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Do the Preferences of Women Differ? Female Representation in Parliament and the Composition of Government Expenditure

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Abstract

The individual preferences of the elected may influence the decomposition of public spending since policy commitment is not always feasible. This paper investigates if the proportion of female representation in parliament affects the composition of government spending. To attain this objective, we analysed the effect of female representation in parliament on preferences expressed by the proportion of each and every component of government expenditure using a system-GMM estimation technique with data from 126 countries of the world. Our results revile that, women representation in parliament increases expenditure on education, government consumption and health expenditures and on the other hand, female representation in parliament decreases military as well as research and development expenditures.

Keywords: female representation, parliament, government expenditure

1. Introduction

Do all the groups in the society need to be represented in parliament for collective interest to be realised? Even though, the answer is yes, it is not the case in real life situation. If political representation is a necessity for collective interest, it can be assumed that the elected should at least to an extent, represent the population. Women compared to men are often under-represented in in the parliament and therefore their interest seems not always taken into consideration. Increasing the number of females in parliament is justified by the fact that it is just to have equal proportions of males and female in parliament with respect to their respective total population and for every once interest to be taken into consideration. It has been shown in the literature that, women have a different approach toward politics (Debski & Jetter, 2015; Devlin & Elgie, 2008; Dollar et al., 2001; Goetz, 2007; Halder, 2004; Paxton & Kunovich, 2003; Rivas, 2013; Swamy et al., 2001; Thomas, 1991; Itzkovitch-Malka & Oshri, 2024; Valsangiacomo, 2021; Bello Hutt, 2022). Their election into parliament in a larger number may therefore probably change the policies as their preferences differ from those of men (Svaleryd et al., 2002; Levitt, 1996). Increasing the number of females in parliament have been a critical issue in many countries and have therefore employed different strategies like quotas on the minimum number of women in parliament with the aim of increasing female number of females in parliament (Ellerby, 2011).

As parliamentary representation is nowadays a vital issue throughout the world, many countries (developing and developed), are struggling to increase the number of females in parliament. Despite numerous barriers, a number of countries have achieved significant advancement by adopting special measures and techniques such as quotas and reserved seats in political parties as well as in the parliament (Halder, 2004). Gender quota policies aimed at increasing the number of females in political office, now exist in many countries. While gender quota policies tend to emphasise on the minimum number of females in government in many countries, it has led to a shift not only in the political agenda but also in the gender consciousness of female representatives (Ellerby, 2011).

Empowerment of women as a key element to achieving gender equality has therefore nowadays, been a fashionable act in almost all parts of the world. It is among the Millennium Development Goals (Sharma & Varma, 2016). Female representation in parliament is therefore the best way to remove the challenges of gender inequality in human development, and therefore increasing the ability of females to shape their lives by creating a sort of equality with men. Empowerment of females gives power to women to have control over the circumstances of their lives and to participate in the policy choice of their society. Empowerment of women is therefore critical not only for their own welfare but also for the development of the society as a whole (Sharma & Varma, 2016).

Gender disabilities and discrimination have been on a decline in the world in recent years. Women constitute approximately 50% of the world's population, but their representation in policymaking has always been minimal. On average, according to data from the World Development Indicators, women constituted only around 12.73 per cent of representatives in parliaments across the world in 1990, with around 49.68 per cent of the world's population. The last decades have witnessed by an increasing number of females in parliament. In 2018, for example, the percentage of female representation in parliament across the world rose to around 23.97 percent, with around 49.58 percent of the world's population. As far as social status is concerned, they are not always treated like men in most aspects of life (Hazarika, 2011). The goal of women's empowerment is to equalise the status and rights with those of men.

In this article, we examine the effect female representation in parliament on composition of government expenditure in some selected countries around the world. The remainder of this paper is organized as follows; Section 2 presents a brief literature on female representation in parliament, Section 3 describes the data to be use, Section 4 presents the empirical evidence and Section 5 conclusion.

2. Literature Review

The preferences of males and do differ significantly (Svaleryd et al., 2002). Theoretically, there is no clear answer as to whether gender is of importance for policy choices. When the voters delegate policy choices to the elected who are who make policy choices based their self-interest and not enforcement campaign promises, there will be an agency problem between the voted and the voters (Persson et al., 2000). The voters can discipline the political agents (the voted) and if the office holder wishes to remain in office the voters can hold the elected for policy choices (Ferejohn, 1986). Nevertheless, the elected usually have some discretionary power over policy choices. It is therefore possible that elected preferences influence policy choices. In other word, the bargaining power of a group of politicians with similar preferences (male or females) will therefore affect the allocation and reallocation of resources (Mauro, 1998).

