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**FISCAL DECENTRALIZATION AND ITS IMPACT  
ON HOUSEHOLD WELFARE IN PUNJAB,  
PAKISTAN: A SPATIAL ANALYSIS**

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## Fiscal Decentralization and Its Impact on Household Welfare in Punjab, Pakistan: A Spatial Analysis

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### Abstract

Disparity in the distribution of public services has persisted throughout Pakistan's history. In this perspective, the literature on regional development has recently underlined how crucial it is to analyze household welfare level phenomena through the lens of spatial models, for instance, density, locality and distance. The study investigates the impact of fiscal decentralization on the household welfare index at the district level in province of Punjab, Pakistan. The analysis is based on household welfare index, which consist of 5 indicators. The Principal Component Analysis (PCA) aggregates these indicators to get a final household welfare index. The results of the study showed that significant positive impacts of fiscal decentralization on the household welfare index at the district level are conditional on the distance of districts from the capital city — the valuable impacts of fiscal decentralization increase as the “distance from the city”

decreases. Since the geography of public service delivery matters, it is recommended to reduce across districts inequalities by developing the social and economic institutions and infrastructure in the underdeveloped districts of the country.



**Key words:** Fiscal Decentralization, Household Welfare Index, Geography, Spatial Disparity.

## **Introduction**

Decentralization<sup>1</sup> is considered as a central building block of development and growth strategy of developing countries by World Bank and other international agencies (Gopal, 2008). Basically, decentralization can be categorized depending up on the transferred level of sovereignty and assignments given to the lower tiers of government. From the perspective of state management, “decentralization” may occur in the political, administrative, and fiscal fields, each of them having well-documented benefits and costs.

Majority of countries were centralized nation states four decades earlier. Trend toward decentralization in the US can be trace back to Reagan’s New Federalism in the 1980s, when states started to improve greater sovereignty (Donahue, 1997). While in Asia, devolution has emerged as a dominating paradigm in since the last three decades. Over time, the justification for decentralization has also evolved, moving from focus on aspects such as ethnicity, culture, language, or religion, to focus on achieving economic and social transformation (Rodríguez, 2009).

There are various other reasons that might explain this growing attention towards decentralization (Armstrong & Taylor, 2000). First and most important reason is the belief in decentralization as a tool to boost efficiency and to stimulate uniqueness in an economy and differentiation in a homogenizing and globalising world (Keating, 1998; Pike & Tomaney, 2004). The second reason relates to the reaction in opposition to strong centralized institutions not only in developing states, but also in developed world such as the European Union. The third reason is to changes in the control structure of private businesses over the last decades. The fourth relates the amendment in the nature of implemented regional policy in the European Union. The last reason is the public involvement in social policy and administration through closer democracy.

Fiscal decentralization<sup>2</sup> basically includes the existence of government in a country in more than one level, each one with different tasks of spending and taxing capability. To accomplish economic efficiency and guarantee efficient governance through channel of subnational government, shifting of power and resources is regarded as very important policy tool.

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<sup>1</sup> Decentralization denotes the shifting of power and accountability for public service delivery from central to subnational governments (Rondinelli & Nellis, 1983; Rondinelli, 1999).

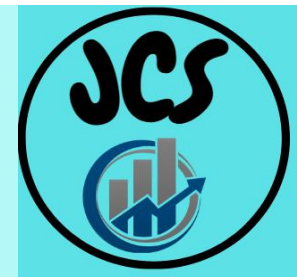
<sup>2</sup> Fiscal decentralization talks about the transfer of power from the central to lower tiers of government for the delivery of government services and public finances (Tanzi, 1995).



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Fiscal decentralization makes sure the involvement of smaller units of federation in the economic development of country and hence put together the smaller units of federation. According to Bird and Smart (2002), for efficient provision of services, those getting transfers need a clear authorization adequate resources and adequate flexibility to take decisions. Along with lower-level governments, fiscal decentralization may also lead to the efficient and effective governance of central government. So, fiscal decentralization can result in efficient provision of local services and public goods and encourage a superior match between policies and preferences of citizens.

