



THE ROLE OF FEMALE CEOS IN SHAPING ESG IN THEIR CORPORATE CULTURE. ANALYSIS OF RELATION OF FEMALE CEOS AND TAX PERFORMANCE OF THE FIRM BASED ON THE WORLD ENTERPRISE SURVEY IN THE CASE OF CENTRAL ASIAN COUNTRIES

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Introduction: The importance of female leadership in making corporate change has taken a considerable turn over the last few decades, in particular, among emerging markets which focus their business practices on social and economic outcomes¹ With this in mind, Central Asian countries are considered to be not so ‘traditional’ in their economic and societal frameworks which are not so welcome to female CEOs, making the process of gender equality at workplace grow slowly in those countries². This paper discusses the correlation of female CEOs and their influence on two key variables-tax compliance and female employment rate. These variable are driving makers within the Environmental, Social, and Governance (ESG) framework, pointing out the diversity in the workplace and ethics of governance practices³

According to⁴ there has been an increasing trend with global findings indicating that women who are in leadership positions support more gender equity at workplace than their counterparts, which supports the association of Female CEOs with encouraging inclusive hiring and diversity in

their companies. Although there has been a considerable change in supporting females in leadership positions, there is still a lot at stake in ensuring their complete rights which leads to greater inclusivity in Central Asian countries(Kocher, A. (2013). This study explores whether female CEO led firms have higher rates of female employment as well as better tax compliance, which can contribute to gender equity in the workplace and support wider social goals set by the United Nations Sustainable Development Goals (SDGs)⁵.

Moreover, the scope of female leadership goes beyond inclusivity at workplace, tax compliance is another key indicator of a company’s transparency and financial accountability⁶. Previous studies have discovered that female CEOs tend to follow regulatory compliance strictly and guide the company with high ethical standards which

¹ Noland, Moran & Kotschwar, Noland, Marcus and Moran, Tyler and Kotschwar, Barbara R., Is Gender Diversity Profitable? Evidence from a Global Survey (February 2016). Peterson Institute for International Economics Working Paper No. 16-3, Available at SSRN: <https://ssrn.com/abstract=2729348> or <http://dx.doi.org/10.2139/ssrn.2729348>

² ³ McKinsey & Company & LeanIn.Org. (2020). *Women in the Workplace 2020*. McKinsey & Company. Retrieved from <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/women-in-the-workplace-2020>

⁴ Dezső, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, 33(9), 1072–1089. <https://doi.org/10.1002/smj.1955>

⁵ (UN Women, 2020). *UN Women. (2020). Annual Report 2019–2020*. UN Women Headquarters. Retrieved from <https://www.unwomen.org/en/digital-library/publications/2020/06/annual-report-2019-2020>

⁶ (Bennouri et al., 2018; Carter et al., 2003) Bennouri, M., Chtioui, T., Nagati, H., & Nekhilij, M. (2018). Female board directorship and firm performance: What really matters? *Journal of Banking & Finance*, 88, 267–291. <https://doi.org/10.1016/j.jbankfin.2017.12.010>



in turn, minimizes cases of informal transitions and tax avoidance ⁷. Since tax evasion is an ever-occurring issue in Central Asian economies, the representation of female CEOs might directly be linked to ethical practices of the organization, enhancing the company's financial stability and accountability ⁸. The results might indicate the importance between female leadership and improved governance practices which can be potential to understand in reducing financial risks and improving tax revenues.

Literature review

Part 1: Female Leadership in Global and Regional Contexts

Global Trends in Female Leadership

Although there has been a noticeable progress over the last few years regarding female leadership, there are still ongoing gender disparities at the executive level. Studies show that women leaders frequently face issues namely lack of mentorship and professional networks, structural biases within corporate policies. The process of where women's career moving forward is blocked usually referred to as a glass ceiling effect. For instance, a study by Smith and Johnson in 2021 points out that female executives were less promoted to top-ranked position despite having similar qualifications and performance status with their male counterparts.