Levitt (1996) demonstrated in a study of the U.S senators that, personal preferences have a significant impact on senators voting patterns in the Congress. In the same light, other studies have demonstrated that gender is also an indicator of policy preferences. Female representatives tend to be more liberal than their male counterparts and are usually more probable to express concerns regarding social policy issues (Thomas, 1991; Seltzer et al., 1997).

Svaleryd et al. (2002) investigated if female representation in the local councils in Sweden influences the pattern the local public expenditure. It was found that male and female preferences differ. Specifically female representatives, compared to male representatives, prefer more spending on childcare relative to elderly care.

In the same line, Dezs¨o and Ross (2012) investigated if female representation in top management improves firm performance. They found that female representation in top management improves firm performance but only to the extent that a firm's strategy is focused on innovation, in which context the informational and social benefits of gender diversity and the behaviors associated with women in management are likely to be especially important for managerial task perform. Besley and Case (2003) find that female representation increased spending on family assistance and strengthens child support.

The has been a series of studies to investigate the effect of women's empowerment on corruption (Dollar et al., 2001; Swamy et al., 2001; Goetz, 2007; Mocan, 2008; Rivas, 2013; Debski & Jetter, 2015). Most, if not all, of these studies confirm that there is a positive link between the involvement of women in society and the control of corruption. Mauro (1998) also found that corruption affect the composition of government expenditures.

This empirical evidence makes us believe that the is likely a relationship that exists between female representation in parliament and the composition of public expenditures. This paper investigates whether the proportion of female representation in parliament affects the composition of government expenditure, which is a gap in the literature. We try to broaden the research on the determinants of the composition of public expenditures by examining the impact of the proportion of women in parliaments.

3. Methodology

In order to investigate the possible differences in preferences across gender, we employed a dataset on the preferences expressed by the proportion of female elected representatives in parliament across different countries. The study focuses on educational, health, general government consumption, military, and research and development expenditures. There are three key reasons for using these sectors; Firstly, they constitute the lion's share of all government expenditures across almost every country. Secondly, the availability of data is good, and lastly, they are key determinants of economic growth and human development.

This paper uses data from WGI[1] and WDI for 126 countries. The institutional dataset from WGIs was assembled by Kaufmann et al. (2009). Several variables where used from this data source; Control of Corruption which measures the degree to which public power is used for private benefits, Political Stability and Absence of Violence/Terrorism (PS) which measures the likelihood of political instability including terrorism, Rule of Law (RL) which measures the extent to which agents have confidence in the rules of society, Regulatory Quality (RQ) which measures the ability of the government to formulate and implement good policies and regulations that permit and promote private sector development, Government Effectiveness (GE) measures the quality of public services and the degree of its independence from political pressures, Voice and Accountability (VA) which measures the extent to which a country's citizens are able to participate in selecting their government. All variables from WGI range from approximately -2.5 (weak) to 2.5 (strong) governance performance. Current health expenditure measures the level of current health expenditures expressed as a percentage of GDP. General government consumption expenditure includes all government current expenditures for purchases of goods and services expressed as a percentage of GDP. General government expenditure measures the level of educational expenditures expressed as a percentage of GDP. Military expenditure includes all current and capital expenditures on the armed forces expressed as a percentage of GDP. Research and development expenditure includes all expenditures on Research and development as a percentage of GDP.

The analytical framework of this study is based on a model in which the different types of expenditures will be the dependent variable and the women's empowerment, which is measured by the proportion of women in parliament to the total number of representatives in the parliament with the remainder of the variables mentioned above as control variables. To estimate the aforementioned model, the system-GMM estimation technique is employed. The motivation for using a system-GMM is found by Arellano and Bond (1991), Blundell and Bond (1998), and later in Levine, Loayza, and Beck (2000), who provided the motivation for using the GMM to study the relationship between variables. GMM controls for the simultaneity from the explanatory variables and the lag of the endogenous variables (Nginyu et al, 2025).

There are numerous methods of dynamic panel estimation, among which we have GMM, difference-GMM and system-GMM. Consistent with Arellano and Bond (1991), the first difference-GMM involves taking, for each period, the first difference of the equation to remove the individuals' specific effects. We are going to apply the two GMMs to better understand the results of our study, since the result of an estimation can change with respect to the estimation method used. The over-identifying restriction test does not check the validity of instruments, but rather it checks whether all instruments identify the same set of parameters. If the probability is not significant, it implies the instruments are valid, where (null hypothesis) H_0 supports the perspective that instruments are valid, while H_1 (alternative hypothesis) supports the view that instruments are not valid.

