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AN EMPIRICAL ANALYSIS OF FISCAL DECENTRALIZATION AND INSTITUTIONAL QUALITY ON GOVERNMENT SIZE: EVIDENCE FROM PAKISTAN ECONOMY

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ABSTRACT

Fiscal decentralization and institutional quality play a crucial role in the economy of developing country like Pakistan. The main objective of the study was to investigate the impact of fiscal decentralization and institutional quality on government size of Pakistan economy. The current study considered revenue and expenditure as sub variables for fiscal decentralization while corruption and rule of Law have been considered as sub variables for institutional quality to assess its impact on government size. The nature of the study was quantitative in nature. The data for the independent variables (i.e. revenue decentralization and expenditure decentralization, corruption and rule of law) and dependent variable (government size) of economy of Pakistan was considered were variables of the study. Time series data was collected from year 2012-2022 for the current study. The World Bank, IMF, Pakistan's State Bank, and other reliable sources were used to collet time series data. Data analysis was carried out through Eviews. Based on the Augmented Dickey-Fuller (ADF) test, multiple regression analysis, through ordinary least square method was conducted after the correlation analysis. The result of correlation analysis shows that revenue, expenditure decentralization and rule of law was having a positive relation with size of government while corruption was having a negative relation with size of government. The results of the regression analysis shows that expenditure Decentralization has a significant positive impact of government size while revenue decentralization has a significant positive impact of government size and rule of Law has a significant positive impact on government size, while corruption has a significant negative impact on government size. The study concluded that H_1, H_2 and H_3 were accepted. The study suggested that efforts should be focused on improving the quality of institutions, especially the rule of law, in order to make governance processes more effective, transparent, and accountable.

Keywords: *Fiscal Decentralization, Institutional Quality, Govt. Size and Multiple Regression Model.*

INTRODUCTION

Global financial crises in the early 20th century heightened the urgency of the need for fiscal decentralization and strong national governments. Many nations were more dependent on their federal governments as a result of two global wars and the Great Depression, (Arif and Ahmad 2020). The 1950s were the zenith of decentralization, after which it started to erode. Decentralization, once again, became widely hailed as a "prescription for growth" for emerging economies in the early 1970s. The fall of the Soviet Union galvanized decentralization movements across the world, particularly in Latin American countries and China. In the 1990s, there was a trend toward nations with decentralization levels in the middle. The public sector performance of both industrialized and developing nations has been on the rise, and both are shifting their focus to devolving authority to local governments (Aslam, et al. 2019).

The transfer of authority from the federal government to state and local governments is the most prevalent example of decentralization of powers. To restate, it's the process by which federal policymakers convey their worries about spending and taxation to state and local governments (Faridi, et al. 2019). The idea behind fiscal decentralization is that by giving local governments more control over their own budgets, authorities can improve financial efficiency and guarantee good governance. Devolution in terms of taxation is also the most straightforward metric to measure and compare. Revenue and spending shares at the subnational level are the most often used metrics for fiscal decentralization (Hanif, et al. 2020). So, decentralization is a mechanism for national governments to hand over power to their subnational counterparts so that those governments may make better use of the resources at their disposal, raise the quality of life for the general population, and distribute the burden more evenly. Western nations choose decentralization to provide public goods more efficiently, whereas low-income nations choose it to eliminate bad governance and macroeconomic instability (Khan, et al. 2021, Hussain, et al. 2022). Political pressure from Latin American people to pursue democracy was the driving force behind the inception of decentralization in those nations. To sum up, the idea behind decentralization is that it would bring political authority closer to the people and make it so that different parts of the same nation may enjoy public goods on an equal footing (Li et al. 2021).