However, at the same time, there are worries about whether all regions will benefit from fiscal decentralization. Fiscal Decentralization may not benefit all regions, with “poor” regions losing competitiveness relative to regions better endowed, consequently increasing regional inequalities. Fiscal decentralization may cause threat if it is planned weakly so that lower level governments are able to externalise their costs to others (Von Hagen et al. 2000; Rodden et al, 2002).

Spatial inequality in public service delivery is one such issue which remained a vital concern for many developed regions of the world as explained by many studies in the literature (for instance Boldrin & Canova, 2001; Neckerman & Torche, 2007; Wu & Gopinath, 2008; Heidenreich & Wunder, 2008), its roots are deeper in developing world (Hall, 1984). Countries with high population such as China and India are also facing the consequences of territorial disparity as explained by many studies (Bhattacharya & Sakthivel, 2004; Liu, 2006; Ghosh & Paul, 2007; Fan et al., 2011).

Conventionally, the justification of the transfer of powers and resources to lower levels of government was based on identity i.e. to protect a distinct language, history, culture or religion within large countries having heterogeneous attributes as discussed by many studies (Hechter, 1975; Moreno, 2001). The new regionalist literature justify the recent wave of decentralization on the basis of a supposed greater capability of lower level governments to rise above the failures of the centralized state as discussed by Bardhan (2002), to achieve superior economic efficiency (Keating, 1998; Morgan, 2002), and to encourage economic distinctiveness and differentiation in a globalising and homogenising world (Pike & Tomaney, 2004).

One of the central doctrines of the fiscal federalism is that financing local services by local taxes increase both efficiency and accountability. The assumed better economic efficiency of decentralized governments depends



on the basic views of the fiscal federalism literature. The transfer of authority and resources to lower level of government makes possible a double enhancement in efficiency as hypothesised by Tiebout (1956) and Oates (1972). There are two most significant economic benefit connected with decentralization. Firstly, the capacity of sub national governments to match public expenditure better to the diverse choices of individuals living in different areas, therefore allocative efficiency of government is enhanced. Secondly, the capacity to mobilise under-utilised resources and create competition among sub-national governments results in delivery of better policies. Mobilisation of resources to their full potential and bigger competition among jurisdiction may lead to greater policy innovation and provision of public goods and services more efficiently, therefore rising the productive efficiency of an economy as a whole (Oates, 1996).

On the other side, devolution of resources and authority from central authority to lower level of government may also broaden spatial inequalities because the redistributive response or capacity of the federal authority is reduced, and for the reason that in the contest for fiscal resources relatively better-off regions will tend to overpass poorer ones. Another justification why fiscal decentralization may not result in convergence of regions is the quality of government in lower tiers. In the framework of the association between decentralization and territorial Inequalities, it is argued that fiscal devolution might deteriorate troubles of governmental capability and corruption which, in result, may lessen or remove the effects of fiscal decentralization on convergence across regions (Prud'homme, 1995; Rodriguez & Ezcurra; Rodriguez & Gill, 2004).

In Pakistan, distribution of powers between the centre and federating units is the most debatable subject over the years, as the country is facing the effects of regional disparity both at provincial and district level. The country has faced major variations in the development level of different regions and it has resulted in inequality within and between the provinces of Pakistan (Jamal & Khan, 2003). Although the issues has been often charged by emotions. A number of steps were taken to resolve these issues; however the major development took place in 2010. The eighteenth constitutional amendment, in the 1973 constitution of Pakistan, approved by the parliament in April 2010 is an attempt to enhance the provincial autonomy. After 18<sup>th</sup> constitutional amendment, the significance of decentralization and its effects on the territorial inequalities attracted attention, since the shifting of power and resources from central to provincial governments. The fiscal structure of Pakistan, history of resources distribution in Pakistan is given in the table 1 below.