4. Results

In this section, we present, the empirically the relationship between female representation in parliament and the repartition of government expenditure. It finds that women representation in parliament increases expenditure on education, health and general government consumption expenditures and on the other hand, female representation in parliament decreases military as well as research and development expenditures.

Table 1. Female representation in parliament and the composition of government expenditure

VARIABLES	Health expenditures	Government Consumption expenditures	Educational expenditures	Military expenditures	Research and Development expenditures
L.Health	0.906***				
expenditures	(0.0258)				
Proportion of seats held by	0.00621**	0.0322***	0.0142***	-0.00333***	-0.00116***
Women in the Parliament	(0.00243)	(0.000625)	(0.00471)	(3.85e-05)	(3.04e-06)

[1] The indicators from WGIs were constructed assembled by?

L.Government		0.717***			
Consumption expenditures		(0.000370)			
L.Educational			0.632***		
Expenditures			(0.0827)		
L.Military				0.889***	
expenditures				(7.09e-05)	
L.Research and					1.043***
Development expenditures					(1.95e-05)
Constant	0.537***	4.086***	1.435***	0.268***	-0.00579***
	(0.132)	(0.0138)	(0.334)	(0.000603)	(2.23e-05)
Observations	2,745	3,050	1,662	2,803	1,347
Number of Countries	185	173	171	162	108
F_p	0	0	0	0	0
F	1342	2.303e+06	56.51	8.680e+07	1.440e+09
hansenp	0.262	1	1	1	1
hansen	177.2	172.6	167.1	161.7	106.4
sarganp	0	0	0	0	0
sargan	2971	4309	2041	3247	1514
ar2p	0.334	0.663	0.761	0.129	0.0579
ar2	-0.967	0.436	0.304	1.520	-1.897
ar1p	5.80e-11	0.00806	0.000360	0.108	1.65e-06
ar1	-6.549	-2.649	-3.568	-1.605	-4.792

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Source: computed by the author.

4.1 Baseline Model

Table 1 presents the effect of female representation on the repartition of government expenditures expenditure. It finds that female representation in parliament increases expenditure on education, health and general government consumption expenditures and on the other hand, female representation in parliament decreases military as well as research and development expenditures. The sign of the coefficient is stable, and the relationship also remains significant when estimated through widely-used robust regression techniques and when modifying the sample from one region to the other. Table 1 provides direct visual evidence that this result is not driven by a small group of countries by taking a good number of countries into the sample.

Table 2. Female representation in parliament and general health expenditure

VARIABLES	Health expenditures	Health expenditures	Health expenditures	Health expenditures	Health expenditures	Health expenditures	Health expenditures
L.Health	0.878***	0.865***	0.916***	0.916***	0.930***	0.919***	0.910***
expenditures	(0.0348)	(0.00161)	(0.00220)	(0.00154)	(0.00238)	(0.00178)	(0.00220)
Proportion of seats held by	0.00363	0.00415***	0.00276***	0.00215***	0.00499***	0.00303***	0.00181***
Women in the Parliament	(0.00445)	(0.000441)	(0.000511)	(0.000521)	(0.000329)	(0.000527)	(0.000401)
Remittance	-0.00862	-0.000553	-0.00763***	-0.00463**		-0.00973***	0.00306**
	(0.0168)	(0.00137)	(0.00245)	(0.00183)		(0.00184)	(0.00130)
Inflation	-0.0577***	-0.0551***	-0.0345***	-0.0286***		-0.0308***	-0.0274***

	(0.00839)	(0.000551)	(0.000514)	(0.000578)		(0.000577)	(0.000473)
Foreign direct investment	0.00347	0.00218***	0.000390*	0.000607		0.000216	-0.000360
	(0.00390)	(0.000325)	(0.000213)	(0.000442)		(0.000267)	(0.000307)
Control of Corruption		0.0342***					
		(0.00438)					
Regulatory Quality			0.00834				
			(0.00904)				
Role of Law				0.0540***			
				(0.0104)			
Political Stability					0.0967***		
					(0.00764)		
Government Effectiveness						-0.000773	
						(0.00998)	
Voice of Accountability							0.0944***
							(0.00924)
Constant	1.157***	1.187***	0.798***	0.764***	0.431***	0.763***	0.772***
	(0.196)	(0.0137)	(0.0156)	(0.0122)	(0.0134)	(0.0182)	(0.0123)
Observations	1,772	1,772	1,772	1,772	1,877	1,772	1,772
Number of Countrycode	122	122	122	122	126	122	122
F_p	0	0	0	0	0	0	0
F	600.8	113064	222974	133837	150418	75332	104215
hansenp	0.994	0.998	1	1	1	1	1
hansen_df	163	164	313	313	313	313	313
hansen	120.9	117.5	119.0	120.5	124.3	119.1	120.7
sarganp	0	0	0	0	0	0	0
sar_df	163	164	313	313	313	313	313
sargan	1308	1366	1709	1785	1941	1756	1811
ar2p	0.224	0.235	0.333	0.362	0.566	0.350	0.367
ar2	-1.216	-1.189	-0.968	-0.912	-0.574	-0.935	-0.902
ar1p	1.46e-06	5.37e-07	1.04e-07	1.09e-07	2.60e-07	9.95e-08	1.18e-07
ar1	-4.817	-5.013	-5.320	-5.311	-5.150	-5.328	-5.297

