Impact of Fiscal Decentralization on the Socio-economic Development of Punjab: A District Level Analysis

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CERTIFICATE

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Dedication and Acknowledgement

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Abstract

This thesis investigates the impact of fiscal decentralization on socioeconomic development of Punjab at district level using panel data of 36 districts over the period 2010-11, 2012-13 and 2014-15. The fixed effect model is used to quantify the impact of fiscal decentralization on socioeconomic development. Fiscal decentralization is defined as ratio of district expenditure to total provincial expenditure. Per capita income and multidimensional poverty index are used to quantify the socioeconomic development. The empirical analysis has shown that fiscal decentralization has a significant impact on per capita income in Punjab implying that fiscal decentralization leads to economic development. The empirical analysis has also shown that fiscal decentralization has a negative and significant impact on poverty. The disaggregated analysis has revealed that education and health expenditure have significant relation with socioeconomic development. In essence, it can be concluded that fiscal decentralization may lead to socioeconomic development directly by inducing socioeconomic efficiency or by reducing poverty at district level through local government systems in Punjab.

Chapter 1: Introduction

1.1 Background

Fiscal decentralization (FD) is a complex and multidimensional phenomenon. It is defined as delegation of financial powers and services from central government to lower tiers of government (Iqbal, Din, & Ghani, 2012). According to Neyapti (2010), FD is a process through which public affairs and responsibilities concerning to public expenditure and revenue generation are transferred from federal to local level governments. FD promotes socioeconomic development through creating and observing more efficiency regarding utilization of public funds by local governments. FD may also promote development through poverty reduction by minimizing deprivation levels of the peoples from basic healthcare and education facilities by improving their living standard.

Theory of decentralization provides a well-known mechanism through which FD may lead to greater socioeconomic efficiency. According to this theory, the preferences for public goods and services differ across individuals and regions. The welfare level achieved by a national government through providing uniform public goods and services is always inferior to the level achieved in a decentralized setup or a local government system which allows for different provision of goods and services across the regions and individuals. The lower tiers of government know well the priorities and preferences as compared to the central or federal level government. This is why, the lower tiers of government primarily function and discharge their duties in the favor of their native peoples in provision of public goods and services (Oates, 2005). This reveals that FD may lead to socioeconomic development directly by inducing socioeconomic efficiency or by reducing poverty. FD contains power of local governments to make tax revenues, form various development projects and expand the allocated money to these projects in legal jurisdictions (Thiessen, 2006)

1.2 Motivation: The Case of Punjab

Pakistan is the fifth most populous country with population exceeding 207.8 million people. Punjab is most populated province of the country with population more

than 110 million people (about 54 percent of total population)[1]. It is also evident that Pakistan has never been succeeded to get rid of different social evils such as poverty, high unemployment and low per capita income, hunger, illiteracy, high mortality rate and worst infrastructure. Punjab has also undergone similar socioeconomic issues.

There are two notable features of Punjab. First, some districts of Punjab are developed and others are underdeveloped. Poverty is very high in Southern Punjab as compared to Central and Northern Punjab (Arif & Iqbal, 2009). More than 25% rural population of Punjab remain unable to avail basic health facilities and about 30% children cannot attend school as they are socially excluded or remain deprived from these facilities due to poverty. In overall, the social indicators such as school education, health and living standards especially in rural areas of Punjab are not impressive. The access to education and healthcare facilities is beyond the peoples in the southern districts of Punjab like Lodhran, Vehari, Bahawalpur, Rajanpur, Rahim Yar Khan and Muzafargarh. Having poverty level more than 30%, the peoples of these districts are comparatively more deprived. Second, the government of Pakistan has taken two major steps towards fiscal decentralization. First is the signing of the seventh National Finance Commission (NFC) award between the federal government and the provincial governments. The second is the bringing of 18th Constitutional Amendment. These developments would cause a fundamental shift in the division of powers between the center and the provinces.

Through the 7th NFC award, a bulk of resources has been transferred to provinces. Moreover, the 18th Constitutional Amendment has conferred a substantial economic authority upon the provinces through which a wide range of responsibilities have been transferred from federation to the provinces. This gives the latter more autonomy in performing various functions such as the provision of health and education facilities, infrastructure development and the maintenance of macroeconomic stability (Mustafa, 2011).

Punjab province used to get more than 50% share from divisible pool. The share of small provinces in divisible pool remained limited as compared to Punjab province. Only the 7th NFC has brought some fortune to small provinces and their shares have surged and pushed up due to this policy shift. As the transfer of resources from center to

[1] http://www.pbscensus.gov.pk/sites/default/files/DISTRICT_WISE_CENSUS_RESULTS_CENSUS_2017.pdf

the provinces was increased in the last NFC award, all the provinces are now in a better position to fight with social evils and to ensure better life standard of their residents. With this background, this dissertation attempts to analyze the impact of recent policy shift on the socioeconomic development of Punjab. This study will answer few important questions including:

i) What are the development consequences of more transferring of resources to Punjab?
ii) Can fiscal decentralization promote socioeconomic development?
iii) What is relative contribution of different type of expenditure in explaining socioeconomic development at district level?

1.3 Objectives of the Study

The primal objective is to measure the impact of fiscal decentralization on the socioeconomic development of Punjab. More specifically, this thesis attempts to:

- Measure the impact of fiscal decentralization on per capita income at district level
- Quantify the impact of fiscal decentralization on poverty in Punjab using multidimensional poverty index (MPI)

1.4 Hypotheses

Based on the existing theoretical literature, the following hypotheses are tested in this dissertation:

i) The process of fiscal decentralization leads to higher per capita income at district level in Punjab
ii) Fiscal decentralization helps to reduce multidimensional poverty at district level in Punjab

1.5 Significance of the study

In Pakistan, it has remained an anxious demand of all provinces to have a more decentralized fiscal and political system. Almost all the people belonging to small provinces consider highly centralized system as a core factor behind the backwardness and under development of the country. This study deals with different important

questions. First, this study discloses the effectiveness of fiscal decentralization which has been initiated by the central government to promote socioeconomic development in the whole country. The policy makers and other governmental officials in Punjab have primary concern to execute fiscal decentralization with true spirit to achieve the milestone of socioeconomic development in the whole province. This study gives a clear cut direction to the policy makers and officials as to whether the fiscal decentralization is a useful institutional reform to promote socioeconomic development or otherwise?

1.5 Methodology

To estimate the impact of fiscal decentralization on socioeconomic development, a panel data set of 36 districts over the period 2010-11 to 2014-15 is used. The panel data estimation is considered as an efficient analytical method for analysis as it allows to include data for different cross section i.e. districts/regions and time periods. The fixed effects model is used to analyze panel data for empirical analysis.

1.6 Organization of the study

This thesis includes six chapters. The first chapter covers brief introduction of the topic. Second chapter entails review of main theoretical and empirical literature related to the topic of fiscal decentralization and various indicators of socioeconomic development. Third chapter contains base of fiscal decentralization in Punjab and Pakistan including different awards and commissions came into being for the distribution of revenue resources and divisible pool over the time. The forth chapter consists of modeling framework, data and estimation methods. The fifth chapter comprises estimation results and discussion while the sixth chapter concludes and gives some policy recommendations.

Chapter 2: Literature Review

2.1 Introduction

Many studies are available that examine impact of fiscal decentralization on various socioeconomic indicators including growth, inequality, employment, HDI, health, education and poverty at regional and country level. In this study, the impact of fiscal decentralization is examined using two broad socioeconomic development indicators i.e. per capita income and poverty. This chapter provides an overview of existing literature with special focus on per capita income, poverty, health and education.

2.2 Empirical literature

Empirical studies have shown that fiscal decentralization stimulates socioeconomic development. Samimi, Lar, Haddad, and Alizadeh (2010) show that there is a positive connection between output growth and fiscal decentralization in Iran. The fiscal decentralization improves positively the employment indicators and also fasters the pace of economic growth. Through education, human capital and economic integration, it generates employment opportunities and enhances the pace of economic growth (Ansari et al., 2011). More governing powers are transferred to local institutions through a decentralized setup for the sake of an efficient local service delivery and business development (Bardhan, 2002). The people in power at local level know better about their local problems and preferences and they have incentive of public policies designed for the development of society. The quality of human capital, economic structure and specific regional policies are favorably controlled. It is also observed that there is high growth rate in more fiscally decentralized states. Besides economic growth, level of poverty may be diminished due to fiscal decentralization (Akai & Sakata, 2002).

