

**REFORMING THE PUBLIC SECTOR THROUGH PUBLIC-PRIVATE
PARTNERSHIP (PPP): THE CASE OF SCHOOL EDUCATION IN PUNJAB,
PAKISTAN**

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Author's Declaration

I, the undersigned Waqas Shabir hereby declare that I am the sole author of this thesis. To the best of my knowledge this thesis contains no material previously published by any other person except where proper acknowledgment has been made. This thesis contains no material which has been accepted as part of my requirements of any other academic degree or non-degree program, in English or any other language.

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ABSTRACT

The public sector across the globe witnessed great transformation since 1980s; large bureaus and unilateral decision-making process gradually transformed into disaggregated agencies and collaborative decision making with the partnership of private and voluntary sector. The Public-Private Partnership (PPP) models are introduced to reform the public sector as they reduce costs and improve public service delivery. The adoption of PPP models requires rule of law, stable institutions, thriving private sector and strong civil society. Even though Pakistan lacks these preconditions, it embarked on the journey to reform the school education sector by forging PPP in its largest province, Punjab, in 2015. This thesis attempts to assess the efficiency and effectiveness of the PPP initiative to improve student enrollment and quality of education in low performing public primary schools. The statistical analysis reveals mixed results and confirms the efficiency of the initiative; however, the effectiveness of the initiative is yet to be proved. There is a need for further in-depth study and analysis to assess the effectiveness of this initiative. Nonetheless, taking such an initiative to reform and reorganize the public sector in the complicated legal and constitutional context of Pakistan is encouraging.

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List of Abbreviations

CEO	Chief Executive Officer
CSO	Civil Society Organization
DfID	Department for International Development
LEAPS	Learning and Educational Achievement in Punjab Schools
NPG	New Public Governance
NPM	New Public Management
NGO	Non-Governmental Organization
PEF	Punjab Education Foundation
PEIMA	Punjab Education Initiative Management Authority
PPP	Public Private Partnership
PMIU	Program Monitoring and Implementation Unit
PSSP	Public School Support Program
SED	School Education Department

Introduction

Governments and public sector across globe strive to provide the basic facilities like education and healthcare to their citizens. The increasing expectations of citizens and limited capacity of bureaucracies to facilitate citizens necessitate transformation in public sector. The public sector needs to be more efficient and effective to meet the expectations of citizens especially considering sustained population growth, demographic shifts, growing societal and political complexity and other associated challenges. These circumstances have forced the decision makers to reform the public sector and seek alternative ways to effectively organize it. Eventually, the state is losing its monopoly over the public policy sphere and mutual interdependencies have led to the involvement of non-state actors including private businesses, civil society organizations (CSOs), and non-governmental organizations (NGOs) in development and provision of public services.

In order to effectively govern a society and its economy, transformation of the public sector is underway from the unilateral top-down model to a multilateral model in collaboration with a range of actors. Therefore, the governments are rapidly forging partnerships with the public, private and voluntary sector to improve service delivery and reduce high costs. The mutual dependence of public and private sectors has blurred the boundaries of public and private realm in the provision of public services. It has led to reorganization of the public sector and has introduced the principles of competition, incentivization, and collaboration among the public, private and voluntary sectors.

This thesis is an attempt to answer the research question: “Are public-private partnerships (PPPs) efficient and effective to improve delivery of public goods like education in Punjab, Pakistan?” For this purpose, this thesis will study a PPP initiative of the government of Punjab, Pakistan to improve the service delivery in public schools. It will outline key

attributes of the model in addition to the gains and challenges associated with the introduction of this model. Most importantly, it will assess the effectiveness of PPP model by analyzing the data on enrollment and student learning outcomes.

The existing literature of public management has discussed the origins, attributes and the efficiency of different PPP models across the globe. The debate has mainly revolved around the efficiency and effectiveness of PPPs as they reduce the cost and improve public services. However, very little evidence is available on the effectiveness of this model. Furthermore, the academic literature has few case studies from the global south and particularly from the Indian sub-continent. This manuscript discusses key paradigms to organize public sector and then tries to explain the case study of PPP in school education sector of Punjab in relation to key themes of the public management scholarship.

A combination of qualitative and quantitative research methods is employed to study the PPP model and assess its effectiveness. The qualitative section draws on the semi-structured interviews with the Managing Director of the initiative who launched the initiative and two other senior officials. In addition, variety of primary sources including the newspaper reports, the Provincial Ordinances and Acts, official reports, license agreements, and directives have been examined. The quantitative section uses the statistical technique of genetic matching to evaluate the impact of the intervention on outcome of interest i.e. student enrollment and student learning outcomes in the subjects of English, Mathematics, and Urdu.

The contribution of this thesis to the existing body of academic literature will be to present the case of PPP from Pakistan with the evidence about its efficiency and effectiveness. This is the first academic study about the initiative and no prior research has been conducted. This thesis will contribute to the existing literature with a new case study from a country of the global south and will explore the benefits and challenges in the context of evolving state. This

reform initiative is the first of its kind in the school education sector of Punjab, as the public sector of Punjab is still organized on the Weberian principles and has not been through the kind of reforms that European and other western countries have experienced.

This thesis is comprised of six chapters. First chapter elaborates the foundations of public sector reforms and discusses the three key paradigms of organizing public sector. This is followed by chapter two that articulates the research methods employed for data collection and analysis. Third chapter shares the narrative of the landscape and background of the public sector in Pakistan and particularly in Punjab. It also delves into the school education sector and reforms initiatives started by the government of Punjab. Fourth chapter discusses the case study of PPP intervention in school education sector of Punjab. Fifth chapter elaborates the findings of statistical analysis and the impact of the intervention. Sixth chapter is comprised of data analysis and the empirical evidence from the PPP case study. The seventh chapter summarizes the key arguments regarding the efficacy, challenges, and risks of PPP model of delivering public services.

Chapter 1 – Key Theoretical Perspectives

This chapter reviews the existing literature on two core areas; transformation of the public sector over last three decades and provision of public services with the partnership of private and voluntary sector. Key arguments are discussed to identify the reasons for transformation in public services and how new approaches have addressed the existing challenges and improved public services.

1.1 Understanding Public Sector: Path of Development and Reform

The evolving path of the public sector has witnessed great transformation over last three decades. Public management is broadly viewed as encompassing the organizational structures, managerial practices and institutional values (Ferlie et al. 2009, 2). There are three broader paradigms that redefined the organization and operations of the public sector, these are named as Weberian model of bureaucracy or old public administration, new public management (NPM) and new public governance (NPG). This chapter builds on the theoretical underpinnings of the three paradigms with a particular focus on the PPP model.

Max Weber was among the first theorists to draw attention towards the most important state apparatus i.e. bureaucracy. In 1911, he laid down the foundations of old public administration by outlining the ideal type of bureaucracy and articulated the rules to run public institutions (Dunleavy 1914, 10). According to his theory, public offices are organized on the principle of hierarchy and the rules regulate the conduct of these offices. He also mentioned that the administrative staff should be completely separated from the ownership of means of production and that the property belongs to the organization only (Weber 1993, 107). The administrative staff is remunerated with fixed salaries in accordance with the assigned rank in

the hierarchy (Weber 1993, 109). The fundamental principles of the system that Weber conceptualized include rule of law, equal and predictable treatment, and impersonal professional civil service (Eliassen and Sitter 2008, 94). The main goal behind this paradigm was compliance of rules and regulations, such that importance was given mainly to the inputs irrespective of the outputs and outcomes.

Traditional hierarchical institutions were not able to meet the demands of citizens and faced huge challenges in delivering public services. The idea of bureaucracy has been widely criticized by scholars because of its inherent conflicts. On one hand bureaucrats are pictured as incompetent individual who fail to coordinate their activities and on the other hand few high-level officials at the top in bureaucracy appears to exercise effective centralized control over many activities (Downs 1967, 132). Anthony Downs rejected these arguments and emphasized that the problems arise because of the inability to control the activities due to the large scale of Bureaus. He explained it further by presenting the law of imperfect control i.e. no one can fully control the behavior of large organization and the law of decreasing coordination i.e. the larger any organization becomes, the poorer is the coordination among its actors (1967, 143).