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Source: computed by the author.

This is also a point of interest since general government final consumption expenditures is not productive and therefore should be discouraged since it is likely not to improve economic growth. We have also found evidence of a positive, significant, and robust relationship between female representation in parliament and government expenditure on education, which is also a point for concern. Previous literature has also shown that educational attainment is an important determinant of economic growth (Hanushek & Woessmann, 2010; Eggoh et al., 2015; Denison, 1966; Benos & Zotou, 2014; Lau et al., 1993).

However, female representation in parliament to have a negative, significant, and robust effect on military

expenditures. Previous literature has shown that military expenditures have a negative effect of economic growth (Abu-Bader & Abu-Qarn, 2003; Pieroni, 2009; Cappelen et al., 1984) though there have been some contradictory results (Yildirim et al., 2005), on the other hand, Alptekin and Levine (2012) and Dunne and Tian (2015) demonstrated that this relationship is non-linear.

4.2 Robustness and Other Considerations

Table 2, 3, 4, 5 and 6 reports the results obtained by re-investigating the effect of female representation in parliament and health expenditure, general government final, educational expenditure, expenditure, military expenditure and research development expenditure while adding other variables (control) in other to check the robustness of our results. The results also demonstrate other important factors that female preference. Our result is consistent with results of the baseline model.

Table 3. Female representation in parliament and general government final expenditure

VARIABLES	Government Consumption expenditures	Government Consumption expenditures	Government Consumption expenditures	Government Consumption expenditures	Government Consumption expenditures	Government Consumption expenditures	Government Consumption expenditures
L.Government	0.837***	0.866***	0.882***	0.865***	0.865***	0.866***	0.873***
Consumption expenditures	(0.000536)	(0.000462)	(0.000573)	(0.000345)	(0.000339)	(0.000473)	(0.000475)
Proportion of seats held by	0.0139***	0.0151***	0.0110***	0.00970***	0.00801***	0.00637***	0.0168***
Women in the Parliament	(0.00102)	(0.00110)	(0.000686)	(0.000590)	(0.000747)	(0.000676)	(0.000813)
Remittance	0.0953***	0.0318***	0.0175***	0.0462***	0.0297***	0.0358***	0.0359***
	(0.00378)	(0.00372)	(0.00427)	(0.00341)	(0.00227)	(0.00336)	(0.00340)
Inflation	-0.120***	-0.0980***	-0.101***	-0.130***	-0.128***	-0.0945***	-0.0992***
	(0.000602)	(0.000336)	(0.000652)	(0.000304)	(0.000308)	(0.000470)	(0.000387)
Foreign direct investment	-0.0304***	-0.00961***	-0.00838***	-0.0214***	-0.0223***	-0.0174***	-0.0113***
	(0.000485)	(0.000769)	(0.000710)	(0.000576)	(0.000675)	(0.000782)	(0.000865)
Control of Corruption		-0.145***					
		(0.0243)					
Regulatory Quality			-0.182***				
			(0.0238)				
Role of Law				-0.117***			
				(0.0188)			
Political Stability					-0.0749***		
					(0.0186)		
Government						0.118***	
Effectiveness						(0.0184)	
Voice of Accountability							-0.247***
							(0.0142)
Constant	3.026***	2.512***	2.386***	2.866***	2.920***	2.679***	2.386***
	(0.0164)	(0.0215)	(0.0246)	(0.0220)	(0.0130)	(0.0218)	(0.0233)
Observations	1,694	1,694	1,694	1,694	1,694	1,694	1,694

Number of Countrycode	120	120	120	120	120	120	120
F_p	0	0	0	0	0	0	0
F	2.402e+06	2.170e+06	1.261e+06	8.397e+06	3.333e+06	3.071e+06	4.473e+06
hansenp	0.997	1	1	0.997	0.997	1	1
hansen	118.4	118.0	118.1	118.5	118.0	118.2	118.1
sarganp	0	0	0	0	0	0	0
sargan	1578	1682	1655	1539	1546	1684	1663
ar2p	0.269	0.594	0.608	0.342	0.345	0.521	0.567
ar2	-1.105	-0.533	-0.513	-0.950	-0.944	-0.642	-0.572
ar1p	0.128	0.138	0.138	0.127	0.128	0.138	0.138
ar1	-1.523	-1.483	-1.484	-1.525	-1.523	-1.483	-1.483

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Source: computed by the author.