**Table 1: Distribution of Revenues under Various NFC Awards**

| Years | Award Name                | Provinces:<br>Federal | Punjab | KPK    | Sindh  | Baluchistan |
|-------|---------------------------|-----------------------|--------|--------|--------|-------------|
| 1974  | 1 <sup>st</sup> NFC award | 20% : 80%             | 60.25% | 13.39% | 22.50% | 3.86%       |
| 1979  | 2 <sup>nd</sup> NFC award | 20%: 80%              | 57.97% | 13.39% | 23.34% | 5.30%       |
| 1984  | 3 <sup>rd</sup> NFC award | Interim award         |        |        |        |             |
| 1991  | 4 <sup>th</sup> NFC award | 20%:80%               | 57.87% | 13.54% | 23.29  | 5.30%       |
| 1997  | 5 <sup>th</sup> NFC award | 62.5% : 37.5%         | 57.88% | 13.54% | 23.28  | 5.30%       |
| 2000  | 6 <sup>th</sup> NFC award | Interim award         |        |        |        |             |
| 2010  | 7 <sup>th</sup> NFC award | 56%:44%               | 51.74% | 14.62% | 24.55  | 9.09%       |

**Source: Ministry of Finance, Pakistan**

### Objectives of the Research

The main objective of the study is to analyze impacts of decentralization on the spatial disparities in household welfare index at district level in the province of Punjab, Pakistan.

### Significance of the Study

Over the years, the question regarding the impacts of fiscal decentralization on spatial disparities across regions/countries has engaged researchers across the globe. Research at district level enables for better explanation of the geographical features of socio-economic statistics and a comprehensive investigation of the effects spatially (spatial regimes and regional spillover) in comparison to analysis undertaken at provincial level. With the 18th constitutional amendment adopted in 2010, major steps are taken by Pakistan towards fiscal decentralization. Furthermore, more transfer of funds has been allowed from the centre to the provinces the after 7<sup>th</sup> National Finance Commission Award; as a result, provinces are now having more influence over the provision of education, health and physical infrastructure.

The essential change in Pakistan toward the transfer of authority between the federation and the provinces demonstrates major implications for the policy planning, management and implementation in long term. Therefore, there is a need for more studies as education, health and other social and public services becomes the lone sphere of influence of the



provinces.

## Literature Review

Theoretically, it is uncertain whether over time territorial inequalities rise or decline or regions converge or diverge. In this regard, understanding three theories of economic literature are vital. The Neoclassical Growth Theory by Solow (1956) state that absolute or conditional convergence between regions is predicted if there are similarities in savings, production technology and preferences. On the other side, Endogenous Growth Theory (Romer, 1986; Romer, 1990) predicted a more differentiated result, where regions could converge, diverge or grow parallel. The New Economic Geography (Krugman, 1991) also believes in the possibility of all three development paths.

Empirically, the links between devolution and territorial imbalances have been analyzed by either cross-country or country specific studies (Barrios & Strobl 2009; Bonet 2006; Canaleta et al. 2004; Akai and Sakata 2002; Liu and Lin 2000; Phillips & Woller 1998 and Zou 1998). So, the empirical literature can be categorized into case studies of single country, cross country researches of developed and developing economies. The cross countries empirical literature can be further categorized into studies of developed and developing economies. For developed countries, various studies focused on the impacts of fiscal decentralization on spatial disparities. The researches focusing on the developed countries such as Kyriacou et al. (2013), Pascual and Ezcura (2008), Canaleta, (2004), and Lessmann (2009) for OECD economies analyzed those regional disparities diminishes with decentralization. For developed countries, with the exception of a single study,<sup>3</sup> most of the empirical studies found positive link between fiscal decentralization and spatial disparities.