1.1.1 New Public Management (NPM)

The large size of welfare states and heavy expenditure were criticized and resulted in the need of improving the economic outlook of the public sector. High costs of public sector and absence of any competition gave rise to the need of efficiency; and bureaucracies' adherence to following the procedures alone, irrespective of the outcomes, triggered the need of effectiveness (Eliassen and Sitter 2008, 93). It is suggested that serious thinking and efforts to reform state bureaucracies and making the governments more like businesses started in 1980s under the banner of new public management (NPM). The rule-bound and process-driven model of organizing public services started being replaced by result-oriented public services

with a focus on efficiency and least cost (Hood 2000, 3-5). Christopher Hood coined the term NPM in 1991 and argued that the basic ideas of public management have history behind them and can be traced far beyond the 1980s. Public sector reforms led by the governments of President Ronald Reagan in United States (1980-1988) and Margaret Thatcher in United Kingdom (1979-1990) are among the prime examples of NPM reforms. During the 1980s and 1990s, many of the OECD countries embarked on a journey to reform their public sector using the principles of NPM. Consequently, NPM was defined in several ways and could hardly qualify as a comprehensive reform program (Eliassen and Sitter 20018, 99-100). Moreover, Hood developed a grid to elaborate four different styles of public management using the cultural theory; the relevant styles for this thesis include hierarchist way and egalitarian way. The hierarchist way of public management operates on socially cohesive and well understood strong rules of procedure whereas egalitarian way has high participation structure with rules constantly in play (Hood 2000, 9).

NPM reforms were introduced to reduce role of the state and improve service delivery. These reforms were rooted in the New Right (the band of thinkers who challenged the welfare state with the free market perspective) critique of old public administration and in the assumption on human behavior towards incentives (Eliassen and Sitter 2008, 103). NPM was not only the product of ideas, doctrines, and theories but also the result of significant political, economic, social, and technological forces. Moreover, NPM ideas were applied in different policy contexts and faced different institutional, political, constitutional, fiscal and cultural challenges (Boston 2011). Subsequently, the NPM models differed across different regions of the world and hence the variation in ideas to organize public services is central to the NPM paradigm and is highly unlikely to disappear. Eventually, a wide range of viable model to organize public services evolved across different regions of the world.

The essential assumptions, principles, and doctrines of NPM were based on new liberalism, public choice theory, agency theory and managerialism (Boston 2011). The broader themes of NPM paradigm include reorganization, competition, and incentivization. The most important aspect of NPM reform is the reorganization of public sector by defining standards, performance indicators and then by evaluating the performance. It requires breaking up large monolithic government departments that are involved in everything from designing policy to frontline delivery of services. The division of these large departments allows for greater transparency and improved control (Eliassen and Sitter 2008, 101). Dunleavy and Margetts (2010, 2) termed as disaggregation this phenomenon of splitting up large bureaucracies developed on Weberian lines as. This resulted in shifting of focus from large multipurpose organizations with broad functions to creation of micro-level agencies and the establishment of single-purpose organizations with focused delivery functions. This reorganization of the public bureaucracies is instrumental in improving the performance of public sector.

The second key theme of NPM focuses on removing the monopolistic characteristics of public sector bureaucracies by introducing competition. This competition is promoted by preferring private over public ownership and encouraging independent over public organizations. The competition is further ensured by inculcating the multisource culture over single source supply in the public sector (Boston 2011). Thus, the competition can either be among the private service providers or among the subunits of a large public entity (Eliassen and Sitter 2008, 102). The competitive process helps to achieve the goals of cost-cutting and efficiency in the provision of public services (Boston 2011).

The third aspect of NPM is incentive-based management in public sector that rewards the performance. In some cases, the incentive-based approach also limits the influence of trade unions, as in the case of the UK the Thatcher government broke trade union powers (Eliassen

and Sitter 2008, 67). NPM introduces monetary incentives over non-monetary incentives to improve the performance (Boston 2011). In addition, it aims to adopt private sector practices of human resource management, performance-based pay, and short-term contracts (Eliassen and Sitter 2008, 103). Thus, the structures and forms of organization under NPM are competitive markets with the goal of efficiency and achieving the desired outputs.

The incentive-based management of public sector inculcates the contracting out of public services. NPM stresses on the contracting out of services with strict and tightly specified short term contracts (Boston 2011). The financially prudent politicians and advocates of rational choice theory consider the contracting out to be an efficient intervention because of its cost reduction characteristics (Ferlie et al. 2009, 6-7). Moreover, one of its purpose is to reduce the workforce management responsibilities of public managers (Ferlie et al. 2009, 6-7). The contracts are awarded under the principles of agency theory. “The agency theory is directed at the ubiquitous agency relationship, in which one party (the principal) delegates work to another (the agent), who performs that work. Agency theory attempts to describe this relationship using the metaphor of a contract” (Eisenhardt 1989, 58). Public institutions serve as the principal seeking the services of private agents who provide public services. Agency theory received popularity in public sector reforms in New Zealand during 1980s and influenced the importance of developing contracts under the principal-agent model in other regions as well (Hood, 2000, 15).

Although NPM paradigm proved to be durable and consistent model yet it received a fair deal of criticism. The private sector management literature outlines the challenges of radical outsourcing of core competencies of the firm and warns about losing the business. Similarly, the UK public management reforms had an unreflective bias towards radical outsourcing. Computer manufacturers in US who outsourced too extensively in 1980s, lost

their grip on the market. National governments might face a similar situation to protect and develop their own core competencies (Dunleavy 1994, 16). Thus, the governments have to prioritize their core competencies and carefully consider their options before contracting out the services.

1.1.2 New Public Governance (NPG)

The NPM paradigm also received criticism once countries started organizing public sector on its principles. Over the last decade, the literature on public sector reforms has shifted the focus from NPM and the management of individual organizations to the governance of complex system of delivery. This transition led to the development of new public governance (NPG) paradigm that has become an epicenter of public sector reforms. This development emerged as a hybrid form of governance that entailed a blend of consumerism and other diverse public management practices (Weisel and Modell 2014, 176). NPG defines the plural nature of contemporary state where a wide range of actors contribute to the delivery of public services (Dickinson 2016, 42). Rhodes considered governance as a broader concept than the government that refers to the services provided by any permutation of government, private and voluntary sectors (1996, 658). The term NPG was coined by Osborne in 2006 whereas scholars have used to denote similar transitions from NPM as new governance, interactive governance, e-governance, digital era governance, network governance, citizen governance, and new public service ethos (Weisel and Modell 2014, 201). The term NPG will be used in this paper to denote this paradigm to organize public sector.

Some of the elements of new governance were developed as incremental changes to reforms proposed by NPM, whereas some were inspired by the core ideas of NPM (Eliassen and Sitter 2008, 104). The NPG paradigm entrusts public managers with the responsibility to effectively manage networks and meet the needs of citizens. Moreover, it views citizens as

actively involved in decision making and service provision (Weisel and Modell 2014, 179). The structures and forms of organization under NPG are collaborative networks that enhance citizens' orientation. Thus, the key goal of NPG paradigm is to ensure the effective delivery of services by collaboration and enhance citizens satisfaction.

Rhodes presented a robust and comprehensive explanation of the concept of governance. He emphasized that inter-organizational linkages are defining features of service delivery and used the term network to describe the several actors involved in the process of service delivery (Rhodes 1996, 658). These networks are composed of organizations which exchange resources i.e. expertise, information, and money to achieve their objectives and maximize their influence. A prominent example of these networks is in the UK as the government creates agencies, bypass laws and use special bodies to deliver services and encourage PPP (Rhodes 1996, 658). This paradigm changes the boundaries of state and makes the boundaries of public, private, and voluntary sectors more flexible and opaque. The governance is about managing networks where the state can indirectly steer the networks (Rhodes 1996, 660).

The notion of governance enjoys a great deal of popularity among academics and practitioners. According to Stoker (1998, 18), "Governance refers to a set of institutions and actors that are drawn beyond government and it identifies blurring of boundaries and responsibilities for tackling social and economic issues". A similar notion of governance is shared by Torfing et al., they considered governance as the complex process that connects the governmental and non-governmental actors in different institutional settings to develop public policy (2012, 8). The governments across Europe adopted different modes of contracting out public services and eventually ended up with various hybrid models involving private, public

and voluntary organizations (Eliassen and Sitter 2008, 107). In other words, NPM reforms paved the way for NPG paradigm.

The critics of NPG view this recent development in public sector with suspicions and raise concerns regarding the transparency and accountability. The accountability structures of PPP hybrids are mainly different from the public sector; therefore, it leads to problems in securing accountability (Ferlie et al. 2009a, 19). They argue that it is regrettable development because it gives rise to huge problems of lack of transparency and accountability. However, the participation of a wide range of actors might make it difficult to hold them accountable but does not undermines the principle of accountability (Torfing et al. 2012, 26). They have not able to able comprehend and absorb the transformative role of state, efficacy of blurred boundaries and interdependence of public, private and voluntary sectors. They overlook the recognition that NPG received in supplementing the state bureaucracies and consider it as facilitator of private interests.