This paper presents evidence of a positive, significant and robust relationship between female representation in parliament and government expenditure on health, which is a reason for concern, since previous literature has shown that health is an important determinant of economic growth (Mayer, 2001; Bloom et al., 2004; Eggoh et al., 2015). In the same light, we also found female representation in parliament to have a positive, significant, and robust effect on general government final consumption expenditures. This point is also supported by the literature in corruption since military expenditures promote corruption and hinder development (Gupta et al., 2001; Ak¸cay, 2006; Aizenman & Glick, 2006). Female representation in parliament has also been demonstrated to have a negative, significant, and robust effect. This seems to be detrimental to economic development since it has been proven to be the motor of economic development.

A potential policy implication might be that it would be desirable to encourage female representation in parliament to improve the composition of their expenditure by increasing the share of those spending categories that are less susceptible to corruption more productive. It should be recommended that the women parliamentarians should take into consideration not only their preferences but they should they should reduce their attitude toward general government final consumption expenditures since it is not productive. They should also increase research and development expenditure since it is the motor of an economy. It guarantees economic growth through technical progress.

5. Conclusion

This paper investigates if the proportion of female representation in parliament affects the composition of government expenditure. Theoretically, the individual preferences of elected representatives may impact public expenditure since full policy commitment is not feasible. To empirically address this issue, I analyze the effect of female representation in parliament on preferences expressed by the proportion of each and every component of government expenditure using a system GMM estimation technique with data from to across 126 countries of the world. Our results revile that, women representation in parliament increases expenditure on education, health and general government final consumption expenditures and on the other hand, female representation in parliament decreases military as well as research and development expenditures. This paper encourages increase female representation in parliament but recommended to reduce expenditures on general government final consumption since it is not productive and increase research and development expenditures which generate and guarantee long run growth through technical progress.

Table 4. Female representation in parliament and educational expenditure

VARIABLES	Educational expenditures	Educational expenditures	Educational expenditures	Educational expenditures	Educational expenditures	Educational expenditures	Educational expenditures
Educational expenditures	0.618***	0.526***	0.696***	0.553***	0.543***	0.721***	0.570***
	(0.0577)	(0.00228)	(0.00752)	(0.00560)	(0.00453)	(0.00456)	(0.00479)
Proportion of	0.0213***	0.0144***	0.0116***	0.0198***	0.0158***	0.0109***	0.0180***

seats held by Women in the Parliament	(0.00503)	(0.000231)	(0.000411)	(0.000521)	(0.000521)	(0.000160)	(0.000482)
Remittance	0.0253	0.0547***	0.0279***	0.0412***	0.0533***	0.0155***	0.0356***
	(0.0190)	(0.00182)	(0.00249)	(0.00224)	(0.00295)	(0.00108)	(0.00304)
Inflation	-0.0330***	-0.0278***	-0.0221***	-0.0268***	-0.0282***	-0.0260***	-0.0293***
	(0.00900)	(0.000406)	(0.000473)	(0.000524)	(0.000579)	(0.000321)	(0.000667)
Foreign direct investment	0.00345	0.000378*	-0.000747***	0.00114***	0.00179***	0.00239***	0.00164***
	(0.00401)	(0.000201)	(0.000253)	(0.000170)	(0.000132)	(0.000225)	(0.000153)
Control of Corruption		0.301***					
		(0.00490)					
Regulatory Quality			0.144***				
			(0.00508)				
Role of Law				0.193***			
				(0.00834)			
Political Stability					0.281***		
					(0.00286)		
Government Effectiveness						0.157***	
						(0.00291)	
Voice of Accountability							0.185***
							(0.00553)
Constant	1.468***	1.856***	1.192***	1.654***	1.726***	1.176***	1.650***
	(0.270)	(0.0148)	(0.0398)	(0.0274)	(0.0267)	(0.0248)	(0.0305)
Observations	1,073	1,073	1,073	1,073	1,073	1,073	1,073
Number of Countrycode	111	111	111	111	111	111	111
F_p	0	0	0	0	0	0	0
F	62.39	440877	37308	31867	1.113e+06	424072	229257
hansenp	1.000	1.000	1	1.000	1.000	1	1.000
hansen	105.5	104.7	99.91	106.5	107.2	105.9	101.4
sarganp	0	0	0	0	0	0	0
sargan	975.1	1036	1077	1040	1042	1029	1024
ar2p	0.266	0.226	0.506	0.256	0.216	0.433	0.236
ar2	-1.112	-1.212	-0.666	-1.136	-1.237	-0.784	-1.185
ar1p	9.88e-05	5.10e-05	1.20e-05	3.16e-05	4.51e-05	2.50e-05	3.34e-05
ar1	-3.894	-4.051	-4.377	-4.162	-4.080	-4.214	-4.149