The researchers are of the view that giving more autonomy to state or city promotes such social provision where local needs are better compensated. In the process of fiscal decentralization, the poor segments of the society are better off as they can express their wants, raise their voices as they perceive their helplessness is hoped to be mitigated. The peoples of lower socioeconomic class but politically empowered can now demand for quality social services, more developmental rules and laws including such

measures that will assist them to escape from poverty. About all developing nations are coming to the decentralization process to abstain from inefficient and ineffective governance, low level of GDP and instable macro-economy (Bird & Wallich, 1993). Fiscal decentralization improves in overall working efficiency of public sector and stimulates GDP (Bahl & Linn, 1992). The states experiencing more decentralized setup are more elastic to design specific regional policies regarding infrastructure and human capital development enhancing fiscal capacity (Oates, 2005). Fiscal decentralization is not only authorizes the lower tiers of government to perform certain duties assigned by central government but it also possesses the power of higher government to influence in different degrees (Mehmood & Sadiq, 2010). This influence from upper tier can be in different forms such as strict regulations, financial intervention and the power to over-rid or rollback policies designed by lower tiers. There are various objectives that motivate the policy makers to establish fiscal decentralization. It often embarks to enhance the public sector efficiency, to accelerate growth rate and delivery of more efficient public services (Bird & Wallich, 1993). The steps to promote fiscal decentralization also aim to strengthen the democracy, to get market based economy and to redress the problems of ethnicity, religious fragmentation and geographical deprivation such as the cases are in India, Indonesia and Pakistan etc. Iimi (2005) assessed an empirical relationship between GDP and fiscal decentralization using local share of expenditure out of total expenditure. It is found that fiscal decentralization has positive impact on per capita income through provision of public goods and services. This study highlights that expenditure decentralization is more effective for growth.

In developing countries, poverty is mostly used to be measured as a single dimension either consumption or income that directly affects living standard of the peoples (Wagle, 2005). But concept of multidimensional poverty is prevailed now even in developing countries because single dimension poverty cannot show exact scenario of poverty which is another form of marginalization and social exclusion (Whelan & Maître, 2010). In developed nations like Britain, many governmental and non governmental agencies took various initiatives to diminish social exclusion to eliminate poverty. Numbers of survey have been launched to discover root cause of poverty. Marginalization index is also found as a policy measure of poverty in Canada.

There are very limited studies on marginalization and social exclusion in developing nations. The marginalization means a state situated at the neck of margin where a poor person is socially excluded from the society. However, a poor or a marginal person can be out of poverty. Such social exclusion leads different segments of the society to multi-dimensions of poverty incidence which are more vulnerable including political, cultural and socioeconomic deprivation.

It is propounded that if the sub-national governments are empowered locally with more powers of revenue collection, then there will be more socioeconomic development (Smith, 2008). This approach (both qualitative and quantitative) is adopted in six Latin American cities from Mexico and Argentina (three from each) to discover the above theory using data from 1980 to 2010. As a consequence, it provides basis that cities with more powers of revenue collection are better off to formulate more developing projects which onward created more job opportunities. This will be the step forward towards the improved living standard of the peoples. To check the impact of fiscal decentralization on the socioeconomic development, Tarigan (2003), used the poled data of 44 developing and developed countries comprising period 1979 to 1999. In this study, following hypotheses had been analyzed; i) collection of resources efficiently, resource allocation and outcome growth, ii) improved economic performance due to fiscal decentralization, iii) fiscal decentralization promotes macroeconomic stability and iv) poverty reduced by fiscal decentralization. According to the results, the relationship of fiscal decentralization with corruption and poverty is negative. The relationship of fiscal decentralization with living standard, healthcare and education is positive. The healthcare and education outcomes got improved due to more expenditure on these sectors through a decentralized set up.

There are perpetual signs with a small resulting coefficient implying that future forecast seems less to analyze the impact of fiscal decentralization on wellbeing and human development. In Colombia, Soto, Farfan, and Lorant (2012) measured fiscal decentralization intensity on infant mortality rate. To conduct this study, a panel data comprising period 1998 to 2007 with fixed effects model had been used. Resultantly there is insignificant relationship between fiscal decentralization and infant mortality rate with different strength for different people of the society. The healthcare sector is

examined by Jimenez and Smith (2005) to find out the empirical results through the process of fiscal decentralization. Fixed effects model and provincial data set for the period 1979 to 1995 of Canadian government based on infant mortality rate and fiscal decentralization is used. As a result the healthcare outcomes are improved because of fiscal decentralization. About 4% infant mortalities are prevented due to 1% increase in fiscal decentralization. Moreover there is a positive association between the infant mortality and private spending when there is a rise in private expenditure.

In Argentina, human development is measured with proxy indicators of education and healthcare in the study of Habibi et al. (2003), which becomes possible at provincial level due to the process of fiscal decentralization from 1970 to 1994. According to the findings of this study, there is a positive association between the human development and fiscal decentralization which emphasizes on the fact that policies in a decentralized system always promote and empower the indicators of human development. Robalino, Picazo, and Voetberg (2001) conducted a cross country analysis to see whether fiscal decentralization improved healthcare outcomes or otherwise? Using a data set of the period from 1970 to 1995 of high and low income countries, they showed that there is a positive association between healthcare facilities and fiscal decentralization. It is concluded that countries with high per capita income and reformed institutions are more productive during the process of fiscal decentralization. Jiménez-Rubio (2011), using data of 19 OECD countries, examined whether fiscal decentralization can improve the indicators of healthcare at gross root level or not? According to the estimation of this study by using OLS and PCSE (Panel Corrected Standard-Errors), the healthcare indicators have been positively improved because of fiscally decentralized policies.

In the study of Uchimura and Jütting (2009) fiscal decentralization through its property of resource mobilization can improve health sector in overall. The proxy indicator to measure healthcare outcome is infant mortality taking its data from 1990 to 1997. Using fixed effects model, the results supported that the countries with above average fiscal decentralization had low mortality rate by more than 17% as compared to the countries had less than average fiscal decentralization index. This study discovers that indicators likewise income and political enthusiasm also reduced the rate of infant mortality. Fiscal decentralization on the outcomes of education is analyzed by Salinas

and Solé-Ollé (2009) in Spain. A data set of the period from 1978 to 1990 for 50 Spanish states had been targeted. The student survival rate i.e. percentage of students in last year for compulsory education and being able to get enrolled in first year of non-compulsory education was taken as indicator. It was found that fiscal decentralization had a statistical influence on the availability of services provided by education sector.

The process of fiscal decentralization was analyzed in another study of Faguet and Sanchez (2008) to check its impact on educational facilities. It was a comparative analysis between Colombia and Bolivia to obtain empirical findings. Simple OLS model with robust errors is used. The student's enrollment for the period from 2002 to 2004 is used in Colombia to measure outcomes of education. In the case of Bolivia, the public sector investment to basic educational and health needs is taken as independent variables due to data constraints. In Colombia, the student's enrollment increased due to the empowerment of local bodies. In the case of Bolivia, it emphasizes on public sector investment through local government system to promote educational facilities.

Wabwire (2010) analyzed the impact of fiscal decentralization on education development. A fiscal decentralization initiative in the form of constituency development fund is selected as an indicator of fiscal decentralization. The constituency of Nambia is targeted for this study and semi structured interviews and questionnaires are designed as a survey to make a public opinion poll. The results of the study showed that constituency development fund makes reliable change in educational performance. The school infrastructure such as number of schools and colleges are gradually increased as an improvement out of that program. The outcomes of revenue decentralization and capital grants of national government are checked by Valla et al (2013) on the infrastructure investment of sub-national governments. The data set for the period from 1990 to 2009 of European Union is used to get results of this study. Here a newly emerged model i.e. estimator of Corrected Least Squares Dummy Variables is applied due to the dynamic behavior of data. It is found out that revenue decentralization leads more infrastructure investment in one way. But on the other way revenue decentralization does not increase redistributed infrastructure investment. The capital grants from the central government has no correlation to infrastructure investment of sub-national governments, hence such grants are insignificant. Impact of fiscal decentralization is seen on public spending i.e.

spending on infrastructure keeping in view the type of society and public institutions by Pal and Wahhaj (2016). A data set of the period from 1997 to 2007 is collected from Indonesian family and life survey. The Davidson exogeneity test is conducted with OLS for empirical results. There is a positive correlation if the sub-national governments are empowered in respect of public revenue and more public spending at local level.