1.2 Public-Private Partnership (PPP) Model

PPP is a flagship and popular model of NPG paradigm that provides a platform to wide range of actors to collaborate for the provision of public services. The opportunity provided by NPM reforms to private sector to directly participate in delivering public services opened the boundaries between both the sectors. It encouraged the private sector to engage in the provision of various public services starting from building maintenance to construction of government facilities and running the schools and hospitals. PPPs are efforts in bringing the key stakeholders together to create national capacities for improved provision of public services. The popularity of PPP model highlights the blurring of boundaries of public, private and voluntary sectors (Eliassen and Sitter 2008, 107). Therefore, a combination of various forms of partnerships emerged in different segments of the public sector.

PPPs are formed by formal contracts between public and private actors with specified terms of cooperation for partnerships and mutual benefits. Koopenjan defined PPPs as a “structured cooperation between public and private parties in the planning, construction and/or exploitation of infrastructural facilities in which they share or allocate risks, costs, benefits, resources and responsibilities” (2005, 137). “The constitutive feature of PPPs is the presence of risk sharing and financial contribution of the private partners” (Torfing et al. 2012, 10). Therefore, any partnership without risk sharing arrangement cannot qualify as the PPP. There are two broader themes of PPPs; the first type is named as concession model in which the private parties design, finance, and operate a public-sector project. Whereas the second type is termed as the alliance or consortium model in which public and private parties cooperate to develop and operate the public-sector project (Torfing et al. 2012, 11).

PPPs combine the resources of government with the private agents and are broadly categorized in four models: 1) contracting out of services through competitive tendering, 2) business management of public entities, 3) development of hybrid organizations for risk sharing, and 4) co-production by public and private actors (Ferlie et al. 2009a, 2). This development of indistinct and close relationship of public, private and not-for-profits give rise to the phenomenon of hybridity (Ferlie et al. 2009a, 2). Thus, PPP hybrids have the characteristics of public, private and voluntary sectors.

The reason for the emergence of these partnerships includes erosion of public sector expertise and high long-term costs incurred by public sector to deliver public services (Pollitt 2003, Ch. 3). Moreover, mutual interdependencies push the public and private actors to interact with each other and find joint solutions to the emerging complex problems. The argument presented by Kooiman sums up the rationale behind PPP as he stated that no single actor whether public or private has the knowledge, capacity, and resources to independently solve

the complex, dynamic and diversified problems of this era (1993, 4). This assertion highlights the interdependences of the public, private and voluntary sectors. Furthermore, these partnerships are driven by the ambition to achieve common objectives while having divergent interests and preferences. The common objectives are outcomes of the negotiations of participating actors from the public, private, and voluntary sector (Torfing et al 2012, 8). In addition, the motives of participating parties include attracting finances, private sector expertise, sharing power, strengthening legitimacy by involving voluntary organizations, and sharing the risk with the non-state actors (Pollitt 2003, Ch. 3).

There has been emphasis on civic engagement in public sector. It has been realized by incorporating the views, opinions, and perspectives of lower echelon employees in addition to the participation of broader citizenry (Torfing et al. 2012, 14). The integration of stakeholders from private and voluntary sector in collective problem solving and decision-making process leads to mutual learning and helps in developing pragmatic policy solutions to complex problems. Therefore, new participatory models of governance like PPP are getting recognition in the policy arena as they produce public value through collaboration of public, private and voluntary actors. However, the successful conceptualization and implementation of PPPs require favorable conditions for collaboration of public and private actors. It includes the rule of law, stable institutional rules, strong state, strong civil society, established businesses, growing need to mobilize experts and high level of mutual trust (Torfing et al. 2012, 22). The UK and western Europe have thriving societies and fulfilled these pre-requisites to initiate various models under NPG whereas the debate about new governance models is less pronounced in Central and Eastern Europe because of weak civil society and low level of political trust (Torfing et al. 2012, 22).

Chapter 2 – Research Methodology

A combination of quantitative and quantitative methods is used to assess the impact of PPP model. This chapter elaborates the research methodology employed for this thesis. It is divided into three sections; first section explicates the rationale for choosing the instruments. Second section outlines the data strategy, and the third section states the strengths and limitations. The thesis uses one case study for analysis and evaluation i.e. PPP initiative launched to improve the service delivery in low performing public schools of Punjab, Pakistan.

2.1 Rationale

The quantitative research methods are used to test the hypothesis, “Are public-private partnerships (PPPs) efficient and effective to improve delivery of public goods like education in Punjab, Pakistan?”. This thesis attempts to evaluate the impact of public schools contracted out in phase 1 of the PPP initiative. The contracted out primary schools constitute the treatment group and the public primary schools are the control group. The table 1 below presents the total number of schools in each group:

Table 1: Distribution of Schools in Control and Treatment Group

School Type	Assignment	Total Schools
Public Schools	Control Group	32501
Contracted Schools	Treatment Group	993

The statistical software R is used to analyze the data of input and output indicators for public and contracted schools. As the control units outnumber the treatment units so the statistical technique of propensity score and genetic matching is employed to assess the impact of the PPP initiative. The genetic matching technique uses the method of Most Similar Cases

based on propensity scores to identify the schools from the control group that are most like the treatment group at the time of baseline. “The matching technique can be particularly powerful in an observational study where the control observations far exceed the treatment observations” (Rubin 2004, 354). Additionally, the significance of using the technique of matching is that the selection of units using matching is unbiased, transparent and replicable (Nielsen 2014, 570). The matching function minimizes the maximum discrepancy observed at each step (Box-Steffensmeier et al. 2010, 280). The strength of using this technique is that it is not usually necessary to measure the control variables in order to control them (Gerring 2008, 669). Thus, the quantitative method of selecting schools for comparison adds more authenticity to the analysis by comparing the similar schools from treatment and control groups. In addition, the budget data of School Education Department (SED) is analyzed to calculate the cost of educating a child in public primary schools.

The qualitative methods draw on the semi-structured interviews of Managing Director and the founder of the PPP initiative along with two senior officials of the PPP agency. The semi-structured interviews are chosen over structured and unstructured interview style as it gives more flexibility to the interviewee in sharing their perspective and often reveals new aspects that might not have been identified by interviewer earlier. They are employed to gather insights about the conceptualization, legitimation, operationalization of PPP initiative and the challenges faced by public managers in the process. In addition to the interviews, the primary sources including newspaper reports, Provincial Ordinances and Acts, official reports, license agreements and policy documents are examined to understand the composition of PPP model in Punjab and assess its efficiency.

2.2 Data Strategy, Variables and Analysis

SED has a robust mechanism of data collection against established input and output indicators from ~52000 public schools on monthly basis. Hence, the primary data collected by third-party monitors employed by Program Monitoring and Implementation Unit (PMIU) of SED is used for analysis. The input indicators include the availability of teachers, and four basic facilities of drinking water, electricity, boundary wall, and toilet. Whereas the output indicators include student enrollment, their attendance, and the formative assessment scores of grade 3 students in subjects of English, Mathematics, and Urdu. The input indicators are covariates (independent variables) and the output indicators are outcome of interest (dependent variables), so the impact of intervention will be evaluated for four output indicators i.e. enrollment, scores of grade 3 students in English, Mathematics, and Urdu. John Gerring (2008, 646) emphasizes the importance of taking into consideration the validity and accuracy of variables. This has been assured while shortlisting the variables for analysis. The selected variables are well accepted in the field of education and fulfill the international standards.

2.3 Strengths and Limitations

The strategy of using the statistical tools of propensity scores and genetic matching is the key strength of the quantitative methods employed in this thesis. Moreover, the variables used for analysis are well accepted in international educational statistics. The data is collected by third-party independent monitors and is highly reliable and accurate. Furthermore, the advantage of using a blend of qualitative and quantitative methods is that the semi-structured interviews reveal the information that cannot be extracted from data and complement the insights of data.

The potential risks and limitations in the research methodology depend on the scale and scope of this thesis. Due to limited scope of the research, the perspective of all the involved

stakeholders cannot be incorporated that include the public managers at district level, representatives of private and voluntary organizations. Moreover, the impact of the initiative is evaluated for schools contracted only in phase 1. The results would have been more representative if the schools from phase 2 and 3 are also included.

Chapter 3 – Landscape of School Education in Punjab, Pakistan

This chapter describes the attributes of public sector in Punjab and presents an overview of SED. Furthermore, it highlights the journey of education reforms that have been introduced in SED. Pakistan inherited British bureaucratic institutions organized on Weberian principles and practices at the time of its independence in 1947. The country has not been able to introduce any substantial reforms in its public sector. The outcome is large uncontrollable bureaus, that are functioning on established rules and centralized decision making. This institutional arrangement has eventually led to high costs and ineffective service delivery. The education system of Pakistan is facing challenges in areas of access, equity, quality, and governance. The country has not been able to meet the Millennium Development Goal (MDG) of universal primary education despite encouraging trends.