There are two main schools of thought when it comes to fiscal decentralization theories: the first-generation and the second-generation schools. According to Mangnejo and Rahpoto (2019), fiscal decentralization was first proposed by Hayek (1945) who argued that local governments should be able to better meet the needs of their constituents by providing goods and services that are more in line with their preferences. This would lead to more economic efficiency in public sector provision. A group of scholars including Hayek (1945), Tiebout (1956), Musgrave (1959), Oates (1972), and Brennan and Buchannan (1980) established the first generation of theories about fiscal decentralization. Oates (2005) introduced a novel theory that is associated with fiscal decentralization; it is known as the second generation theory. This theory suggests that fiscal institutions, when coupled with political institutions, increase economic efficiency. The second generation of economic theory incorporates ideas from a number of earlier frameworks, including the principal-agent, contract, firm, and asymmetric information theories (Sasana, 2019).

Nevertheless, decentralization has its advantages. One of these is that local governments are believed to know more about public choices than the federal government. When local governments are involved in making decisions, it improves the government's overall efficiency. Since local governments under a decentralized system have direct contact to the community, tax collection goes higher. Research study by (Aslam et al. 2019), Faridi, et al. (2019), Arif and Ahmad (2020), Hanif, et al. (2020), and Shahid and Kalim (2020) suggest that decentralization impacts the relative size of governments. Hayek (1945), Musgrave (1959), and Brennan and Buchanan (1980) put out the “Leviathan hypothesis" that "government intrusion into the economy is smaller when the public sector is decentralized”.

Among the most intriguing uncharted territories in the realm of academic inquiry is the connection between governmental structures and their sizes. Since the government is an inherent part of both the political and economic systems, it is its job to put economic policies into action (Hussain, et al. 2022). Nonetheless, the political system is one of several institutional constraints that influence government conduct in both direct and indirect ways (Snowdon and Vane 2005). Conflicts over redistributive transfers, the distribution of resources among themselves, and the abuse of political authority and public monies are only a few examples of the ways in which the political system is already strained. According to Khan, et al. (2021), political entities are crucial in resolving such disputes. According to research, the relative magnitude of government is influenced by the stability and quality of political institutions (Arora & Chong 2018). When it comes to shaping the size and effectiveness of governments throughout the globe,

economists contend that government institutions play a crucial role. Financial centralization, information asymmetry, rivalry between municipalities, bureaucratic conduct, intergovernmental transfers and grants, fiscal illusion, size of the municipality, and institutional setting are the important factors that Placek et al. (2020) identified as determining the efficiency of local governments. According to Khan and Hanif (2020), the quality of Pakistan's institutions is the deciding factor in the correlation between GDP growth and the size of the government (Faridi, et al. 2019, Li, et al. 2021)

This Leviathan Hypothesis has been the subject of extensive empirical investigation, with the majority of the studies focusing on Latin American and Organization of Economic Cooperation and Development (OECD) economic samples. There are two major schools of thought among the studies that have examined the impact of fiscal decentralization on government size. One school of thought holds that fiscal decentralization has a negative correlation with government size (Marlow, 1988; Ehdaie, 1994; Rodden, 2003; Cassette and Patty 2010; and Golem and Perovick 2014; Carniti, et al. 2019). The second school of thought holds that fiscal decentralization has a positive correlation with government size (Nelson 1986; Grossman 1989; Wu and Lin 2012, Canavire, et al. 2020). However, the present study is important to improve the existing literature of economics by giving the empirical results of fiscal decentralization and institutional quality on government size in the context of Asian economies, specifically considering Pakistan. The main objective of the study was to investigate the impact of fiscal decentralization and institutional quality on government size of Pakistan.