For developing countries, most of the empirical studies found mixed result for link between fiscal decentralization and spatial disparities. Researches focusing on the developing countries include; Shah and Shankar (2003), Gill and Rodríguez (2004), and Ezcurra and Rodríguez (2010). For single country studies, most of the studies found positive connection between decentralization and territorial disparities, Such as Qiao et al. (2008) and Zhang and Kanbor (2005) for China, Araujo (2007) for Brazil, Pike and Tomaney (2009) for the UK, Hill (2008) for Indonesia, Warner and Pratt (2005) for US, Azfar and Livingston (2002) for Uganda, Gulati and Husain (2002) and Bagchi (2003) for India, Bonnet (2006) for Colombia, and Silva (2005). For Pakistan, Most of the research is based on provincial level disparities. Limited empirical evidences can be found addressing spatial

<sup>3</sup> Exception include Rodriguez and Gill (2003)



disparities at district level such as Munir (2017), Ahmed (2011), Akhtar (2008), and Jamal and Khan, (2003).

The above empirical literature clears that most of the studies on spatial disparities are limited to the use of GDP per capita. Recently, a few studies have used development indices for studying the phenomenon of club convergence across countries/regions. To the best of my knowledge, no research has been conducted so far to investigate the club hypothesis with regards to the broader aspects of development for Pakistan at district level. So, we create an augmented development index that could cover the wide-ranging aspects of development into some calculable units and then on the basis of this index we analyze the convergence club hypothesis.

### Methodology

#### Selection of Model

The study follows a cross-section regressions framework, which shows link of decentralization with household welfare index. We estimate regression consisting of 33 districts of Punjab for the period 2008-09 and 2014-15. Our hypothesis is to test the proposition that whether move in the direction of more fiscal devolution would be related with low inequalities in household welfare index across districts of Punjab using cross-section regressions framework.

For the cross-section analysis, the basic estimation equation is as follows:

$$Disparity = \beta_0 + \beta_1 FD_i + \beta_2 Control_{i+} \varepsilon_i \quad (1)$$

Disparity denotes the different measures household Index for regional disparity for periods 2008-09 and 2014-15.  $i$ .  $Control_i$  is a vector capturing some of the control variables; for control variables we employ the following variables: population density and distance to the capital cities. FD represents the Household assets (proxy for decentralization).

Given the fact that Fiscal decentralization may not have a direct association on development level; we investigate whether an increase in the levels of Fiscal decentralization combined with the distance from capital city can alter the household welfare level across districts.

We, therefore, include an interaction term of FD and Dstcp flows in Equation 1 leading to Equation 2.

$$Disparity = \beta_0 + \beta_1 FD + \beta_2 Control_{i+} \beta_3 FD \times Dstcp + \varepsilon_i \quad (2)$$

From Equation 2, while  $\beta_1$  estimate the direct effects of FD and,  $\beta_2$  examines the effect of control variables and  $\beta_3$  tests changes in household welfare level conditioned on instantaneous variations in both the levels of FD or Dstcp.

To verify the marginal impact of FD on dev in the presence of Dstcp, we take the partial derivative of dev with regards to Dstcp. The partial





derivative leads to equation below:

$$\frac{d(dev)}{d(FD)} = \beta_1 + \beta_4 Dstcp \quad (3)$$

In instances where both  $\beta_1$  and  $\beta_4$  are nonnegative values, then partial increases in both FD and Dstcp will lead to an immediate increase in development level.

## Variables Description and Data Source

### Dependent Variables

Household Welfare Index is the dependent variable for the study. The index is composed of five indicators. These indicators are believed as the major objectives of development as defined by UNDP in its sustainable development goals (SDG'S). The Principal Component Analysis<sup>4</sup> (PCA) is used to aggregate these indicators to get final household welfare index. The list of indicators and abbreviations of the variables used in the model are given in the appendix.

### Explanatory Variables

#### Fiscal decentralization

Fiscal decentralization refers to shifting some tasks for expenditures and/or revenues to lower tiers of government.

Fiscal decentralization has two types

- a) Revenue Decentralization
- b) Expenditure Decentralization

#### Revenue Decentralization

Devolution of revenues refers to the share of provincial government in revenue as fraction of revenue of central government.

#### Expenditure Decentralization

Devolution of expenditures refers to the expenditure's Share of provincial government expenditure as fraction of expenditure of central government.