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Female representation in parliament and military expenditure

VARIABLES	Military expenditures	Military expenditures	Military expenditures	Military expenditures	Military expenditures	Military expenditures	Military expenditures

L.Military	0.913***	0.869***	0.869***	0.868***	0.913***	0.904***	0.869***
expenditures	(0.000677)	(0.00104)	(0.00158)	(0.00118)	(0.00172)	(0.00152)	(0.000400)
Proportion of seats held by	-0.00747***	-0.0201***	-0.0197***	-0.0185***	-0.00700***	-0.00906***	-0.00407***
Women in the Parliament	(7.60e-05)	(0.000347)	(0.000308)	(0.000282)	(0.000328)	(0.000199)	(0.000160)
Remittance	0.00930***	-0.00844***	-0.00778***	-0.00288***	-0.0114***	0.00109	-0.00871***
	(0.000554)	(0.00101)	(0.00143)	(0.000996)	(0.00131)	(0.000931)	(0.000417)
Inflation	-0.0409***	-0.0433***	-0.0434***	-0.0433***	-0.0269***	-0.0253***	-0.0450***
	(9.36e-05)	(0.000188)	(0.000248)	(0.000125)	(0.000184)	(0.000218)	(0.000220)
Foreign direct investment	-0.00537***	-0.00206***	-0.00254***	-0.00356***	-0.000732***	-0.000405**	-0.00169***
	(0.000164)	(0.000229)	(0.000195)	(0.000218)	(0.000197)	(0.000166)	(0.000108)
Control of Corruption		-0.408***					
		(0.0113)					
Regulatory Quality			-0.368***				
			(0.00469)				
Role of Law				-0.329***			
				(0.00678)			
Political Stability					-0.128***		
					(0.00944)		
Government						-0.113***	
Effectiveness						(0.00568)	
Voice of Accountability							-0.185***
							(0.00137)
Constant	0.542***	0.946***	0.957***	0.957***	0.508***	0.483***	0.651***
	(0.00162)	(0.00834)	(0.00850)	(0.00782)	(0.0133)	(0.00735)	(0.00507)
Observations	1,691	1,733	1,733	1,733	1,733	1,733	1,691
Number of Countries	120	120	120	120	120	120	120
F_p	0	0	0	0	0	0	0
F	738762	181129	219456	307607	212353	335923	1.812e+06
hansenp	0.998	0.998	0.998	0.998	1	1	0.998
hansen	116.3	113.7	113.9	113.2	115.2	112.7	116.7
sarganp	0	0	0	0	0	0	0
sargan	1083	1023	1009	1027	1522	1566	979.6
ar2p	0.739	0.923	0.926	0.939	0.539	0.486	0.546
ar2	-0.333	0.0969	0.0933	0.0766	0.614	0.697	-0.604
ar1p	0.000427	0.000496	0.000554	0.000484	0.00239	0.00251	0.000348
ar1	-3.523	-3.483	-3.453	-3.490	-3.037	-3.022	-3.577

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Source: computed by author.

Table 6. Female representation in parliament and research and development expenditure