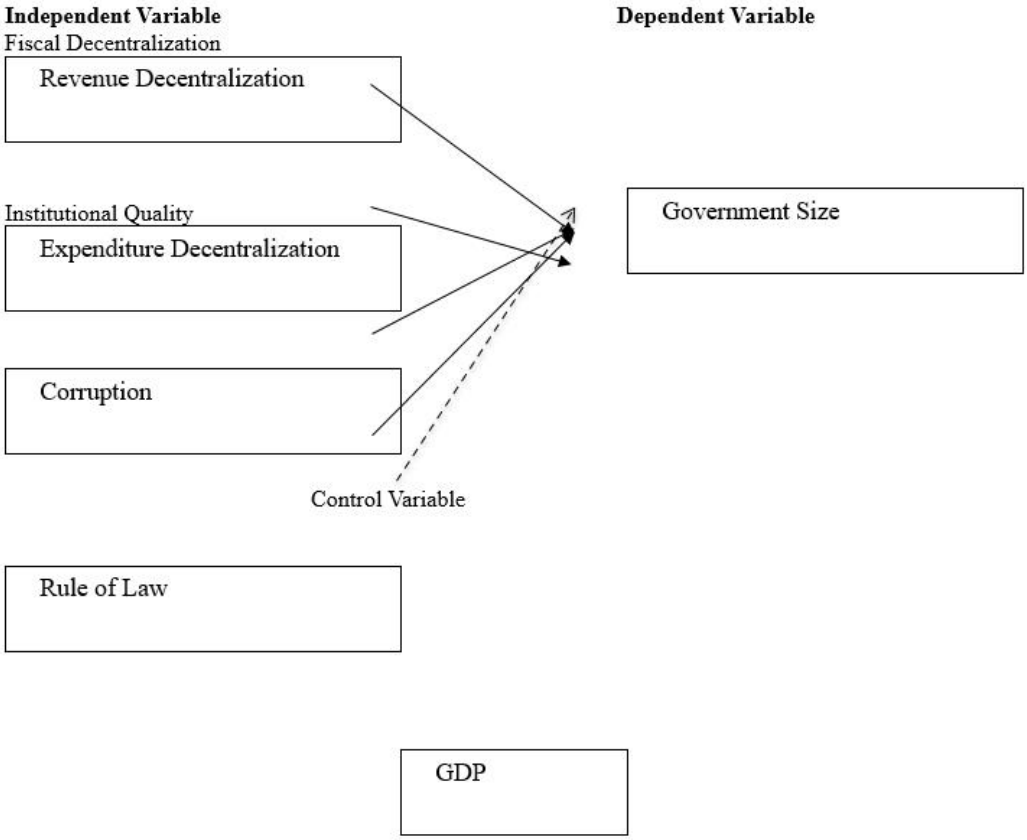
Materials and Methods

Research Design

Research design is a strategy and plan that is utilized and adopted for conducting research to achieve the objectives of the research (Lee, & Saunders, 2017). The aim of the current study was to investigate the impact of fiscal decentralization and institutional quality on government size, therefore, the study was quantitative in nature while descriptive research design is chosen for the study.

Population and Sample Size of the Study

In this research study population of the data was 1947 to 2022, while the sample size was considered ten (10) years, which were from 2012 to 2022. The data were collected from different sources like, State Bank of Pakistan (SBP), IMF and World Bank and other pertinent sources were accessed for data belonging to Pakistan. The data for the independent variables (i.e. revenue decentralization and expenditure decentralization, corruption and rule of law) and dependent variable (government size) of economy of Pakistan were used.



Econometric Model for Empirical Testing

The following econometric specification and the model specification of Sohail et al. (2021) was utilized to assess that whether transfer of fiscal authority and quality institutions and governance do really impact the government size in economy of Pakistan.

$$\mathbf{Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \ldots + \varepsilon_t} \quad \textbf{.....eq (1)}$$

$$\mathbf{GS_t = \beta_0 + \beta_1 FD_{1t} + \beta_2 IQ_{2t} + \beta_3 GDP_{3t}} \quad \textbf{.eq (2)}$$

GS_t = Govt Size (in years)
β_0 = Intercept term of the model
β_i = Slope/Parameters of the model
FD_t = Fiscal Decentralization (Revenue & Expenditure in Years)
IQ_t = Institutional Quality (Corruption and Rule of Law in Years)
GDP_t = Gross Domestic Product in years
ε_t = Error Term

Results and Discussion

In this section of study included the results of descriptive statistics, unit root test, coefficient of correlation and the analysis of regression model.