2.3 Gap in existing literature

Although this portion is dealt with review of different studies made to identify the impacts and nexus of fiscal decentralization and various socioeconomic indicators i.e. fiscal decentralization and healthcare facilities, fiscal decentralization and education, fiscal decentralization and living standard, fiscal decentralization and poverty, fiscal decentralization and employment but no more than one or two such studies are made within the province of Punjab that identify the impact of fiscal decentralization on the socioeconomic development. The present literature review discovers that impact of fiscal decentralization has mostly positive association with the indicators of socioeconomic development except few. The literature also reveals that it does not exist any sufficient amount of empirical work on the topic of fiscal decentralization and socioeconomic development. Therefore, this study would have great contribution and would help very much to understand the topic of fiscal decentralization and its impact on socioeconomic development empirically in the discourse of Punjab using socioeconomic development indicators i.e. per capita income and poverty with fiscal budget and maximum components of expenditure as a measure of fiscal decentralization.

Chapter 3: Stylized Facts

3.1 Introduction

Pakistan is a federal state with four provinces – Punjab, Sind, Baluchistan and Khyber Paktunkhwa. There are three tiers of government in Pakistan, including the federal, provincial and local (comprising district, tehsil and union administrations) levels. For the federal system of government, the basic framework for the management of public finance, delegation of financial powers and distribution of revenue between the Federation and the Provinces is laid down in the Constitution.

Under the constitution of 1973 of the Islamic Republic of Pakistan, the federation and the provinces, in addition to their exclusive sources of revenue, have a divisible pool. This comprises the net proceeds of specified taxes which are shared by all the provinces and the federation. Taking into consideration the fiscal and socio-economic realities, the federal government meets the additional requirements of the provinces through special transfers, concessions and measures. These may include grants-in-aid, subsidies, assistance, relief and other federal functions.

Under the Constitution of Pakistan, the federal government has power to levy the most productive taxes. These may include non-agriculture income taxes, import taxes, sales taxes and production or excise duties. The federal government collects the bulk of resources in the shape of taxes and then redistributes among federation and the provinces. This is done to correct the vertical and horizontal fiscal imbalances. Acknowledging the importance and complexity of the revenue-sharing, the Constitution, under Article 160, provides the setting up of an autonomous body after every five years. This is the National Finance Commission (NFC). Its primary functions are to recommend the operation of the divisible pool, borrowing powers, grant-in-aid and such other matters relating to finance as may be referred by the President. In view of above background, the purpose of this section is to look at the fiscal decentralization process in Punjab.

3.2 Historical background of Punjab

.Punjab is the home of more than 110 million populations. Its boundary lies with Sind, Baluchistan, KPK, ICT and AJK including Indian Punjab, Rajasthan, Jammu and

Kashmir. Lahore is the capital city of Punjab. The Punjab in Pakistan came into being under Radcliffe award in 1947. The Punjab is settled since olden eras. Dating back to 2600 BC, the civilization of Indus Valley was first exposed in Harapa, district Sahiwal. The Alexander defeated King Porus at Hydaspes in Punjab in 326 BC. In the 8th Century CE, Punjab win by the Umayyad and latterly Tamerlane, Babur, and Nadir Shah invaded Punjab and Punjab reached at splendid height during Mughal era. Subsequently after a prolific uprising in 1759, Sikhs claimed Lahore but defeated by British. The Punjab then became a center point during independence movement both for India and Pakistan. Resultantly the Pakistan resolution and declaration of Indian Independence were made in Lahore. The Punjab is an industrial province of Pakistan. The industrial sector contributes about 24% to the provincial GDP. The Punjab is the prosperous and less poor as compared to other provinces of Pakistan. In the Punjab province, about 40% peoples are living in the urban areas where HDI ranks to high value as compared to rest of country. The Punjab is leading in agriculture and service sector and is a big economy in the country contributing more than 50% to National GDP in overall. The Punjab supplies a large pool of professionals and technically skilled persons to the country's manpower and is also superior in manufacturing sector. The provincial growth rate reached to 7.8% during 2002-2003 to 2007-2008 and overall economy raises about 7 to 8% every year. The Punjab industries include textiles, fashion, cinema, sports goods, heavy machinery, electrical and surgical appliances, vehicles, auto parts, metals, sugar, aircraft, cement, agricultural machinery, bicycles and rickshaws, floor coverings, and processed foods etc. It produces about 90% paper, 71% fertilizers, 69% sugar and 40% cement for the country's economy. The British established largest irrigation system that makes Punjab agriculturally rich province. The wheat and cotton are its chief crops and contribute up to 76% country's annual food grain production. The cotton crops also contribute substantially to the national economy.

The poverty incidence is different from region to region in the Punjab province. The living standard of people in Northern and Central Punjab is comparatively high with lower poverty level. Conversely, the peoples in Southern and Western Punjab are undergoing a cheap living standard with comparatively high poverty level. The people of

Southern and Western Punjab are highly dependent on agriculture sector as there are limited industries in these regions.

3.3 Fiscal Decentralization in Punjab

The GDP of local governments in Punjab from their own sources remained below than 0.1%. This is because of close and large tax base inelasticity, inefficiency to make use of restricted tax base due to centralized tax system, weak tax administration and lack of incentives to raise revenue pool. The constitution of Pakistan entrusted autonomy to federal government to empower the potential of an extensive federal and some provincial tax base revenue. However, within the federal government, the control for levying and collection of taxes on imports, sales, income needs to be centralized in the fiscal decentralization process but the expenditure autonomy remained in the hands of local governments. The distance between imposing/collection of taxes at federal level and the spending autonomy at local level calls for the distribution of resources from federal to provincial and lower tiers of government.

In Punjab, at district level, the vertical imbalances are addressed under a provision of local government ordinance by assessing the district's financial needs through the provincial finance commission. Under the rules and laws, the PFC is entrusted a charge to analyze and examine economically the present situation for fair resource distribution to local governments. It is observed still some international standards of vertical imbalances in Pakistan after analyzing different studies and socioeconomic indicators. This is why the district governments in Punjab are dependent on funds transfers from upper tiers rather than own revenue sources of TMAs that is an important revenue base at the end of lower tiers of government. According to the particular indication, the local governments in Punjab are not of adequate capacity in terms of finance and human resource, therefore the service/ expenditure gap and financial inadequacy are devolved to local governments through administrative and fiscal decentralization.

The districts were ranked on the basis of healthcare, education, employment, poverty reduction and the indicators of housing and residential services. In the Punjab province, there was not a credible and comparable data for making PFC resource distribution criteria and the unit cost of delivery of social services in different corners of

the province. The resource transfers were made to the local governments of Punjab province according to previous and historical share allocated to meet the expenditure of staff allocated to the districts of Punjab or by the revenue received from Octroi and Zila Tax. For assurance of smooth provision of social services, the baseline expenditures were considered as the indicator of need. For financing the local government's development projects, the ranking of districts was made on the basis of development indicators. The limited transparent distribution formula was made to give more weight-age to population based allocation in the backward districts of Punjab. The population based allocation is made to Municipal Corporations/TMAs in the Punjab province. Similarly Rs.60000/- PM were allocated per Union Administration in Punjab except Lahore as Rs.180000/- were allocated per union administration in Lahore. The differentiation in 'allocable amount' from provincial consolidated pool for further distribution to the districts of Punjab is still a problem to be resolved. The PFC is composed of two same but different criterions, one is to allocate the funds to compensate recurrent expenditure and other is to compensate the development expenditure which is a flaw in PFC system. The resources allocated for recurrent expenditure are further divided into salary and non-salary (non-salary component is dealt with account IV under district government while salary and development expenditure are treated in account I managed by provincial government) components which lessens the autonomy of districts to prepare their own financial budget and to develop projects. The major chunk of the financial budgets is beyond the access of district governments as they have not power to specify their financial resources according to their preferences. There are several projects at the end of federal and provincial governments that directly link the local government's finances and public policies for their accomplishment through fiscal decentralization and local government capacity. In the affairs pertaining to taxes dispensed to authorities at local level such as Tehsil Municipal Administrations, the ability to extend property tax base, realization of tax collection, distributional arrangements are deeply suffered by the provincial government decisions as the provincial government keeps their authority on public policies regarding exemption, imposition, rating tax and tax areas and techniques to predict and assess the values of properties. Due to the small revenue bases and uncertainty of an adequate flow of financial resources, the provincial government is not only unwilling to provide some of

their revenue bases to the local governments but also unwilling to provide more spending autonomy to the local governments particularly when the provincial government suffers from shortfall of revenue resources. Actually such unwillingness of the provincial government starts due to the future demand for revenue resources on transfers from divisible pool to meet the expenditure of staff salary and salary bills of additional staff and staff retirement benefits. If achieved MDGs, the PFC has to provide more financial resources to local governments. The PFC needs to arrange equitable distribution of resources among the districts to empower the each level of government to discharge their duties and public functions honestly and efficiently. In this sense, the fiscal equalization grants are required to maintain the normal level of social services as the governments are made answerable about the quality and standard of these social services. The local governments have energy to perform as an instrument wherein the provincial government has an interest in the service delivery system beyond the jurisdiction of institutional arrangement at the lower level. The programs that are initiated with the provincial financial aid, aim at improving access to education which is evidently more in less poor regions of the province as evaluated when local governments utilized more resources on poverty reduction strategies. As per local government ordinance, the district governments are more flexible to utilize more financial resources to compensate local needs out of flow of resources under the PFC share without limits and compromise the operational legislative autonomy of PFC. The population still remains a leading criterion followed by area, tax effort and backwardness. More efficiency and equitability is required if there is balanced and rational horizontal distribution. It needs to form a system of encouraging revenue generation at local level with the devolution of full agricultural income at the end of district governments and devolving property tax to the Tehsil Municipal Administrations. By constituting proper public policy and conditional grants in favor of local governments based on provincial priorities and by transferring more development funds to devolved bodies with local governments, the vertical gap can be bridged. Therefore the provision of financial grants and the establishment of awards are required for local governments to perform their function smoothly and efficiently.