Punjab is the largest province of Pakistan with an estimated population of 110 million spread across thirty-six districts (Pakistan Bureau of Statistics 2017, 1). The province has one of the largest public-school networks in the world with ~52000 public schools managed centrally by the school education department (SED) of government of Punjab. The secretary SED leads the department at the central level with a team of thirty-six Chief Executive Officers (CEOs) looking after one district each. The table 2 below presents a glimpse of the SED and its large scale:

Table 2: Scale of SED

Number of Schools	Enrollment	Teachers
52,394	12,268,991	403,172

Source: Open.punjab.gov.pk/schools

The public education system is categorized in four categories as primary, elementary, high and higher secondary schools. The primary schools cater to students from kindergarten to grade five, the elementary from grade six to eight, and high and higher secondary schools offer grades nine to twelve. The table 3 below highlights the share of each category in the province:

Table 3: Public School Categories

Category	Total Schools
Primary	36,777
Elementary	8,283
High and Higher Secondary	7,383

Source: "Punjab School Census" 2017

SED has been functioning on the Weberian principles of rules and regulation with a set hierarchy starting from the secretary at the center to head teacher at the level of school. The importance is given to inputs i.e. following rules and regulations and impersonal order without taking the outputs and outcomes into consideration. This arrangement has led to disastrous performance of public schooling system in every aspect. The compensation of teachers in public schools focuses on inputs and in private sector it is linked to the outputs (Andrabi et al. 2008, xii). The officials of SED, from secretary to a school teacher, are paid fixed salaries and don't have any financial incentive to improve their performance.

Learning and Educational Achievement in Punjab Schools (LEAPS), an extensive four years study (2003-07) by a team of researchers from The World Bank revealed the status of education quality in public and private schools. A formative assessment of grade 3 students was conducted in public and private schools and the results suggested that students in public schools perform significantly lower in comparison to private schools. It takes 1.5 to 2.5 additional years of schooling for public school students to catch up with grade 3 students of private schools (Andrabi et al. 2008, x). In addition, the cost of educating a child in public

schools is twice the cost of educating in private schools. The reason includes the significantly high cost incurred by public sector in lieu of the salaries as teachers in public schools are paid 5 times more than that of private schools (Andrabi et al. 2008, x). Thus, SED is running public schools at much higher cost without any significant performance and therefore couldn't meet the expectation of citizens.

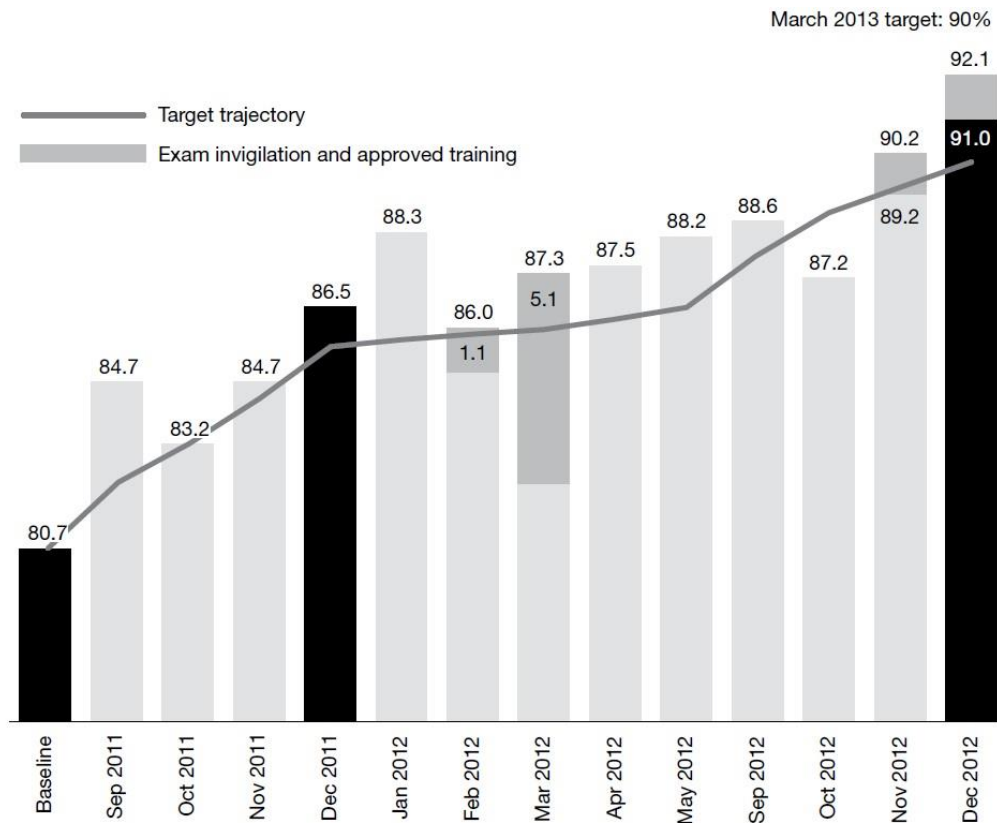
3.1 Journey of Reform

SED faced challenges in providing quality education and was not able to attract the children to its public schools. In 2011, the public schools lacked the basic facilities and the buildings were a disgrace, over 20% of the teacher won't show up in schools, 40% of the school going age children were out of school and only 53% of students in grade 3 were able to read a sentence in Urdu which is the national language (Barber 2013, 10). The expectations of the Pakistani public for quality education are rising because of evolving political system and awareness by media (Aziz et al 2014, 5-6). Owing to the dismal performance and SED's inability to meet the rising expectations of citizens, the province embarked on a journey to reform the school education sector under the flagship program of Punjab Schools Reform Roadmap. The province's efforts to reform the school education sector was not only inspired by Britain but also funded and guided by the Government of UK's Department of International Development (DfID). Sir Michael Barber led all the efforts from national to provincial levels and provided his technical expertise in developing and executing the reform program. He is serving as DfID's Special Representative on Education in Pakistan since 2010 and was chief advisor to Prime Minister Tony Blair from 2001-2005.

The reform efforts were mainly inspired by NPM paradigm and introduced the key aspects of managerialism in the functioning of SED. They changed the direction of the department from inputs to outputs and introduced performance indicators. The reform roadmap

brought remarkable improvement in the educational landscape of the province in a matter of two years. The presence of teachers in public schools increased from ~80% to ~90%. The figure 1 below illustrates the trend of teacher presence from 2011 to 2012:

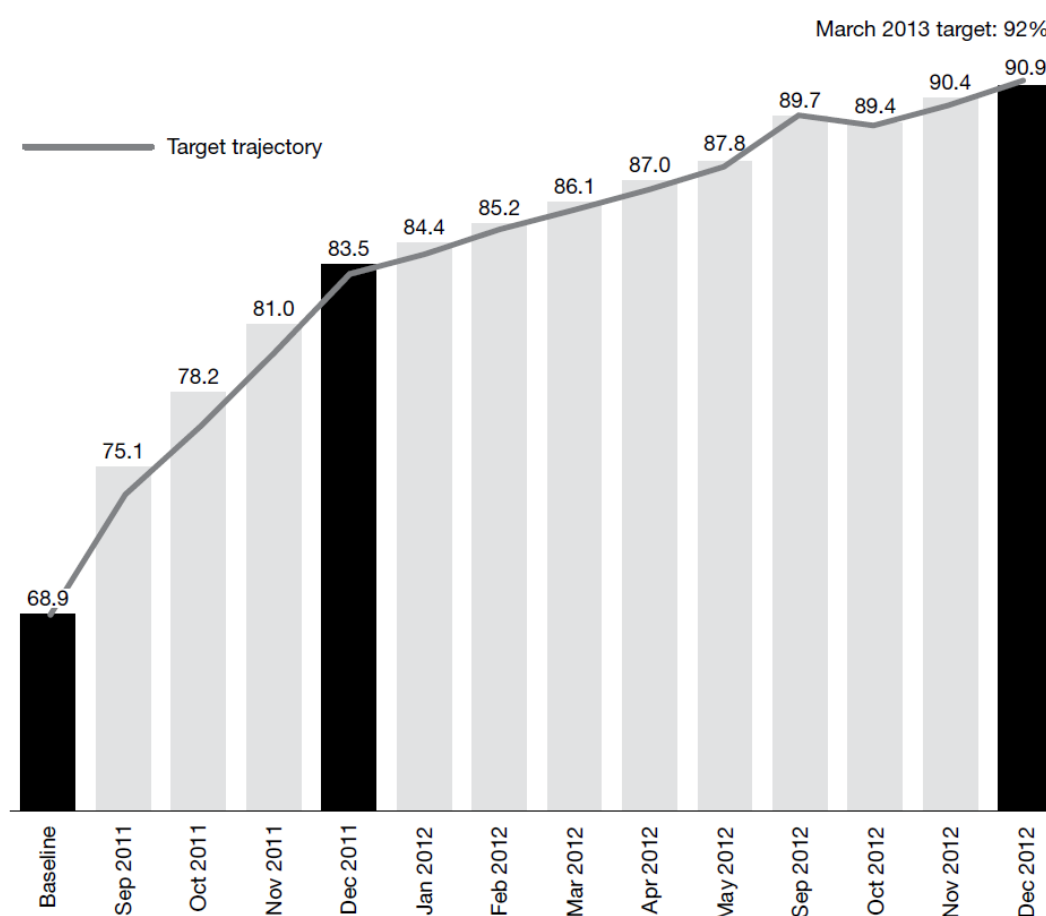
Figure 1: Teacher Presence in Public Schools of Punjab (2011-2012)