For Punjab, there is no data available for revenue and expenditure decentralization at district level. We use household asset as a proxy for fiscal decentralization. The rationale for using household asset as a proxy for fiscal decentralization is that literature witness significant association between fiscal decentralization and income inequality, such as Sacchi and Salotti, (2013) for OECD countries and Shahzad and Yasmin (2016) for Pakistan revealed significant association between fiscal decentralization and

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<sup>4</sup> PCA is a method that analyses and identifies patterns in data, and express the data as to display their resemblances and variations. It changes a number of correlated variables into smaller number of uncorrelated variables but retain the information in large set. These uncorrelated variables which are extracted from original set variables by means of their correlation matrix are known as principle components (Basel, et al., 2020).



income inequality. For this reason, we use household asset as a proxy for fiscal decentralization at district level for province of Punjab, Pakistan.

### Data Source

For data on dependent and explanatory variables, the study utilizes different sources. For dependent variables, this research makes use of data from the Pakistan Social and Living Standards Measurement survey (hereafter PSLM) for periods 2008 and 2014 respectively. Since 2004, PSLM is produced by the Pakistan's Federal Bureau of Statistics (hereafter FBS) on annual basis. We use data from PSLM for the periods 2008 and 2014 respectively. For Household assets data (Fiscal decentralization) at district level, we use data from Multiple Indicator clustering surveys (MICS) of Punjab for the periods 2008 and 2014 respectively.

For the research the time period chosen divided further into two sub-periods as a period of prior to devolution (2008-09) and after the devolution (2014-15).

### Results and Discussion

To study the impacts of fiscal decentralization and control variables on Household Welfare Index, initially we estimate the direct impact of both fiscal decentralization and control variables on the Household Welfare Index through cross sectional regression analysis.

**Table 2: Fiscal Decentralization and Household Welfare level in selected districts of Pakistan (2008-2009)**

|   | Household Welfare Index (1) | Household Welfare Index (2) |
|---|-----------------------------|-----------------------------|
| Fiscal Decentralization                               | -2.911*** (0.645)           | 3.036** (2.733)             |
| Distance to Capital City                              | -0.071** (0.0233)           | 1.482** (0.610)             |
| Population Density                                    | 0.002 (0.003)               | 0.019 (0.008)               |
| (Fiscal Decentralization) *(Distance to Capital City) | -                           | -0.016 (0.006)              |
| Constant  | 411.540                     | -159.632                    |
| Observation   | 33                          | 33                          |
| R-Squared   | 0.664                       | 0.731                       |
| F-Stat (P-Value)                                      | 35.33                       | 83.11                       |



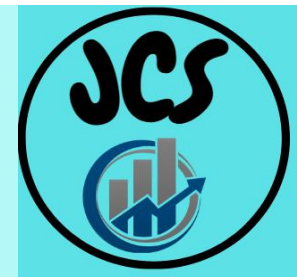
**Table 3: Fiscal Decentralization and Development in selected districts of Pakistan (2014-2015)**

|  | Household Welfare<br>Index (1) | Household Welfare<br>Index (2) |
|--|--------------------------------|--------------------------------|
| Fiscal Decentralization                                      | -3.058***<br>(0.410)           | 0.379*<br>(1.761)              |
| Distance to Capital City                                     | -0.060**<br>(0.020)            | 0.819**<br>(0.430)             |
| Population Density   | 0.002<br>(0.002)               | 0.011**<br>(0.004)             |
| (Fiscal Decentralization)<br>* (Distance to Capital<br>City) | -                              | -0.009<br>** (0.004)           |
| Constant   | 430.457                        | -102.316                       |
| Observation  | 33                             | 33                             |
| R-Squared  | 62.160                         | 0.534                          |
| F-Stat (P-Value)   | 62.16                          | 61.26                          |

**Notes:** All estimations are done by using OLS robust. \*, \*\* and \*\*\* respectively show the significance at 10, 5 and 1 percent significance level. Values in the brackets represent robust standard error. Abbreviations of Variables are already discussed in appendix.