3.3.1 Legal Form of Fiscal Decentralization

Likewise lot of other international governments, the federal government of Pakistan manages to create more revenue against its needs. Comparatively the provinces of Pakistan create very small amount of revenue against their needs and provincial generated revenue remains unable to compensate their expenditure needs. Therefore, the National Finance Commission is a legal resource distributing body to distribute the financial funds among the federation and the federating units. The NFC is to distribute the financial resources for every five years. The NFC is composed of some governmental and some non- governmental members whose are normally the provincial ministers of finance and some other financial experts including the federal finance minister as a head to allocate the funds for the provinces according to an agreed and unanimous resource sharing formula. The 'unanimity rule' is a principle to announce the provincial share in the NFC award. There was some type of failure or deadlock in many previously established finance commissions on grounds of lack of consensus to announce resource sharing criteria. The federal revenue source (divisible pool) existed for sharing arrangement among the provinces is explained in the Constitution and any revenue source which may be added to this source by the President of Pakistan is mentioned at the time of establishment of the Commission. There remained usually the two types of issues regarding announcement of the award. One is the specification of amount of funds for federal government out of the divisible pool and the other issue is to choose various indicators to adopt an agreed or unanimous revenue sharing formula. The 7th NFC announced in 2009 and became practical in 2010, is titled as 'landmark' in a way to mark delete on all previous failures and deadlocks due to which the previous commissions faced constraints to announce the awards. There were two major reasons to end deadlocks during seventh NFC i.e. the reduction in the federal share and articulation of new multiple indicators along with the indicator of 'population' the sole indicator in the previously announced awards for the distribution of divisible pool. The divisible pool will include Income Tax (excluding income tax on salaries paid out of federal consolidated fund), Corporation Tax, Sales Tax, Wealth Tax, Capital Value Tax, Customs duties, Federal Excise duties, Export duties on cotton, goods imported or exported, goods produced, manufactured or consumed including some more exports as

suggested and added by the President. Moreover 1% deduction is made out of divisible pool as federal revenue collection fee. The federal government will also tolerate the expenditure incurred on terrorism in any part of the country. As considering that KPK has a front line role in war on terror, therefore, 1% out of divisible pool will be paid to KPK in extra. This share was proportionately 1.8% of total provincial share in divisible pool in 2010-11. After such deductions, 56%will be paid in 2010-11 and 57.5% from 2011-12 to onward five years consecutively to the provinces. The federal share out of divisible pool will be 44% in 2010-11 and 42.5% to onward for five years. For the first time it was agreed unanimously to include in 7th NFC the multiple indicators as resource distribution criterion decreasing percentage from 100 to 82% of 'population' that is still a major indicator. These indicators with their respective weight-age are as under:

i. Population: 82.0%

ii. Poverty/backwardness: 10.3%

iii. Revenue collection/generation: 5.0%

iv. Inverse population density: 2.7%

Keeping in view the special need of Baluchistan, the province wise percentage share being paid out of federal divisible pool was revised as given below:

Punjab	51.74%
Sind	24.55%
KPK	14.62%
Baluchistan	9.09%

The actual current expenditure for financial year 2005-06 are termed as baseline expenditure of City District Government/District Government in Punjab, according to Punjab Specification and Distribution of Provincial Resources Order 2006 that remained valid up to the targeted years i.e. 2010-11, 2012-13 and 2014-15. The base line expenditures for City District/District Governments are increased by 15%according to this Order. The expenditure made by Provincial Government on account of pension, debt servicing, charged expenditure, subsidy, capitalization of pension fund and GP fund are known as common expenditure. The net proceeds of the Provincial Consolidated Fund is

the fund reduced by common expenditure, expected shortfall in receipts, transfer payments of urban immovable property tax and 2.5% GST.

3.3.2 Specification of the Provincial Retained Amount

The provincial retained amount shall be equal to 58.1% of the net proceeds of the provincial consolidated fund or provincial divisible pool in every financial year.

3.3.3 Specification of the Provincial Allocable Amount

This amount is equal to 41.9% of the net proceeds of the provincial consolidated fund or the provincial divisible pool in every financial year. The provincial allocable fund is increased by 2.5% GST in every year and decreased by the share of Cantonment Board calculated by the Provincial Government on the basis of population.

3.3.4 Resource Distribution among the Local Governments

The provincial allocable fund is distributed among the City District Government/District Government, or Tehsil Municipal Administration, Town Municipal Administration or the Union Administration on the basis of their respective expenditure needs in the following ratio:

Table 3.1: Percentage allocation of Resources among Local Governments

Local Tiers Governments	**Percentage Resource Allocation**
City District/District Governments	83.81%
Tehsil/Town Municipal Administration	12.50%
Union Administration	3.69%

Source: Punjab Specification and Distribution of Resources Order 2006

3.3.5 Provincial Finance Commission Grant System

The sums assigned to every tier of local governments as per given above ratios shall be distributed among the local governments through a grant system in the following ratios (Table 3.2). Around 70% share of General Purpose Grant, Equalization Grant and Development Grant of Town Municipal Administrations that are obtaining municipal services through their City District Governments are given to their respective City District Government.

Table 3.2: PFC Grant System

S No.	Type of Grant	Provincial Allocable fund + 2.5% GST – Share of Cantonment Board	Distribution of Grants in Local Govts.	% Distribution of grants in Local Govts.
1.	General Purpose and Equalization Grants for City District/District Governments	67.50%	General Purpose Grant for CDGs/ DGs Equalization Grant for CDGs/ DGs	89.00% 11.00%
2.	General Purpose and Equalization Grants for Tehsil/Town Municipal Administration or Union Administrations	13.00%	General Purpose Grant for TMAs Equalization Grant for TMAs General Purpose Grant for Union Administrations	57.28% 14.32% 28.40%
3.	Development Grant for City District/District Governments or Tehsil/ Town Municipal Administrations	11.30%	Development Grant for CDGs/DGs Development Grant for TMAs	78.26% 21.74%
4.	Tied Grants for City District/District Governments or TMAs	8.20%	Tied Grant for CDGs/DGs, Tied Grant for TMAs	91.00% 9.00%

Source: Punjab Specification and Distribution of Resource Order 2006

3.3.6 Criteria for Distribution of Grants

The distribution of grants among the City District/District Governments or Tehsil/Town Municipal Administrations or Union Administrations shall be made as follow:

a. **General Purpose Grant** for City District /District Government or Tehsil/Town Municipal Administration shall be calculated on the basis of their population. The General Purpose grant for Union Administration shall be made on the basis of a fixed monthly amount equal to higher allocation to Union Administration of the City District Government Lahore.

b. **Equalization Grant** is calculated on the basis of fiscal gap between respective baseline expenditure and respective share under General Purpose Grant for City District/District Government and Tehsil Municipal Administration/Town Municipal Administration. The difference amount left under equalization grant after equalization has been made, shall be distributed to City District/District Government, TMAs on the basis of population.

c. **Development Grant** is provided to City District/District Govt. on the basis of their respective population and Index of under Development made from Multiple Indicator Cluster Survey data giving equal weight. Same is provided to the Tehsil Municipal Administrations and Town Municipal Administrations on the basis of their respective total population and urban population giving equal weight.

d. **Tied Grant** is provided to City District/District Government for Education and Health sector on following criteria:

The Education component based on Population 60%, Performance 40% and the Health component based on Population 70%, Health Deprivation Index 30%.Same grant is distributed to TMAs on Population 70%, Water & Sanitation Index 30%.Grants are given to City District/ District Government and Tehsil/Town Municipal Administrations subject to annual review by the Provincial Finance Commission.