4.1 Estimated Results of Descriptive Statistics

Table 4.1 indicates the results of the mean, standard deviation, minimum and maximum values of the variables. It shows that mean value of government size is 19.23, its standard deviation value is 0.77, the minimum value is 17.71 while the maximum value is 20.29, mean value of Revenue Decentralization is 0.23, its standard deviation value is 0.15, the minimum value is 0.031 while the maximum value is 0.46, mean value of Expenditure Decentralization is 0.486, its standard deviation value is 0.08, the minimum value is 0.27 while the maximum value is 0.62, mean value of Rule of Law is 0.37, its standard deviation value is 0.014, the minimum value is 0.36 while the maximum value is 0.39, mean value of Corruption is 126.27, its standard deviation value is 6.36, the minimum value is 116 while the maximum value is 140 and mean value of government size is 4.40, its standard deviation value is 1.26, the minimum value is 2.5 while the maximum value is 6.5.

Previous research studies on Pakistan's government size have yielded comparable average figures, suggesting that the country's

spending and activities are on the average large scale. The amount of decentralization of revenue-raising capabilities to subnational levels may have been investigated in studies on fiscal decentralization in Pakistan.

Table 4.1: Estimated Results of Descriptive Statistics

S.no	Variable	Mean	Standard Deviation	Minimum	Maximum
1	Government Size	19.23669261	0.7730768628	17.7120132	20.29641773
2	Revenue Decentralization	0.235863636	0.1508118938	0.031	0.4661
3	Expenditure Decentralization	0.486572727	0.08799519789	0.2774	0.62
4	Rule of Law	0.378181818	0.01418802511	0.36	0.39
5	Corruption	126.2727273	6.367653618	116	140
6	GDP	4.400909091	1.261757484	2.5	6.5

Source: Secondary Data

4.2 Unit Root Test for Stationary/Non Stationary

To determine whether time series variables are stationary or non-stationary (i.e. have a unit root). According to Fedorová (2016), the existence of the unit root is defined by the null hypothesis in the unit root test, while the non-stationarity of the variable is defined by the alternative hypothesis. The purpose of the Augmented Dickey-Fuller (ADF) test in this research is to determine if the study's variables include a unit root (Hall, 1994). "Ho: Series has unit root" was the ADF test's null hypothesis. The study's variables' ADF test results are shown in the tables below.

The analysis started by testing all of the variables at the most level first (0). There was no evidence of stationarity at level I (0) for any of the variables. The table 4.2 shows that the probability value for Real GDP was 0.3204 (t = 1.1791), indicating that Government Size was not statistically significant. Consequently, the null hypothesis, which reads, "Ho: Series has unit root," was accepted, indicating that Government Size was not stable. The other variables, Revenue Decentralization, Expenditure Decentralization, Rule of Law, Corruption, and GDP, all had insignificant probability values: 0.2201 (t = 0.0131), 0.3414 (t = 1.2451), 0.7661 (t = 1.8781), 0.2876 (t = -1.0341), and 0.3877 (t = -0.3481), respectively. As a result, the null hypothesis, "Ho: Series has unit root," was accepted, indicating that none of these variables were stationary.

Next at the first difference I stage, the Augmented Dickey-Fuller (ADF) test was run (1). According to the first difference findings, every single variable was statistically significant at the first difference level I (1). The table 4.2 shows that Real GDP was statistically significant with a probability value of 0.0221 (t = -5.274528). This means that the null hypothesis, which states that the series has a unit root, was rejected, indicating that Real GDP was stationary at first difference I(1). The other variables, Revenue Decentralization, Expenditure Decentralization, Rule of Law, Corruption, and GDP, all had probability values of 0.00214 (t = 6.135), 0.0144 (t = 5.9294), 0.0010 (t = 4.2935), 0.0210 (t = -3.2565), and 0.0340 (t = -4.25310), respectively. This meant that these variables had also become stationary at first difference I (1), and the null hypothesis, "Ho: Series has unit root," was rejected.

