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Fiscal Decentralization and Quality of Education in Pakistan

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ABSTRACT

Fiscal decentralization is a process in which many organizations and segments are capable to grind effort thoroughly. It is government by which spending tasks and revenue duties are handed over to sub-national governments. Fiscal Decentralization is capable to influence how much portion of crucial management is headfirst to native government. The main objective of the present study is to explore the effect of expenditure decentralization and revenue decentralization on the quality of education. The secondary source of data is used in order to analyze the quality of education. The study concludes that the revenue decentralization is the most useful for raising the quality of education. This sort of study inspires contribution of people at lower level and improve the efficiency of people. So, government should increase more outlay for purpose of refining the structure of education.

1. Introduction

Fiscal decentralization plays a central role in up lifting or raising the economic growth in developed as well as in developing economies. The fiscal planning is scorching subject subsequently past two decades. The local government's financial entrustment is suitable for the operative control. It is merely an approach by which, all components (of economy) can produce or (contributed) to upsurge the economic growth.

National Finance Commission (NFC) in 1947 is made for the purpose to provide different commercial authorities among different sectors in Pakistan. First of all, it is composed of financial resources. It's second job to rearrange its assets across different regions in Pakistan. Fiscal Decentralization well-defined as the advancing (transported) the fiscal conclusion to the altered authority. This Authority assembles various proposal or making changed programs and manage with public capitals from higher authorities to local government. Central government design towards various collective problems might not be resolved. That's the way Fiscal Decentralization is worthy policy to determine all social and financial issues (Ahmed and Lodhi, 2013; Rondinelli et al., 1983)

In context of constraints of fiscal transference is a way through which different institute and segments can be capable to work systematically. This is an instrument of the management through which

spending tasks also revenue duties are stimulated toward the local level. Financial Decentralization is capable to defining as how considerable portion of fundamental management is accelerative to the sub-national government (Davoodi & Zou 1998). Decentralization procedure attempt to emphasize a condition which native individual in mounting economies underway trying more independent and political supremacy (Lodhi 2013). The directorial and financial consultant local voted government accomplish restored and effort new competence in evolving arrangement. It was sustained by (Smith 1985; Manor 1999 and Ahmed and Lodhi 2013) that financial regionalization is an active procedure or technique. It might be cooperative to decide the delinquent issues like, political instability, poverty and regional inequality.

Ahmed and Lodhi (2013) empirically highlighted that due to decentralization issue, corruption came in to practice and destroyed the economies of scale. These subjects can be resolved in source of financial regionalization and FD helps to increase the extent and excellence of altered communal services, for instance health, education and infrastructure etc. Ahmed and Lodhi (2013) elucidated the point that fiscal decentralization has substantial consequence the diverse social areas like increases the efficiency and education.

The consequences of fiscal decentralization are in health zone and study countless difficulty, towards the differences of volume. The limited local provincial management within the establishment of overpriced health management vaccinations (Litvak et al 1998). The talk on the consequence of regionalization in education have established over twenty years of consideration. (Héctor, 2006). A positive relationship between the financial regionalization and theoretical consequences was found.

Mello (2011) discovered the interconnection between fiscal decentralization and communal set up. This analysis was based on the survey study conducted in two countries Brazel and Indonesia. Faridi et. al (2012) studied the contribution of fiscal decentralization to economic growth in Pakistan. Kis-katos and Sjahrir S. (2017) have inspected the managerial impact of fiscal and political decentralization. This study was based on panel data for 271 regions covering the year of 1994 -2009. The analysis is based on the explanatory variables like education, health, expenditures and transportation expenditures. The study used the Robustness trial. The study presented that financial decentralization altered education about seven percent for schooling scheme.

Hanif and Chaudhry (2015) investigated the characteristics of public investment and Economic Decentralization in Pakistan. The time series data set from year covering period 1972-2013 were employed. The Johansen co-integration technique was applied for analysis. The study disclosed that local income and spending portions in total government revenue and expenses upgraded the public investment. The study recommended that fiscal decentralization might be also helpful for other countries of developing regions. The study concluded that economic decentralization has important and enlightening influence on education, health, roads as well as institution. Fiscal Decentralization has increased of social services and goods to the local individual. It has also enhanced community investment at indigenous level.