3.3.7 Inter se Resource Distribution

The inter se distribution of resources for City District/District Government excluding Tied Grants is as under:

Table 3.3: Percentage Resource Distribution among the Districts

S No.	District	Percentage Share
1	Attock	2.15%
2	Bahawalnagar	3.24%
3	Bahawalpur	3.18%
4	Bhakkar	1.88%
5	Chiniot	1.34%
6	Chakwal	1.93%
7	Dera Ghazi Khan	2.59%
8	Faisalabad	6.64%
9	Gujranwala	4.15%
10	Gujrat	2.53%
11	Hafizabad	1.17%
12	Jhang	2.39%
13	Jhelum	1.47%
14	Kasur	3.09%
15	Khanewal	2.80%
16	Khushab	1.60%
17	Lahore	7.62%
18	Layyah	1.93%
19	Lodhran	1.67%
20	MandiBahauddin	1.52%
21	Mianwali	1.83%
22	Multan	3.95%
23	Muzaffargarh	3.44%
24	Nankana Sahib	1.92%
25	Narowal	2.05%
26	Okara	2.90%
27	Pakpatan	1.79%
28	Rahim Yar Khan	4.00%
29	Rajanpur	1.61%
30	Rawalpindi	4.05%
31	Sahiwal	2.53%
32	Sargodha	3.90%
33	Sheikhupura	2.77%
34	Sialkot	3.31%
35	Toba Tek Singh	2.30%
36	Vehari	2.74%
	Total	**100%**

Source: Punjab Specification and Distribution of Resource Order 2006

3.4 Socioeconomic Development in Punjab

3.4.1 Per Capita Income

The GDP at district level is not directly available. In order to measure per capita income, PSLM surveys are used. The income by means of first and second employment, pension, rent and income from remittances based on an individual district, generated over a previous one year. The district wise average value of all such income is treated as per

capita income for the instant analysis. The overall per capita income of Pakistan rose by about 9.5%upto 1513 dollar and estimated 129 dollar rise per person which is significant. It means there is 7.5% rise in per capita income in terms of rupees up to Rs.153060/- during fiscal year 2014-15. It is received by dividing total national income by the population after adding 189 million peoples more in population during 2014-15 as reported by Pakistan Bureau of Statistics. Such significant enhancement in per capita income was because of appreciation of rupees against dollar. But to enlist rightly in the league of middle income countries, Pakistan requires 4000 dollar as per capita income. The growth rate of population was 2% in 2010-11, 2.01% in 2012-13 and 1.89% slightly less in 2014-15.The Pakistan Bureau of Statistics on lump sum basis, fixed an addition of 6 million peoples annually in country's population. However, there is a repeated decline in new private investment and there is no positive change in saving and investment because government remained unable to deliver on these two crucial economic indicators and targets are not achieved. Therefore, there is a huge gap between targets and outcomes in terms of total national output during fiscal year 2014-15.

The per capita income in Punjab remained comparatively low in 2006-07 and 2008-09. Such estimation in Punjab has been done by the Institute of Public Policy discovering that the provincial growth rate in 2006-07 and 2008-09was only 2.5% that was below 2.9% average for country and outlying below 3.4% for rest of the country. Therefore, per capita income has been condensedas shrinking size of the economy of Punjab in this period.Other than fiscal gapor budget deficit 4.9 and 7.8% in the years 2008-09 and 2009-10 respectively, there was a significant jump in revenue resulting budget surplus in 2010-11 under 7th NFC.

3.4.2 Poverty

MPI (Multidimensional Poverty Index) for Pakistan is generated by the OPHI (Oxford Poverty and Human Development Initiative) which shows deprivation level that the peoples of Pakistan undergo in respect of education, health, and living standard. The PSLM surveys for the years 2004-05, 2006-07, 2008-09, 2010-11, 2012-13 and 2014-15 are used to construct MPI. Alkire-Foster Method is used to calculate MPI for Pakistan

(Alkire, Jindra, Aguilar, Seth, & Vaz, 2015). Poverty incidence for years 2010-11, 2012-13 and 2014-15 are taken from this report (GoP, 2016a). This index covers three socioeconomic dimensions i.e. education, health and living standard as proxy indicators of poverty measurement including fifteen more sub parameters carrying an individual weight-age as mentioned against each. These parameters assign an accumulated weight-age to health, education and living standard individually.

3.4.3 Health

The decentralized healthcare mechanism is further devolved to the district level in Punjab leaving a little administrative role with provincial government at Lahore. Practically the present system seems more complicated but its outcomes are far reaching. The whole healthcare system in Punjab is composed of three sub systems or sub structures i.e. the service delivery system where hospitals are established at numerous levels, the administrative system wherelarge number of public servants work together at the district, division and province leveland lastly the monitoring system where healthcare facilities execute outwardly.About 3000 government aided medical healthcare facilities are provided to the public in Punjab province. These facilities are segregated and categorized to five administrative hierarchies as per given below hierarchical structure:

Hierarchical structure ofhospitals in Punjab

- The Basic Health Units (BHUs)
- The Rural Health Centers (RHCs)
- The Tehsil HeadquartersHospitals(THQs)
- The District Headquarters Hospitals(DHQs)
- Teaching Hospitals

Now there are more than 2500 Basic Health Units working across the province of Punjab. These BHUs are providing lot of basic healthcare facilities to the rural residents seeking healthcare. Mostly one BHU serves the population of one union council. Somewhere in Punjab, one union council is served by two BHUs. Due to this fact, variant number of BHUs per district is available in Punjab.Therefore, such variation needs

allocation of average rural population per BHU. For example in Rajinpur district, there is more than 30000 rural populations per BHU due to lowest number of BHU in the district. On contrary, there is less than 20000 populations of rural patients per BHU in Faisalabad due to greater number of BHUs in the district. This implies that rural population and number of BHUs are not in line with the districts of Punjab. To acquire the good strength of human capital, healthcare sector plays a vital role. It improves the socioeconomic efficiency due to enhancement in overall productivity of labor force and human capital within the country.

3.4.4 Education

About half of the population is illiterate in Pakistan and one fourth children of school going age do not go to school. In the far reached rural areas, this is a grave problem both in boys and girls. It is another reality that Pakistan expands about 0.2%of its GDP on education sector that shows we give low priority to education as compared to other developing countries. The most of our student are below the standard because scarce financial resources allocated to education sector are not spent honestly. The skill improvement and increasing wellbeing of 40%, below the age of 15, population of our country is a big challenge. For the sake of socioeconomic development, a wide, integrated and high quality education system is the dire need of the country.

The Punjab is a home of country's 60% population. The national education policy with the educational goals under vision 2030 should be tooled within the province. There can be seen many favorable notions at the policy level but there are virtually few faults when the education policy is assessed. For equal job and competitive opportunities between rural and urban students, the imposition of uniform syllabus is necessary in the schools by the government for the sake of uniform education system. The access to education for rural residents is quite difficult and it needs to implement a balanced approach for formal and informal education. The public and private sector must do something for the betterment and development of education in these areas. In the flung and remote areas of the province, some school buildings are engaged by the local landlord as a shelter for their cattle. So the government must take a strict action for the vacation of these school buildings for proper assurance and implementation of

appropriate education mechanism. For the production of an efficient human capital and skilled youth, the already established vocational and technical institutions must be cared and reformed.

Chapter 4: Modeling Framework, Data and Estimation Methods

4.1 Introduction

This section entails complete information of methodological framework, data and estimation method. Existing literature (presented in chapter 2) depicts a significant relation between fiscal decentralization and socioeconomic development. Based on this review, section 4.2 gives descriptive methodological framework used to identify the linkages between fiscal decentralization and socioeconomic development. Section 4.3 provides detailed information on data used to quantify the impact of fiscal decentralization on key socioeconomic development indicators. Section 4.4 presents a brief description of estimation methodology used in this thesis.