Table 4.2: Estimated Results of Augmented Dickey-Fuller (ADF) Test

	At Level I(0)		At First Difference I(1)	
Variables	t-statistics	Prob.	t-statistics	Prob.
Government Size	1.1791	0.3204	5.274528	0.0221*
Revenue Decentralization	0.0131	0.2201	6.135205	0.00214*
Expenditure	1.2451	0.3414	5.929401	0.0144*

Decentralization				
Rule of Law	1.8781	0.7661	4.293515	0.0010*
Corruption	-1.0341	0.2876	-3.25650	0.0210*
GDP	-0.3481	0.3877	-4.25310	0.0340*
GDP	-0.3481	0.3877	-4.25310	0.0340*

Notes:

1. The test is conducted as the significance level of 5% at the level series.
2. The test is conducted as the significance level of 5% at the first difference series
3. * is indicating the null hypothesis i.e. "H_0: series has unit rood "is rejected at 5% level of significance

According to the Augmented Dickey-Fuller (ADF) test, which was discussed before, none of the variables were stationary at Level. However, at First Difference, all of the variables became stationary. This demonstrates that the chosen variables all follow the same sequence of integration and hence need to be checked for presence of long-run or level relationship by conducting either the Bounds Test (When time series are stationary at different order of Integration i.e., some are Integrated of order zero and some are Integrated of order one) or the Johansen Test (When time series are stationary at same order of Integration i.e., either all are Integrated of order zero or all are Integrated of order one), which is the case in this study. According to the results of Johansen Test (All the trace/maximum statistics values are greater than the critical values for all the rank order), there is no long-run or level relationship among the variables of interest, which ends the notion of using Auto Regressive Distributive Lag (ARDL) model (for Long-run relationship) or Vector Error Correction (VEC) Model (for Short-run relationship). Thus, the study used ordinary least squares regression to look at how different variables affect the dependent variable if their integration orders are same (Hall, 1994). The sections that follow provide the outcomes of the ordinary least squares regression.

Correlation Analysis

Correlation analysis was conducted to examine the relationship that exists between the study variables as shown in the below table.

Table4.3: Estimated Results of Coefficient of Correlation

Variables	GS	RD	ED	RL	Corr	GDP
Gov Size	1					
Rev Decent	0.361*	1				
Expend Decent	0.378**	0.413*	1			
Rule of Law	0.481*	0.214	0.198	1		
Corruption	-4.11*	-0.341	-0.24*	0.176*	1	
GDP	0.187*	0.164*	-0.376	0.341*	0.224	1

*correlation is significant at 0.05, **correlation is significant at 0.01

Variance Inflation Factor Test for Checking Multicollinearity

Variance inflation factor (VIF) was analyzed to examine the multicollinearity between the study variables, as the results are shown in the table below.

The below table shows the values of the correlation coefficient. The values are indicating that the correlation coefficient value between government size and revenue decentralization is 0.361, indicating that there is a moderate positive relationship between government size and revenue decentralization, the correlation coefficient value between government size and expenditure decentralization is 0.378, indicating that there is a moderate positive relationship between government size and government size, the correlation coefficient value between government size and rule of law is 0.481, indicating that there is a strong positive relationship between rule of law and government size, and the correlation coefficient value between government size and corruption is -4.11, indicating that there is a strong negative relationship between government size and corruption the correlation coefficient value between

government size and GDP is 0.161, indicating that there is a weak positive relationship between government size and GDP.