Ahmad (2016) studies the impact of fiscal devolution on education. Panel data of 62 countries of OECD's were used for analysis. Two models were specified in order to evaluate the quality of education. The first model was about public expenditures on education and second model considered the student teacher-ratio. The significant independent variable were urbanization, government share, population, fiscal decentralization and GDP Per Capita.

Ahmad and Lodhi (2016) analyzed the impact of fiscal decentralization on education and health. The study was based on the panel data of provinces of Pakistan. The Generalized Methods of moments

was employed for analysis. Findings showed that fiscal decentralization turned out to be the most significant factor for health care. Rauf et. al. (2017) studied the role of fiscal decentralization in developing the quality of education in Pakistan.

The main goal of the present study is to examine the quality of education based on the theme of fiscal decentralization. After introducing the present research paper's theme through providing the review of previous research, the rest of the research is outlived as follows. The second section provides the discussion of the data and methodology. The findings of the study are elaborated in subsequent section, while the concluding remarks are presented in the last section.

1- Data Methodology and Model Specification

The main ingredient of the study is the reliable data. The present study is based on the secondary source of data. Considering the time series data, the study covers the period from 1970 – 2019. The data set is generated from the secondary sources like the Ministry of Finance, World Development Indicators, Handbook of Statistics, Economic Survey of Pakistan (Various issues), State Bank of Pakistan.

The suggested technique for analysis is Auto-Regressive Distributed Lag models (ARDL) based on the findings of unit root tests. In order to examine stationarity of the data, Augmented Dickey Fuller Test and Philip Perron (PP) Test are employed.

The specified model is given by the following functional form.

$$TSR = f(ED, RD, PSI, INF, GCF, GDP)$$

The functional form may be given by the following equation.

$$T/S = \beta_o + \beta_1 ED + \beta_2 RD + \beta_3 PSI + \beta_4 INF + \beta 5 GCF + \beta 6 GDP + \mu i$$

Where $\left(T/S\right)$ indicates teacher-students ratio, (quality of education)

ED = expenditure decentralization

RD = revenue decentralization

INF = inflation

GFC = Gross Fixed Capital Formation

GDP = Gross Domestic Product Per capita

PSI = Per student institution

2- Results and Discussion

The results of the study are discussed in two steps. In first step, we discuss the descriptive properties of the data. The second step provides econometric analysis of the study.

a) Descriptive Analysis

The summary statistics of some selected variables are reported in table 1.

Table 1

Summary Statistics of Some Selected Variables

	TS	ED	RD	PSI	INF	GFC	GDP
Mean	0.04	0.24	0.24	114.01	8.12	15.97	702.35
Median	0.04	0.24	0.33	110.97	7.76	16.40	515.5
Maximum	0.05	0.31	0.43	142.27	20.28	19.12	1482
Minimum	0.03	0.15	-0.19	91.11	2.52	12.52	303
Std. Dev.	0.005	0.03	0.19	11.69	3.80	1.62	382.99
Skewness	-0.31	-0.12	-0.92	0.52	0.70	-0.33	0.75
Kurtosis	1.53	2.82	2.38	2.88	3.73	2.18	2.07
J.B	4.24	0.15	6.36	1.82	4.19	1.84	5.26
Probability	0.11	0.92	0.04	0.40	0.12	0.39	0.07
Sum	1.77	9.84	9.79	4560.47	324.94	638.91	28094
Sum Sq. Dev.	0.001	0.05	1.45	5335.62	563.88	103.44	5720723
Observations	40	40	40	40	40	40	40

Source: Calculated by authors

All the variables show wide dispersal from their respective mean value. Almost all variables are little bit skewed, that is PSI, INF and GDP are positively skewed while others are negatively skewed. Kurtosis values indicate that the INF has Lepto-Kurtic distribution, while all other variables are Platy-Kurtic. The Jarque-Bera (JB) test is a joint hypothesis measure of skewness and kurtosis. J.B probability values show no problem of abnormality among the variables.

Correlation Matrix

The correlation matrix provides the degree of association among the variables. The findings of Pair wise correlation among the variables are discussed in table 2.