There is a combination of cultural, economic, and social factors which have shaped female leadership in Central Asia. Although many professional sectors saw a growing number of women employed, their presence at executive levels stays limited. Previous studies indicate that Central Asian countries merge traditional gender roles with modern economic pressures, which in turn, makes it difficult for women leadership with fewer opportunities and much constraints ⁹. Particularly in Kazakhstan and Uzbekistan, women are often seen as primary caretakers, causing tension between traditional roles and professional ambitions that can deprive women from the access of leadership positions.

One issue with supporting female leadership is aligned with the fact that there is a lack of formal policies and corporate practices in Central Asia which can serve as a means of support for women striving for leadership positions. Central Asian countries in comparison with other regions tend to initiate fewer implementations which promote gender equity in corporate level, resulting in male dominance at corporate boards and executive roles.. This lack of support structure adds to a delayed progression toward gender diversity in leadership in the region, since the corporate landscape is still shaped by traditional gender roles

Female CEOs and Tax Behavior

Female CEOs tend to adopt conservative, ethical practices in tax management which increases the transparency of tax behaviour if seen via an ESG lens ¹⁰(Francis et al., 2014). This perspective is a sign of a broader commitment to corporate social responsibility (CSR) and supports the governance aspect of ESG, resulting in long-term

⁷ (Chen, Leung & Evans, 2018) □ Carter et al. (2003): Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *The Financial Review*, 38(1), 33–53. <https://doi.org/10.1111/1540-6288.00034>

⁸ (World Bank, 2021). World Bank. (2021). *World Development Report 2021: Data for Better Lives*. World Bank Group. Retrieved from <https://www.worldbank.org/en/publication/wdr2021>

¹⁰ Francis, R., Raynor, M., & Hill, A. (2014). *The Francis Report: One Year On*. NHS England. Retrieved from <https://www.england.nhs.uk/2014/02/the-francis-report/>



sustainability and transparency¹¹ Tax Compliance and Corporate Governance Risk Aversion and Ethical Decision-Making Previous studies which were seeking the correlation between female CEOs and the firm's financial transparency found that females are likely to avoid tax evasion by setting up a proper tax strategies¹²(Desai & Dharmapala, 2006; Adams & Ferreira, 2009). Francis et al (2014) discovered that female led companies showcase a lower tendency in tax aggressiveness, reflecting risk-averse strategy which is consistent with corporate governance standards. It is important to understand this inclination toward conservative tax behaviour particularly in Central Asian context where tax compliance is one of key indicators of maintaining stable business operations. Moreover,¹³Ho, Liao, and Taylor (2015) found a connection between gender diversity in executive roles and lower tax evasion. They discovered that females CEOs concentrate on compliance by following lower-risk tax practices. Byrnes, Miller, and Schafer (1999) did a meta-analysis showing that women tend to be more risk-averse than man, which can be linked with lower high-risk tax strategies when the CEO is female. This behaviour in female CEOs was also found by Huang and Kisgen(2013), who discovered that female executives tend to follow conservative financial decisions rather than gaining in short-term period. Desai and Dharmapala (2006) point out that firms with vigorous governance are less likely to engage in tax evasion. This association aligns with the view that female CEOs, identified with promoting ethical standards, are likely to foster tax compliance as a part of their company's corporate governance strategy. Furthermore, Gallemore et al. (2014) claims that CSR-committed firms are prone to socially responsible tax behaviours, which makes tax payments as an integral part of theirs. Buse, Bernstein, and Bilimoria (2016) found female led companies often take CSR more seriously which goes along with tax behaviour. To support this, Adams and Ferreira(2009) point out that having a gender diversity in executive positions positively impacts social and ethical performance. The relevance of this risk-avoiding behaviour in females is crucial for Central Asia where evolving tax codes can improve a company's transparency with stakeholders and government institutions, ensuring a dedication to ethical governance. As well as that, female CEOs can contribute to a better sustainable and stable corporate environment.