Source: Barber 2013, 16

In addition, the availability and functioning of basic facilities of drinking water, electricity, boundary wall and toilet improved rapidly. The figure 2 below depicts this change:

Figure 2: Availability and Functioning of Facilities (2011-2012)



Source: Barber 2013, 17

Furthermore, there has also been progress in getting the out of school children enrolled in schools, however, the SED was not able to achieve the desired outcomes of enrollment. Therefore, it remained a significant challenge to achieve 100% enrollment of children of primary school going age and improving the student learning outcomes of already enrolled children (Barber 2012, 73-74). The reform efforts were aimed at introducing the managerial spirit to operating procedures of SED and it did not bring any change to the institutional organization. As compared to the public sector of European countries and the UK, SED was still functional on Weberian paradigm in 2012 and was not reorganized on the principles of NPM.

Chapter 4 – Case Study: Public-Private Partnership for Public Schools in Punjab

This chapter is divided into three sections; the first section elaborates the rationale and the process of conceptualization of PPP initiative in Punjab and then outlines the key characteristics of the PPP model. The second section discusses the advantages that PPP initiatives bring to the institutions and society. It is followed up by the third section that highlights the challenges associated with the introduction of PPP model.

Western liberal democracies and other countries like Australia and New Zealand started reforming the public sector since 1980s, whereas the countries in global south have recently started reorganizing the public sector. As “the conditions of emergence of interactive governance include the presence of capable and resourceful actors, a high degree of trust among public and private actors, and the possibility of ensuring voluntary compliance” (Torfing et al. 2012, 11). These new paradigms have not been well received in Indian sub-continent and even the concept of PPP is associated with meeting the basic needs to reform the large-scale public enterprises in line with structural adjustment plans only (Ferlie et al. 2009, 2). Although Pakistan is way behind to achieve the favorable conditions to launch PPP projects, surprisingly the country embarked on the journey to establish PPP project amid weak rule of law, fragmented and weak civil society and emerging business community.

4.1 Conceptualization and Realization of PPP Initiative

Despite all the reform efforts, SED had thousands of low performing primary schools and was not able to improve the conditions because of the large scale of its school network. The cost of running the low performing schools was high without a substantial improvement in the performance. After years of reforms, the strategy to reduce the cost and benefit from the

expertise of private sector was considered by decision makers. Therefore, the political leadership in consultation with SED, and international development partners decided during the last quarter of 2015 to partner with private sector to improve the service delivery in low performing schools. Eventually, a PPP framework was conceptualized to improve the enrollment and quality of education in low performing public primary schools. This led to the development of a plan to outsource 5,000 low performing schools out of total 36,777 public primary schools to private entrepreneurs and organizations from the voluntary sector. For this purpose, SED in collaboration with Punjab Education Foundation (PEF) launched the PPP initiative under the banner of Public School Support Program (PSSP) in November 2015. PEF is an autonomous organization of government of Punjab dedicated for PPP in school sector.

The Managing Director of PEF, Ali Jan Khan, helped conceptualize the idea of developing PPP framework and was assigned the responsibility to design, manage and lead the initiative. In comparison to the rest of the world, these reforms under the NPM paradigm had a mix of similar and distinct challenges in the context of Pakistan. Ali Jan Khan shared the highlights of his experience in leading the initiative and challenges faced in rolling it out. The intervention of PPP was conceived keeping in view the limited institutional capacity of SED. The aim was to improve service delivery in public schools by developing quality partnerships with private sector. He further emphasized that there were doubts about the capability of private sector in supporting the public sector, but this initiative has proved the potential of private sector to support the public sector in service delivery. Whereas the key challenges included the pushback from teacher unions and litigation (Khan 2018).

The contracting out and competitive tendering model of PPP was adopted to improve the service delivery in public primary schools of Punjab. The contracts are offered on the agency theory principle whereby PEF works as the principle and the actors from private and

public sector operate as agents. The selected public schools were offered for short-term performance-based contracts of two years to a variety of actors from private and voluntary sector. The essence of this model is that government provide funding and private partners manage the operations of schools. The partners are divided into two main categories, institutional partners comprising of private educational chains, NGOs, and CSOs; and individuals comprising of private schools, private individuals, and retired government servants. Government pays a sum of \$5 to individual partners in lieu of fee per child and the institutional partners receive \$7 dollars. The extra \$2 dollar per child is paid to institutional partners as management cost. The partners hire the teachers, ensure the availability of facility and manage the daily affairs of schools (Pakistan 2017).

Public primary schools with enrollment of less than 20-30 students and poor performance in annual examination of grade 5 i.e. less than 25% were shortlisted for tendering (Pakistan 2017). The whole process of contracting out has been completed in three phases; first phase was launched in December 2015 with 993 schools, the second phase was launched in April 2016 with 1303 schools and the third phase was launched in November 2016 with 1980 schools. The table 4 below highlights the phase wise-allocation of total schools to each category of partner:

Table 4: Partners and Contracted Schools' Allocation Metrix

Category	Phase-I	Phase-II	Phase-III	Total
Private Educational Chains	104	127	542	773
Organizations – NGOs, CSOs	580	601	675	1856
PEF Partners	266	278	442	986
Private Individuals	24	150	168	342
Private Schools	19	76	94	189

Retired Government Servants		71	59	130
Grand Total	993	1303	1980	4276

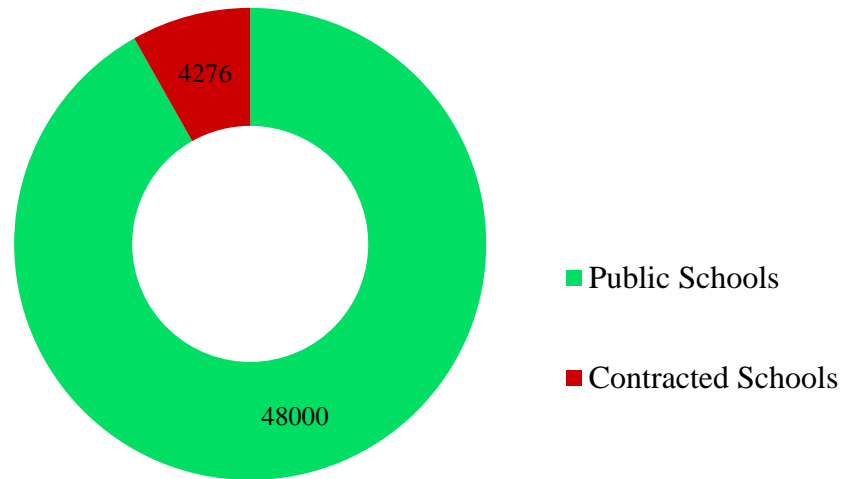
Source: PEIMA Datacenter, 2018

After running the program for two years, the government had to create a new dedicated agency to cater to the needs of partners and contracted out schools. The creation of a new agency required fulfillment of legal and constitutional requirements. Therefore, an ordinance was passed for establishment of Punjab Education Initiative Management Authority (PEIMA) in 2017. Following up with this, the provincial assembly of Punjab passed PEIMA Act in 2018 to complete the process of legislation and legitimizing the legal existence of agency. Thus, initiation of PPP projects entails a high degree of legal and constitutional complexity and requires a great deal of efforts for legitimization. As a result, the government of Punjab has created a new public agency i.e. PEIMA to devise, implement and manage reform initiatives and monitor day to day affairs of the PPP initiative. PEIMA has a central role in leading and steering the network of private and voluntary actors. It is responsible for supervision and deployment of effective monitoring functions for contracted schools (PEIMA Act 2018).