Table 2

Pair wise Correlation Matrix

	TS	ED	RD	CD	PSI	INF	GFC	GDP
TS	1							
ED	0.07	1						
RD	-0.55	0.59	1					
PSI	0.55	-0.43	-0.85	-0.83	1			
INF	0.12	0.14	-0.04	-0.05	-0.03	1		

GFC	-0.52	0.27	0.56	0.55	-0.59	0.27	1	
GDP	0.78	-0.33	-0.89	-0.87	0.88	-0.02	-0.65	1

Source: Calculated by authors

Findings shows that the variables are like RD and GFC are negatively related to TS while all other variables have positive relationship.

b) Econometrics Analysis

In econometrics analysis, first of all we discuss the findings of unit roots by using ADF and PP tests. The results are reported in table 3

Table 3

Findings of Unit Root test

Variable	Philips's Perron Statistics			ADF Test Statistics		
	At Level Intercept	1st Difference Intercept	Remarks	At Level Intercept	1st Difference Intercept	Remarks
TS	—	-8.49 (0.0000)	I(1)	—	-7.17 (0.0000)	I(1)
ED	—	-7.23 (0.0000)	I(1)	-3.25 (0.0052)	—	I(O)
RD	—	-6.73 (0.0000)	I(1)	—	-6.71 (0.0000)	I(1)
PSI	-3.10 (0.03)	—	I(O)	—	-5.32 (0.0001)	I(1)
INF	-4.50 (0.004)	—	I(O)	—	-6.99 (0.0000)	I(1)
GFC	—	-5.62 (0.0000)	I(1)	—	-5.62 (0.0000)	I(1)
GDP	—	-4.33 (0.0014)	I(1)	—	-4.31 (0.000)	I(1)

Source: Calculated by authors

Findings shows that not all the variables are stationary at level. Some variables are stationary at levels, and some are stationary at first difference.

Bound Test

The long run relationship is tested through Bound test. The F-statistic is 5.9. It is statistically significant at 1 percent. The upper boundary critical value is 3.714. Therefore, it is concluded that F-statistic value is greater than the upper bound critical value which confirms that co-integration exists in the model. Findings are given in table 4.

Table 4

ARDL Bound Test

Null Hypothesis: No long-run Relationship Exist				
Test statistic	F-Statistic			
Value	5.938338			
K	6			
Critical value Bound				
Significant	10%	5%	2.5%	1%
10 Bound	2.12	2.45	2.75	3.15
1 Bound	3.23	3.61	3.99	3.43

Source: Calculated by authors

Table 5

Long Run ARDL Estimates of quality of Education Model

Variable	**Coefficient**	**Std.Error**	**t-Statistic**
ED	-0.062544*	0.023834	-2.624202
RD	0.066078*	0.006644	9.945602
PSI	0.000583*	0.000089	6.519284
INF	0.000038	0.000144	0.266570
GFC	0.000749	0.000469	1.598200
GDP	0.000026*	0.000002	14.851215
C	-0.054081*	0.014759	-3.664159

Source: Calculated by authors

***Significant at one percent level**.

Table 5 provides the long-run estimates of the quality of education model. Quality of education is measured by teacher-student ratio. The study shows that the Coefficient of expenditure decentralization (ED) is negative and statistically significant. It indicates the quality of education reduces about 0.0625 units of expenditures authority is shifted to provincial level. We have found that the revenue decentralization has positive and significant impact on the quality of education. The quality of education is improved about 0.066 units due to an increase in one unit in revenue decentralization. The coefficient of per student institution (PSI) is positive and highly significant at one percent level. The increasing ratio of per student, institution also raises the quality of education.

The study reveals that the inflation and gross fixed capital formulation, both are positively linked with the quality of education, but their impact is not significant. We have also observed that GDP per capita has significant and positive impact on the improvement of education in Pakistan. The reason

may be that as the income level increases the people have more opportunities to attain best education with modern techniques.

3- Concussion

The main objective of the study is to analyze the impact of fiscal decentralization on the quality of education. The present study has used teacher-student ratio as an indicator of quality of education. The expenditure decentralization and revenue decentralization are taken as a measure of decentralization. The concludes that the expenditure decentralization is not in favor of quality of education. But interestingly the revenue decentralization raises the quality of education. Moreover, it is found that per student institution favors the quality of education. Similarly Gross Domestic per capita and inflation ratio improves the quality of education in Pakistan.

Based on the above conclusion the following policy are suggested.

i) The Government should adopt the policy of revenue decentralization.

ii) Number of institutions should be increased in order to raise the quality of education.

iii) Policies regarding standard of living of the people through increasing per capita income should be encouraged.

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