Consistent with other research, this result shows that local governments often see an increase in expenditure and services after implementing fiscal decentralization policies. This connection exemplifies the interconnected character of fiscal decentralization initiatives, where the authority to raise funds and the duty to spend those funds are often intertwined. It seems that nations with more robust legal systems and institutions also tend to have bigger governments, as shown by the positive connection between the rule of law and government size (0.481). Previous research has shown that strong governance procedures are crucial for the public sector to expand and provide services, and our conclusion confirms that. This outcome runs counter to what was expected and may be an indication of the difficulties due to corruption in allocating resources and managing the public sector effectively.

Table4.4: Estimated Results Variance Inflation Factor Test for Multicollinearity

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.012161	41.86714	NA
Rev Decent	0.022152	21.64311	1.26163
Expend Decent	1.264304	16.43213	1.052294
Rule of Law	0.102218	4.912611	1.324561
Corruption	0.101445	1.625427	1.162122
GDP	2.263151	5.143447	1.162559

Source: Secondary Data

There is no significant multicollinearity in these explanatory variables of the research, as seen in the above table, where the variance inflation factor for all the variables is less than 5.

Estimated Results of Multiple Linear Regression Model

As shown by the results of Augmented Dickey-Fuller (ADF) test, multiple regression analysis through Least Squares method was deemed suitable for the current study, the below parts show the results of the multiple regression analysis for both fiscal decentralization and institutional quality.

Results of Fiscal Decentralization and Government Size

Table 4.4 shows the results of multiple regression analysis through Least Squares method between Fiscal Decentralization and Government Size. It indicates the value of Adjusted R square is 0.21, showing that a unit root change in independent variable i.e., fiscal decentralization counts for 21 percent change in government size. The regression coefficient value for Revenue Decentralization is 32.19 significant at (p=0.0223, t=3.24), showing that Revenue Decentralization has a significant positive impact of government size, thus H1a of the study is accepted. Similarly, regression coefficient value for Expenditure Decentralization is 12.5 significant at (p=0.0352, t=3.12), showing that Expenditure Decentralization has a significant positive impact of government size, thus H_{1b} of the study is also accepted.

Table4.4: Estimated Coefficients of Fiscal Decentralization and Government Size

Dependent Variable: Govt Size
Method: Least Squares
Sample: 2012 to 2022
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.895736	3.246422	2.124104	0.0313
Revenue Decentralization	32.19412	14.417	3.245621	0.0223
Expenditure Decentralization	12.51321	7.322741	3.124851	0.0352
GDP	1.244305	0.497937	2.238539	0.0315
R-squared	0.312421	Mean dependent var		19.23

Adjusted R-squared	0.214513	S.D. dependent var	0.77
S.E. of regression	0.155421	Akaike info criterion	2.414513
Sum squared resid	0.29552	Schwarz criterion	3.532148
Log likelihood	21.12864	Hannan-Quinn criter.	3.120736
F-statistic	89.121	Durbin-Watson stat	2.250371
Prob(F-statistic)	0.023262		

Source: Secondary Data

Institutional Quality and Government Size

Below are the results of multiple regression analysis through Least Squares method between Institutional Quality and Government Size

Table 4.4: Estimated Coefficients of Institutional Quality and Government Size

Dependent Variable: Govt Size
Method: Least Squares
Sample: 2012 to 2022
Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.895736	3.246422	2.124104	0.0313
Rule of Law	21.03931	5.245421	2.464115	0.0014
Corruption	-10.41521	8.332340	-3.214552	0.0212
GDP	1.244305	0.497937	2.238539	0.0315

R-squared	0.36764	Mean dependent var	19.23
Adjusted R-squared	0.32545	S.D. dependent var	0.77
S.E. of regression	0.14514	Akaike info criterion	2.64141
Sum squared resid	0.78141	Schwarz criterion	3.76587
Log likelihood	26.7641	Hannan-Quinn criter.	3.386814
F-statistic	82.876	Durbin-Watson stat	2.38691
Prob(F-statistic)	0.1922		