The PPP model in Punjab embraced the three broader themes of NPM paradigm i.e. reorganization, competition, and incentivization. The government of Punjab has adopted the principle of reorganization and disaggregation by splitting up the large SED and creating a dedicated agency that is responsible to manage the delivery of public service of education. The figure 3 below depicts the share of public and contracted schools managed by PEIMA in the public education ecosystem of Punjab:

Figure 3: Public and Contracted Schools Overview

Total Schools in Public Ecosystem across Punjab

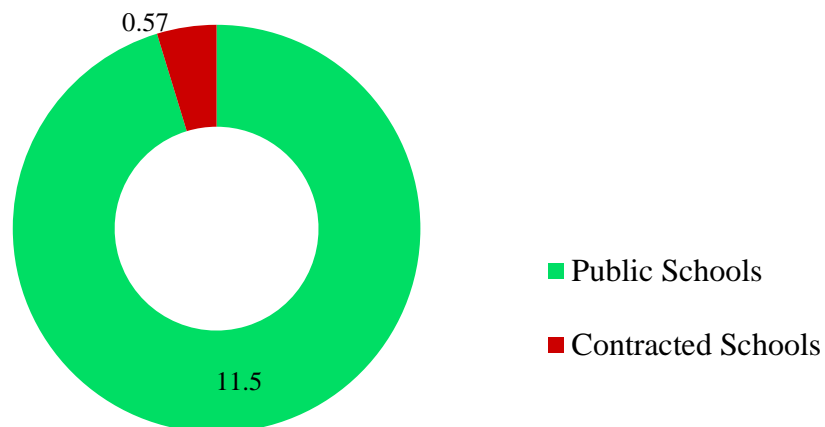


Source: "Punjab School Census" 2017

Furthermore, the figure 4 below presents the share of enrollment by public and partner schools in Punjab:

Figure 4: Enrollment Share (in millions) of Public and Contracted Schools

Total Student Enrollment in Public Ecosystem across Punjab



Source: "Punjab School Census" 2017 and PEIMA Datacenter 2018

The principle of competition is ensured by competitive tendering of selected schools whereby individuals and institutions from private and voluntary sector compete to win the contract. The schools are allocated to an individual or institution with higher qualification and experience in the field of education delivery (“Interviews” 2018). Furthermore, the principle of incentivization is ensured by giving monetary incentives based on the performance of schools. If the contractors are not able to meet the targets of performance indicators established by PEIMA then financial penalties are imposed. This mechanism of financial incentives serves as the driving force for enhanced delivery of services in public schools by private partners (“Interviews” 2018).

Even though the region has weak civil society and emerging private state, launching and sustaining a PPP project is a great success. Moreover, the complicated institutional and legal structure is key impediments towards taking new initiatives and reforming the public sector in Pakistan. The PPP initiative launched by the government of Punjab evolved into a hybrid of NPM and NPG paradigms. It’s a combination of traditional form of government and new forms of governance. The contracting out of schools is carried in line with the principles of NPM whereas the partnership and collaboration with the private and voluntary sector are developed in line with the values of NPG. The partners are not only managing schools like regular NPM contractors rather they are actively involved in problem-solving and decision-making process. This attribute of collaborative decision-making and participation of involved stakeholders sets this PPP model apart from traditional contracting out model of PPP. The partners are not just the implementers of the policies shared by the authority rather they are actively involved in the decisions taken by the authority i.e. PEIMA (“Interviews” 2018). This attribute of PPP model adopted by the government of Punjab is based on the governance principles as outlined by Torfing et al.

Furthermore, PPP initiative reinforced the central role of the state in opposition to the attempt of NPM reforms to reduce the role of the state. The senior public managers of PEIMA are taking the leadership role and steering the network of organizations. The current organization of SED and PIEMA can be best described by Hood's grid as discussed earlier in NPM section. SED is operational in hierarchist way of public management by adhering to well understood strong rules of procedure whereas PIEMA is organized in egalitarian way has high participation from the involved stakeholders that influence the rules and regulations.

4.2 Gains of PPP model

The adoption of PPP model brings added value to the delivery of public services and results in reduction of huge costs. The PPP model to reform the school education sector of Punjab has been highly beneficial in reducing the costs. The cost of educating a child in public schools is around 14-15 USD per month based on the salaries paid to the public school teachers (Budget 2018). Whereas the cost of educating a child in schools through PPP model is 5-7 USD per month (Pakistan 2018). Thus, this mode of PPP helps the public sector in saving funds by contracting out schools. Moreover, one of its purpose is to reduce the workforce management responsibilities of public managers (Ferlie et al. 2009a, 6-7). The contracting out model results in reduced workload for public managers at lower echelons (at district level). This reduction in responsibilities includes the human resource management of teaching and non-teaching staff, performance management, and supervision of day to day affairs of schools.

This model of PPP has not only increased the competition among the partners from private and voluntary sector but has also created an atmosphere of competition among the public schools. Public school teachers have now realized that they need to improve their performance and bring quality learning in classrooms otherwise the schools will be contracted out to private providers. The most important aspect that sets this PPP model apart from SED is

quick decision making and action taking mechanisms put in place by PEIMA. It results in immediate resolution of issues as compared to SED (“Interviews” 2018). Moreover, it has also increased choice of schooling option for the parents even in rural areas as well.

4.3 Challenges Associated with PPPs

The key challenge associated with outsourcing is opportunistic behavior of agents. If agents are self-interested utility maximizers, then it can lead to misalignment of goals and breaches of contracts (Boston 2011). There is some truth in this argument as well because 5000 schools were offered for contracts and after running three phases of tendering there are still 724 low performing schools left with the SED and no partner is willing to adopt. Thus, it supports the argument that public schools operated by SED might not meet the performance expectation, yet they are serving the underprivileged in remote areas where private entrepreneurs don’t find the opportunity of profit.

Secondly, the risk sharing arrangement brings its own intricacies in the PPP model. The principal and agents have different attitude towards risk sharing (Boston 2011). In the contracting out mode of PPP, private and voluntary sector only share the operational risk whereas the financial risk lies with the public sector. This has also been raised by scholars that in most of the PPP cases, even if the operational risks are transferred to private sector yet the financial risk still lies with the public sector (Pollitt 2003, Ch. 3). In this case of PPP as well, the financial burden solely lies with the public sector i.e. PEIMA and private partners take the operational risks of running the school. In an ideal scenario, all the participating sectors should share equal financial risk and it would enhance the ownership and performance.

The process of tendering and contracts gets more complex with short-term contracts and especially when it is introduced for the provision of public goods like healthcare and education. Moreover, it requires the government to rigorous monitoring of the performance of

the contractor (Ferlie et al. 2009a, 10-11). “It is extremely difficult and time-consuming to make contracts that are capable of regulating the complex and conflict-ridden interaction between the public purchaser and the private providers” (Torfing et al. 2012, 10). The irony is that NPM is the quest to replace government bureaucracy with the private bureaucracy and contract managers that are actually more difficult to hold accountable (Meier and Hill 2009, 6). The principal often finds it difficult to monitor the performance of the agent in addition to the heavy costs associated with monitoring.

Although PPPs yield short-term benefits, yet the long-term costs are more problematic and usually ignored (Pollitt 2003, Ch. 3). The stakeholders engaged in this process only acknowledge the benefits associated with it and ignore the darker consequences it generates. The transition process entails high opportunity cost, and in this case, SED had to bear it. The litigation process and reallocation of teachers consumed a lot of energy of the officials of SED and the performance of schools also got affected. Moreover, as discussed by former MD PEF about the teacher unions, SED also had to face strong resistance from teacher unions while contracting out these schools.

