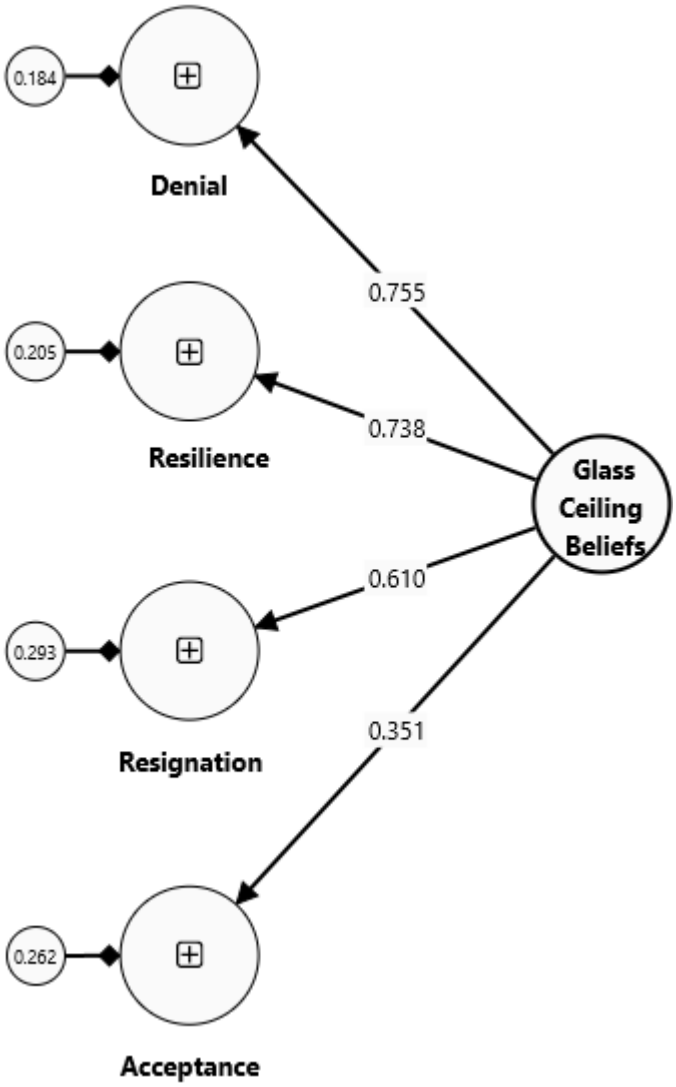

Figure 1. Second-Order Glass Ceiling Beliefs Model

6. Discussion and Conclusion

The present study measured the GCB of female university employees in Kazakhstan. It is the first study in which the Career Pathways Survey (CPS), developed by Smith, Crittenden, et al. (2012), was employed to determine beliefs about the glass ceiling in Kazakhstan. The study's findings corroborated the hypothesis by Smith, Crittenden, et al. (2012) that women exhibit four distinct attitudes toward the glass ceiling: "denial, resilience, resignation, and acceptance." In conclusion, the scale was adapted in the present study, and the analyses confirmed the 38-item, 4-factor structure of the original scale. The current study's findings substantiate the existence of the glass ceiling phenomenon and associated beliefs (Khalid & Aftab, 2023; Lathabhavan, 2019). It is therefore recommended that the preparation of women regarding glass ceiling perceptions be discussed to facilitate women's advancement in their careers and ensure their success (Khan et al., 2024).

The structural and cultural characteristics of universities in Kazakhstan have often led to an attitudinal bias that prioritizes men, which led to a widespread view among male and female employees that maternal roles should take precedence over the professional careers of women. This view often leads to the organization of female careers based on their maternal responsibilities. In different regions of Kazakhstan, especially in the south, gender inequality and attitudes toward women are significantly affected by local cultural and national dynamics (Tuganova, 2014).

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An analysis of Kazakh human capital requires integrating a gender perspective and spatial and regional diversity. Studies on gender inequality at universities and how national traditions induced these inequalities revealed the GCB and how these beliefs were reinforced by social and cultural factors (Bajdo & Dickson, 2001). This perspective is critical to the development of gender equality policies in Kazakhstan. The findings could help develop a more equitable and inclusive environment in educational institutions in the country.