Source: Secondary Data

The above table is showing that the value of Adjusted R square is 0.32, showing that a unit root change in independent variable i.e., institutional quality counts for 32 percent change in government size. The regression coefficient value for Rule of Law is 21.03 significant at (p = 0.0014, t = 2.46), showing that Rule of Law has a significant positive impact of government size, thus H1a of the study is accepted. Similarly, regression coefficient value for Corruption is -10.4 significant at (p = 0.0212, t = -3.21), showing that Corruption has a significant negative impact of government size, thus H2b of the study is also accepted.

Table 4.5: Summary of the Study Hypotheses

Hypothesis	Results
H_{1a}: There is significant impact of Revenue Decentralization on Government Size	Accepted
H_{1b}: There is significant impact of Expenditure Decentralization on Government Size	Accepted
H_{2a}: There is a significant impact of	Accepted
H_{2b}: There is a significant impact of	Accepted

Source: Secondary Data

Conclusion of the Study

The main aim of the present study was to find out that whether fiscal decentralization and institutional strength have increased or decreased the government ability to expend in context of Pakistan economy. With a particular focus on the new attempt to investigate the relationship between fiscal decentralization (Independent Variable), institutional quality (Independent Variable), and government-size (Dependent Variable) in Pakistan, the study pursued to determine in

what way decentralization of expenditure and revenue affected the size of the government in Pakistan economy. The current study considered Revenue and Expenditure as sub variables for fiscal decentralization while Corruption and rule of Law as sub variables for government-size. As the aim of the current study was to investigate the impact of independent variables on dependent variable, statistically, therefore quantitative research types while descriptive research design was chosen for the current study. As the aim of the study is to investigate the impact of fiscal decentralization and institutional quality on government size of Pakistan. Time-series data was collected from year 2012-2022 for the current study.

Descriptive analysis indicated that the amount of decentralization of revenue-raising capabilities to subnational levels may have been investigated in studies on fiscal decentralization in Pakistan. Possible topics covered by research on spending decentralization in Pakistan include the distribution of decision-making and responsibility-making power among various governmental levels. The result of correlation analysis shown that local governments often see an increase in expenditure and services after implementing fiscal decentralization policies. This connection exemplifies the interconnected character of fiscal decentralization initiatives, where the authority to raise funds and the duty to spend those funds are often intertwined. It seems that nations with more robust legal systems and institutions also tend to have bigger governments, as shown by the positive connection between the rule of law and government size (0.481). Previous research has shown that strong governance procedures are crucial for the public sector to expand and provide services, and our conclusion confirms that. This outcome runs counter to what was expected and may be an indication of the difficulties due to corruption in allocating resources and managing the public sector effectively. While results of the regression analysis shown that Expenditure Decentralization has a significant positive impact of government size, Revenue Decentralization has a significant positive impact of government size, Rule of Law has a significant positive impact of government size, while Corruption has a significant negative impact of government size. In order to make governance processes more effective, transparent, and accountable; the research indicated that efforts should be concentrated on enhancing the quality of institutions, particularly the rule of law.

Recommendations of the Study

1. To make governance processes more effective, transparent, and accountable, efforts should be concentrated on enhancing the quality of institutions, particularly the rule of law.

2. Launching coordinated anti-corruption efforts that highlight the significance of ethical behavior and enhance enforcement mechanisms is crucial to mitigate the detrimental impacts of corruption on the extent and effectiveness of government and the public sector.

3. Implement a fiscal decentralization approach that gives lower levels of government power while also requires them to be accountable to and work with higher-level authorities in order to maximize efficiency in resource utilization and service provision.

By setting up procedures for ongoing monitoring and evaluation, we can see how fiscal decentralization and attempts to improve institutions have affected the size of government and the efficiency of the public sector over time

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