Chapter 5 – Comparative Data Analysis

This chapter is dedicated to present and analyze the results generated by statistical tools using the software R. The first section illustrates the results generated by matching function of R and the second section builds on the statistical significance of the impact that the PPP initiative had on outcome of interest (dependent variables). The applications against the first phase of the PPP initiative were received by December 2015, therefore, the data collected during the month of January 2016 is taken as the baseline. Whereas the data for the month of January 2018 is taken as the end line. The data is collected from all the public schools once every month against established indicators. The independent monitors visit the schools once every month and there are cases when few schools are not visited in a particular month due to weather conditions or any unforeseen circumstances. In such cases, the data of unvisited schools is not recorded therefore only schools that have the data available for all the indicators for baseline and end line are selected for further analysis. The table 5 below presents the total schools from control and treatment group used for statistical analysis:

Table 5: Control and Treatment Schools with Data against all the indicators

Category	Total Schools	Schools with data on all indicators
Control Group (Public Schools)	32501	25477
Treatment Group (Contracted Out)	993	622

Source: "Punjab School Census" 2017& PEIMA Datacenter 2018

5.1 Matching Results

The baseline data of all the input and output indicators of the treatment schools is run through the propensity score model. After generating the propensity scores, the matching function is used to select comparable schools from the control group based on the propensity

scores. Then genetic matching and match balance functions are used to maximize the balance without limits in all the x covariates by using an algorithm that determines the weight for each covariate. The balanced outcomes after matching for all the x covariates i.e. the scores in the subject of English, Mathematics, Urdu, total teachers, student enrollment, student presence, facilities of drinking water, electricity, boundary wall, and toilet is as follows:

```
***** (V1) data_ph1$english_baseline *****
               Before Matching      After Matching
mean treatment.....      72.426      72.426
mean control.....      76.258      72.75
std mean diff.....     -18.932     -1.6006

mean raw eQQ diff.....      3.7781      0.6871
med  raw eQQ diff.....         2         0
max  raw eQQ diff.....         25        17

mean eCDF diff.....      0.040657      0.0063348
med  eCDF diff.....      0.029752      0.0055732
max  eCDF diff.....      0.098527      0.021497

var ratio (Tr/Co).....      1.3191      1.103
T-test p-value.....      3.5227e-06      0.19787
KS Bootstrap p-value.. < 2.22e-16      0.706
KS Naive p-value.....      1.5185e-05      0.9337
KS Statistic.....      0.098527      0.021497
```

```
***** (V2) data_ph1$math_baseline *****
               Before Matching      After Matching
mean treatment.....      87.135      87.135
mean control.....      88.834      87.217
std mean diff.....     -10.967     -0.52928

mean raw eQQ diff.....      2.0707      0.19745
med  raw eQQ diff.....         0         0
max  raw eQQ diff.....         17        12

mean eCDF diff.....      0.023424      0.0028814
med  eCDF diff.....      0.024347      0.0015924
max  eCDF diff.....      0.062837      0.012739

var ratio (Tr/Co).....      1.4011      1.0222
T-test p-value.....      0.0068732      0.17776
KS Bootstrap p-value..      0.004      0.916
KS Naive p-value.....      0.016545      0.99996
KS Statistic.....      0.062837      0.012739
```

```
***** (V3) data_ph1$urdu_baseline *****
               Before Matching      After Matching
mean treatment.....      83.432      83.432
mean control.....      86.312      83.68
std mean diff.....     -19.618     -1.6866
```

mean raw eQQ diff.....	2.8907	0.49841
med raw eQQ diff.....	2.5	0
max raw eQQ diff.....	25	9
mean eCDF diff.....	0.03916	0.0063105
med eCDF diff.....	0.037236	0.0039809
max eCDF diff.....	0.10597	0.019108
var ratio (Tr/Co).....	1.3539	1.0945
T-test p-value.....	1.5569e-06	0.18884
KS Bootstrap p-value..	< 2.22e-16	0.786
KS Naive p-value.....	2.3906e-06	0.97589
KS Statistic.....	0.10597	0.019108

***** (V4) data_ph1\$teachers_total_baseline *****

	Before Matching	After Matching
mean treatment.....	2.3039	2.3039
mean control.....	3.1623	2.337
std mean diff.....	-96.1	-3.7134
mean raw eQQ diff.....	0.89068	0.053344
med raw eQQ diff.....	1	0
max raw eQQ diff.....	27	1
mean eCDF diff.....	0.037278	0.0059271
med eCDF diff.....	0.0021981	0.0015924
max eCDF diff.....	0.23668	0.033439
var ratio (Tr/Co).....	0.25075	1.0899
T-test p-value.....	< 2.22e-16	0.22286
KS Bootstrap p-value..	< 2.22e-16	0.088
KS Naive p-value.....	< 2.22e-16	0.48374
KS Statistic.....	0.23668	0.033439

***** (V5) data_ph1\$student_enrollment_baseline *****

	Before Matching	After Matching
mean treatment.....	82.204	82.204
mean control.....	117.57	82.352
std mean diff.....	-96.166	-0.40332
mean raw eQQ diff.....	36.744	1.0844
med raw eQQ diff.....	22	1
max raw eQQ diff.....	1093	18
mean eCDF diff.....	0.067802	0.0054123
med eCDF diff.....	0.025201	0.0039809
max eCDF diff.....	0.25108	0.021497
var ratio (Tr/Co).....	0.24108	1.0524
T-test p-value.....	< 2.22e-16	0.75978
KS Bootstrap p-value..	< 2.22e-16	0.864
KS Naive p-value.....	< 2.22e-16	0.9337
KS Statistic.....	0.25108	0.021497

***** (V6) data_ph1\$student_attendance_baseline *****

	Before Matching	After Matching
mean treatment.....	72.458	72.458
mean control.....	105.83	72.781
std mean diff.....	-96.339	-0.93233

mean raw eQQ diff.....	34.682	0.95541
med raw eQQ diff.....	21	1
max raw eQQ diff.....	1003	14
mean eCDF diff.....	0.066703	0.0051911
med eCDF diff.....	0.023591	0.0031847
max eCDF diff.....	0.24621	0.023089
var ratio (Tr/Co).....	0.24516	1.0318
T-test p-value.....	< 2.22e-16	0.39461
KS Bootstrap p-value..	< 2.22e-16	0.808
KS Naive p-value.....	< 2.22e-16	0.89127
KS Statistic.....	0.24621	0.023089

***** (V7) data_ph1\$student_attend_percentage_baseline *****

	Before Matching	After Matching
mean treatment.....	87.82	87.82
mean control.....	89.523	87.917
std mean diff.....	-14.359	-0.81725
mean raw eQQ diff.....	1.8344	0.24761
med raw eQQ diff.....	1	0
max raw eQQ diff.....	15	9
mean eCDF diff.....	0.019279	0.0035154
med eCDF diff.....	0.0054786	0.0023885
max eCDF diff.....	0.084578	0.015924
var ratio (Tr/Co).....	1.3056	1.0572
T-test p-value.....	0.00041605	0.18911
KS Bootstrap p-value..	< 2.22e-16	0.958
KS Naive p-value.....	0.00033758	0.99729
KS Statistic.....	0.084578	0.015924

***** (V8) data_ph1\$drinking_water_baseline *****

	Before Matching	After Matching
mean treatment.....	0.99518	0.99518
mean control.....	0.99568	0.99518
std mean diff.....	-0.72909	0
mean raw eQQ diff.....	0	0
med raw eQQ diff.....	0	0
max raw eQQ diff.....	0	0
mean eCDF diff.....	0.00025277	0
med eCDF diff.....	0.00025277	0
max eCDF diff.....	0.00050553	0
var ratio (Tr/Co).....	1.1183	1
T-test p-value.....	0.8573	1

***** (V9) data_ph1\$selectricity_baseline *****

	Before Matching	After Matching
mean treatment.....	0.89871	0.89871
mean control.....	0.90976	0.89871
std mean diff.....	-3.6589	0
mean raw eQQ diff.....	0.0096463	0

med raw eQQ diff.....	0	0
max raw eQQ diff.....	1	0
mean eCDF diff.....	0.005524	0
med eCDF diff.....	0.005524	0
max eCDF diff.....	0.011048	0
var ratio (Tr/Co).....	1.1105	1
T-test p-value.....	0.36705	1

***** (v10) data_ph1\$boundary_wall_baseline *****

	Before Matching	After Matching
mean treatment.....	0.95981	0.95981
mean control.....	0.96668	0.95981
std mean diff.....	-3.4943	0
mean raw eQQ diff.....	0.0064309	0
med raw eQQ diff.....	0	0
max raw eQQ diff.....	1	0
mean eCDF diff.....	0.0034344	0
med eCDF diff.....	0.0034344	0
max eCDF diff.....	0.0068688	0
var ratio (Tr/Co).....	1.1994	1
T-test p-value.....	0.3886	1

***** (v11) data_ph1\$toilet_baseline *****

	Before Matching	After Matching
mean treatment.....	0.98553	0.98553
mean control.....	0.9854	0.98553
std mean diff.....	0.11041	0
mean raw eQQ diff.....	0.0016077	0
med raw eQQ diff.....	0	0
max raw eQQ diff.....	1	0
mean eCDF diff.....	6.5976e-05	0
med eCDF diff.....	6.5976e-05	0
max eCDF diff.....	0.00013195	0
var ratio (Tr/Co).....	0.99265	1
T-test p-value.....	0.97831	1

Before Matching Minimum p.value: < 2.22e-16

Variable Name(s): data_ph1\$english_baseline data_ph1\$urdu_baseline data_ph1\$teachers_total_baseline data_ph1\$student_enrollment_baseline data_ph1\$student_attendance_baseline data_ph1\$student_attend_percentage_baseline Number (s): 1 3 4 5 6 7

After Matching Minimum p.value: 0.088

Variable Name(s): data_ph1\$teachers_total_baseline Number(s): 4

The above results show that balance is achieved as the mean of control schools for all the eleven variables has been successfully balanced to that of treatment school after running the data for thirty-two generations. Thus, this scale has produced the matches, the balance, and the p-value; and its lowest p value is highest therefore a reliable inference is possible.