The underrepresentation of women in leadership roles in higher education institutions is a pervasive phenomenon across the globe. It is crucial to comprehend the impediments to women's access to leadership roles in higher education, particularly in light of the social, political, and economic circumstances prevailing in Kazakhstan. While the proportion of female administrators in Kazakhstani higher education is relatively high in comparison to other countries, it is evident that it does not align with the desired level. It could be suggested that the access of women to tertiary education is limited in Kazakhstan due to structural barriers such as the “glass ceiling syndrome.” The glass ceiling could lead to the underrepresentation of Kazakh women in the business world and negatively affect their career development. For women to take on more effective professional roles in Kazakhstan, further training and development programs are needed to improve their personal and professional skills. Such programs should provide theoretical knowledge and practical skills. The Kazakh government and all relevant parties should act to improve the current conditions to reduce the barriers women face in professional life. These endeavors should extend beyond the mere enforcement of existing legislation to encompass the formulation of policies that would advance gender equality and equal opportunities in the workplace.

Increasing participation of women in the workforce in Kazakhstan would promote sustainable development and social progress at the macroeconomic level. Increasing economic diversity and competitiveness would promote national social welfare. At the micro level, access of women to fulfilling jobs would allow them to contribute more to the domestic budget and allow their children to grow up under better conditions. Active and satisfied professional women would contribute to the development of healthier, happier, and educated individuals in Kazakhstan. Thus, the adoption of policies that would increase the economic and social participation of women is of vital importance for the future of Kazakhstan.

The study’s findings demonstrated the existence of gender barriers to female college employees' access to senior positions. To ensure gender equality in academic administration, transparent and auditable appointment and promotion systems should be established. According to the literature, transparency and accountability are critical factors in reducing gender stereotypes and creating an equitable institutional culture (van den Brink et al., 2010). These systems could reduce the glass ceiling that female academics perceive in their careers and allow them to be more visible for leadership positions.

Furthermore, it was emphasized that budgeting in higher education institutions should support gender equality. Budgeting that prioritizes gender equality would ensure fairness in the distribution of resources in academic institutions and contribute to equal opportunities. Such an approach would encourage both male and female academics to utilize their talents and assume more active managerial roles.

In conclusion, higher education institutions should take proactive steps to advance gender equality and provide a more inclusive and supportive academic environment for both sexes to achieve their full potential. By improving diversity in academic leadership, these steps would contribute significantly to the overall success of institutions and gender equality.

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7. Limitations and Future Research

For further contribution to the literature, the scale's reliability and validity should be tested on different conditions and samples. Future studies could focus on gender-based career perceptions. They should investigate the origins of career perceptions of both men and women and the basic factors and dynamics that determine these perceptions. Future studies should also explore gender inequality and its interactions with social, cultural, and economic factors.

Furthermore, a comprehensive analysis of the roles of recruitment and promotion criteria in gender equality and the effects of these criteria on male and female candidates is essential. It is of the utmost importance to ascertain the existence and ramifications of gender bias in recruitment and promotion decisions. A comprehensive analysis of the personal traits of men and women, their professional competencies (Mistry et al., 2024), and the effects of these factors on their career paths could prove instrumental in the development of fairer gender equality and career development policies.

Such studies would provide valuable information for policymakers, business leaders, and social scientists to overcome gender inequality and create an equitable workplace. These findings could play a key role in overcoming the challenges faced by both sexes in business life by paving the way for more effective gender equality strategies.

Declarations

Author Contributions. Conceptualization by Z.T., M.S. and H.E.Ç, methodology by H.E.Ç., L.K. and Z.K., validation by H.E.Ç., L.K., and Z.K., formal analysis by H.E.Ç. and Z.K., references by L.K. and Z.K., data collection by H.E.Ç., writing—original draft by M.S., L.K. and Z.K. review and editing by Z.T. and M.S. All authors have read and agreed on the publication version of the manuscript.

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