VARIABLES	Research and development expenditures	Research and development expenditures	Research and development expenditures	Research and development expenditures	Research and development expenditures	Research and development expenditures	Research and development expenditures
L.Research and	0.947***	0.924***	0.892***	0.962***	0.905***	0.980***	0.979***
development expenditures	(0.000958)	(0.0341)	(0.00169)	(0.00236)	(0.000583)	(0.00104)	(0.00128)
Proportion of seats held by	-0.000237***	-0.000967	-0.00101***	-0.000245*	-0.00131***	-0.000343***	-0.000138
Women in the Parliament	(6.02e-05)	(0.00109)	(6.81e-05)	(0.000145)	(2.01e-05)	(8.01e-05)	(8.47e-05)
Remittance	-0.0254***	-0.0223*	-0.0200***	-0.00770***	-0.0194***	-0.00397***	-0.00431***
	(0.000519)	(0.0119)	(0.000473)	(0.00100)	(0.000437)	(0.000376)	(0.000400)
Inflation	-0.00627***	-0.00579**	-0.00433***	-0.00151***	-0.00498***	-0.00212***	-0.00209***
	(8.66e-05)	(0.00253)	(7.60e-05)	(0.000124)	(1.83e-05)	(0.000116)	(7.41e-05)
Foreign direct investment	-0.000473***	-0.000716	-0.00118***	-0.000323***	-0.000993***	-0.000542***	-0.000233***
	(9.59e-06)	(0.000610)	(9.39e-06)	(2.37e-05)	(6.99e-06)	(4.29e-05)	(1.79e-05)
Control of Corruption		0.0418					
		(0.0281)					
Regulatory Quality			0.0906***				
			(0.00153)				
Role of Law				0.0362***			
				(0.00268)			
Political Stability					0.0822***		
					(0.000665)		
Government						0.0208***	
Effectiveness						(0.00163)	
Voice of Accountability							0.0107***
							(0.00118)
Constant	0.172***	0.185***	0.187***	0.0662***	0.176***	0.0614***	0.0542***
	(0.00221)	(0.0532)	(0.00238)	(0.00316)	(0.00164)	(0.00101)	(0.00141)
Observations	985	985	985	985	985	985	985
Number of Countrycode	88	88	88	88	88	88	88
F_p	0	0	0	0	0	0	0
F	1.340e+07	1312	884855	947561	1.040e+07	2.045e+06	8.424e+06
sig2	0.00784	0.00755	0.00713	0.00682	0.00733	0.00699	0.00698
hansenp	1	1	1	1	1	1	1
hansen	80.20	80.60	78.94	84.69	82.31	80.52	80.22
sarganp	0	0	0	0	0	0	0

sargan	930.3	960.4	996.2	1143	979.9	1130	1145
ar2p	0.305	0.233	0.215	0.229	0.201	0.247	0.292
ar2	-1.025	-1.192	-1.239	-1.204	-1.278	-1.159	-1.054
ar1p	5.62e-05	9.35e-05	4.82e-05	3.23e-05	3.81e-05	3.17e-05	3.37e-05
ar1	-4.028	-3.907	-4.064	-4.156	-4.119	-4.161	-4.147

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Source: computed by author.

References

Abu-Bader, S. and Abu-Qarn, A. S., (2003). Government expenditures, military spending and economic growth: causality evidence from Egypt, Israel, and Syria. *Journal of Policy Modeling*, *25*(67), 567–583.

Aizenman, J. and Glick, R., (2006). Military expenditure, threats, and growth. *Journal of International Trade & Economic Development*, *15*(2), 129–155.

Ak¸cay, S., (2006). Corruption and human development. *Cato J.*, *26*, 29.

Alptekin, A. and Levine, P., (2012). Military expenditure and economic growth: A meta-analysis. *European Journal of Political Economy*, *28*(4), 636–650.

Bello Hutt, D., (2022). Rule of law and political representation. *Hague Journal on the Rule of Law*, *14*(1), 1-25.

Benos, N. and Zotou, S., (2014). Education and economic growth: A meta-regression analysis. *World Development*, *64*, 669–689.

Besley, T. and Case, A., (2003). Political institutions and policy choices: evidence from the united states. *Journal of Economic Literature*, *41*(1), 7–73.

Bloom, D. E., Canning, D., and Sevilla, J., (2004). The effect of health on economic growth: a production function approach. *World development*, *32*(1), 1–13.

Cappelen, ˚A., Gleditsch, N. P., and Bjerkholt, O., (1984). Military spending and economic growth in the OECD countries. *Journal of peace Research*, 21(4), 361–373.

Debski, J. and Jetter, M., (2015). Gender and corruption: a reassessment.

Denison, E. F., (1966). Measuring the contribution of education to economic growth. *The Economics of Education*, 202–260. Springer.

Devlin, C. and Elgie, R., (2008). The effect of increased women's representation in parliament: The case of Rwanda. *Parliamentary Affairs*, *61*(2), 237–254.

Dezs¨o, C. L. and Ross, D. G., (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, *33*(9), 1072–1089.

Dollar, D., Fisman, R., and Gatti, R., (2001). Are women really the "fairer" sex? Corruption and women in government. *Journal of Economic Behavior & Organization*, *46*(4), 423–429.