5.2 Impact on Output Indicators

In matching package, Y is the vector containing the outcome of the interest to estimate the causal effect. There are four outcomes of the interest (dependent variable) that this thesis would like to see the impact for treatment schools under PPP model. It includes the levels of student enrollment and assessment scores of grade 3 students in English, Mathematics, and Urdu at the time of end line. The impact of the treatment i.e. contracting out schools through PPP is as follows:

Y1= student_enrollment_endline

```
Estimate... 63.467
AI SE..... 3.111
T-stat..... 20.401
p.val..... < 2.22e-16

Original number of observations..... 26099
Original number of treated obs..... 622
Matched number of observations..... 622
Matched number of observations (unweighted). 1256
```

Y2=english_endline

```
Estimate... -16.027
AI SE..... 0.98438
T-stat..... -16.281
p.val..... < 2.22e-16

Original number of observations..... 26099
Original number of treated obs..... 622
Matched number of observations..... 622
Matched number of observations (unweighted). 1256
```

Y3=math_endline

```
Estimate... -17.376
AI SE..... 0.77066
T-stat..... -22.546
```

p.val..... < 2.22e-16

Original number of observations.....	26099
Original number of treated obs.....	622
Matched number of observations.....	622
Matched number of observations (unweighted).	1256

Y4=urdu_endline

Estimate... -12.829
AI SE..... 0.90146
T-stat..... -14.231
p.val..... < 2.22e-16

Original number of observations.....	26099
Original number of treated obs.....	622
Matched number of observations.....	622
Matched number of observations (unweighted).	1256

The average treatment effect on the treated is highlighted as “Estimate” in the results above; it is evident that the treatment had a positive effect only on student enrollment, and have negatively affected the assessment scores of English, Mathematics, and Urdu. Standard Error is labelled as SE and is below 5% for all the outcome that assures the authenticity of results. Moreover, P value is less than 0.05 rather very small that means the results are statistically significant. Therefore, the null hypothesis cannot be completely rejected in this case. Null hypothesis can only be rejected for student enrollment whereas for assessment scores the null hypothesis holds true that there PPP model is not effective.

Chapter 6 – Analysis and Discussion

Although it is the prime responsibility of the state to provide public services such as education to its citizens, the public sector is not able to meet the expectations of the citizens. The deteriorating situation of public services results in declining confidence of citizens in their governments in general and public sector in particular. Therefore, the expansion and transformation of the public sector is essential to meet the needs of citizens. PPPs enhance capacities of the state and strengthen the public sector in order to bring a lasting impact. These partnerships foster synergies and facilitate exchange of resources between the public, private and voluntary sectors. Performance and impact of PPPs result in improved public services, reduced public expenditures, and enhanced citizen satisfaction. Participation of different actors in PPPs is highly productive as each participant brings a unique set of resources. Public managers bring institutional knowledge and legal expertise and the participants from private sector bring expertise, best practices, and financial resources. Thus, these partnerships bring innovation in the management of public sector through collaboration and cooperation.

The literature on public sector reforms pays little attention to the roles, responsibilities, and capabilities of public managers who steer these new partnerships. Such transformative changes enhance the responsibilities of public managers as they have to facilitate the partnerships, negotiate with participating actors, cope with internal coercion and address political struggles as well. The most challenging aspect is the development of trust and consensus among actors with diverging interests. In addition, some public managers at the lower echelons of hierarchy lack the capacity to lead these changes. Notwithstanding the challenges and weaknesses, public managers need to assume the leadership role to steer and facilitate participants in these partnerships. Ansell and Gash (2008, 544-546) also endorse the perspective that ultimate authority lies with the public institutions and they should initiate the

forums for joint problem solving and collective decision making. Facilitative leadership is necessary and is a critical ingredient in developing the trust and achieving consensus (Ansell and Gash 2008, 554). Such leadership is crucial in embracing, empowering and involving stakeholders for collaborative decision making (Vangen and Huxham 2006, 4). Most importantly, success of these partnerships is dependent on the degree of mutual trust. If public managers can develop trust among participants, then it can serve as a catalyst for innovation.

NPM paradigm tried to reduce the role of public sector yet it emerged with stronger and much more central role in conceptualizing, developing and leading the partnerships for improved service delivery. Torfing et al. (2012, 5) concluded, “governance is offering a new perspective that recognizes the central influence of government in and over governance”. In the case of Pakistan, public sector has the central and dominating role in steering the network and leading the transformation in contrast to the idea presented by Rhodes about governance where networks are self-governing.

Although the breaking up of large monolithic government departments or bureaus may lead to enhanced control yet it exacerbates the problem of effective coordination and communication among different units. The problems of coordination not only persist rather get more complicated over time with contracting out services. The senior officials of PIEMA also highlighted that coordination and communication with partners and other public departments and agencies is challenging (“Interviews 2018). Therefore, a more robust framework for smooth coordination and communication is required. The challenge of coordination can be addressed by introduction of platforms at various levels for intra-organizational and inter-organizational communication.

The NPG paradigm has increased the expectation of citizens and other stakeholders regarding their participation in public policy process (Torfing et al. 2012, 29). These reforms

were instrumental in transforming bureaucracies and forced them to incorporate the feedback and perspective of ordinary employees, citizens, and the private sector. Although, the engagement of various actors is encouraging in effective delivery of public services, but it has added more complexity to the process of policy formulation and implementation. Moreover, it is highly challenging to steer and develop consensus in these partnerships because of diverse interests, varied levels of competencies of participants, and approaches to problem-solving.

As discussed earlier, the analysis of budget data reveals that the PPP initiative to reform the public education sector is highly efficient as it significantly reduces the cost of educating children in schools. However, the results are not encouraging regarding the effectiveness of this initiative. While student enrollment has improved in schools, performance in assessment scores in subjects of English, Mathematics, and Urdu has significantly decreased. Moreover, there is a caveat in this analysis as only the data of schools contract out in phase 1 is analyzed for this thesis. Therefore, a further in-depth analysis is required to see the impact in schools contracted out in phase 2 and phase 3.

Conclusion

Emerging global trends and influence of international organizations shape local institutions and behaviors. This results in the empowerment of private and voluntary sectors which are instrumental in determining the future of public sector in any country. Reliance on the private sector has increased over time because of its expertise and low cost. The shrinking space for unilateral decision making has created an urgent need for reinvigoration of public sector and collaboration with non-state actors from the private and voluntary sector. Changing socio-economic, political and global trends indicate the perseverance and further development of NPG paradigm, even in societies which lack the basic requirements for this transformation. With these rapid changes, the states will have to make strategic choices that bring lasting impact with less cost. Efficient and effective governance of society and economy draws on the collaborative interaction of various public and private actors.

This thesis attempted to study the case of adoption of PPP model to reform the school education sector of Punjab, Pakistan and presented the findings regarding its efficiency and effectiveness. It explored the need for the development of PPP model and the challenges associated with the PPPs. Public sector reforms are driven by goals of reducing cost, improving service delivery and enhancing citizens' satisfaction. The essence of the model of PPP adopted in Punjab is that the schools are publicly funded and privately managed. The participants from private and voluntary sector bring the technical expertise of running educational institutes and the knowledge of the sector whereas public sector provides the financial resources. Eventually, close collaboration and partnership blurs the boundaries between all three sectors and depicts hybridity. Although collaboration with a wide range of actors is encouraging, yet it increases the responsibility of the public managers and makes the coordination more complicated.

Furthermore, long-term challenges of contract management and risk sharing need to be considered by public decision makers before entering into partnerships.

There is a mixed impact of the PPP initiative in reforming the school education sector of Punjab. It is evident from the statistical analysis and the interviews of the officials that the initiative of PPP for the provision of education is highly efficient and has substantially reduced the cost, but its effectiveness has yet to be proved. The cost of educating a child through PPP is half the cost of educating in public school. Statistical analysis of the data of schools from phase 1 reveals mixed results, whereas the levels of enrollment has seen significant improvement, the assessment scores in the subjects of English, Mathematics, and Urdu recorded a significant drop. These insights are drawn from the data of schools contracted out in phase 1 only. Therefore, a further analysis for the schools contracted out in phase 2 and phase 3 is needed. Besides these results, reforming public sector in the context of constitutional and legal complications is a challenging task. The principal lesson that can be drawn from this analysis is that the hybrid model of governance reduces the cost and brings some positive impact in service delivery.

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