4.2 Modeling Framework

Fiscal decentralization is a complex and multidimensional phenomenon. It refers to the delegation of authority for public finances and the devolution of public services from the national government to sub-national governments or from sub-national governments to local governments (Iqbal et al., 2012). According to Neyapti (2010) fiscal decentralization occurs through the devolution of policy responsibilities for public spending and revenue collection from a central government to local governments. Fiscal decentralization promotes socioeconomic development observing more efficiency regarding allocation of public money. The socioeconomic development is also developed due to fiscal decentralization when poverty or deprivation level is decreased. The theory of fiscal decentralization provides a well-known mechanism through which fiscal decentralization may lead to greater socioeconomic efficiency. According to this theorem, the preferences for public goods and services differ across individuals and regions. The welfare level achieved by a national government through providing a uniform public goods and services is always inferior to the level achieved in a decentralized setup which allows diversified provision of goods and services across the regions. The local governments function in a better way in favor of local peoples as compared to the federal government. The local governments know well the priorities, preferences and needs of their natives (Oates, 2005). The discussion reveals that the fiscal decentralization can promote socioeconomic development directly by inducing economic

efficiency or by reducing poverty. Following Iqbal et al. (2012), we have used following model to capture the impact of fiscal decentralization on socioeconomic development:

$$Y = \varphi(FD, Z) \ldots . (4.1)$$

In equation (4.1), Y represents socioeconomic development, FD represents fiscal decentralization and Z is the vector of control variables that explains the behavior of development over time. Using this model, we define econometric model that captures the impact of fiscal decentralization on socioeconomic development at district level. The model is given as:

$$Y_{i,t} = \delta_0 + \delta_1 FD_{i,t} + \delta Z'_{i,t} + \varepsilon_t \ldots . . (4.2)$$

Where Y is measured as per capita income and poverty at district level, FD is the measure of fiscal decentralization which could be quantify as total budget or expenditure at district level, Z is the path provided to the control variables, ε the commotionim agined successively uncorrelated to the explanatory variables, t represents time period t $(= 2010 - 11, 2012 - 13, \ 2014 - 15)$, and i denotes districts $i(= 1,2,3,4 \ldots \ldots \ldots \ldots \ldots .36)$, δ_0 and $\delta_1$are the parameters of scalar quantity and δ is the parameter of vector quantity. The 'Z'indicating the control variables is largely used in empirical literatures including household size, gender of the head of the household, population, and area (Arif & Iqbal, 2009; Arif, Iqbal, & Farooq, 2011; Awan, Iqbal, & Waqas, 2011; Iqbal & Awan, 2015; Iqbal et al., 2012; Iqbal & Nawaz, 2017; Nawaz & Iqbal, 2016).

4.3 Data Description

To empirically test the impact of fiscal decentralization on socioeconomic indicators, this thesis uses various data sources. Three datasets of Pakistan Social and Living Standards Measurement (PSLM) Surveys are used conducted in 2010-11, 2012-13 and 2014-15. The PSLM Surveys conducted by the Pakistan Bureau of Statistics (PBS) provide detailed socioeconomic information at district level. The PSLM is one of the main mechanisms for monitoring the implementation of the development projects and tracking of the SDGs at district level in Pakistan. It is the only systematic survey which provides reliable data across the four provinces. The universe of survey consists of all

urban and rural areas of the four provinces and Islamabad excluding military restricted areas. A two-stage stratified sample design has been adopted in this survey. Population of all provinces is considered as the universal sample. Under the framework of PLSM each city/town is sub-divided into enumeration blocks. Each enumeration block comprises about 200-250 households and categorizes into low, middle and high income group**.** Year wise distribution of sample for Punjab and Pakistan is given in Table 4.1.

Table 4.1: Sample Distribution

Year	Punjab	Pakistan
2010-11	32,372	77,488
2012-13	31,916	75,516
2014-15	36,002	78,635

Source: (GoP (2012), 2014), 2016b))

Data on districts, area and population is obtained from Punjab Development Statistics Reports published by Bureau of Statistics, Government of the Punjab[2]. Data on budget or expenditure at district level is obtained from various official document shared by the Finance Department, Government of the Punjab[3]. Using these data sources, a balanced panel has been constructed with 36 cross sections i.e. districts and three time periods i.e. 2010-11, 2012-13 and 2014-15.

4.4 Variable Construction

4.4.1 Fiscal Decentralization

As defined earlier, fiscal decentralization means endowing sub-national governments with more revenues generating and expenditure power. There are various methods of measuring fiscal decentralization such as revenue ratio (the ratio of sub-national governments to national government is analyzed) and expenditure ratio (ratio of sub-national and national expenditure is used) etc. In Pakistan, since there is not a proper and efficient tax collection mechanism both at district and provincial level and major

[2] https://bos.punjab.gov.pk/system/files/Dev-2016.pdf
[3] http://finance.punjab.gov.pk/

pool of taxes and revenue is received at the level of federal government. These resources at federal level are then reallocated and redistributed to the provincial governments according to their demands. Therefore, measuring fiscal decentralization through revenue decentralization is not a good idea and the desired results would not be very much accurate because of more expenditure needs at lower level. In this study, the expenditure decentralization technique has been used to measure fiscal decentralization. Data on allocated budget is obtained from the Finance Department, Govt. of the Punjab, for three years i.e. 2010-11, 2012-13 and 2014-15 at district level.

In this study, we have defined fiscal decentralization as a ratio of district expenditure to total provincial expenditure. It can be written as follow:

$$FD_{i,t} = \frac{(Exp\_Distt)_{i,t}}{(Total\_Exp\_Province)_t} * 100$$

Where FD is the expenditure decentralization (ratio) for i district for time period t. $(Exp\_Distt)_{i,t}$ is the total district expenditure in period t while $(Total\_Exp\_Province)$ represents total provincial expenditures during the same time period. Apart from total expenditure, disaggregated expenditure approach is also used. Following indicators are used in this study:

i. Education Expenditure
ii. Health expenditure
iii. Social Protection expenditure
iv. General Public Service expenditure
v. Public Order & Safety Affairs expenditure
vi. Economic Affairs expenditure
vii. Environment Protection expenditure
viii. Housing & Community Amenities expenditure
ix. Recreational, Culture & Religion expenditure

Similar method has been used to measure fiscal decentralization for each component. It is ratio of expenditure in each component at district level to the total provincial expenditure in that component.

4.4.2 Socioeconomic Development

Socioeconomic development is a multi-dimensional concept. In this study, socioeconomic development is quantified using following two broad indicators:

i) Per Capita Income: the GDP at district level is not directly available. In order to measure income per capita, PSLM survey is used. The income by means of first and second employment, pension, rent and income from remittances, based on an individual district, generated over a previous one year. The district wise average value of all such income is treated as income per capita for the instant analysis.

ii) Poverty: basically the MPI (Multidimensional Poverty Index) for Pakistan is generated by the OPHI (Oxford Poverty and Human Development Initiative) which shows deprivation level that the peoples of Pakistan undergo in respect of education, health, and living standard. The PSLM surveys for the years 2004-05, 2006-07, 2008-09, 2010-11, 2012-13 and 2014-15 are used to construct MPI. Alkire-Foster Method is used to calculate MPI for Pakistan (Alkire et al., 2015). Poverty incidence for the years 2010-11, 2012-13 and 2014-15 are taken from this report (GoP, 2016a). This index covers three dimensions i.e. education, health and living standard at district level including fifteen more sub parameters carrying an individual weights. These parameters assign an accumulated weight to health, education and living standard individually. Figure 4.1 provides the detail of parameters used for each dimension with their weights.

Figure 4.1: Pakistan's National MPI – Indicators, Deprivation Cut-offs and Weights

	Indicator	Weights
Education	Years of schooling	1/6 = 16.67%
	Child school attendance	1/8 = 12.5%
	Educational quality	1/24 = 4.17%
Health	Access to health facilities/clinics/Basic Health Units (BHU)	1/6 = 16.67%
	Immunisation	1/18 = 5.56%
	Ante-natal care	1/18 = 5.56%
	Assisted delivery	1/18 = 5.56%
Standard of Living	Water	1/21 = 4.76%
	Sanitation	1/21 = 4.76%
	Walls	1/42 = 2.38%
	Overcrowding	1/42 = 2.38%
	Electricity	1/21 = 4.76%
	Cooking fuel	1/21 = 4.76%
	Assets	1/21 = 4.76%
	Land and livestock (only for rural areas)	1/21 = 4.76%

Source: GoP (2016a)

4.4.2 Other control variables

Various control variables are used to ensure the robustness of results.

i) **Household Size**: HS is constituted from PSLM which contains all persons of one household at district level. Again the district average is used for analysis.

ii) **Gender of the head of the household**: PSLM is again used to count gender of the head of household at district level. The analysis is made using district average.

iii) **Population**: Estimated population of each district is taken from Punjab Development Statistics

iv) **Area**: Actual area of each district

v) **Population density**: Population divided by total area of the district.