We investigate the direct and indirect impacts of fiscal decentralization and control variables on the household welfare index through cross sectional regression analysis. Firstly, we estimate the direct impact of fiscal decentralization and control variables on the household welfare level. Third column of table 2 and 3 shows direct impacts of fiscal decentralization and control variables on household welfare index for pre and post decentralization periods. Findings indicate significant negative association between fiscal decentralization and welfare Index at district level for both pre and post-decentralization periods. The results further show that the magnitude of this inverse relationship has increased in post decentralization period.

For control variables, the findings of the study also revealed significant negative impacts of control variable “distance from capital city” on household welfare level across districts. While the coefficient values for control variable (distance from capital city) have decreased in the post decentralization period. It means that the negative impact of “distance from the capital city” is more in pre-decentralization period than post



decentralization period. The control variable “Population density” is insignificant in both periods (see table 2 & 3).

Then, we test whether the relationship between the household welfare level of districts and fiscal decentralization may be conditional on the distance from capital city. We employ the multiplicative term of fiscal decentralization and distance from capital city (FD\*dstcp). The 6<sup>th</sup> column of table 2 and 3 show indirect impacts of fiscal decentralization and control variables on household welfare index for pre and post decentralization periods. The impacts of fiscal decentralization are reduced in post decentralization period, from 3.03609 to 0.3799, but still positive and significant (see table 2 and 3). The results of the study show that link between the household welfare of districts and fiscal decentralization is conditional on the distance from capital city.

On the whole, finding of the study revealed that the positive impacts of fiscal decentralization on household welfare increases, as distance from capital city decreases. Therefore, useful impacts of fiscal decentralization are conditioned on “distance from the capital city”.

## **Conclusions and Recommendations**

### **Conclusion**

Overall findings revealed that although fiscal decentralization may be independently damaging or even irrelevant to household welfare index at the district level, distance from capital city can act as an excellent moderator in overturning the insignificant or adverse impact into positive. So, the more the district is close to the capital city, the more the fiscal decentralization is effective in putting useful impacts on development level, educational level and household welfare level.

### **Policy Recommendations**

Findings of study have vital implications for current efforts to reduce spatial disparities at district level in Pakistan. Important Implications of the study are given as under;

- Decentralization has the advantage that it involves citizens in decision-making process and makes local representative more responsible. Therefore, there is a need for transfer of authority to lower-level government to take part in the public service delivery at district level as it can enhance the efficiency and service delivery at lower level.
- The useful impacts of fiscal decentralizations are conditional upon the distance from capital city. So, the districts which are too distant from capitals must be provided with enhanced infrastructure and connected with capital cities. The development of connectivity could definitely speed up the pace of development pace reduce disparity.



- Capacity building and enhancing the reliability of the system is the need of system, otherwise decentralization may give in undesirable outcome and high corruption.
- There is a need for independent academic studies to focus on region specific policies. Furthermore, given the variety it is very important that region social aspects should be taken into account while doing such research.
- The lack of reasonable official figures lead to wild guesses and dubious estimates as the basis of the argument. Therefore, it is important for government to produce a reliable data on socio-economic indicators at district level.

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## Appendix

### A1: List of Indicators of Household Welfare Level

| S.NO | Household welfare Index          |
|------|----------------------------------|
| 1    | Households with RCC Roof.        |
| 2    | Households by housing ownership. |
| 3    | Household with Gas.              |
| 4    | Households with electricity      |
| 5    | Households with flush toilet.    |

### A2: Abbreviations of the Variables used in the Model

| S.No | Variables | Abbreviations  |
|------|-----------|--|
| 1    | fd        | Fiscal decentralization                                    |
| 2    | dstcp     | Distance from capital city                                 |
| 3    | popdens   | Population density   |
| 4    | devdfd    | Development index divided by Fiscal decentralization       |
| 5    | edudfd    | Education index divided by Fiscal decentralization         |
| 6    | hhdfd     | Household welfare index divided by Fiscal decentralization |