



## The Regional Impact of the Glass Ceiling on Women's Entrepreneurship Indicators in Selected Countries

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### Abstract

**Background and Objective:** his study aims to examine the regional impact of the glass ceiling phenomenon on women's entrepreneurship indicators in selected countries (Egypt, Iran, Jordan, Lebanon, Oman, Qatar, and Turkey) over the period from 2008 to 2024. The glass ceiling, as an invisible barrier preventing women from accessing senior managerial positions and entrepreneurial opportunities, is the focus of this research. The objective is to analyze the dynamics of these constraints and their effects on key indicators such as parliamentary participation, wages, economic participation, gender equality index, managerial positions, and board membership.

**Methodology :** This study employs the Quantile Vector Autoregressive (QVAR) panel method based on the Diebold and Yilmaz (2012) framework. Annual data for the mentioned variables were collected and standardized by creating a composite index. The analysis was conducted across the 25th, 50th, and 75th quantiles to examine connectivity and volatility spillovers among variables under various conditions (stable, moderate, and volatile). A rolling window approach was used for temporal dynamics analysis, and unit root tests ensured data stationarity.

**Findings and Results:** The results indicate that the glass ceiling has a significant negative impact on women's entrepreneurship during crises (e.g., the 2014–2016 oil price collapse) and prosperity periods (e.g., 2018 women's rights reforms). Parliamentary participation emerges as the primary receiver of volatility, particularly vulnerable in crises, while board membership and the gender equality index serve as transmitters and stabilizers. The U-shaped pattern of the Total Connectedness Index (TCI) confirms reduced connectivity in intermediate conditions and increased connectivity during crises and prosperity. Lebanon and Iran showed greater vulnerability, while Qatar and Oman exhibited relative resilience. To mitigate glass ceiling effects, recommendations include implementing women's entrepreneurship mentoring programs in Iran and Lebanon, increasing women's parliamentary quotas in Lebanon and Egypt, developing women-supportive organizational cultures in companies in Iran and Turkey, conducting public education to reduce gender stereotypes in Iran and Jordan, and strengthening local databases for more accurate data collection.

**Keywords:** Glass Ceiling, Entrepreneurship, Women, Entrepreneurship Indicators, Iran, Developing Countries.

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## **Extended Abstract**

### **Introduction:**

The role of women in economic and social development has gained increasing attention in developing countries, where their participation in entrepreneurship is recognized as a key driver of growth. However, women face significant barriers, often referred to as the "glass ceiling," an invisible yet persistent obstacle that limits their access to senior managerial positions and entrepreneurial opportunities. This study examines the regional impact of the glass ceiling on women's entrepreneurship indicators in seven selected countries (Egypt, Iran, Jordan, Lebanon, Oman, Qatar, and Turkey) over the period from 2008 to 2024. The research focuses on key indicators, including parliamentary participation, wages, economic participation, gender equality index, managerial positions, and board membership, to analyze how structural and cultural barriers influence women's entrepreneurial outcomes. By exploring the dynamics of these indicators during critical periods, such as the oil price collapse (2014–2016) and women's rights reforms (2018), this study aims to provide insights into the interplay of socioeconomic factors and their implications for policy-making to enhance women's economic empowerment.

### **Methodology:**

This study employs the Quantile Vector Autoregressive (QVAR) panel method, based on the framework developed by Diebold and Yilmaz (2012), to analyze the connectivity and volatility spillovers among the selected variables. Annual data for the period 2008–2024 were collected for Egypt, Iran, Jordan, Lebanon, Oman, Qatar, and Turkey, covering variables such as parliamentary participation, wages, economic participation, gender equality index, managerial positions, and board membership. A composite index was created by averaging these variables to provide a comprehensive measure of women's socioeconomic status. Data were standardized to eliminate scale effects, and stationarity was confirmed using the Augmented Dickey-Fuller (ADF) unit root test. The QVAR model was applied across the 25th, 50th, and 75th quantiles to capture the behavior of variables under stable, moderate, and volatile conditions. A rolling window approach (100 days) was used to examine temporal dynamics, and robustness checks were conducted with varying window sizes (100 and 150 days) and forecast horizons (5 and 10 days). The Total Connectedness Index (TCI) and directional spillover indices (TO, FROM, NET) were calculated to assess the interdependencies among variables.

### **Results and Discussion**

The findings reveal that the glass ceiling exerts a significant negative impact on women's entrepreneurship, particularly during economic crises (e.g., the 2014–2016 oil price collapse) and periods of prosperity (e.g., 2018 women's rights reforms). Parliamentary participation emerged as the primary receiver of volatility, indicating its high vulnerability to external shocks, especially in crisis conditions. In contrast, variables such as board membership and the gender equality index acted as transmitters, contributing to system stability. The Total Connectedness Index (TCI) exhibited a U-shaped pattern, with higher connectivity in the 25th and 75th quantiles (crisis and prosperity) and lower connectivity in the 50th quantile (moderate conditions), aligning with Diebold and Yilmaz (2014). Regionally, Lebanon and Iran showed the highest vulnerability to shocks, reflecting fragile socioeconomic structures, while Qatar demonstrated remarkable resilience, with indicators remaining stable across all conditions. Oman exhibited relative stability, with lower volatility compared to other countries. The analysis of specific periods, such as the oil price collapse and women's rights

reforms, highlighted that parliamentary participation consistently received the most volatility, while board membership and gender equality index played stabilizing roles. These findings suggest that structural barriers, such as limited access to managerial roles, exacerbate the impact of the glass ceiling, particularly in turbulent economic conditions.

## Conclusion

This study underscores the pervasive impact of the glass ceiling on women's entrepreneurship in the selected countries, with pronounced effects during economic and social upheavals. The vulnerability of parliamentary participation and the stabilizing role of board membership and gender equality highlight the need for targeted policies to enhance women's representation in decision-making and leadership roles. The regional disparities, with Qatar and Oman showing greater resilience, emphasize the importance of context-specific interventions. Policymakers should prioritize educational and support programs to strengthen women's presence in management and promote gender equality to enhance resilience against economic shocks. Future research could benefit from daily data collection and broader country coverage to improve analytical precision. This study provides a robust analytical framework for addressing the glass ceiling and fostering women's entrepreneurship in developing countries.

## Declarations

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