Table 4.2: Definition of variables and data sources

Variables	**Definition**	
Dependent Variables		**Source**
Per Capita Income	Log per capita income by means of first and second employment, pension, rent and income from remittances based on an individual district generated over a previous one year. The district wise average value of all such income is treated as income per capita for this analysis.	(GoP (2012), 2014), 2016b))
Poverty	Incidence of multidimensional poverty at district level (head count ratio): measured by three dimensions i.e. education, health and living standard with fifteensub indictors/parametersassigningcertain weights.	GoP (2016a)
Fiscal Decentralization Measures (Independent Variable)		
Expenditure	Log budget allocation at district level: i) Total budget at district level (revised) ii) Education expenditure (Education) iii) Health expenditure (Health) iv) Social Protection expenditure (SP) v) General Public Service expenditure vi) Public Order & Safety Affairs expenditure (POSA) vii) Economic Affairs expenditure (EA) viii) Environment Protection expenditure (EP) ix) Housing & Community Amenities expenditure (HCA) x) Recreational, Culture & Religion expenditure (RCR)	(Punjab, 2016)
Other Control Variables		

Gender	At district level, the gender of the head of the household is calculated by using district average	(GoP (2012), 2014), 2016b))
Household Size	All persons of one household at district level by using district average	(GoP (2012), 2014), 2016b))
Population	Estimated population at district level	Punjab (2016)
Area	Actual area of the district	Punjab (2016)
Population Density	Population divided by the total area of the district	Punjab (2016)

Source: Author's own

4.5 Estimation Methodology

For estimation of the impact of fiscal decentralization on socioeconomic development, we have used a panel data set of 36 districts over the period 2010-11 to 2014-15. The estimation by panel data is known as an effective diagnostic tool to make analysis as it enables to incorporate the data for various cross section e.g. districts, regions or time periods. The usage of panel data for estimation is beneficial as it may cover: i) increase in sample size that leads to better estimates; ii) controlling for variables not directly observable or measureable e.g. culture; iii) accounts for individual heterogeneity and iv) tackling the problem of omitted variable biasness (Nawaz, 2015; Nawaz, Iqbal, & Khan, 2015; Nawaz & Khawaja, 2016).

Two techniques are commonly used to analyze panel data i.e. the fixed effects model and random effects model. The fixed effect is the most common technique for estimation of linear panel regression. In this method, the constant term remains as cross section specific and varies for each cross section but still assumed that the slope coefficients are constant across countries. This takes into account the individuality of each cross-sectional unit. The fixed effects model can also captures the time effects by introducing time dummies, one for each time interval, just like the dummy variable to account for cross-sectional effects. Unlike the fixed effects method, an alternative method for estimating a panel data set, is the random effects model wherein each entity has its intercept not as fixed, but random parameter. In this model, instead of treating intercept as a fixed, we assume that it is a random variable with a mean value of the intercept. The random effects model is also known as error component model because the composite error term consists of two

components i.e. cross section or individual specific component, the combined time series and cross-section error component[4]. To decide between fixed or random effects models, we use the Hausman specification test.

[4] For detailed description on fixed effects model and random effects model see Greene (2008), chapter 11

Chapter 5: Estimation Results and Discussion

5.1 Introduction

This section covers a detailed description of estimation results along with policy implications. As discussed in previous chapter, panel estimation technique has been used to analyze the impact of fiscal decentralization on socioeconomic development at district level. The analysis is divided into two parts. In section 5.2, in an aggregated analysis, the impact of overall expenditure as a measure of fiscal decentralization is discussed on socioeconomic development taking per capita income and poverty as measures of socioeconomic development. In section 5.3, disaggregated analysis is presented where individual components of expenditure i.e. various heads of fiscal budget or expenditure at district level are discussed. Last section concludes in overall the whole discussion.

5.2 Aggregated Analysis

First, we have estimated the impact of total budget or expenditure at district level – proxy of fiscal decentralization on per capita income at district level using fixed effects techniques. The table 5.1 shows all relevant results. There are various conditions applied to check results robustness. Repeatedly it is examined and tested whether the fixed or random effects techniques are effective or otherwise? The Hausman test supports fixed effects techniques. Such techniques are used to estimate the impact of fiscal decentralization on socioeconomic development after ensuring that fixed effects model is more feasible. The results have shown that fiscal decentralization has a significant impact on per capita income implying that fiscal decentralization can promote socioeconomic development at district level by enhancing per capita income. The results remain same in different specification. The estimated coefficients are significant at 1 percent level. The estimated results show that 1 percent increase in ratio of district expenditure leads to 0.15 percent increase in per capita income.

The existence of strong positive relation verifies the Oates theorem of fiscal decentralization. The empowerment of local governments may lead to greater socioeconomic efficiency that ensures delivery of public services at lower cost. The socioeconomic development can be achieved in a decentralized setup by allowing

different provision of goods and services across the regions. The local governments know well the problems and priorities of their natives; therefore, they function in a better way as compared to the federal government with respect to provision of public goods and services.

Table 5.1: Impact of Fiscal Decentralization and Socioeconomic Development: Fixed Effects: Per Capita Income

VARIABLES	(1)	(2)	(3)
FD	0.146	0.159	0.055
	(0.04)***	(0.03)***	(0.04)
Household Size		-0.340	-0.314
		(0.04)***	(0.04)***
Gender (Household)		1.033	1.333
		(0.27)***	(0.27)***
Log (Population Density)			0.096
			(0.03)***
Constant	10.136	11.303	10.372
	(0.05)***	(0.30)***	(0.38)***
Observations	108	108	108
R-squared	0.406	0.654	0.697
Number of Districts	36	36	36

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

The burden on the resources is expanded while the household size is increased. When the family size increases, then there will be a little quantity of resources for public needs and individual welfare, hence per capita income decreases. Therefore, there is a negative relationship between the household size and per capita income. Existing literature also supports similar results (Arif & Iqbal, 2009; Arif et al., 2011; Iqbal & Awan, 2015). The household size is a prime demographic factor and it is positively related with poverty status (Chaudhry, 2009). Large household size is likely to put extra burden on a household's assets and less resources push them to poverty especially in developing nations facing dearth of resources (McKay & Lawson, 2003).

Population density has a significant positive effect on per capita income at district level. The estimated coefficient is significant at 1 percent level. This implies that more dense districts are likely to have better socioeconomic development. This is linked with socioeconomic efficiency with respect to better living standard with the provision of

basic public services likewise clean water, sanitation, boundary walls, electrification, cooking fuels and assets like land and livestock for rural areas, more health facilities i.e. increase in basic health units, immunization, antenatal care and assisted delivery, educational facilities i.e. improvement in years of schooling, child school attendance and educational quality. All such facilities can be utilized by more citizens in more dense districts; they may have more opportunities to generate more per capita income as compared to low dense districts where they have low per capita income.

Impact of fiscal decentralization on poverty is investigated using head-count ratio based on multidimensional poverty index (MPI) constructed by Government of Pakistan using PSLM. The estimated results are presented at table 5.2. The results have shown that total expenditure has a negative and significant impact on incidence of poverty. The estimated coefficients are significant at 1 percent level. These findings indicate that expenditure at local level help to improve socioeconomic conditions like better living standard for more peoples, good health for more beneficiaries and more education for more citizens. The living standard with the provision of basic public services likewise clean water, sanitation, boundary walls, electrification, cooking fuels and assets like land and livestock for rural areas, health indicator with equal access to health facilities, increase in basic health units, immunization, antenatal care and assisted delivery, education indicator with respect to improvement in years of schooling, child school attendance and educational quality develop with more expenditure through local governments. Population density has a significant negative effect on poverty at district level as shown in Table 5.2. The estimated coefficient is significant at 1 percent level. Apparently, this finding contradicts previous findings of positive effect of population density on per capita income. However, the implication of this result can be reviewed from the definition of MPI. This index looks into the deprivation of household from education, health and living standard. The people deprived of basic healthcare facilities, school education with poor living standard are not able to participate socially and politically in the affairs of a particular society. Hence they are socially excluded from the society and considered as poor segments of the society. In populated dense region, per capita income available of public utilities is more as compared to low populated dense

regions. In this sense, without availing basic healthcare facilities, school education and with poor living standard, they are more prone to MPI poverty.

Table 5.2: Impact of Fiscal Decentralization and Socioeconomic Development: Fixed Effects: Dependent Variable (Multidimensional Poverty (head count))

VARIABLES	(1)	(2)	(3)
Log (Total Expenditure)	-0.092	-0.152	-0.069
	(0.04)**	(0.03)***	(0.03)**
Household Size		0.169	0.148
		(0.03)***	(0.03)***
Gender (Household)		1.602	1.362
		(0.21)***	(0.21)***
Log (Population Density)			-0.077
			(0.02)***
Constant	0.496	-1.943	-1.198
	(0.04)***	(0.23)***	(0.29)***
Observations	108	108	108
R-squared	0.083	0.566	0.626
Number of Districts	36	36	36

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

5.3 Disaggregated Analysis

To further probe the relative importance of different expenditure, we have conducted disaggregated analysis. Total expenditure are divided into followingexpenditure components: i) Education, ii) Health, iii) Social Protection, iv) General Public Service, v) Public Order & Safety Affairs, vi) Economic Affairs, vii) Environment Protection, viii) Housing & Community Amenities and ix) Recreational, Culture & Religion expenditure.