Methodology

Data Collection

The dataset is taken from the World Bank Enterprise Survey includes comprehensive information on companies from Central Asian countries, including Kazakhstan, Kyrgyz Republic, Tajikistan, and Uzbekistan. The data consists of 5,302 firm-level observations across various sectors. Key variables include firm

¹¹ Ho, Liao, & Taylor. 2015. Ho, L.-C. J., Liao, Q., & Taylor, M. (2015). Real and Accrual-Based Earnings Management in the Pre- and Post-IFRS Periods: Evidence from China. *Journal of International Financial Management & Accounting*, 26(3), 294–335. <https://doi.org/10.1111/jifm.12030>

¹² Khitarishvili, T. (2016). Gender Dimensions of Inequality in the Countries of Central Asia, South Caucasus, and Western CIS. *Levy Economics Institute of Bard College Working Paper No. 858*. Retrieved from https://www.levyinstitute.org/pubs/wp_858.pdf

¹³ Desai, M. A., & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics*, 79(1), 145–179. <https://doi.org/10.1016/j.jfineco.2005.02.002>
Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291–309. <https://doi.org/10.1016/j.jfineco.2008.10.007>



demographics, financial indicators, CEO characteristics, and tax performance indicators¹⁴(World Bank, 2023).

Variable Selection To examine the relationship between female leadership and tax performance, we focused on the following key variables:

Dependent Variables:

Tax Compliance Indicator (j3_encoded): A binary variable representing tax compliance status, encoded as 0 or 1.

Tax Performance (j4_cleaned): A continuous variable measuring overall tax performance on a numeric scale.

Independent Variable:

Female CEO Indicator (fem_ceo): A binary variable indicating whether a firm is led by a female CEO (1 if female, 0 otherwise), reflecting evidence that gender diversity may enhance corporate transparency and compliance¹⁵.

Control Variables:

Financial metrics, such as Sales (sales_cleaned, ln_sales_cleaned) and Sales Growth (sales_growth_cleaned), capturing economic size and trajectory of each firm.

Firm characteristics, including Firm Size (size_num_cleaned) and Firm Age (firmage_cleaned, ln_firmage_cleaned).

Innovation (innovation_cleaned) and Foreign Ownership (foreign_dummy_cleaned) as additional controls.

Country Indicators: One-hot encoded country dummies were included to account for country-specific fixed effects¹⁶.

Data Cleaning and Preprocessing

Missing Data: Missing values in key variables were identified and addressed. For numeric fields, we used median imputation to fill gaps, while binary fields were defaulted to 0 in cases of missing values. This approach aligns with best practices in handling missing data for large datasets¹⁷.

Categorical Encoding: Variables like j3 (tax compliance) were transformed into binary format, and country variables were one-hot encoded to capture country-specific fixed effects.

Outlier Treatment: Numeric outliers in variables such as sales and firm size were reviewed, and we log-transformed relevant financial indicators to reduce skewness and stabilize variance¹⁸(Wooldridge, 2015).

Model Specification

To analyze the effect of female CEO presence on tax performance, we ran two Ordinary Least Squares (OLS) regression models:

¹⁴ World Bank. (2023). *World Bank. (2023). World Development Report 2023: Migrants, Refugees, and Societies*. Washington, DC: World Bank. <https://doi.org/10.1596/978-1-4648-1941-4>

¹⁵ Terjesen et al., 2016 Terjesen, S., Aguilera, R. V., & Lorenz, R. (2015). Legislating a Woman's Seat on the Board: Institutional Factors Driving Gender Quotas for Boards of Directors. *Journal of Business Ethics*, 128(2), 233–251. <https://doi.org/10.1007/s10551-014-2083-1>

¹⁶ OECD. (2020). *OECD Economic Outlook, Volume 2020 Issue 1*. Organisation for Economic Co-operation and Development.