Dunne, J. P. and Tian, N., (2015). Military expenditure, economic growth and heterogeneity. *Defence and Peace Economics*, *26*(1), 15–31.

Eggoh, J., Houeninvo, H., and Sossou, G.-A., (2015). Education, health and economic growth in African countries. *Journal of Economic Development*, *40*(1), 93.

Ellerby, K., (2011). Quotas for women in politics: Gender and candidate selection reform worldwide by mona Lena Krook. *Journal of Women, Politics & Policy*, *32*(2), 164–166.

Ferejohn, J., (1986). Incumbent performance and electoral control. *Public choice*, pp. 5–25.

Giorgio d'Agostino, J. Paul Dunne, Luca Pieroni, (2016). Government spending, corruption and eco-nomic growth. *World Development*, *84*, 190–205.

Goetz, A. M., (2007). Political cleaners: Women as the new anti-corruption force? *Development and Change*, *38*(1), 87–105.

Gupta, S., De Mello, L., and Sharan, R., (2001). Corruption and military spending. *European Journal of Political Economy*, *17*(4), 749–777.

Halder, N., (2004). Female representation in parliament: A case study from Bangladesh. *New Zealand Journal of Asian Studies*, *6*, 27–63.

Hanushek, E. A. and Woessmann, L., (2010). Education and economic growth. *Economics of education*, 60–67.

Hazarika, D., (2011). Women empowerment in India: A brief discussion. *International Journal of Educational Planning & Administration*, *1*(3), 199–202.

Itzkovitch-Malka, R., & Oshri, O., (2024). The Weight on Her Shoulders: Marginalization of Women Legislators in Parliaments and Substantive Representation of Women. *British Journal of Political Science*, *54*(4), 1340-1361.

Kaufmann, D., Kraay, A., and Mastruzzi, M., (2009). *Governance matters VIII: Aggregate and individual governance indicators 1996-2008*. The World Bank.

Lau, L. J., Jamison, D. T., Liu, S.-C., and Rivkin, S., (1993). Education and economic growth some cross-sectional evidence from Brazil. *Journal of development economics*, *41*(1), 45–70.

Levitt, S. D., (1996). How do senators vote? Disentangling the role of voter preferences, party affiliation, and senator ideology. *The American Economic Review*, 425–441.

Mauro, P., (1998). Corruption and the composition of government expenditure. *Journal of Public Economics*, *69*(2), 263–279.

Mayer, D., (2001). The long-term impact of health on economic growth in Latin America. *World development*, *29*(6), 1025–1033.

Mocan, N., (2008). What determines corruption? International evidence from microdata. *Economic Inquiry*, *46*(4), 493–510.

Nginyu, G. G., Fonchamnyo, D. C., Epo, B. N., & Asongu, S. A., (2025). The effects of institutional quality and biocapacity on inclusive human development in Sub-Saharan Africa. *Journal of Applied Social Science*, 19367244251327997.

Paxton, P. and Kunovich, S., (2003). Women's political representation: The importance of ideology. *Social Forces*, *82*(1), 87–113.

Persson, T., Roland, G., and Tabellini, G., (2000). Comparative politics and public finance. *Journal of Political Economy*, *108*(6), 1121–1161.

Pieroni, L., (2009). Military expenditure and economic growth. *Defence and Peace Economics*, *20*(4), 327–339.

Rivas, M. F., (2013). An experiment on corruption and gender. *Bulletin of Economic Research*, *65*(1), 10–42.

Seltzer, R. A., Newman, J., and Leighton, M. V., (1997). *Sex as a political variable: Women as candidates and voters in US elections*. Lynne Rienner Publishers.

Sharma, P. and Varma, S. K., (2016). Women empowerment through entrepreneurial activities of self-help groups. *Indian Research Journal of extension education*, *8*(1), 46–51.

Svaleryd, H. et al., (2002). *Female representation: Is it important for policy decisions?* Univ., Department of Economics.

Swamy, A., Knack, S., Lee, Y., and Azfar, O., (2001). Gender and corruption. *Journal of development economics*, *64*(1), 25–55.

Thomas, S., (1991). The impact of women on state legislative policies. *The Journal of Politics*, *53*(4), 958–976.

Valsangiacomo, C., (2021). Political representation in liquid democracy. *Frontiers in Political Science*, *3*, 591853.

Yildirim, J., Sezgin, S., and Ocal, N., (2005). Military expenditure and economic growth in middle Eastern countries: A dynamic panel data analysis. *Defence and Peace Economics*, *16*(4), 283–295.