First, we estimate the impact of these components on per capita income at district level. The results are presented in table 5.3. Secondly we estimate the impact of expenditure components on poverty and results are presented in table 5.4.The estimated results have shown that education and health expenditures have significant relation with socioeconomic indicators at district level. The other components have expected sign but insignificant relation with socioeconomic indicators at district level. This shows that education and health expenditure are the two key components essential for socioeconomic development of any district in Punjab. Education and healthcare are onward the key component for creating human capital. Human capital plays a vital role in bringing social cohesion and socioeconomic prosperity (Becket, Murphy, & Tamura,

1990; Iqbal & Awan, 2015; Nawaz & Iqbal, 2016). In the public policies, the human capital as a determinant of better health, education, skills and professional training has a significant status and great worth because of its primary role for the sake of socioeconomic efficiency, poverty reduction and ultimately socioeconomic development. In the absence of human capital, socioeconomic development and poverty reducing strategies do not accomplished(Iqbal & Awan, 2015). All control variables have expected sign as explained in case of aggregated analysis.

Table 5.3: Impact of Fiscal Decentralization and Socioeconomic Development: Fixed Effects: Dependent Variable (Per Capita Income): Disaggregated Analysis

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Education	Health	SP	GPS	POSA	EA	EP	HSA	RCR
FD	0.053	0.075	0.076	0.001	0.021	0.019	0.017	-0.001	0.004
	(0.01)***	(0.02)***	(0.02)***	(0.02)	(0.02)	(0.03)	(0.01)	(0.01)	(0.02)
Household size	-0.314	-0.302	-0.305	-0.304	-0.304	-0.307	-0.293	-0.366	-0.304
	(0.04)***	(0.04)***	(0.04)***	(0.04)***	(0.04)***	(0.04)***	(0.04)***	(0.06)***	(0.04)***
Gender head	1.398	1.490	1.238	1.442	1.361	1.380	1.369	1.733	1.431
	(0.26)***	(0.27)***	(0.25)***	(0.27)***	(0.27)***	(0.29)***	(0.30)***	(0.39)***	(0.27)***
ln_population_d	0.100	0.125	0.094	0.118	0.101	0.111	0.092	0.136	0.117
	(0.02)***	(0.02)***	(0.02)***	(0.02)***	(0.03)***	(0.02)***	(0.03)***	(0.03)***	(0.02)***
Constant	10.294	10.053	10.415	10.133	10.300	10.229	10.324	10.161	10.142
	(0.35)***	(0.35)***	(0.32)***	(0.35)***	(0.37)***	(0.38)***	(0.48)***	(0.61)***	(0.34)***
Obs	108	108	108	108	108	108	101	68	108
	0.697	0.693	0.734	0.692	0.695	0.693	0.701	0.684	0.692
Number of Dist.	36	36	36	36	36	36	27	34	36

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

Table 5.4: Impact of Fiscal Decentralization and Socioeconomic Development: Fixed Effects: Dependent Variable (Poverty): Disaggregated Analysis

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Education	Health	SP	GPS	POSA	EA	EP	HSA	RCR
FD	-0.067	-0.065	-0.047	-0.014	-0.060	-0.023	-0.029	0.007	-0.026
	(0.03)**	(0.03)*	(0.02)***	(0.01)	(0.02)***	(0.03)	(0.01)***	(0.01)	(0.01)*
Household size	0.148	0.142	0.137	0.137	0.136	0.140	0.138	0.093	0.134
	(0.03)***	(0.03)***	(0.03)***	(0.03)***	(0.03)***	(0.03)***	(0.03)***	(0.04)**	(0.03)***
Gender head	1.282	1.323	1.350	1.286	1.463	1.301	1.457	0.774	1.326
	(0.20)***	(0.20)***	(0.20)***	(0.21)***	(0.20)***	(0.22)***	(0.21)***	(0.27)***	(0.20)***
ln_population_d	-0.081	-0.088	-0.090	-0.098	-0.056	-0.096	-0.051	-0.141	-0.097
	(0.02)***	(0.02)***	(0.02)***	(0.02)***	(0.02)***	(0.02)***	(0.02)**	(0.02)***	(0.02)***
Constant	-1.105	-1.064	-1.070	-0.992	-1.383	-1.016	-1.505	0.004	-1.002
	(0.27)***	(0.27)***	(0.25)***	(0.27)***	(0.27)***	(0.29)***	(0.34)***	(0.41)	(0.26)***
Obs	108	108	108	108	108	108	101	68	108
	0.626	0.621	0.643	0.613	0.661	0.611	0.665	0.642	0.622
Number of Dist.	36	36	36	36	36	36	27	34	36

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

It is revealed from above results that education and health expenditure have significant contribution in promoting socioeconomic development of the districts of Punjab through local governments by decreasing poverty incidence. Moreover, if there is more poverty incidence or less concentration of government on the provision of healthcare, education and general public service facilities tothe individuals at district level then there will be less social and environmental protection withunawareness of recreational,cultural and religious activities. Hence, poverty has negative effect with social protection, environment protection, public order and safety affairs, economic affairs and general public service delivery.

5.4. Conclusion

The empirical analysis has shown that fiscal decentralization as measured by total expenditure at district level has a significant positive impact on socioeconomic development of the districts in Punjab. Aggregated analysis has shown that total budget or expenditures are positively related with per capita income and negatively with incidence of poverty at district level. Furthermore, disaggregated analysis has revealed that out of all others, the education and health expenditure components have significant contribution in promoting socioeconomic development of the districts of Punjab through expenditure in a decentralized set up by increasing per capita income and reducing poverty incidence.

Chapter 6: Conclusion and Policy Recommendations

6.1 Conclusion

The evidences discover that the fiscal decentralization because of an efficient service delivery and prioritizing local preferences accelerates socioeconomic development, reduces poverty and increases socioeconomic prosperity and wellbeing of the peoples. This study finds an impact of fiscal decentralization (impact of total budget or expenditure) on socioeconomic development (increasing per capita income and reducing poverty) of Punjab at district level and investigates a nexus between fiscal decentralization and socioeconomic development. The panel data of various expenditure components at district level in Punjab over the period 2010-11 to 2014-15 has been used as a measure of fiscal decentralization. Two broad indicators i.e. per capita income and poverty have been used for the measurement of socioeconomic development. The aggregate empirical analysis shows that impact of total expenditure on per capita income is positive and negative on poverty incidence. It means fiscal decentralization by increasing per capita income and decreasing deprivation level, upgrading wellbeing or living standard, improving health and education of the people at district level promotes ultimately socioeconomic development at district level. Per capita income is derived from PSLM and poverty is extracted from MPI head count ratio constructed by Government of Pakistan with three dimensions i.e. health, education and living standard.

When such impact is measured by an individual expenditure component of fiscal decentralization in a disaggregated analysis, it is revealed that health and education has again a contribution in promotion of socioeconomic development. This proves that health and education are the key components in any district of Punjab that may lead to social cohesion, socioeconomic efficiency, and development through local government system. Therefore, the public expenditure on health and education at district level in Punjab in a decentralized or local government set up has a significant contribution in promoting socioeconomic development.

According to the analysis, more investment on health and education is necessary that onward reduces the poverty incidence for the betterment of peoples at district level. When there is a better living standard of the peoples then there is more socioeconomic

development. It is therefore recommended that resource distribution under a decentralized set up is important for the citizens at district level in Punjab not only to decide their own fate but also to redress their grievances to great extent. The decentralized set up also bridges the gap between the rulers and ruled. As the representatives from lower level, the authorities of local government are well aware about the priorities and social problems of their natives. Therefore, they bring always development oriented public policies which prove ultimately as a growth engine for socioeconomic development at local level.

6.2 Policy Recommendations

According to literatures, following policy recommendations are imperative:

1. There is a significant link of total budget or expenditure at district level with the proxies of one of the socioeconomic indicators i.e. health, education and living standard, there should be more concentration regarding allocation of budget and investment towards these sectors.
2. As the fiscal decentralization collectively or individually reduce poverty incidence or deprivation levels at district level, the process of fiscal decentralization should be implemented throughout the country asa national poverty reduction strategy.
3. The healthcare facilities are improved due to fiscal decentralization, therefore, the local governments should be made fiscally more powerful to establish more healthcare institutions to benefit more peoples at district level in Punjab.

The socioeconomic development and public policies work together for the betterment of public. For Pakistan to get full benefit of the capability of fiscal decentralization; it is a dire need to exercise good governance, transparent political and administrative institutions, efficient and honest bureaucracy and well executed macroeconomic policies. Because without these, the decentralization process may indulge in socioeconomic disorder and institutional demotion

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