¹⁷ Little, R. J. A., & Rubin, D. B. (2019). *Statistical Analysis with Missing Data* (3rd ed.). Wiley. <https://doi.org/10.1002/9781119482260>

¹⁸ Wooldridge, J. M. (2015). *Introductory Econometrics: A Modern Approach* (6th ed.). Cengage Learning.



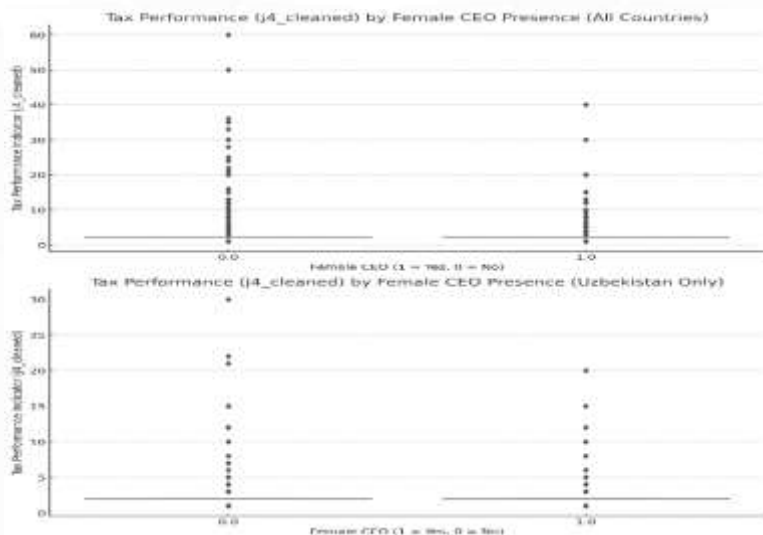
Model 1: Explores the relationship between female CEO presence (fem_ceo) and tax compliance (j3_encoded), controlling for financial and demographic variables and country effects.

Model 2: Investigates the association between female CEO presence and the continuous tax performance metric (j4_cleaned), using the same set of controls.

For each model, we included interaction effects to observe variations across countries. Additionally, a subset analysis was conducted for Uzbekistan to provide a focused examination of tax performance under female leadership within this specific context ¹⁹.

Statistical Analysis

We utilized the StatsModels OLS function in Python for regression analysis. Statistical significance was determined at the 5% level, and each model’s goodness-of-fit was evaluated using R-squared values. To verify robustness, we examined standard errors and multicollinearity diagnostics, ensuring that the model assumptions were met ²⁰



Contribution and directions for further research

This study is a significant contribution to the literature on women's leadership and tax compliance. Focusing on a region that has received little attention in the academic literature, it sheds light on the complex interplay between leadership and corporate responsibility in terms of being transparent to the government. It also provides a comparative framework for understanding how cultural and institutional contexts affect women's leadership effectiveness in promoting ESG in this country.

However, the study also reveals the need for further research. Future work should explore more deeply the intersection of gender, leadership and socio-political factors, especially through qualitative methods that can capture the experiences of women leaders in Central Asia. Expanded coverage to more sectors and other regions with similar socio-cultural characteristics will provide a deeper understanding of how female leadership affects gendered employment in transition economies. Finally, we should

¹⁹ Slemrod, J. (2019). Tax Compliance and Enforcement. *Journal of Economic Literature*, 57(4), 904–954. <https://doi.org/10.1257/jel.20181437>
²⁰ 2015Wooldridge, J. M. (2015). *Introductory Econometrics: A Modern Approach* (6th ed.). Cengage Learning



not forget the role of public policy. Central Asian governments should consider introducing more targeted measures to support women leaders and create an inclusive work environment. Encouraging innovation and foreign investment in sectors where women are underrepresented, as well as providing institutional support to women entrepreneurs, can significantly increase tax compliance. By removing both structural and cultural barriers that limit women's participation, policies can ensure that female leadership leads to real improvements in ESG at all levels of the labour market.